

≈ H. Marc Cathey (1928–2008) ≈

# The American GARDENER®

The Magazine of the American Horticultural Society November / December 2008

## Striking Stems *enliven winter*

Mysterious  
Witches' Brooms

California Native  
Plant Pioneer  
Lester Rowntree

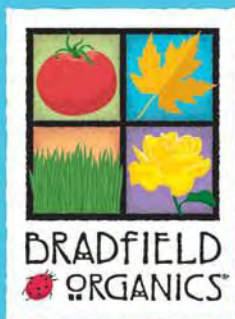
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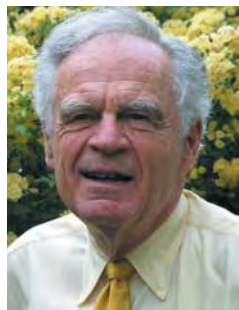
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## NOTES FROM RIVER FARM

*“Green is the color of hope.”*

—H. Marc Cathey

AS THIS ISSUE of *The American Gardener* was being readied for press, we received the sad news that Dr. H. Marc Cathey, retired president emeritus of the American Horticultural Society, had passed away at age 79 in his home town of Davidson, North Carolina. In addition to serving twice as president and later as president emeritus of the AHS, Marc's contribution to American horticulture over the course of his 50-year career is legendary. American gardeners and the entire horticulture industry have lost one of their greatest cheerleaders.



Marc's life was a celebration of all things green and growing, of creativity and science, and of family and faith. He was a remarkable man and an accomplished horticulturist. Through his lifetime achievements as a noted research scientist, a dynamic communicator, and a respected green-industry champion, millions of Americans have been touched in some way by his work.

Marc loved being around people. He always had time for a few words of encouragement or advice for a friend or colleague wrestling with the challenges of academic or professional life. To the hundreds of horticultural professionals across the country who have benefited from Dr. Cathey's wisdom and mentoring, he will always be “Uncle Marc.”

It is only fitting that Marc lived by the passionate belief that “green is the color of hope, and in the color of plants is our hope for the future.” In light of the turbulent times we are living in today, his words ring true more than ever. Plants not only bring hope for solutions to many of the challenges of the world, they add beauty to our surroundings, refresh our spirits, and nourish our bodies.

We dedicate this issue of *The American Gardener* to Marc's enduring legacy to the American gardening world, to his years of dedicated service to the American Horticultural Society, and to the hope and inspiration he has given us that will live on in our hearts forever. Uncle Marc, we will miss you.

Susie Usrey, Chair, AHS Board of Directors  
Tom Underwood, Executive Director



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You can read an article about Marc Cathey, view photos of him, read articles written by him, and see tributes from some of his colleagues and friends—including a poem written by University of Georgia horticulturist Allan Armitage—on the American Horticultural Society's website ([www.ahs.org](http://www.ahs.org)).



## MEMBERS' FORUM



### SOWING SEEDS OF DELIGHT

As an AHS member, I enjoy participating in the annual Seed Exchange program. Each year I like to try some varieties new to my garden. This year, I decided to try Italian climbing zucchini with my grandchildren. They had great success with it, as you can see in the photo (above). The vines covered their hideaway tunnel, and at the end of the season, they hauled away the extra squash for the deer to enjoy outside the garden fence.

Sandra Willis  
Corvallis, Oregon

### MISSING MAGNOLIA FAMILY MEMBERS?

Gil Nelson's article on native magnolias in the September/October 2008 issue was great. It mentioned that there are two genera in the magnolia family. What happened to the others, like *Michelia*?

Kris S. Jarantowski  
Executive Vice President and Director  
Chicago Botanic Garden  
Glencoe, Illinois

**Gil Nelson's response:** Traditional classification systems—based primarily on grouping plants that share a common set of morphological features—have distin-

guished as many as a dozen genera, including *Michelia*, within the magnolia family. More recent schemes, however, attempt to reflect true evolutionary lineages and to assign generic names only to groups that are considered to be monophyletic—composed of a single ancestor and all of its descendants—in nature. These findings reduce *Michelia* (and several other traditional genera of the magnolia family) to sections of the genus *Magnolia*, giving the affected species new scientific names to reflect the changes. Hence, such plants as the popular banana shrub (*Michelia figo*) become true magnolias (to wit, *Magnolia figo*). The classifica-



*Michelia figo*, above, is now *Magnolia figo*.

### Member Services

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

tion followed by Magnolia Society International and presented on its website ([www.magnoliasociety.org](http://www.magnoliasociety.org)) is representative of these modern interpretations and is the one followed in the article.

### GIVE DESIGNERS MORE CREDIT

As a garden designer, I was disheartened and even insulted by the excerpt “Plants with Presence” from Scott and Lauren Springer Ogden's new book, *Plant Driven Design* (September/October, 2008). The line that caught my eye—and kept being emphasized within the article—was “The designer sits at the board...”

Most designers, including myself, do sit at their boards sketching a plan—but *not until* they have visited the site, interviewed the clients, and considered the site, ecosystems, etc. I would hope that all garden designers are interested in heightening their awareness and knowledge of the latest movements in garden design.

I consider the Ogdens and other garden designers my colleagues. They would have better served their fellow designers by positively promoting an ongoing education into the habitat gardens they design without classifying others in the profession as mere “drawing board designers.”

Suzanne Edney  
Apex, North Carolina

**PLEASE WRITE US!** Address letters to Editor, *The American Gardener*, 7931 East Boulevard Drive, Alexandria, VA 22308. Send e-mails to [editor@ahs.org](mailto:editor@ahs.org) (note Letter to Editor in subject line). Letters we print may be edited for length and clarity.





# THE AMERICAN HORTICULTURAL SOCIETY TRAVEL STUDY PROGRAM 2009 TOURS

## TOUR SPOTLIGHT

### **Costa Rica: Gardens, Rainforests, and Orchids**

*with AHS host Tom Underwood,  
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*Look for more details coming soon for  
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*with AHS Host Kurt Bluemel  
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**April 24 – May 2, 2009**

### **Gardens of Florence**

*with AHS Host Susie Usrey  
Tour escorted by Susie Orso*

**May 22 – 30, 2009**

### **Gardens of Chile**

*with AHS Host Mac Plant  
Tour escorted by Mary Kroening*

**October 8–21, 2009**

**Destinations for domestic tours  
will be announced in December.**



**For more information about the AHS Travel Study Program,  
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## Visiting Scholar Focuses on Youth Programs



Norm Lownds

THIS FALL, the American Horticultural Society staff has been enjoying the presence of a special guest at River Farm. **Norm Lownds**, an associate professor in the horticulture department at Michigan State University in East Lansing and curator of the university's acclaimed 4-H Children's Garden, is spending three months of his sabbatical working with the AHS Education Department on conceptualizing and enhancing the Society's youth programs.

"As part of the AHS's Master Plan, we are expanding and re-designing our overall youth and family educational programs, including new programs being developed in conjunction with the planned Family Discovery Garden at River Farm," says AHS Education Programs Manager **Stephanie Jutila**. "Because Norm has been chair of the National Children & Youth Garden Symposium Advisory Panel since 2000, he is uniquely qualified to help us examine our role in connecting children and families to plants and the natural world." According to Jutila, one of the strengths Lownds brings to the planning process is his expertise in combining traditional hands-in-the-dirt programs with technological tools and re-

sources that have proven successful in getting children engaged with plants and the environment.

You can read more about Lownds, who is featured in the "One on One" profile in this issue, on page 42.

## Gift from Daniel Family Funds Garden Calm Renovation

THE CONSTRUCTION PHASE of a major renovation in the Garden Calm at River Farm, funded by a generous donation from AHS President's Council member **Judy Daniel** and her family, was completed in September. The Garden Calm is so named because of the cool, shady microclimate created by the serenely spreading canopy of a historic Osage orange tree (*Maclura pomifera*) growing near the garden's eastern border. The garden is being dedicated by the Daniels in memory of Judy's sister, the late **Barbara Wall Bond**.

Upgrades to the garden included creation of a new ADA accessible brick path, the addition of a granite millstone water feature in the courtyard, and installation of a drainage system to eliminate periodic flooding that plagued the site. A garden bench featuring an Osage orange motif also will be installed. The bench will bear a plaque honoring Daniel's mother, **Louise Vanderburgh Wall**.

"Through this gift of renovating the Garden Calm in remembrance of Judy's sister Barbara," says AHS Executive Director **Tom Underwood**, "the Daniel family has also provided a gift of a tranquil garden that will be enjoyed by all visitors to River Farm for decades to come. We are grateful for their generosity."

During construction, **The Care of Trees**, River Farm's official tree care provider and one of the AHS's corporate partners, monitored the site to ensure there was no damage to the Osage orange tree, which is estimated to be more than 200 years old and is one of the largest specimens in the eastern United States.



Another recent addition to the Garden Calm is an attractive new green roof on the garden's well house, a quaint miniature building about five feet high that houses irrigation valves. The green roof was donated and installed by the **Furbish Company**, a sustainable building firm headquartered in Baltimore, Maryland. The central location of the well house allows visitors to get a good view of the plants—mostly different varieties of sedums—and the materials used to create the green roof.

To round out the project, River Farm's Horticulture Coordinator **James Gagliardi** is working on a new blue-and-white-themed design for the central garden bed, which will be installed next spring using plants donated by **Monrovia** nurseries.



Above: Andrew and Judy Daniel, along with nieces Kathy McAfee and Susan Muir, enjoy the renovated Garden Calm. Right: AHS Horticultural Coordinator James Gagliardi discusses design plans with Daniel.



## Celebrating a Greener Boston

FOR THE SEVENTH consecutive year, the AHS supported Boston Mayor **Thomas M. Menino's** annual Garden Contest by providing one-year AHS memberships to contest winners. The contest, now in its 12th year, draws together Boston resi-



At the awards ceremony for the 2008 Boston Garden Contest, AHS representative David Ellis, second from right, joins Boston Mayor Thomas Menino, left, and other contest sponsors in congratulating the three winners of the Window Boxes or Tree Pit Garden category.

dents of all ages, ethnicities, incomes, and abilities to green up their own patch of the city.

At the awards ceremony, held on a perfect balmy August evening in Boston's City Park, top winners in 11 categories ranging from window-box gardens to shade gardens, school gardens, and vegetable or herb gardens, received the coveted "Golden Trowel" award presented by Menino, as well as their AHS memberships. The second and third place winners in each category also received recognition.

Director of Communications **David J. Ellis** represented the AHS at the ceremony. "We are very pleased once again to be involved with Mayor Menino's garden contest, which encourages urban beautification and brings communities together," said Ellis. "We commend the Mayor for his continuing support of this important program and congratulate all of the passionate gardeners who participated in the contest."

For information on next year's contest, visit [www.cityofboston.gov](http://www.cityofboston.gov) or call (617) 635-4505.

## Look for New Webinars Next Year

MORE THAN 1,000 AHS members have participated in one or more online seminars since the AHS launched its webinar program last year. This benefit, exclusively offered to AHS members, is designed to provide online access to top-notch horticultural experts speaking on a range of topics. The most recent one, held in October, featured plantsman, author, and designer **C. Colston**

### 63RD ANNUAL COLONIAL WILLIAMSBURG GARDEN SYMPOSIUM



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**Burrell**, who spoke about “Design and Plants for Woodland Gardens.” Other speakers this past year were **William Cullina**, **Dan Hinkley**, and **Tracy DiSabato-Aust**.

Look for more details soon on the AHS website at [www.ahs.org](http://www.ahs.org) and in the January/February 2009 issue of *The American Gardener*.

## No Child Left Inside Update

IN JULY, the AHS joined the No Child Left Inside Coalition (NCLIC), a growing alliance of more than 700 organizations working together to support the development of improved outdoor environmental education programs for children. Currently, the NCLIC’s key goal is passage of the Federal No Child Left Inside Act (H.R. 3036 and S. 1981). This legislation would help fund various environmental education initiatives and support improved training for teachers involved with these programs.

The good news is that in September the U.S. House of Representatives approved this bill—an important step as the NCLIC continues to lobby for the legislation in the months ahead. If you would like to voice your support, please contact your representative in Congress. Sample letters and information on how to get involved are available at [www.nliccoalition.org](http://www.nliccoalition.org).

## Fun with Pumpkins at River Farm



Visitors to River Farm this autumn discovered pumpkins in lots of unexpected places, including containers, open windows, and in the Children’s Garden. The pumpkins were donated by AHS Corporate Partner Homestead Gardens.



AHS NATIONAL EVENTS AND PROGRAMS

## 2008–2009 CALENDAR

Mark your calendar for these national events that are sponsored or co-sponsored by the AHS. Visit [www.ahs.org](http://www.ahs.org) or call (703) 768-5700 for more information.

- DEC. 1–24 & JAN. 2–16. **Holiday Trees Display.** George Washington’s River Farm, Alexandria, Virginia.
- DEC. 6. **Holiday Concert.** George Washington’s River Farm, Alexandria, Virginia.
- DEC. 11. **Annual River Farm Holiday Reception.** George Washington’s River Farm, Alexandria, Virginia.
- MARCH 18–MAY 31. **Epcot International Flower & Garden Festival.** Lake Buena Vista, Florida.
- APRIL 17 & 18. **Spring Plant Sale.** George Washington’s River Farm, Alexandria, Virginia. (Note: AHS Members-only preview sale is Thursday April 16 from 4 p.m. to 8 p.m.)
- MAY 1. **Colonial Williamsburg Garden Symposium.** Williamsburg, Virginia.
- MAY 17. **Friends of River Farm Family Picnic.** George Washington’s River Farm, Alexandria, Virginia.
- JULY 23–25. **National Children & Youth Garden Symposium.** Cleveland, Ohio.

## AHS Editor Honored by GWA

IN SEPTEMBER, **David J. Ellis**, AHS director of communications and editor of *The American Gardener* magazine, was named a fellow of the Garden Writers Association (GWA) at the organization’s symposium in Portland, Oregon. This honor recognizes a GWA member who has demonstrated exceptionally high degrees of skill, professional ethics, and dedication to the objectives of the GWA.



David J. Ellis

Ellis joined the AHS in 1994 as assistant editor of the magazine, which at the time was named *American Horticulturist*. He became editor in 1997 and assumed the role of director of communications in 2002. In addition to editing *The American Gardener*, Ellis has written more than 50 articles for the magazine. He also coordinates the AHS’s horticultural book publishing program and oversees the website and media relations. For the last several years, he has worked with other AHS staff members to conceive and advance the Society’s environmental initiatives, including the Green Garage program, which educates gardeners about earth-friendly products and techniques.





Illuminations provided by Homestead Gardens will be part of the outdoor winter tree display at River Farm. Indoor holiday decorations will be featured in the Estate House from December into January.

## Holiday Happenings at River Farm

RIVER FARM will be decked out for the holidays from December 1 through 24 and January 2 through 16. The Estate House will feature festive displays of fragrant greens, colorful poinsettias, and holiday trees decorated with a sparkling array of themed ornaments. AHS Corporate Partner **Homestead Gardens** of Davidsonville, Maryland, will trim selected outdoor trees on the property with lights to brighten the early winter evenings.



Jody Marshall

On December 6 at 7:30 p.m., join the AHS for a holiday concert of seasonal favorites and toe-tapping folk and Celtic tunes featuring **Jody Marshall** on the hammered dulcimer and vocals, **Andrea Hoag** on fiddle and vocals, and **Paul Nahay** on piano. The cost for the concert is \$20 for AHS members, \$25 for non members. Space for the concert is limited, so pre-registration is recommended. To register, call (703) 768-5700 ext. 114.

Please note: River Farm's winter hours are from 9 a.m. to 5 p.m. Monday to Friday, and the grounds and offices will be closed for the holidays from December 25 through January 1.

*News written by Editorial Assistant Caroline Bentley.*

# Gifts of Note

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

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If you would like to support the American Horticultural Society as part of your estate planning, as a tribute to a loved one, or as part of your annual commitment to charitable giving, please contact: Stephanie Perez, (703) 768-5700 ext. 127 or [sperez@ahs.org](mailto:sperez@ahs.org).



# AHS NEWS SPECIAL: America in Bloom's 2008 Award Winners

by Caroline Bentley

**M**ORE THAN 200 people from 30 communities nationwide attended the seventh annual America in Bloom (AIB) educational symposium and awards ceremony October 2 through 4 in Columbus, Ohio. This year's "Homecoming"



theme honored AIB's hometown with special tours of public and private gardens, including the Governor's Residence and Franklin Park Conservatory. Presentations offered take-home ideas including how to select plants for site-specific color, urban forestry, greening your community, how gardens change the face of neighborhoods, developing backyard conservation programs, new plant developments, and heritage preservation.

**Bill Dawson** from the Franklin Park Conservatory described Columbus's "Growing to Green" project, which helps beautify the city's neighborhoods with more than 130 thriving community gardens. The Environmental Protection Agency's eco-friendly "Greenscaping" program was detailed by **Jean Schwab** of the agency's Washington, D.C., branch. The EPA program outlines eco-friendly lawn and garden care solutions



The winner of the AHS-sponsored Community Involvement Award, Incline Village General Improvement District in Nevada, boasts spectacular natural vistas and active citizens dedicated to beautification efforts.

that save time and money while protecting our natural resources.

As part of the AHS's partnership with AIB, the Society annually sponsors the Community Involvement Award,



one of eight special "criteria" awards. This award "encourages and recognizes civic excellence where community members, government, business, and non-profit organizations work together to address critical local issues" to improve their quality of life. This year's award recognized the **Incline Village General Improvement District, Nevada**. According to AIB, "Incline Village sets the standard for community involvement. In fact, the judges have recommended that [the citizens] develop a book on their principles and implementation of collaboration between service groups. It is a model that deserves recognition and should be repeated in every town in America."

Next year's America in Bloom symposium will be held October 1 to 3 in Hershey, Pennsylvania. For more information or to enter your community in next year's contest, visit [www.americainbloom.org](http://www.americainbloom.org) or call (614) 487-1117.

*Caroline Bentley is an editorial assistant with The American Gardener.*

## POPULATION CATEGORY AWARD WINNERS

- under 5,000 Greendale, Indiana
- 5,001–10,000 North Manchester, Indiana
- 10,001–15,000 Greendale, Wisconsin
- 15,001–25,000 Stuart, Florida
- 25,001–50,000 West Lafayette, Indiana
- 50,001–100,000 Fayetteville, Arkansas
- 100,001–300,000 Toledo, Ohio

## CRITERIA AWARD WINNERS

- American Horticultural Society Community Involvement Award **Incline Village General Improvement District, Nevada**
- Ball Horticultural Company Floral Displays Award **Ironton, Ohio**
- Gardens Alive! Environmental Awareness Award **West Lafayette, Indiana**
- J. Frank Schmidt & Son Company Urban Forestry Award **Greendale, Wisconsin**
- Meister Media Worldwide Heritage Preservation Award **Lafayette, Indiana**
- Project Evergreen Landscaped Areas Award **Bexley, Ohio**
- SafeLawns Turf & Groundcover Areas Award **Tipp City, Ohio**
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# Indoor Gardens Under Glass

BY KRIS WETHERBEE

PHOTOGRAPHS BY RICK WETHERBEE

Winter may have your yard in hibernation mode, but you can still cultivate a garden even when temperatures dip well below freezing. Just bring the beauty of the outdoor botanical world inside by creating a miniature garden enclosed in glass.



**W**HETHER self-contained or slightly ajar, a terrarium provides a low-maintenance microclimate where many tropical plants and flowers can flourish. A terrarium can be as simple as an orchid growing inside a glass dome, or as grand as a small indoor woodland or tropical garden complete with figurines, bridges, and other accessories that transform a collection of glass-encased plants into a scenic botanical display.

## WARDIAN CASES, BELL JARS, AND MORE

Growing exotic plants in glass containers actually began as early as 500 B.C., when plants were exhibited under bell-shaped glass jars. But terrariums as we know them today evolved in the late 1820s, when a caterpillar experiment by British physician Nathaniel Ward led to the discovery that plants could thrive in glass containers.

Ward was studying the developing pupae of moths in a covered glass jar that also contained some soil from the woods. After several months he observed that healthy ferns and mosses were growing, which was an anomaly in London as the ferns in his rockery kept dying due to the fumes from the city's factories. "No historian has ever been able to say what happened to the pupae, but by July 1833, Ward had built the first of what would come to be known as Wardian cases," says terrarium aficionado Elvin McDonald, director of the Des Moines Botanical Center and

**A desert-themed terrarium, planted with succulents and cacti, requires soil with sharp drainage and a container with an open top.**



## TERRARIUM THEMES



**WOODLAND:** Mosses, lichens, miniature hostas, and small ferns create a wonderful woodland effect. Add violets, impatiens, phlox, miniature sinningias, or native woodland plants for color. You can also mix in carnivores such as butterwort (*Pinguicula* spp.). Other good options include life plant (*Biophytum sensitivum*), selaginella, wild strawberry (*Fragaria virginiana*), baby tears (*Soleirolia soleirolii*), cyclamens, wood anemones, and wood betony (*Pedicularis canadensis*).



**COLORFUL:** Accent varying shades of green with plants that add colorful impact. Options include flowering miniature versions of roses, pelargoniums, African violets, lobelias, bromeliads, gloxinias, oxalis, episcias, orchids, or fuchsias. Mix in colorful foliage plants, such as crotons, coleus, marantas, polka dot plants (*Hypoestes* spp.), rex begonias, magic carpet (*Saxifraga stolonifera* 'Tricolor'), aluminum plant (*Pilea cadierei*), and painted net leaf (*Fittonia verschaffeltii*).

**TROPICAL:** Slow-growing palms such as Neanthe Bella palm (*Chamaedorea elegans*), little lady palm (*Rhapis excelsa*), or dwarf papyrus (*Cyperus* spp.) function as trees. Filler plant options include petite ferns, branch-mounted orchids, peperomia, bromeliads, coleus, pothos, begonias, Mexican foxglove (*Tetranema roseum*), and maranta. Good candidates for groundcovers are *Ficus pumila*, ivy, *Phlox stolonifera*, club moss, and dwarf black mondo grass (*Ophiopogon japonicus*).

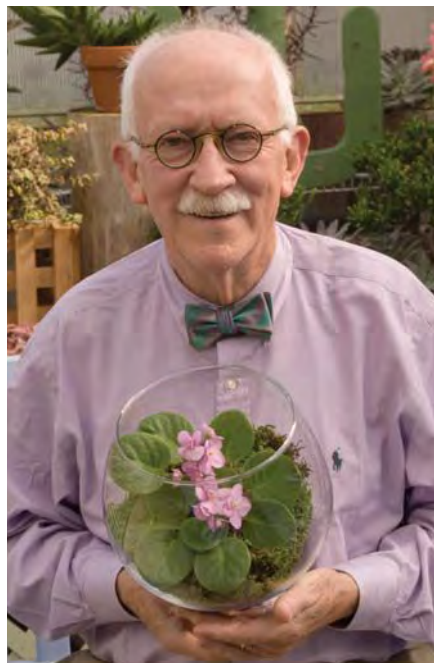
**CARNIVOROUS BOG:** Carnivorous plants such as Venus flytraps (*Dionaea muscipula*), sundews (*Drosera* spp.), pitcher plants (*Nepenthes* spp.), butterworts (*Pinguicula* spp.), and bladderworts (*Utricularia* spp.) require an environment with high humidity, so they are naturals for terrariums. Several species can be combined to create a tiny indoor bog garden. To mimic the bog habitat, the soil mixture should include lots of sphagnum moss and to prevent mineral build-up which can harm plants, watering should be done with distilled water or rainwater. —K.W.

editor at large for *Better Homes & Gardens*.

These virtually air-tight, wood-framed, and glass-glazed cases were used to ship ferns from England to Australia. The ferns lived despite six months of harsh conditions on the high seas. If ferns could thrive in the protected environment of a glass case, why not other exotic plants? For the eight-month voyage back to England, the cases housed Australian native plants that had not previously been able to withstand long-distance travel. "The experiment was a success," says McDonald, and the Wardian case launched the beginning of a new era in plant hunting and commerce.

It took until the 1970s before terrariums gained real popularity, especially for amateur gardeners, as the basically self-contained ecosystems didn't demand green thumb expertise.

Today the enthusiasm for terrarium gardening has gone global. "Tissue-culture and international chains have led to the growth of mega-nurseries, which supply stores across the country with formerly ex-



Terrarium expert Elvin McDonald shows off a single plant terrarium: an African violet growing in a huge brandy snifter.

otic species," explains Stephanie Hutter, a container specialist with Alice Cooke Design Associates in Connecticut. Hutter says that small nurseries specializing in dwarf and miniature cultivation, carnivorous plants, or xeriscaping can be easily found on the Internet. "All this has led to a growing sophistication in terrarium design and plant selection."

### A MICROCOSM OF CLIMATE

Terrariums provide gardeners with the opportunity to enjoy tiny rainforests and miniature exotic gardens inside an otherwise normally dry home atmosphere. The ecosystem created inside the magical environment of these humidity-controlled glass houses mimics nature's water cycle.

Plants take water from the soil and release moisture through their leaves into the atmosphere in a process known as transpiration. The moisture or condensation collects inside the glass and drips back into the soil where it is recycled by plants. The result is a microclimate



## HOW TO PLANT A TERRARIUM IN 10 EASY STEPS



1. Place a one- to two-inch layer of pea gravel or pebbles in the container bottom to provide drainage.
  2. Sprinkle a thin layer of activated charcoal on top.
  3. Fill to proper height with a slightly moist, well-drained potting soil—from a minimum of one-and-a-half inches to a quarter of the container's height (including drainage materials).
  4. Use a long spoon or stick to make planting holes in the soil.
  5. Unpot plants, gently remove excess soil from roots, and set plants in holes, leaving room for each to grow.
  6. Firm soil around plant roots. Use a blunt-ended stick for containers with narrow openings.
  7. Add decorative items and final touches.
  8. Use a syringe or soft-hair paint brush to remove any soil from glass or plant foliage.
  9. Mist lightly with water from a spray bottle, if needed.
  10. Place terrarium in a shaded area for a few days to allow plants to settle into their new environment, then move the container to its permanent location.
- K.W.

where many tropical plants can flourish with minimal maintenance.

### CHOOSING A CONTAINER

During the heyday of the 1960s and 70s, terrarium containers consisted of primarily fish tanks, bubble bowls, and large brandy snifters. These days a variety of glass containers take on new life as terrariums, including glass candy jars, cookie jars, sun-tea jars, and myriad other jars, jugs, or bottles. Actually, any clear or near clear glass container will do as long as light can come through and the base is watertight. But steer clear of colored or heavily tinted glass, which filters out too much light and thereby interferes with plant growth.

Your container should be roomy enough to accommodate your plants without crowding them. You'll save yourself aggravation and time if you also choose a container with an opening large enough for your hand to enter. Lids work best for fish aquariums and containers with large openings, although jars or bottles with narrow openings can usually do without.

Hutter plants terrariums in glass containers of all shapes and sizes. She especially loves bell jars and old glass houses, but doesn't use closed terrariums. "Historically, terrariums were closed system," she says. "But closed cases tend to promote mold, which is of course the enemy." Instead Hutter allows for air circulation by leaving a quarter-inch gap be-

tween the container bottom and the base, or by utilizing glass houses equipped with a panel that opens at the top.

### SELECTING PLANTS

The peperomias, pileas, and other typical plant suspects from the '70s have evolved into a plethora of miniature wonders that range from indoor houseplants and outdoor favorites, to exotic species of tropical and carnivorous plants. Cultivars like *Begonia* 'Buttercup', creeping fig (*Ficus pumila* 'Minima'), and trailing spike moss (*Selaginella kraussiana* 'Brownii') maintain their diminutive size for years.

While your choices can seem virtually endless, there are a few determining factors that are vital to a low-mainte-





Both lidded and open glass containers, in a variety of sizes and shapes, are suitable for terrariums.

nance, long-lasting terrarium: the size of the plant and its requirements for light and water. Moisture-loving begonias or violets wilt in the drier conditions more suited to mat-forming verbenas and thymes. And bright light conditions required by crotons will scorch delicate ferns and many palms.

Suitable plants for bright light include those boasting flowers or colorful foliage, such as bromeliads, fuchsias, begonias, orchids, impatiens, aphelandras, dracaenas, coleus, and crotons. Filtered or indirect light is best for ferns, palms, ivies, mosses, fittonias, aucubas, pothos, philodendrons, peperomias, aluminum plants, and prayer plants (*Maranta* spp.).



Miniature orchids are excellent candidates for terrariums, as are many carnivorous plants such as pitcher plants (shown) and Venus flytraps.

The key is to choose compact plants that play well with each other and are suitable to the size of your container. A petite Neanthe Bella palm (*Chamaedorea elegans*) or palm look-alike life plant (*Biophytum sensitivum*) will fare much better in the confines of a terrarium than a giant reed palm. A miniature African violet is a better fit than the standard, larger size. “Think about how plants are also going to play with the shape of the container,” Hutter says. “You don’t want plants embracing the glass too quickly as any foliage landing against the glass will eventually rot.”

### POTTING MATERIALS

The success of a terrarium is due in part to



## Sources

**Black Jungle Terrarium Supply**, Turners Falls, MA. (413) 863-2770. [www.blackjungle.com](http://www.blackjungle.com).

**Glasshouse Works**, Stewart, OH. (740) 662-2142. [www.glasshouseworks.com](http://www.glasshouseworks.com).

**Logee’s**, Danielson, CT. (888) 330-8038. [www.logees.com](http://www.logees.com).

**Miles’ To Go**, Cortaro, AZ. (520) 682-7272. [www.miles2go.com](http://www.miles2go.com).

**The Violet Barn**, Naples, NY. (585) 374-8592. [www.robsviolet.com](http://www.robsviolet.com).

## Resources

**The Complete Houseplant Survival Manual** by Barbara Pleasant. Storey Publishing, North Adams, Massachusetts, 2005.

**The New Houseplant: Bringing the Garden Indoors** by Elvin McDonald. Macmillan Publishing, New York, New York, 1993.

**The New Terrarium** by Tovah Martin. Clarkson Potter, New York, New York, 2009. (Available Feb. 24.)

its lack of drainage holes. But you still need to plan a way for the excess water to escape. Depending on the size of your container, a one- to two-inch layer of coarse gravel, pea gravel, small pebbles, marble chips, or colored aquarium gravel in the bottom of your container serves as sufficient drainage. Sprinkle a half-inch layer of activated charcoal over the drainage material to keep the soil smelling fresh. Top that with a thin layer of moss, such as sphagnum moss, to prevent soil from filtering into the drainage area.

Potting soil comprises the final layer. You can buy potting soil, or make your own by combining one part soil; one part peat moss or coir; and one part vermiculite, perlite, or soil conditioning grade of pine bark. For an open-air desert garden, use one part potting soil with one



## TERRARIUM MAINTENANCE TIPS

A closed terrarium may never need additional water. Even an open-top terrarium needs less water than a houseplant in open air. Depending on the size of the opening, this type of terrarium typically needs about two to four tablespoons a month of added water to thrive.

When you do water, do so sparingly and only when the soil surface becomes dry. Use a light hand when watering, adding just enough to moisten the soil. Never soak the soil. Instead, mist lightly with a spray bottle or apply water with a small watering can, eye dropper, or syringe. If heavy condensation forms inside the glass, temporarily lift the cover to allow excess moisture to evaporate.

Terrarium plants seldom need fertilizing. You want to keep plants healthy but growing slowly. Don't fertilize the first year, then fertilize with a weak solution of water-soluble houseplant fertilizer or fish and seaweed fertilizer each spring.

You'll need to occasionally prune overgrown or rampant plants, and trim damaged or dead leaves. Pinching plant tips can also help keep plants in bounds. Otherwise, your terrarium will seldom need attention. —K.W.

part sand. Soil level will vary depending on the size of the container, but should range from a minimum of one-and-a-half inches to a maximum of a quarter of the terrarium height for both potting soil and drainage material.

### TOOLS OF THE TRADE

Potting tools that make planting your terrarium a less complicated task include a funnel, household scissors, long spoon or sturdy stick, a small paintbrush or syringe, and an atomizer or spray water bottle.

A plastic funnel, paper funnel, or empty cardboard paper towel roll works well for pouring in potting soil and other materials into containers with narrow openings. This technique also allows you to create "hills and valleys" with the soil.

Bamboo sticks, a long wooden spoon, or an iced-tea spoon taped to a wooden stick can be used for digging holes for plantings. And chopsticks really come in handy when setting plants into the holes in terrariums with narrow openings. Use a long stick with a cork secured to the end to gently firm soil around plant roots.

Once your terrarium is planted, you'll need a small paintbrush or air from a syringe or empty spray bottle to clean any soil from plant leaves and the inside of the glass. That same spray bottle or atomizer filled with water provides a gentle mist of water for plants. But if the opening is really small, you may find that a kitchen bulb baster provides more precision when watering hard-to-reach areas.

### PLANTING TECHNIQUES

When planting your terrarium, keep in mind where it will be located. Most terrarium plants prefer diffused light near a bright window—bright enough to read by—but never in direct sunlight as that can scald foliage or bake plants to death.



The generous proportions of this top-venting hurricane lamp provide ample room for Mexican foxglove (*Tetranema roseum*), purple shamrock, silver lace fern, golden spike moss, and Irish moss.

You can also locate your glass garden virtually anywhere in your home or office as long as it receives from 12 to 16 hours daily of supplemental artificial light.

When planning the layout of a terrarium, think in terms of your outdoor garden—only on a much smaller scale. Combining plants of different shapes, colors, and textures adds visual interest to the overall design. Taller plants and palms make effective trees; compact flowering plants and ferns mimic small bushes and shrubs; trailing plants work well as vines; and mosses, lichens, and other mat-forming plants grow into groundcovers to fill in the open spaces. "Golden spike moss (*Selaginella kraussiana* 'Aurea') with its lemony-gold color really lights up any plant you put next to it," Hutter adds.

If your terrarium will be viewed from all sides, you'll want to arrange the larger plants near the center. For one-sided viewing, place taller plants towards the back with lower plants clustered near the front, and sculpt the soil so that it slopes from the back of the container towards the front.

### FINISHING TOUCHES

Turn a terrarium into a scenic display or create a natural effect with decorative small stones and pine cones, pieces of small twigs, seed pods, moss-covered tree bark or driftwood. Pebbles, rocks, and wood can also be used to fashion dry stream beds, miniature rock ledges, or cliffs.

Search yard sales, pet shops, or aquarium shops for small stone or ceramic figures that enhance the natural setting. Think frogs, mushrooms, pagodas, or tiny arbors—whatever works with your theme. Just be sure not to overcrowd the terrarium with too many trinkets. The key is to create a wonderland that looks like a mini-version found in nature.

Since its somewhat fortuitous beginnings, the art of creating a terrarium has evolved into many different forms and functions. But it's never less than what your own imagination can create. "Seeing a microcosm of nature under glass has timeless appeal," McDonald says. "Creating and maintaining such a garden is Zenlike or meditative, similar to nurturing a bonsai."

Kris Wetherbee is a freelance writer based in Oakland, Oregon.





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# tales from the golden age of Plant Exploration

Gripped by the thrill of discovery, adventurous 19th-century plant explorers risked their lives and loves in pursuit of new plants.

ARTICLE AND PHOTOGRAPHS BY KEN DRUSE

ONE OF my earliest memories involves walking through the woods with my mother and happening upon a clearing where a strange creature stood in a pool of dappled light. This odd thing, half as tall as I was, looked like a little tower with a balcony covered by a striped awning. My mother carefully lifted the canopy, and a secret was revealed: there was a tiny person hiding inside! My mother explained that this was Jack, a clergyman, and the tower was his pulpit, something I am sure I didn't understand, but certainly never forgot.

There in that woodland glen, seeds were sown; I was destined to become a man who loves plants. And, with a nod to that first Jack in the pulpit, or *Arisaema*, it turns out that it's the extraordinary plants—those with secrets to uncover—that still capture my attention. These species typically appear unassuming at first, the kind of plants you need to get up close to in order to appreciate. But on further examination, as with *Arisaema*, these subtle creatures often have the most enthralling tales to tell.

Plants have been collected and valued as sources of food and fragrance, and uti-



Jack in the pulpit (*Arisaema fargesii*)

lized as botanical curatives and in food preservation, for millennia. But in the 18th century, plant exploration became a global pursuit: plant explorers, in search of answers to questions raised by science and spurred by the need to explain the mysteries of the natural world (on the promise of financial rewards), set off across the globe, often finding danger—and adventure—along the way.

Traveling the world to see botanical wonders for the first time sounds thrilling, but plant hunting was no posy-picking party. Explorers often risked life and limb to locate a plant, sometimes losing both in the process. George Forrest nearly starved to death while being chased by Tibetan warrior priests, and on his seventh expedition, having recorded more than 1,200 plants, he died of a massive heart attack.

Reginald Farrer succumbed to pneumonia in the mountains of Burma; E. F. Leitner was killed by natives in the Florida Keys. Jon Lawson walked more than 1,000 miles through the Carolinas, with botanical riches second only to China in the temperate world, before he was captured by Tuscarora Indians and burned at the stake. And James B. Chambers, a New Zealand missionary and horticulturist, was eaten by cannibals.

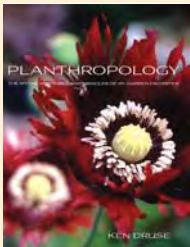
## DAREDEVIL DOUGLAS

The search for the next new plant was more than an occupation; it was an obsession with botany, and a passion for adventure. Take, for example, the eventful life of Scotsman David Douglas, who traveled through North America. Great Britain has only a handful of native needle-leaved evergreens, but Douglas added dozens more to the landscape, including America's popular cut Christmas tree, the Douglas fir (*Pseudotsuga menziesii*).

Covering 7,000 miles in North America between 1824 and 1827, Douglas somehow managed to escape death dozens of times. He nearly froze to death attempting to find the sugar pine tree described on an earlier expedition by his predecessor Archibald Menzies. As a passenger on a ship that sank, he survived in a rowboat that was blown 70 miles out into Hudson Bay; had several serious run-ins with Native Americans; was forced to swim naked across a freezing river during a hailstorm; and was thrown from his canoe into a whirlpool on the Fraser River, losing all of his possessions, including his journal and plant collections.

With all these near-death experiences, it is not surprising that he decided to head

This article is adapted with permission from *PLANTHROPOLOGY: The Myths, Mysteries, and Miracles of My Garden Favorites* © 2008 by Ken Druse. Published by Clarkson Potter/Publishers, a division of Random House, Inc.







David Douglas introduced many familiar U.S. West Coast natives. Two that were named in his honor, meadow foam (*Limnanthes douglasii*) and Douglas iris (*Iris douglasii*) are featured in this California meadow, above. Another Douglas find is the iconic California poppy (*Eschscholzia californica*), left.

for Hawaii to recuperate, a place where he had found peace in the past. Douglas's "busman's holiday" included a climb up Mauna Kea on July 12, 1834, where he came upon a bullock—one of the naturalized cattle that roamed the island—that had fallen into a pit dug in the earth to catch the animals.

Douglas surely must have seen the exposed hole and recognized what was in it, for he had noted earlier in his journal, "The grassy flanks of the mountain







abound with wild cattle, the offspring of the stock left here by Captain Vancouver.” Some accounts claim that he was retracing his steps to retrieve a forgotten item and did not remember the pit, or that his curiosity might have gotten the best of him and he stepped too close to the edge and fell in. Whatever the explanation, Douglas ended up in the pit with the bullock and was trampled and gored to death. He was 35 years old.

There were suspicions at the time that it might not have been an accident. His guide for the day, an ex-convict who had settled in Hawaii after serving his time in an Australian penal colony, disappeared after the incident. Douglas’s large purse was gone as well. Some suspected Ned Gurney, another ex-convict from Botany Bay who had breakfasted that morning with Douglas. Gurney had also been the one to dig the bullock pit in which Douglas met his end. Douglas’s fate remains one of the mysteries in the lives and deaths of plant explorers.

### VON SIEBOLD’S ROMANCE

Adventure, danger, and murder all sound romantic with the passage of time. One young explorer’s journey was particularly dramatic, and could have served as source material for a Puccini opera—a botanical *Madame Butterfly*, perhaps. Dr. Philipp Franz Balthasar von Siebold’s story begins in August 1823. As a 24-year-old German doctor and naturalist working for the Dutch, von Siebold arrived on the Japanese man-made island of Deshima, located in Nagasaki harbor.

For nearly 200 years, following the 1636 “Act of Seclusion,” Japan had isolated itself from the rest of the world. During this time the Japanese had formed a rare trade agreement with the Dutch, but they were wary of all other outsiders. When von Siebold arrived, he and all the Dutch traders had to live on the small outpost of Deshima, which was Japan’s sole connection between the mainland and the rest of the world.

It was von Siebold’s medical experience, and his name and accent—which the Japanese mistook for being those of a Hollander—that allowed him entrance to

Deshima. On this tiny island, he learned to speak Japanese, and as word of his skill as a physician spread, Japanese students flocked to him to learn the latest medical practices. Von Siebold was even allowed onto the mainland, and while he refused any money for his services, patients and students gave him pottery, scrolls, screens, lacquerware, books—and plants, which he then grew in a garden on the island.

As von Siebold’s interest in Japanese plants grew, he employed a Japanese artist, Keiga Kawahara, to paint the plants. Only Japanese servants, students,



**Above:** Among the plants named for Philipp von Siebold is *Primula sieboldii*, a popular Japanese primrose species. **Opposite page:** Another of Siebold’s discoveries was the Oyama magnolia (*Magnolia sieboldii*), a small tree. **Shown here is a flower of ‘Colossus’, a selection distinguished from the species by its larger, more pendulous flowers.**

merchants, registered prostitutes, and artists like Kawahara with official permission were allowed to cross to the island and mix with foreigners.


Because of von Siebold’s status and privilege, he was able to travel as a member of the Dutch embassy to Edo (now Tokyo) for an audience with the Tokugawa shogun. He collected 1,000 specimens during this trip, as well as a dangerous possession for a foreigner: a se-

cret map of Japan. He also [fell in love with] Kusumoto Taki, a beautiful 18-year-old girl known by the honorific name O-taki-san. Because Tokugawa laws did not allow the two lovers to spend time alone together, let alone marry, O-taki-san agreed to register as a prostitute in order to move to Deshima and live with von Siebold on the island, where, in 1827, the couple had a daughter, O-ine.

In 1828, von Siebold decided to move his family and plant collection to Holland, but before their ship could set sail, a typhoon struck Deshima. Von Siebold survived the storm, but the secret map was found and he was imprisoned. Forced to make a choice—take his plants and leave, alone, or be put to death—in December 1829, von Siebold set sail for Java, taking with him 1,200 specimens of 485 species and varieties, but leaving his beloved O-taki-san and O-ine behind.

Von Siebold’s name is not on the tip of every gardener’s tongue, but the names of plants associated with him are planted in gardens all over the temperate world: *Hosta sieboldiana*, a plant that has parented many popular, bold-leaved varieties; *Primula sieboldii*, a woodland primrose with lilac, pink, or white flowers; *Magnolia sieboldii*, the Oyama magnolia, which bears the whitest of all flowers in the genus, with a ring of crimson stamens in the center of

the nodding blossoms; the rare *Clematis florida* ‘Sieboldii’, which has creamy white flowers with a tuft of purple-black stamens; and the familiar stonecrop that might be in your garden right now, *Sedum sieboldii*, which bears succulent silver leaves edged in yellow and red.

Clearly von Siebold made many valuable contributions to the plant world with the specimens he collected during his time in Japan, but some might say that his most touching bequest is a selection of *Hydrangea macrophylla* that he named ‘Otaksa’ after his beloved. 

*An award-winning writer and photographer, Ken Druse is the author of 16 books, including the groundbreaking Natural Garden series. The host of a garden radio show called “Real Dirt,” he lives in Brooklyn, New York.*









# Striking Stems

BY RITA PELCZAR

## *provide winter interest*

Kick the appeal of your winter landscape up a notch with shrubs and small trees that offer colorful stems, arresting forms, or exquisitely textured bark.

**T**HE SHORT days and chilly temperatures of winter have stripped deciduous plants of their summer and autumn finery, exposing their “bare bones” to the world. With this seasonal exposure, however, some of the

finest qualities of many garden shrubs and trees are revealed.

Winter stem colors vary widely. Beyond brown, black, and gray they include yellow, green, red, pink, orange, and ghostly white. Often it is the young

growth that sports the brightest hues, so for many shrubs with colorful stems it's best to remove the oldest stems each spring to encourage lots of new shoots.

Several selections of the red-osier dogwood (*Cornus stolonifera* syn. *C. sericea*,

**Opposite page:** After two or three years, stems of black bamboo (*Phyllostachys nigra*, USDA Hardiness Zones 7–11, AHS Heat Zones 12–4) darken from green to black, providing dramatic contrast and a strong vertical element to a snowy landscape. **Top:** If left unpruned, the redstem willow (*Salix alba* var. *vitellina* ‘Britzensis’, Zones 4–9, 9–1) will grow to become a large tree. However, it is most effective—and most colorful—if cut back frequently and maintained as a shrub.



USDA Hardiness Zones 3–8, AHS Heat Zones 8–1) display colorful winter stems, and despite the common name, all are not red. While the stems of ‘Cardinal’ range from brilliant red to yellow-orange, those of ‘Flaviramea’ are bright yellow. Most cultivars grow to about six feet tall, spread to 12 feet, and sucker vigorously. They are great for massing against an evergreen background.

The stems of *Salix* ‘Flame’ (Zones 3–8, 7–1) are orange-red. “This vigorous grower never fails to elicit positive visitor response at the JC Raulston Arboretum,” says the North Carolina arboretum’s director Dennis Werner. “It’s a great alternative to the red- and yellow-stem

**Right: The bright yellow-green stems of *Cornus stolonifera* ‘Flaviramea’ show off to fine advantage against a dark, snow-dusted evergreen backdrop of Hinoki cypress (*Chamaecyparis obtusa* ‘Crippsii’) and Leyland cypress ( $\times$ *Cupressocyparis leylandii*). Below right: *Rubus cockburnianus* (Zones 6–8, 8–6) is known as the ghost bramble for good reason. Its arching, prickly white stems, which grow to eight feet tall, provide a stark contrast to the browns and greens of the winter garden.**

dogwoods, which often are challenging for us here in the mid-South.”

The shoots of coral bark Japanese maple (*Acer palmatum* ‘Sango-kaku’, Zones 6–8, 8–2) are bright coral-red. “It is the newest growth that is the reddest, and only where the winter sun shines on the stems, so plant it where you see it from that angle,” suggests Larry Mellichamp, a professor at the University of North Carolina–Charlotte, and co-author with Peter Loewer of *The Winter Garden: Planning and Planting for the Southeast* (Stackpole Books, 1997).

For shrubs with exfoliating bark, it’s the older branches that produce the best show, so removing low branches or twiggy growth to reveal the patchwork of bark colors or shredding textures will enhance the winter display in the garden. This same discretionary thinning treatment applies to shrubs with dramatic branching habits.

Ellen Zagory, director of horticulture at the University of California–Davis Arboretum, recommends a manzanita, *Arctostaphylos densiflora* ‘Howard McMinn’







(Zones 7–9, 9–7), for western gardeners. It has “beautiful, mahogany, muscular branches with age,” says Zagory.

Many shrubs and trees with striking forms—from rigidly upright to downright twisted—are best appreciated in winter. The paper bush, *Edgeworthia chrysantha* (Zones 7–9, 9–7) is a multi-stemmed shrub that grows five to six feet tall and wide. “Its brownish stems are unique in that they fork in threes,” says Mellichamp. “They have a reddish cast in winter and are stocky and attractive—not finely twiggy—the proportions are pleasing.”

Suzy Bales, author of *The Garden in Winter: Plant for Beauty and Interest in*

**Top left:** The young branches of coral bark Japanese maple (*Acer palmatum* ‘Sango-kaku’) glow in the winter sun. In spring, new leaves open orange-yellow. Here it is backed by the pinkish tan and white exfoliating bark of Chinese paper birch (*Betula albosinensis* var. *septentrionalis*, Zones 3–8, 8–3). **Bottom left:** *Cornus sanguinea* ‘Mid-winter Fire’ is a favorite of Roger Gossler of Gossler Farms Nursery. “We cut it back in mid-March so it never gets over four to five feet tall,” says Gossler. This results in an incredible display of orange, red, and yellow stems. The plant also withstands fairly dry and very wet conditions, adds Gossler.



*the Quiet Season* (Rodale Books, 2007), describes Harry Lauder’s walking stick (*Corylus avellana* ‘Contorta’, Zones 3–9, 9–1) as “a living sculpture. It is mesmerizing for its tangle of corkscrew branches, each one squiggling and twisting like a madcap doodle,” says Bales, who gardens on Long Island, New York. It usually grows to about 10 feet tall and wide. (For more shrubs with outstanding winter stems, see chart on page 28.)

Each season has its strong points. So rather than yearning for the warmth and riotous colors of spring, enjoy the variety of winter colors, textures, and forms of your shrubs and trees. They impart a stark beauty to the winter landscape, often further enhanced by the muted tones of winter grass, a backdrop of dark evergreens, or a carpet of fresh snow.

*Rita Pelczar is a contributing editor for The American Gardener.*



## MORE SHRUBS THAT DAZZLE IN WINTER

Name	Height / Spread (feet)	Comments	Origin	USDA Hardiness, AHS Heat Zones
<i>Cornus alba</i> (Tatarian dogwood)	6–10/5–6	winter stems are coral-red and color is best on one- to three-year-old wood	Asia	2–8, 8–1
<i>Cornus sanguinea</i> ‘Midwinter Fire’ (bloodtwig dogwood cultivar)	10/8	bright orange-yellow winter stems, good fall foliage color	Europe	4–7, 7–1
<i>Fouquieria splendens</i> (ocotillo)	30/6	spiny, erect shrub with cylindrical, white-striped green stems	southeastern U.S.	7–11, 12–6
<i>Heptacodium miconioides</i> (seven-sons flower)	15–20/8–10	large shrub or small tree has light tan bark that peels to reveal dark brown inner bark	China	5–9, 9–4
<i>Hydrangea quercifolia</i> (oakleaf hydrangea)	6/8	stiff branches have attractive orange-brown, exfoliating bark	southwestern U.S.	5–9, 9–5
<i>Jasminum nudiflorum</i> (winter jasmine)	3–4/4–10	wide-spreading shrub with trailing, bright green stems	China	6–9, 9–6
<i>Kerria japonica</i> ‘Kin Kan’ (Japanese kerria cultivar)	6/8	bright yellow arching stems with green stripes	Japan	4–9, 9–1
<i>Salix</i> ‘Erythroflexuosa’ (willow cultivar)	15/15	arching, spirally twisted branches, young stems are bright yellow	hybrid	5–9, 9–5
<i>Salix irrorata</i> (dewystem willow)	6–20/2–6	upright, clumping shrub with stems that turn lavender in fall. Cut stems back to keep bushy	Rocky Mountains, southwestern U.S.	4–8, 8–4
<i>Salix purpurea</i> ‘Nana’ (purple osier cultivar)	3/5	slender purple stems, adapts to moist locations	hybrid	4–7, 7–1
<i>Salix sachalinensis</i> ‘Sekka’ (fantail willow)	15/30	twisted reddish stems, used in flower arrangements	Japan	4–7, 7–1
<i>Stachyurus praecox</i>	10/10	upward-arching red-purple stems, pendulous flowers in late winter	Japan	6–8, 8–6
<i>Vaccinium corymbosum</i> (highbush blueberry)	5–12/5–12	multi-stemmed shrub with arching yellow-green to red stems in winter	eastern North America	3–8, 8–1



Above: Flowers appear in late winter on the arching, bright green stems of *Jasminum nudiflorum*. Right: The white-striped, green stems of ocotillo (*Fouquieria splendens*) can grow 20 feet tall and are leafless most of the year.







**Top:** With its twisted branches exposed, Harry Lauder's walking stick (*Corylus avellana* 'Contorta') makes a wonderful specimen for the winter landscape. Cut stems can be used for indoor arrangements. **Left:** By removing lower branches and twigs of *Lagerstroemia indica* 'Natchez' the beautiful exfoliating bark is revealed.

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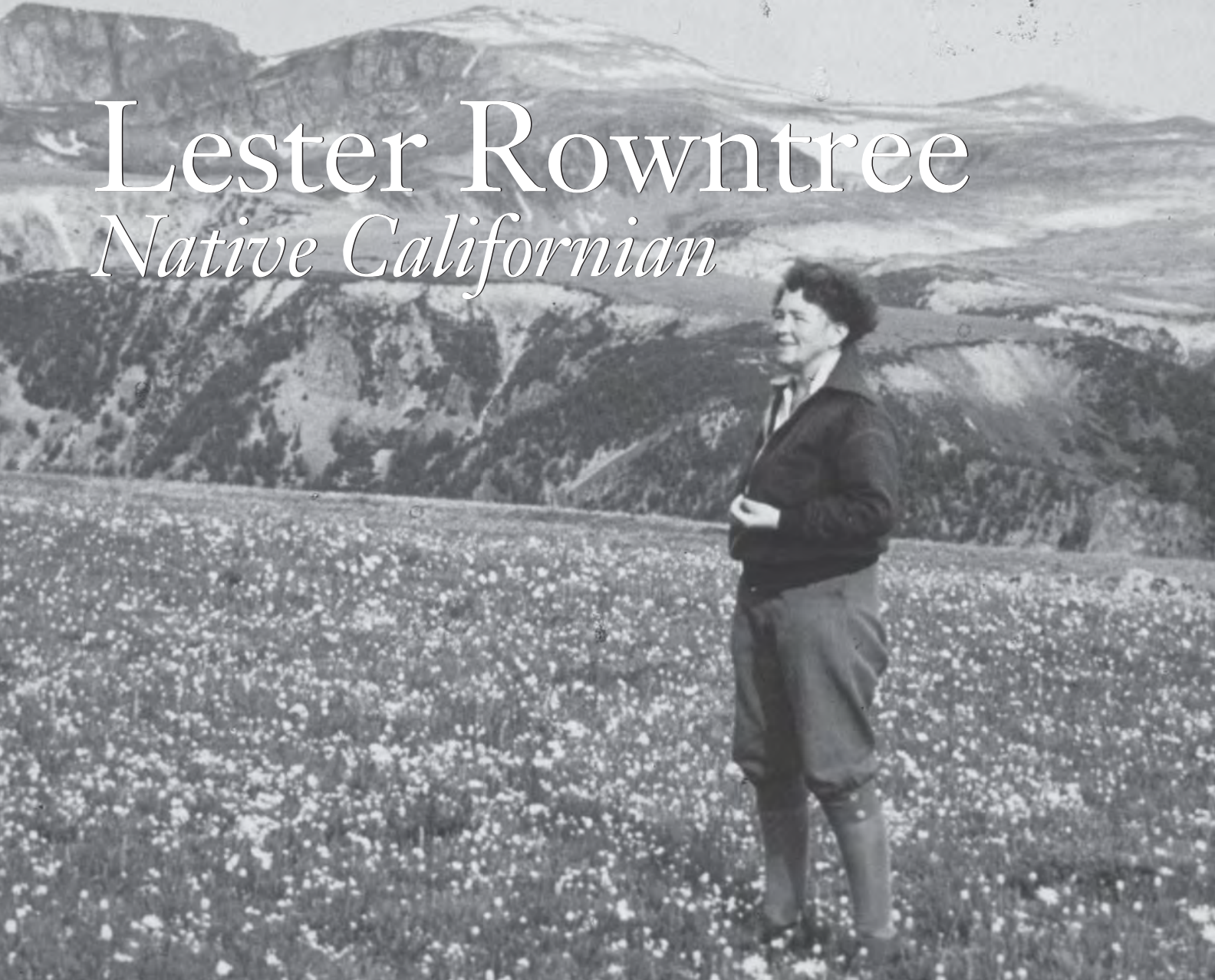
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# Lester Rowntree

## *Native Californian*



An early champion of Western native plants, Lester Rowntree was a prolific author, nursery owner, and plant hunter whose accomplishments still inspire California horticulturists more than 25 years after her death.

BY JUDITH LARNER LOWRY

CALIFORNIA NATIVE plants have come of age. With many native plant nurseries throughout the state, exploding public interest, and an increasing number of important new books on the subject, these plants are being woven into the public and private lives of Californians. How Lester Rowntree, (1879–1979), known as “the duenna of California native plant horticulture” would have rejoiced!

Rowntree lived 100 fruitful years, a life that intrigued and inspired her contemporaries and continues to do so to this day. As the proprietor of a native plant seed business, she roamed—mostly alone—California’s alpine and other regions, collecting seeds and plants and studying them in their habitats. In two books and more than 700 articles, she described her adventures and the plants she studied in prose that was so vivid, eccentric, person-

al, humorous, and moving that readers were captivated equally by the subject matter and by the author.

These articles were published in many of the top national magazines of the time, including *Gardening Illustrated*, *Atlantic Monthly*, and *House & Garden*. She contributed more than 20 articles to the *National Horticultural Magazine*, which was a precursor of *The American Gardener*. (To read two of these articles, click on the web

**This apparent self-portrait, taken in the late 1930s, shows Lester Rowntree among the wildflowers in the Beartooth Mountains of Montana.**



special linked to this article on the AHS website, [www.ahs.org](http://www.ahs.org).) Working tirelessly for the preservation of California's flora and its incorporation into gardens, she also covered a range of topics of interest to gardeners throughout the country.

It would be hard to find a professional prominent in the field of California native plant horticulture today who does not feel a debt to Rowntree. Bart O'Brien, senior staff research associate at Rancho Santa Ana Botanic Garden; Warren G. Roberts, superintendent of the University of California–Davis Arboretum; Steve Edwards, director of the botanic garden of the East Bay Regional Park District; Dave Fross, owner of Native Sons Nursery; and many, many others credit Rowntree with an important role in their discovery of their chosen field.

Roberts met Rowntree when she gave an outdoor talk about wild California plants to students at the University of California–Davis in 1962. He remembers her “absolute enthusiasm for California native plants and her important role in getting the word out. She was a vibrant, sparkling person, vibrating with enthusiasm. When I think of her, which is often, she inspires me still.”

## RIISING TO LIFE'S CHALLENGES

Rowntree was named Gertrude Ellen Lester when she was born in the Lake District region of England. In 1889, when she was 10, her family emigrated to the



Rowntree with husband, Bernard, and son, Cedric, in New Jersey around 1918.



With her trusty burro, Skimpy, Rowntree poses during a seed collecting trip in the High Sierra region of east-central California, sometime in the late 1930s.

United States. She spent the remainder of her childhood years in Kansas and California before moving to Pennsylvania, where she worked as a governess and completed her schooling.

In 1908, she married Bernard Rowntree, an electrical engineer, with whom she had a son, Cedric. At that time she formally adopted her family name, Lester, as her given name. For more than a decade, the family lived in Oradell, New Jersey, where Rowntree created a showplace garden that was an early indicator of her horticultural talent.

Diagnosed in 1921 with a terminal illness, Rowntree convinced her husband to move back to California, where she had lived as a young girl. “If I was to die, I wanted to expire amidst the splendid wildflowers of southern California,” she later wrote. In California, the doctors proved to be wrong, and Lester soon recovered a vibrant health that was to serve her well for many years of rugged plant exploration. Ever after, she was a firm believer in the healing power of time spent with plants.

In 1931, Rowntree and her husband divorced. At 52, Rowntree, with friend and business partner Lila Clevenger, opened a mail-order seed company called Lester Rowntree & Company. As she described in an essay called “Lone Hunter,” every spring would find her on the road collecting seeds for more than 4,000 customers:

“I inhabit my hillside only from November to February, while the winter

storms are blowing and the winter rains pouring. In March and April I have long shining days on the desert, in May happy weeks in the foothills, where a chorus of robins wakes me and my morning bath is in a rushing stream of just-melted snow. In June I am in the northern counties scented with new-mown hay and wild strawberries. In July in the higher moun-

*“If I was to die, I wanted to expire amidst the splendid wildflowers of southern California.”*

tains, and in August and September up in the alpine zone with mule or burro.”

In a typical day in her seed-gathering life, she spent the night at her base camp, reached by burro or packtrain, and woke at sunrise to walk to the places where cars and burros couldn't go, there to spend the day with the plants. Sometimes it was a return to an old friend, sometimes a new discovery.

“To the conversant the procedure of tracking down flowers is natural and plausible. After the eager encounter must come a sojourn long enough to learn the day and night habits of the plants, to photograph, to press a specimen and perhaps take some seed, to study the symbiotic relationship between vegetation and its attending insects. Not until intimacy has been established can a move be made to the next stand,” she wrote.



The interplay between horticultural purpose, a naturalist's unlimited curiosity, business person's practicality, and author's drive towards sharing experience fuelled her writing. In 1936, Macmillan published her first book, *Hardy Californians*. In 1939, Stanford University Press published *Flowering Shrubs of California and Their Value to the Gardener*. Between the two books, a clear shift takes place, which Rowntree described as "infatuation giving way to love." Sydney B. Mitchell, then president of the California Horticultural Society, remarked of the second book: "There is nothing to compete with it; no one else could have written it."

In the book's introduction, Rowntree describes her method:

"...I have put down what I have gleaned from personal observation of the habits of these shrubs in the wild and of the behavior under cultivation of those which I have grown in California during the last 12 years. In compiling it I have followed my invariable rule of writing only from my own notes, taken on the spot, of the things that shrubs have told me in personal interviews."

## RIGORS OF PLANT HUNTING

Rowntree confessed to occasionally longing for someone to share her journeys, but she found that few could handle the rigors of the life she usually relished and sometimes stoically endured. "It's not all beer and skittles," she said in response to those who overly romanticized it. Rattlesnakes were challenging companions, once turning up in her sleeping bag, bears invaded her camps, and lizards hung around to hear her sing.

Though she considered burros to be the best companions for plant-finding expeditions, she resigned herself to the necessity of the automobile. The interiors of her cars were customized for her occupation—she removed seats to make room for "flower presses, books, photographic gadgets, canteens, tools, and seed bags." Her many bouts of car trouble in remote areas, which, in reality, must have been alarming, were handled as amusing anecdotes in her articles and books. She frequently locked herself out of cars, experienced flat tires and vapor lock, and once even barely escaped from her car as it teetered on the edge of, and then finally toppled over, a cliff.



Western blue-eyed grass (*Sisyrinchium bellum*), Rowntree wrote, "is one of those forgiving plants that does not resent the encroachments of civilization."

The vagaries of the natural world also required stoicism.

"You must steel yourself to bear the agonizing disappointment of some precious seed or flower missed by just a day or two... You may go five hundred miles or more in search of a certain plant only to find that the bloom is just spent or the seed just fallen... Or that a whole stand of *Lupi-*

*nus confertus* or *L. lyallii* has been carried off to the burrows of ground squirrels."

But the rewards, described in her writings and in her talks, were many:

"A collecting trip brings with it an awareness of earth and a sense of well-being which adds to the larger life. You exchange confusion for peace; the feverish occupations of the city for the calm and

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quiet business of stalking plants in Nature's planless plantings...Although men do not know it, it is the inspiration coming from experiences like this which they live by."

## A NATIONAL PERSPECTIVE

In *Hardy Californians*, one of Lester's stated goals is to demonstrate to East Coast gardeners that the alpine plants of California might thrive in their gardens, and that they are compelling enough to be worth a try. She wrote, "American horticulture would take longer strides if plantsmen in the East knew the Pacific Coast material better and if we on the Pacific Coast were more familiar with the plants and growing conditions in the East."

When gardening in New Jersey, she longed to try out California's flora, bringing back her own seed collections for trials. Each stage of her life brought a different focus. In her younger years, she thrilled to see in nature "...floods of blossoms I used to cultivate in an English garden, those baby blue eyes and poppies which in California spill across the grass..." In the garden, she treasured the plants that stimulated for her what close friend James Roof, the first director of Tilden Botanic Garden, called "field memories."

In 1949, a series of fires destroyed Rowntree's seed room, writing studio, and greenhouses, after which Rowntree closed

*"American horticulture would take longer strides if plantsmen in the East knew the Pacific Coast material better and if we on the Pacific Coast were more familiar with the plants and growing conditions in the East."*

her seed business. Though devastated by the loss of her notes for two more books, Rowntree continued to write an astonishing number of articles after the fire. Some, like "A Trail of Beauty" and "The Lone Hunter," were deeply thought-out essays, others were more casual plant descriptions or gardening recommendations, the vast majority as yet unanthologized or collected. Intriguing snippets of unpublished materials are still to be found in the Rowntree archives, residing at the California Academy of Science in San Francisco.

## SOME OF LESTER ROWNTREE'S FAVORITES

Rowntree's evocative plant descriptions make native plant fans like me itch to try some of the species she encountered. But be forewarned that many of the plants Rowntree wrote about are still unavailable or are not suited for cultivation much out of their native range. The ones I describe below are generally available through nurseries and worth trying.

Early in Rowntree's career, she held out hope that gardeners east of the Rockies could learn how to successfully grow Western plants, but with experience she came to understand that most natives were best suited to their regional habitats. One exception to this is California annual wildflowers, which can be treated just like any garden annuals.

### ANNUALS

Tufted or foothill poppy (*Eschscholzia lobanii*) is an unusual relative of the well-known California poppy. Rowntree describes it as "a low tuft of very pretty cut leaves and has light yellow flowers on upright seven inch stems." It blooms in early to midsummer and pairs well with *Phacelia californica*.



*Nemophila maculata*

Of five-spot (*Nemophila maculata*), Rowntree wrote, "in its native haunts [it] makes a lovely picture." Its large, spring-blooming flowers are white with very fine purple veinings and a big striking blotch of dark purple in the top center of each petal. Growing less than a foot tall, it's excellent in containers, in sun or part shade.

### PERENNIALS AND SUBSHRUBS

Rowntree was fond of penstemons, a large genus of herbaceous perennials distributed widely in the western United States. One she wrote about was *Penstemon heterophyllus*, a California native that bears a pointed spike of purple, pink, blue, or lavender flowers in early summer. It has narrow, gray-green leaves with reddish stems, and thrives on hot, dry, gravelly slopes.

Among California's interesting semi-woody subshrubs are the "buckwheats" (*Eriogonum* spp.). "People who travel the California roads fall, sooner or later, under the spell of the Eriogonums and become champions of their beauty," wrote Rowntree. In *Hardy Californians*, she praised "the architectural value of *E. giganteum*," which grows to seven feet tall, with gray-green leaves that are white below. In zones with freezing winters, it can be grown as an annual.

### EVERGREEN SHRUBS

Though endemic to one small area of California, bush anemone (*Carpenteria californica*) has proven to be not only lovely but adaptable as well. A moderate-growing evergreen shrub three to 10 feet tall, it bears fragrant white flowers from May to August. It thrives in sun or part shade with average to low water. Pinch branches to keep it bushy.

Rowntree is credited with introducing a cultivar of wild lilac (*Ceanothus cuneatus* var. *rigidus*) called 'Snowball'. This shrub has stiff branches and leathery leaves, decorated by clusters of small, pure white flowers in spring. Growing to four feet tall and wide, it thrives in full sun in summer dry climates and is a good choice for tough, rocky slopes.

—J.L.L.



*Ceanothus 'Snowball'*



Her humorous asides on the nature of gardeners and various horticultural controversies are treasures. On the proper culture of lupines, she says:

“The question of lime or acid soil for Lupins is one to be approached with trepidation, for with some gardeners it has taken on the seriousness and sanctity of a religious issue. After all the heated discussions on the reaction of the genus *Lupin* [sic] to lime which have enlivened (not to say embittered) our horticultural magazines for the past few years, we seem not much nearer the solution of the matter.”

The pastime of gardening requires a certain callousness to plant death. In an unpublished manuscript, “My Hillside Garden,” Rowntree describes her attitude: “The disappointment of a plant’s death is always tempered by the realization that here is an empty spot in which to try a new plant.”

But gardeners must also learn when to give up. In *Flowering Shrubs of California*, Rowntree shares her experience of trying to grow mahala mat (*Ceanothus prostratus*), a shrub that is exuberant in the wild, yet recalcitrant in the garden.

“I have tried it in sandy soil and in red clay-like soil, in humus and grit, and in

*“The disappointment of a plant’s death is always tempered by the realization that here is an empty spot in which to try a new plant.”*

loam. And I have decided that the secret of its culture rests in the laps of the gods and that they are keeping it there. Let those who dream bright dreams of garden banks smothered in the airy lavender of *Ceanothus prostratus*, dream on. I wish them joy of their visions.” For herself, she concludes, “I refuse to suffer any more over it.”

## ENCOURAGING FUTURE GENERATIONS

Lester Rowntree was devoted to exposing children, including her grandsons, to the wonders of the natural world at an early age. She took young people to wild places in her car, gave lectures at colleges and universities, and received them in her home. Rowntree’s Carmel Highlands cottage and garden became a legendary destination, and the Lester Rowntree Native Plant Gar-



Rowntree shares her knowledge with students at the University of California–Davis in 1962.

den in nearby Carmel is still maintained in her honor today.

Her love of children also expressed itself in four children’s books, *Ronnie; Ronnie and Don; Little Turkey*; and *Denny and the Indian Magic*. When asked where her ideas



for those books came from, she said: “I picked those ideas up from kids all around when I was collecting. Kids are full of good stories.”

In the last two decades of her life, when decreasing mobility forced

her to hang up her traveling shoes, Rowntree turned her focus back to her garden, putting into it the energy and devotion her field trips formerly absorbed.

On her 100th birthday, Rowntree received congratulatory telegrams from both U.S. President Jimmy Carter and the United Kingdom’s Queen Elizabeth. She died five days later.

## AN ENDURING LEGACY

During her long life, Rowntree received numerous honors. In 1965, when the California Native Plant Society was formed, Rowntree was appointed lifetime honorary president. The American Horticultural Society gave Rowntree an award for horticultural writing in 1971. In 1974, the California Horticultural Soci-

ety honored her for her work in preserving California native plants.

But it’s her books that are her ultimate legacy. One can return to *Hardy Californians* or Rowntree’s other writings year after year, and still find new gems missed in previous readings. In her 100 years of life, Rowntree gathered field memories from many different Californian ecosystems, from the coast to the desert to the redwoods and the chaparral to the Sierras and the foothills and back again. Her plant descriptions can bring plants to life, her tales of high adventure astound, and her eloquence still sends out an irresistible call—the call to explore California and its plants.

“There soon comes that feeling of eager anticipation, of being quite sure that just around the next curve, over the crest of that hill, on the other side of that rockspire or bit of wood which hides the immediate view, something exciting will be found.”

In this sentiment, she echoes that printed on the bookplate of the esteemed Willis Linn Jepson, the botanist for whom *The Jepson Manual: Higher Plants of California* is named, and whom Rowntree revered:

“Something lost beyond the ranges over yonder. Go you there.”

*Judith Larner Lowry has been the proprietor of Larner Seeds, specialists in California native plants and seeds, for the last 30 years. The author of two books and numerous articles, she lives in Bolinas, California.*



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# wicked and wonderful Witches' Brooms

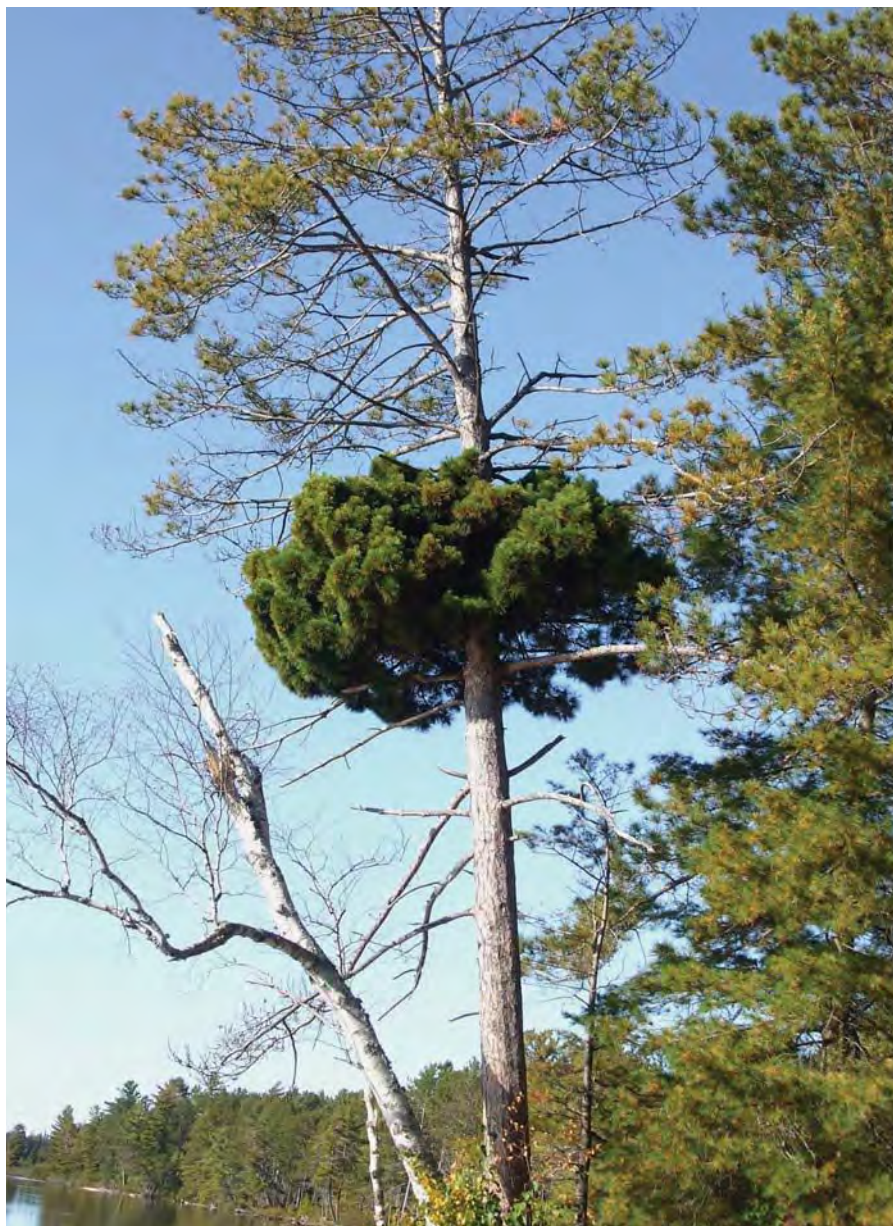
Scientists are still unraveling the mysteries of these strange plant mutations, which cause significant damage to some plants but in other cases have yielded exciting new cultivars.

BY KATHRYN LUND JOHNSON

ASK A BOTANIST to define “witches’ broom” and the answer will have nothing to do with Halloween or the Wizard of Oz. Instead, you’ll hear something similar to the response I received from nurseryman Gary Gee, owner of Gee Farms in Stockbridge, Michigan. As Gee explains it, a witches’ broom is “a congested clump of plant tissue growing on a parent plant that has a different genetic makeup from the parent.” The term “witches’ broom” is derived from the German word, *hexenbesen*, meaning “to bewitch a bundle of twigs.” The phrase originated in medieval times, when unexplained happenings were often attributed to witchcraft.

Witches’ brooms are a widespread phenomenon that may occur on deciduous and coniferous trees and shrubs as well as herbaceous plants. A variety of host-specific causes—including dwarf mistletoes, fungi, viruses, mites, aphids, bacteria, and phytoplasmas—have been linked to the deformities. Some witches’ brooms are caused by a single agent, others by a complex of agents. In some cases, the etiologies—specific causes or the interrelationship of a variety of causal factors—are unclear. Studies suggest that some may be triggered by environmental causes.

One of the more intriguing theories involves the effects of radiation exposure. Bob Fincham, owner of Coenosium Nursery in Eatonville, Washington, says, “Witches’ broom mutations can be induced by the background radiation present all around us. At the time cell divisions are occurring in growing tissues, the tissue is extremely susceptible to dam-



A witches' broom encircles the trunk of a red pine (*Pinus resinosa*) growing beside a lake at Tahquamenon Falls State Park in Michigan's Upper Peninsula.

KATHRYN LUND JOHNSON



age by radiation. If the damage occurs at the right time and place, a mutation may result.” Indeed, the 1986 Chernobyl radiation disaster in the former Soviet Union spawned scores of conifer brooms. Meteor showers, too, with their inherent radiation, may contribute to the appearance of witches’ brooms. “This might explain the appearance of multiple brooms in a concentrated area,” says Gee.

Whatever the reason, it’s generally accepted that an event occurs at a cellular level that alters the activity of the growth hormones cytokinin and gibberellin, stimulating cell division and encouraging shoot elongation. The effect of the resulting mutation, or witches’ broom, ranges from minor cosmetic blemishes to significant deformities that may cause loss of vigor or potentially threaten the life of the host.

### A PHENOMENON WITH MANY CAUSES

From the perspective of foresters, nursery owners, and gardeners, most witches’ brooms are undesirable. Because several different types of causal agents are involved, measures for prevention and control vary from genus to genus and even species to species. While some are relatively easy to dispatch by pruning out brooms or culling infected plants, others are more effectively avoided by eliminating an insect or mite vector. For some, there is no practical control and gardeners are simply advised to avoid planting potential host plants in areas where certain witches’ brooms are likely to occur.

In some parts of the Midwest, for example, the prevalence of hackberry witches’ broom, a disfiguring disease of common hackberry (*Celtis occidentalis*) and sugarberry (*C. laevigata*), has reduced the value of these species in the landscape. Caused by a combined attack of an eriophyid mite and a powdery mildew fungus, the brooms often die back during the dormant season, leaving brown clumps of stems. Because there are no methods for avoiding or controlling this disease, where the disease is common, some horticulturists recommend planting resistant species, such as Jesso hackberry (*C. jessoensis*) or Chinese hackberry (*C. sinensis*).

Witches’ brooms can be responsible for significant economic losses of infected crops. Dwarf mistletoes (*Arceuthobium* spp.) are semi-parasitic evergreen plants

that produce some chlorophyll, but mainly derive their nutrients, physical support, and water from the vascular systems of host plants. They can cause witches’ brooms in several species of pine (*Pinus* spp.) and spruce (*Picea* spp.), as well as Douglas fir (*Pseudotsuga menziesii*), balsam (*Abies balsamea*), western and mountain hemlock (*Tsuga heterophylla* and *T. mertensiana*), and western larch (*Larix occidentalis*).

Brooms appear once the mistletoe is established and the resulting diminished quality of the wood may render it unmar-



**Above left:** Multiple witches’ brooms have disfigured this hackberry, a tree that is especially susceptible to the disease in the Midwest. **Above right:** A witches’ broom appears as a tangled mass of twigs on this otherwise stately catalpa.

the host plant. Chemical control is not practical, and although removing and destroying infected plants is an effective measure, it is time-consuming and expensive. Attempts to develop resistant cultivars are ongoing, and biological control holds promise in the form of a fungus, *Trichoderma stromaticum*, which parasitizes the broom-causing fungus.

Some witches’ brooms are caused by rust fungi that require an alternate host to complete the fungus life cycle. By removing the alternate host, the disease can



ketable, creating a significant impact on commercial timber production. Control of dwarf mistletoe requires its removal from the host by pruning.

The cacao tree (*Theobroma cacao*), from which the world gets its chocolate, is the host of another economically damaging witches’ broom. Caused by the fungus *Crinipellis pernicioso*, cocoa-bean witches’ broom is having a devastating effect on cocoa production in Africa, Asia, South America, and Central America. Fungal spores penetrate young tissue in vegetative and flower buds, causing mutations and profuse branching that divert energy from

be avoided. Spruce broom rust attacks white, black, and Sitka spruces that grow in the vicinity of the fungus’s alternate host, bearberry (*Arctostaphylos uva-ursi*). Although many spruces are not adversely affected by broom rust, others display a decrease in growth, top kill, and subsequent attacks by wood-decaying fungi that affect lumber quality. In timber lots, this disease can be avoided by eliminating bearberry within 1,000 feet of a spruce tree. For the home gardener, who is likely to have an attachment to bearberry, pruning out the brooms is the best method of control.



Aster yellows, which infects more than 200 herbaceous plants worldwide, is caused by phytoplasmas—submicroscopic, single-celled organisms that are transmitted by leafhoppers. The appearance of a bushy cluster of leaves instead of flowers is a primary indicator of the disease. Other symptoms are yellowing or reddening of the leaves, a reduction in size of leaves, and loss of vigor of the plant. Monitoring and early detection are crucial for control, as is eliminating nearby weeds that may harbor the disease-causing organism; weeds that serve as hosts include dandelion, wild carrot, wide-leaf plantain, and thistle. Avoid infections by propagating plants by seed and preemptively controlling leafhoppers.



**Gary Gee displays one of four witches' brooms that sprouted from the broom cultivar *Pinus mugo* 'Mops'. Right: This columnar sugar maple at Yew Dell Gardens in Crestwood, Kentucky, *Acer saccharum* 'Powhattan', was derived from a witches' broom discovered by Theodore Klein.**

If symptoms appear, destroy infected plants; do not compost them.

Black witches' broom is an infection of serviceberry (*Amelanchier* spp.) caused by the fungus *Apiosporina collinsii*. The undersides of the leaves of diseased trees become coated with the black fungus, and brooms form as clumping clusters of stems. While vigor is reduced in affected branches, overall the disease has little effect on the life of the tree. To control, simply prune out unsightly brooms.

### SPAWNING NEW CULTIVARS

Not all witches' brooms are bad. Gary Gee, in fact, views witches' brooms that appear on conifers in quite a positive

light. He and other conifer devotees around the world know that certain of these brooms have the potential to yield exciting new conifer cultivars.

Though brooms may be propagated by seeds, asexual propagation is preferred. The first step is to take a cutting from the original broom. The cutting, referred to as a "scion," is either rooted directly or grafted to young conifers that serve as the "understock." When grafting, the wound is given a year to heal. The understock growth is then removed and a new plant stands in its place.

The late Sidney Waxman, a professor of plant science at the University of Connecticut at Storrs, was a pioneering de-

veloper of witches' broom cultivars. Over the course of his career, Waxman introduced approximately 40 new cultivars to the nursery trade—most of them derived from witches' brooms. "Sidney devoted his career to finding and collecting witches' brooms and propagating their seedlings," says Gregory Tormey, a horticulturist at the University of Connecticut who served as Waxman's technical assistant. Among the well-known cultivars Waxman introduced are selections of eastern white pine (*Pinus strobus*) such as 'UConn Gold', 'Sea Urchin', and 'Green Shadow', a Japanese red pine (*Pinus densiflora*) called 'Low Glow', and 'Blue Sparkler' tamarack (*Larix laricina*).



LEFT: KATHRYN LUND JOHNSON; RIGHT: COURTESY OF YEW DELL GARDENS



## SOME RECOMMENDED WITCHES' BROOM CULTIVARS

***Chamaecyparis pisifera* 'Sungold'** (USDA Hardiness Zones 4–8, AHS Heat Zones 8–1) is a golden yellow, mound-shaped cultivar that matures to lime green. Planting in full sun is recommended for best color. Maximum growth is about three feet.

***Larix laricina* 'Blue Sparkler'** (Zones 1–5, 5–1) was introduced by Sidney Waxman in 1993. This dwarf deciduous conifer has a dense habit that is reminiscent of miniature fireworks. Its blue-green needles turn gold in autumn, then drop. In 10 years, it can grow three feet high and two-and-a-half feet wide.

***Picea glauca* 'Cecilia'** (Zones 2–6, 6–1) has a compact growing habit, globose form, and blue-gray needles. It grows three to six inches per year.

***Picea omorika* 'Nana'** (Zones 4–8, 8–1) is a dense, bluish green, dwarf cultivar of Siberian spruce with a silvery glow. It matures from a round form to pyramidal. It grows three to six inches per year.

***Picea pungens* 'Globosa'** (Zones 2–8, 8–1) is a dwarf cultivar characterized by prickly steel-gray needles and a dense, compact, globose shape. It grows three to five inches per year. Prune to retain shape. It makes a nice specimen plant when grafted to a tall standard.

***Picea pungens* 'St. Mary's Broom'** (Zones 2–8, 8–1) is a globose, tightly compact dwarf with blue-gray needles. It grows one to two inches per year without developing a central leader.

***Pinus densiflora* 'Jane Kluis'** (Zones 4–7, 7–1) is a compact, globose, green-needled dwarf distinguished by light tan buds. It is deer-browse resistant, grows three to six inches per year, and adapts to full sun or part shade.

***Pinus mugo* 'Mitsch Mini'** (Zones 3–7, 7–1) is an exceptionally slow-growing, bun-shaped, miniature cultivar with green needles. One of the smallest mugs, it grows approximately one inch per year.

***Pinus mugo* 'Mops'** (Zones 3–7, 7–1) is a bright green, dome-shaped dwarf that retains its compact form without pruning. Its foliage changes to gold in late autumn. It grows less than three to five inches per year.





## Sources

The following mail-order sources offer witches' broom conifer cultivars.

**Broken Arrow Nursery**, Hamden, CT. (203) 288-1026. [www.brokenarrownursery.com](http://www.brokenarrownursery.com).

**Coenosium Gardens**, Eatonville, WA. (360) 832-8655. [www.coenosium.com](http://www.coenosium.com).

**Gee Farms**, Stockbridge, MI. (517) 769-6772. [www.geefarms.com](http://www.geefarms.com). (Not mail-order—plants must be picked up at nursery.)

**Rich's Foxwillow Pines Nursery**, Woodstock, IL. (815) 338-7442. [www.richsfoxwillowpines.com](http://www.richsfoxwillowpines.com).

## Resources

**American Conifer Society**, Lewisville, NC. (336) 945-0483. [www.conifersociety.org](http://www.conifersociety.org).




Growing to only about five feet tall at maturity, *Ginkgo biloba* 'Spring Grove' is derived from a broom on a large ginkgo tree in Spring Grove Cemetery and Arboretum in Cincinnati, Ohio.

How stable are such new cultivars? "Extremely," says Gee. "Reversions do happen, though, from time to time, when a recessive gene reverts to the parental genetic makeup. It's usually possible for the growth to be removed by simple pruning," he says. Occasionally witches' broom cultivars produce their own brooms. The popular cultivar *Picea abies* 'Little Gem' has its origins in *P. abies* 'Nidiformis', also a broom. In Gee's extensive arboretum, he points out a dwarf mugo pine, *Pinus mugo* 'Mops', that has spawned four genetically dissimilar brooms. Because brooms are mutations, no two have identical DNA—even when they are produced on the same plant.

Broom conifer cultivars do not stay small forever, but their growth is considerably slower than that of the parent plant, allowing for placement in locations where other, more typical, trees or shrubs would crowd the landscape. The great variety of sizes, shapes, and colors provides gardeners with countless opportunities to express their creativity. Sometimes scions are grafted on top of a tall understock, adding a sprightly upside-down exclamation point to the landscape. "If 'different' is what you're looking for, I guarantee you'll find it in a witches' broom cultivar. The combinations of shapes and colors available are almost endless," says Gee.

Evergreen conifers account for the vast majority of witches' brooms that have led to ornamental plant selections but a few cultivars of deciduous trees, including a deciduous conifer, are derived from brooms. The late Theodore Klein of Kentucky introduced three sugar maples that originated as witches' brooms: *Acer saccharum* 'Powhattan', 'Natchez', and 'Shawnee'. And *Ginkgo biloba* 'Spring Grove', found as a witches' broom in Ohio, retains a compact habit, achieving a maximum height of five feet in 10 to 15 years.

Learning more about the origins of these intriguing mutations will not only help you manage brooms that may arise unwanted in your home garden, but add to your appreciation for the eye-catching cultivars that have derived from these botanical curiosities. 

*Kathryn Lund Johnson is a freelance writer and photographer from Middleville, Michigan. Her most recent article for The American Gardener was on slugs.*



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## Norm Lownds: Children's Garden Innovator

by Kirsten Winters

USING TECHNOLOGY to get children interested in plants and gardens might appear to be a tough and somewhat contradictory task, but it's one that horticulture professor Norm Lownds embraces. As curator of the acclaimed Michigan 4-H Children's Garden at Michigan State University (MSU) in East Lansing, Lownds oversees two-thirds of an acre of outdoor space and 1,500 square feet of indoor space devoted to engaging kids to learn about and appreciate the natural world. About 200,000 children visit the garden each year, and, thanks to technology, even more children (and adults) can make virtual visits.



When the garden was founded in 1993 by its first curator, Jane Taylor, the idea of designing gardens expressly for children was groundbreaking. It began a movement to encourage children to spend less time indoors occupied by technological diversions and more time outdoors experiencing nature. When Lownds became curator in 1997, he saw an opportunity to bring both worlds together. "This is a generation that uses technology as a tool for learning," says Lownds, "and it needs the garden even more than previous generations."

Under his leadership and with the help of MSU's Communication Technology Laboratory (Comm Tech Lab), of which he is a principal investigator, now the 4-H Children's Garden also offers online learning tools. These include a kid-friendly interactive website filled with fun educational games and the Wonder Wall, a moderated communications space where students can ask questions about plants.

In addition to his work at MSU, Lownds is chair of the AHS's National Children & Youth Garden Advisory Panel, and now, while on a sabbatical from the university, consultant to the AHS's educational programs at River Farm. Garden writer Kirsten Winters talked with Lownds about how technology and plants can be combined to stimulate children's interest in nature.

**Kirsten Winters:** The Michigan 4-H Children's Garden has become a model for other gardens around the world. What is the secret of its success?

**Norm Lownds:** We are first and foremost a garden. Plants are everywhere and we connect them to everyday life. There are over 80 different theme gardens—something for every interest. In the Crayon Color Garden, kids find out some crayon colors have been named after the plants growing in front of them. In the Hispanic American Garden, they can see plants native to Central America and used in His-



Norm Lownds shows and explains the different parts of a plant—here the stem—to a group of children visiting the Michigan 4-H Children's Garden.



panic cooking, such as tomatoes, tomatillos, and chile peppers. In addition, we encourage kids and their adults to touch and interact with plants and really *experience* the garden. In the Sense-Ational Herb Garden, for example, we ask visitors to smell the plants and find those that remind them of foods in a Thanksgiving meal.

The two most important things we focus on in our educational programs are *curiosity* and *wonder*—because without them, a person won't learn anything. Kids are naturally full of both, and it's magical for them to be able to ask questions and discover the answers in a beautiful garden. The Internet might be their first source of information, but they still love the freedom to explore outdoors.

### How do you decide what to grow in the garden, and which plants are most popular with kids?

The plants in each garden need to fit a theme. The ideas come from watching which plants kids interact with and also from thinking like a kid (in my case, a seven-and-a-half-year-old). We grow the plants and ask kids to evaluate them during the season to pick the very best, which get on a list called "Cool Kid Plants" that we compile each year.

The number-one Cool Kid Plant is sensitive plant (*Mimosa pudica*), which folds its leaves when touched. Others include snapdragon, lamb's ears, chocolate mint, 'Teddy Bear' sunflower, and 'Purple Haze' carrot.

### What went into creating the Michigan 4-H Children's Garden kidstour website (<http://4hgarden.msu.edu/kidstour>) to make it fun and educational for kids?

Faculty, staff, and students in the Comm Tech Lab were encouraged to let their imaginations run wild in creating fun and engaging online experiences. They came up with imaginary characters such as Shakey the Caterpillar and activities such as Garden Pizza Place Game, where kids can learn the best conditions for growing tomatoes and wheat for making a pizza.

We are also working on integrating Web 2.0 aspects into our site—things like ways for visitors to share their garden photos and videos (YouTube), their experiences and stories (blogs and wikis),

ask questions (Wonder Wall), and make virtual garden visits through our web cams. We're looking at using online collaboration spaces and tools to help kids write up experiments and discoveries.

### The Wonder Wall is a popular feature. Could you tell us a bit about it?

The original Wonder Wall is a large blank sheet of paper in the garden on which visitors write anything they wonder about, such as: "Why do plants lose their leaves in the fall?" and "Why do we have aphids?" The staff and I answer the questions while



The Michigan 4-H Children's Garden offers a virtual tour, top, and, above, games designed to entertain and teach children about the fascinating world of plants.

the kids are at the garden or write the answers and send them to their teachers.

The online Wonder Wall (<http://wonderwall.msu.edu>) follows the same premise, except that it has a much wider audience. Users such as members of a youth club can sign up for a Wonder Wall so they can interact with targeted groups—such as teachers—and with each other in a fun, colorful, visual communications space. Users who are logged on at the same time can live chat.

### The Personal Science Assistant (PSA) is a tool you are currently evaluating for kids in the garden. How does it work?

This technology application allows kids to

use a hand-held electronic device called a PSA to discover things about the plant that may not be obvious right there in the garden. When a kid passes the device over a special plant tag, additional information on the plant comes up on the PSA, including photos and descriptions of all the plant parts, how the plant is used, how the plant looks in each season.

Kids love using the PSA and making interesting discoveries. More important, they end up examining the plants much more closely. I hear them say things like, "I didn't know tomatoes had yellow flowers," or "I never saw the seeds of a pansy before, but look, they are all over these plants!"

### What will be the scope of your project during your tenure with the AHS at River Farm?

The AHS staff and I will be looking at the big picture—a national model or initiative—and devising what that might look like and how we might get there. One aspect is expanding the Cool Kid Plants evaluation program to a national level by extending the testing and selection to school gardens around the country through the AHS and developing a children and youth garden certification program. We are also identifying the components of a national Children, Youth & Gardens Network.

### What can parents and teachers do to get children interested in the outdoor world and gardening?

Start your kids with plants that are fun, such as the Cool Kid Plants—mint that smells like chocolate or purple carrots. Involve them in all aspects of the garden—from planning to harvest—and let them decide what and where to plant. Let the garden be *theirs*. Get excited about and celebrate all the stages of growth.

Adults can also visit a children's garden with their kids; besides the Michigan 4-H Children's Garden, there are dozens of great ones around the country now. And, of course, I encourage folks to attend the next AHS National Children & Youth Garden Symposium from July 23 to 25, 2009, in Cleveland, Ohio.

*Kirsten Winters is a freelance writer who lives in Corvallis, Oregon.*



## A Selection of Useful Specialty Tools

by Rita Pelczar

**T**HROUGHOUT THE YEAR I have the opportunity to test many gardening products—some are new, others are just new to me. As we wrap up another year of Green Garage reports, I'd like to highlight a few cool tools that I've found particularly useful, innovative, or just nifty.

Sometimes an abundance of fruit or nuts from the trees in your yard—acorns, apples, walnuts, etc.—can create a litter problem. On a visit to Michigan in August, my sister-in-law introduced me to a tool designed to dispatch that litter without the need to bend over. The **Nut Wizard** consists of a pliable wire cage that rotates at the end of a pole. It's sim-



**The Nut Wizard**

ple, easy to use, and it really works. Just roll the cage over fruit or nuts and the litter is collected. It's available in four sizes to accommodate fruit with diameters from three-eighths to four inches. My sister-in-law uses the largest size to harvest walnuts and pears. The collected fruit or nuts unload easily into a bucket or basket, or your compost pile.

For transplanting tiny seedlings, I frequently use a dibble, but now a similar tool is available for larger transplants. The **Wedgie**® looks like a dibble on steroids, and it makes transplanting a breeze—especially if, like me, you do a

lot of it and your digging hand or wrist tends to get tired. It resembles the wedge we use to split wood, but it's solid plastic and it has a comfortable, rounded grip. And it's bright yellow, so you're not likely to misplace it in your garden.

If you use containers in your outdoor gardens, you are probably familiar with the difficulties of proper placement. Just when you decide on the perfect spot, you realize that the surface is far from level. Rather than spending time excavating or shimmying, Crescent Garden provides a simple solution with their **Pot Level**—two rounded discs that rotate to



**The Wedgie®**



**The Pot Level from Crescent Gardens**

accommodate the slope of any surface. Twist them around to get the proper angle, set your planter on top, and it's no longer lopsided. The plastic disks come in three colors: terracotta, stone, and concrete. The Pot Level works equally well for that tipsy birdbath.

Black & Decker's rechargeable 18-volt, battery-powered **Alligator**® Lopper is my favorite new power tool. It's a cross between a chainsaw and pruners. It

### Sources

**Alligator**® Lopper,  
[www.BlackandDecker.com](http://www.BlackandDecker.com).

**Crescent Gardens Pot Level**,  
[www.crescentgarden.com](http://www.crescentgarden.com).

**Double Play Bow Rake**, Ames True  
Temper, Carlisle, PA.  
[www.amestruetemper.com](http://www.amestruetemper.com).

**Nut Wizard**, Bedford, IN.  
[www.nutwizard.com](http://www.nutwizard.com).

**ThemaCELL**® Patio Lantern, The  
Schawbel Corporation, Bedford, MA.  
[www.thermacell.com](http://www.thermacell.com).

**Wedgie**®, Wherry Enterprises of  
Illinois Inc., Chicago, IL.  
[www.wedgie.biz](http://www.wedgie.biz).

clamps down on a branch with its “jaws” to hold it securely while it cuts branches up to four inches in diameter—great for those jobs that are just a bit too big for



**The Alligator**® Lopper



## WINTERIZING YOUR GARDEN TOOLS

- Remove and drain hoses and connection adapters from outside water lines. Repair leaks and damaged fittings with a hose repair kit. Coil hoses loosely, making sure to avoid kinks, and do not hang from a nail which can cause kinking. Store them in a dry location.
- Shovels, spades, hoes, forks, trowels, and other tools that come in direct contact with soil should be cleaned—a steel brush works well to remove caked-on dirt. Wash and dry thoroughly. Rust spots should be cleaned with sandpaper or steel wool. Use a file or whetstone to sharpen dull edges, then lightly oil the blades and wipe off any excess.
- Repair or replace broken or rough handles of hand tools. Apply linseed oil to wooden handles to prevent cracking. Or if you have a tendency to lose track of where you've placed your tools, consider painting all their handles red, orange, or bright yellow.
- Clean and sharpen blades of pruners, loppers, and saws. Oil the blades and lubricate pivot points and springs.
- Wash and rinse sprayers (rinse several times). Clean nozzles and screens. If you use a sprayer for herbicides, be sure to label it with permanent marker so you don't inadvertently damage desirable plants next year by using it to apply other pesticides. Store tank upside down. Follow directions in your owner's manual for other recommended maintenance procedures.
- Wash wheelbarrows and carts and dry thoroughly. Remove rust spots with steel wool and paint to protect from further damage. Grease wheel axles.
- For lawn mowers and other power equipment, drain gasoline or gasoline/oil mixture. Wipe all surfaces clean and sharpen cutting edges. Clean or replace spark plugs. Refer to your owner's manual for further maintenance procedures. —R.P.

hand snips or loppers to handle easily. Metal guards provide protection from the cutting chain. It's easy to start, and because it's powered by a rechargeable battery rather than gasoline, it's lightweight and relatively quiet.

If you enjoy spending time in your garden in the evening but are bothered by mosquitoes, you might want to try the **ThermaCELL® Mosquito Repellent Patio Lantern**. This battery-operated



**Mosquito Repellent Patio Lantern from ThermaCELL®**

lamp is designed for outdoor use only and it works best where air movement is minimal. It is cordless and odorless and includes replaceable heat-activated repellent mats that become effective about 20 to 30 minutes after you turn it on; the repellent mat can be operated with or without the light. Each mat lasts up to four hours and covers an area of 15 by 15 feet, providing up to 98 percent protection from mosquitoes and other biting insects.

I have really come to appreciate the rugged construction of my **Double Play Bow Rake** from Ames True Temper as I've worked the clay soil in my new yard. The short teeth on one side are well designed for breaking up clumps of clay as I prepare new beds, while the longer teeth help smooth the soil surface. Rather than having to put down one tool and pick up another, I can simply flip sides of the rake.



**Double Play Bow Rake**

No matter what tools you use in the garden, it's important to take care of them so that they provide you with years of dependable service. Winter is a great time to examine, clean, and repair your tools before you put them away. That way they'll be in top shape for tackling next season's gardening endeavors when spring finally rolls around.

*Rita Pelczar is a contributing editor of The American Gardener.*

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## Horticultural News and Research Important to American Gardeners



### INVESTIGATING WILD ONIONS TO UNDERSTAND PLANT DIVERSIFICATION

Imagine long hours under the hot desert sun or slogging through the wilderness while keeping an eye out for venomous snakes. These are all in a day's work for Erica Wheeler, a graduate student with the Interdisciplinary Plant Group at the University of Missouri, as she hunts for wild onions across the country. With the support of a fellowship grant from the Lewis and Clark Fund for Exploration and Field Research, over the last two years Wheeler has managed to collect a majority of the 87 *Allium* species native to North America.

These species have a wide distribution, making wild onions ideal for investigating factors that promote plant diversification. Previous research suggests that early on in the evolutionary history of these plants, one lineage of North American wild alliums diversified west of the Rocky Mountains and another lineage diversified to the east. Wheeler's work confirms this and suggests that the "rate of speciation in the western lineage may be higher than in the eastern one," she says. "This pattern has been seen in other plant groups in North America and

may be the result of the topographic and geological diversity in the west."

As Wheeler continues to piece together the evolutionary tree of wild onions, she also hopes to gain a better understanding of factors that cause some species to become rare. "We don't know a lot about why some plant species are rare and others are common," she says. This research could ultimately help scientists and land managers make better conservation decisions to prevent extinction of rare plants.



**Allium** adventuress Erica Wheeler, above, collects wild onion species, such as *Allium abramsii*, top, in an effort to better understand plant diversification.

### LOOKING FOR LADYBUGS

Certain species of the ladybug—one of the garden's quintessential good guys—have been declining in numbers over the last 20 years. Scientists suspect that en-



**Two-spotted ladybug**  
(*Adalia bipunctata*)

croachment by non-native species, habitat loss, and pesticides are contributing factors, but they need more data to better understand this trend. You can help to survey these insects as part of the Lost Ladybug Project, a collaborative effort of the U.S. Department of Agriculture's Agricultural Research Service, Cornell University in Ithaca, New York, and South Dakota State University in Brookings. Although this research project encompasses all species of ladybugs (or, more accurately, lady beetles), certain species native to the United States are of particular interest because they have become so rare. These include the nine-spotted, two-spotted, and transverse lady beetles.

Both adults and children are encouraged to take photographs of any ladybugs they come across and send them to Cornell through the website [www.lostladybug.org](http://www.lostladybug.org), along with details about where and when the beetles were seen. This will help scientists identify and inventory the different species across the country. All finds are posted on the website, which also provides tips for locating and collecting these insects, along with other kid-friendly ladybug activities.

### FARWEST SHOW'S BEST PLANTS OF THE YEAR

Several plants made waves at the New Varieties Showcase held during the 2008 Farwest Show in Portland, Oregon, in August. Among them was the Best of Show winner, a cultivar of looking-glass



plant (*Coprosma repens*) called 'Tequila Sunrise' introduced by Ball Ornamentals. Also named best of the shrub/vine category, this compact evergreen shrub has



***Coprosma repens* 'Tequila Sunrise'**

glossy red, yellow, and green variegated foliage. The colors intensify in cooler temperatures. Growing to about three feet, it is hardy in USDA Zones 7 to 10 and heat tolerant in AHS Heat Zones 10 to 7.

To qualify for the showcase, selections must be either new to the market or previously available only in limited quantities. The plants also must have characteristics that clearly distinguish them from other introductions. Among the 40 other standout varieties entered in this year's event were *Agave* 'Sharkskin' from Euro-American Propagators, named best tropical/tender perennial; *Carex trifida* 'Rekohu Sunrise' from Skagit Gardens, judged best in the perennial/grass category; and *Styrax japonicus* 'Fragrant Mountain' from Crispin's Creations Nursery, which was named best tree.

Visit [www.farwestshow.com/vvarieties.shtml](http://www.farwestshow.com/vvarieties.shtml) for a list of all the new plants displayed at the Farwest Show, which is a nursery and greenhouse industry trade show supported by the Oregon Association of Nurseries.

## NEW ONLINE RESOURCE FOR ENGAGING KIDS WITH NATURE

Teachers and others looking for fun ways to engage children and youth in the natural world may want to visit to the Bulb Project ([www.thebulbproject.org](http://www.thebulbproject.org)). Sponsored by the Netherlands Flower Bulb Information Center (NFBIC) in Danby, Vermont, this new online resource contains a wide range of activities focusing on bulbs for a variety of age levels.

"We need to help reconnect our children and youth with the natural world," says Marcia Eames-Sheavly, educational coordinator for the site. "Flower bulbs are a great gateway to help get them interested in gardening and growing things, while learning lessons in art, science, math, history, and more along the way."

In addition to a blog where educators can share ideas, the site offers tips for planning community beautification projects, involving children and youth in project planning and execution, and forging partnerships with local retailers and bulb suppliers as sponsors of school or community flower bulb projects.

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## THE LOVELIEST LILY

A hybrid lily, *Lilium* 'Robina' (USDA Zones 3–8, AHS Zones 8–1), took top honors at the Outstanding Varieties Competition during the Society of American Florists (SAF) annual convention, held in Palm Beach, Florida, in September. An Orienpet lily—derived from a cross between Oriental and trumpet lilies—'Robina' grows three to four feet tall and bears



*Lilium* 'Robina' makes an excellent cut flower.

large, rosy pink flowers highlighted by a white center. It not only earned Best in Class for cut bulbs, but was chosen Best in Show from 331 entries submitted by 36 companies. 'Robina' is the first cultivar from Green Valley Floral of Salinas, California, to earn SAF's highest distinction, though many of this cut flower grower's varieties have won other awards at the SAF competition in the past five years.

For more information on the Society of American Florists—an association serving the floral industry that includes wholesalers, growers, and retailers—and for a complete listing of this year's award winners, visit the society's website at [www.safnow.org](http://www.safnow.org).

## SAN FRANCISCO HOSTS FIRST AMERICAN SLOW FOOD GATHERING

Slow Food, an international organization that works to reconnect people with their food and its local sources, held its first "collaborative gathering to unite the growing sustainable food movement" on American soil this past summer. Held in San Francisco, California, Slow Food Nation took place over Labor Day weekend and attracted an estimated 60,000 participants from 42 states. What has

## PEOPLE and PLACES in the NEWS

### Seed Savers Exchange Names New Executive Director

Seed Savers Exchange (SSE), based in Decorah, Iowa, recently named George Donald DeVault as its new executive director. In addition to running his own organic farm for 35 years, DeVault was an editor at Rodale, Inc. for nearly 25 years and has written about sustainable agriculture topics for a variety of publications. DeVault succeeds former executive director Kent Whealy, who co-founded Seed Savers in 1975 with his wife at the time, Diane Ott Whealy.



Donald DeVault

"Seed Savers combines the best of everything I have worked for all of my life as a journalist, organic farmer, and gardener," says DeVault. "Seed Savers is doing more than preserving and passing along our garden heritage. It is safeguarding our future food and our food future."

With approximately 7,500 members worldwide, the non-profit organization works to preserve heirloom plant varieties and educate the public about the value of agricultural diversity. Its members actively help to collect and conserve heirlooms, and have shared an estimated one million samples of rare seeds with each other and other gardeners since SSE's founding. Additionally, the organization operates Heritage Farm, an 890-acre certified organic farm that grows more than 25,000 rare fruit, vegetable, and other plant varieties. Call (563) 382-5990 or visit [www.seedsavers.org](http://www.seedsavers.org) for more information.

everyone still talking is the Slow Food Nation Victory Garden that replaced the lawn at City Hall. This organic garden, filled with nearly 4,000 plants of many different edible plants, served as the event's centerpiece and helped to demonstrate the benefits of sustainable food production, even in urban environments.

"The Slow Food Nation Victory Gar-

den is one more way to showcase the City's tangible commitment to sustainability and, as in the past, confront some of the most challenging issues of our times," says San Francisco Mayor Gavin Newsom. "For many urban residents, access to healthy and nutritious food is as important now as it was during the Second World War."



Scores of volunteers helped plant thousands of vegetable seedlings in the Slow Food Nation Victory Garden, which replaced the San Francisco City Hall's lawn this summer.



According to the garden's creators, Victory Gardens of the World War II era inspired the project, but it is part of an effort to redefine "victory" in terms of achieving sustainability in today's urban areas. The garden will remain in production into November, and according to Slow Food Nation's blog, many visitors have expressed a desire for it to become a permanent fixture. For more information, visit [www.sfvictorygardens.org](http://www.sfvictorygardens.org).

## WILDFLOWER CAMPAIGN TO HONOR LADY BIRD JOHNSON

Lady Bird Johnson, a former First Lady who died at the age of 94 last year, championed the conservation of America's native plants for much of her life. To honor her legacy, the *Austin American-Statesman* newspaper, in partnership with the Lady Bird Johnson Wildflower Center



Lady Bird Johnson

(LBJWC) at the University of Texas in Austin, has begun a five-year campaign to plant wildflowers in central Texas. The campaign, which launched on August 27—to honor President Lyndon B. Johnson's 100th birthday—has already raised thousands of dollars. It will end in 2012 on Lady Bird's 100th birthday.

"Lady Bird Johnson recognized the value of preserving wildflowers and native plants that showcase the unique identity of different regions," says Susan Rieff, LBJWC executive director. "The Wildflower Center is excited to work with the *Austin American-Statesman* to seed wildflowers in central Texas so future generations can understand and experience Lady Bird's delight in their presence."



As shown in this artist's rendering, the Phipps Conservatory and Botanical Gardens' new Center for Sustainable Landscapes will feature a green roof and other energy-efficient components.

Donations to the campaign will be used to buy seeds that will be planted in parks and along highway rights-of-way. Part of the funds also will be used to give packets of a special wildflower seed mix to Texas schoolchildren. Created by LBJWC and Native American Seed, a wildflower seed company based in Junction, Texas, the mix includes many of Lady Bird's favorite annuals and perennials such as purple coneflower (*Echinacea purpurea*), black-eyed Susan (*Rudbeckia hirta*), and Texas bluebonnet (*Lupinus texensis*).

For more information on this project, visit [www.statesman.com/wildflowers](http://www.statesman.com/wildflowers).

## PHIPPS CONSERVATORY BREAKS GROUND FOR NEW GREEN BUILDING

The Phipps Conservatory and Botanical Gardens in Pittsburgh, Pennsylvania, has firmly established itself as a leader in sustainable building. In 2005, Phipps opened the first LEED (Leadership in Energy and Environmental Design) certified visitor center in a public garden, and in 2006, it completed the world's most energy-efficient conservatory.

Now this September, Phipps broke ground for its Center for Sustainable Landscapes, which "will set the standard for green building practices and operations, and will bring international recognition to the region," says Phipps's Executive Director Richard V. Piacentini. Supported by a \$2.5 million grant from the Heinz Endowments, the Center is designed to be a zero net energy building that will generate

all of its own energy with renewable resources as well as capture and treat all of its water on site. It will house Phipps's education, research, and administration offices when it is completed in 2010.

For more information, call (412) 622-6914 or visit [www.phipps.conservatory.org](http://www.phipps.conservatory.org).

## GREAT BACKYARD BIRD COUNT

You can contribute to the conservation of biodiversity by joining the Great Backyard Bird Count (GBBC) from February



13 to 16, 2009. In its 12th year, the GBBC is a joint project of the Cornell Lab of Ornithology and the National Audubon Society. Its objective is to create a comprehensive picture of where all kinds of birds are spotted during late winter and to compare this information to data from past years.

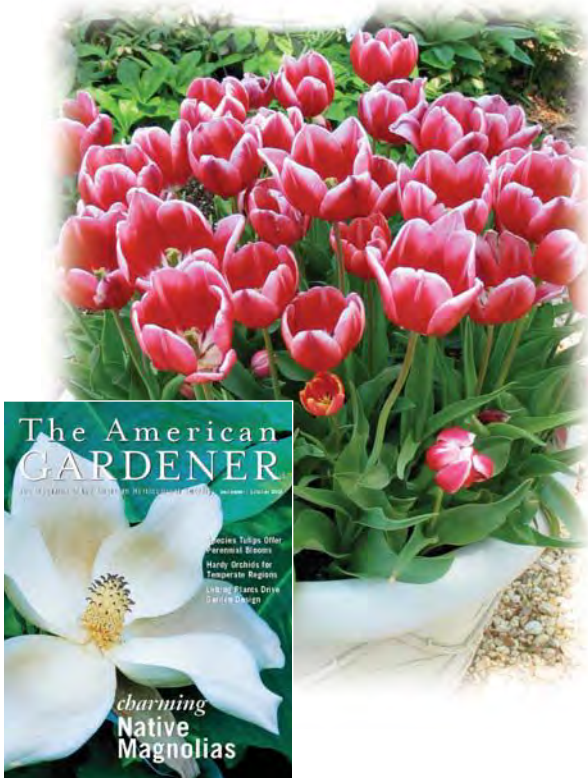
To participate in this free event, simply count the birds you see for as little as 15 minutes in your yard, neighborhood, or at a park, and report your sightings online at [www.birdcount.org](http://www.birdcount.org). The website includes instructions for participation, as well as a large menu of resources for learning more about bird populations in America. Submission of photos and videos is also encouraged.

News written by Associate Editor Viveka Neveln and freelance writer Kirsten Winters.



## GIFTS FOR THE GARDENER

*Winter is filled with occasions for remembering others with gift-giving. Here is a selection of items sure to be appreciated by those who garden.*



### *American Horticultural Society Membership*

AHS memberships make great gifts for the gardeners and garden lovers on your list. **And for a limited time, give a gift membership for \$35/Individual or \$50/Sustaining (Dual), and we'll give you a free membership, too!** Membership benefits include six issues of *The American Gardener*, complimentary or reduced-priced admissions to more than 220 public gardens and arboreta throughout North America, as well as discounts to flower shows and participation in our 50th Annual Seed Exchange. The AHS is a (501)(c)(3) non-profit organization. Offer ends on December 12, so call (800) 777-7931 ext. 140 today! [www.ahs.org](http://www.ahs.org).



### *Plow & Hearth Cast Iron Hose Holder*

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### *Planet Natural Seed-Starting Kit*

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## Johnny's Selected Seeds Garden Hod Gift Basket



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## Thirsty Light

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## Recommendations for Your Gardening Library

### Perennial Combinations

C. Colston Burrell. Rodale Books, Emmaus, Pennsylvania, 2008. 384 pages. Publisher's price, softcover: \$22.95.

### Designer Plant Combinations

Scott Calhoun. Storey Publishing, North Adams, Massachusetts, 2008. 240 pages. Publisher's price, softcover: \$18.95.

GARDENERS AND designers looking for new plant ideas will find more than they can use in these two books, both packed with information on plant combinations for small and large gardens alike. The books are published in essentially the same format: they are about the same size, with lovely photographs of eye-catching plant combinations, short and simple text to explain the planting concepts, and special tips and techniques to achieve spectacular results. But the books are also quite different: C. Colston Burrell takes a plantsman's approach to perennial combinations, while Scott Calhoun concentrates on combinations with design impact and includes trees and shrubs as well as perennials and annuals.

*Perennial Combinations* is a 1999 hardcover book that has been expanded and updated, with a new chapter on big, bold plants that in recent years have zoomed in popularity. Burrell's book is divided into chapters that let you choose what suits your property. These include combinations for color, seasonal interest, and for special sites (sunny, shady, sandy, etc); for wild areas (woodlands, meadows) and for fun (butterflies and fragrance). Each entry in *Perennial Combinations* includes a color photo with a key to the plants, plus special tips that will allow you to create similar combinations using the perennials that are best for your particular region. Burrell also includes schematic drawings of garden designs featuring combinations for sunny sites, wet sites, bold foliage, bold accents, and a variety of other effects and situations.

In *Designer Plant Combinations*, Scott Calhoun's chapters delve into combinations for different classes of plants: perennial partners, masses of grasses, accent plant associates, groundcover groupies, and more. Each section has back-

ground pages of a different color, making it very easy to find your way around the book. All of the photo vignettes feature six plants or less, with a profile of each plant and a "designer tip" that tells the reader how to achieve the same effect. These tips include how to work with plants from a painter's perspective, "celebrate the seed head," grow vines through trees, design with weeping trees, plant pathways, and rein in "speedsters," or fast-growing trees and shrubs.

If you're more interested in plants, *Perennial Combinations* might be your choice, and if you're bent on terrific design, you'd be better off with *Designer Plant Combinations*. My advice is to pick up a copy of each. They will open your mind to limitless new possibilities that can make any garden a unique and creative outdoor refuge.

—Jane Berger

*Jane Berger is a landscape designer based in Washington, D.C. and the publisher of [www.gardendesignonline.com](http://www.gardendesignonline.com).*

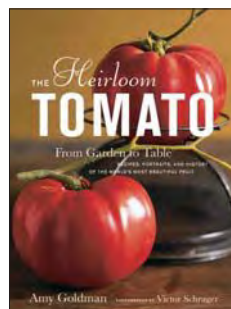
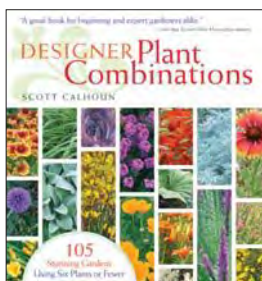
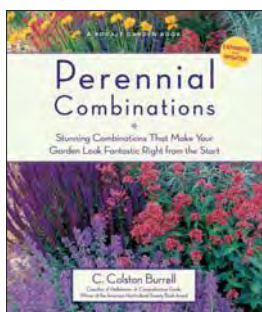
### The Heirloom Tomato

Amy Goldman. Bloomsbury USA, New York, New York, 2008. 272 pages. Publisher's price, hardcover: \$35.

IF THE 16th-century Flemish botanist Rembert Dodoens had read *The Heirloom Tomato*, he wouldn't have claimed that America's favorite vegetable "be of two sortes, one red and the other yellowe, but in all other poyntes they be lyke." Author Amy Goldman establishes that tomatoes—which technically are fruits despite the U.S. Supreme Court's 1887 ruling in *Nix v. Hedden* that they were vegetables—are of many sortes and far from lyke.

Coffee-table books, and this volume is pure *Lycopersicon* eye candy thanks to Victor Schrage's gorgeous photographs, are rarely as informative, interesting, and well written as is *The Heirloom Tomato*. In addition to a brief but first-rate guide to cultivating tomatoes, it details 200 heirloom, open-pollinated (OP) varieties, most of which have been around for decades, lovingly handed down from one generation to the next.

There are some entries—'Oregon Spring', a 1984 creation from Jim Baggett, is an example—that minimally qualify as true heirlooms (which purists would say are pre-1945 varieties maintained in a particular region or within a family). The Johnny-come-lately tomatoes, usually termed "created heirlooms," also are stable OPs and often are bred from heirlooms such as





'Tidwell German', which was grown for 100 years by the same Tennessee family.

Goldman, who is board chair of the noteworthy Seed Savers Exchange, trialed all 200 tomatoes (and hundreds more) over five seasons in her Hudson Valley garden in New York. For each variety she specifies size and weight, shape, color, soluble solids (a measure of sweetness), flavor, texture, best uses, plant habit, leaf type, yield, maturity, origin, synonyms, and seed sources. Each entry also is accompanied by lively comments and history. Did you know that seeds for 'Nebraska Wedding' are still given to a few brides in the cornhusker state? Or that the 'Delicious' tomato that weighed seven pounds, 12 ounces holds a Guinness World Record?

One thing we also learn is that "heirloom" doesn't always mean better. Twenty-seven tomatoes are judged "poor" in flavor, with 'Schimmeig Creg' receiving a "nonexistent" flavor rating. Its firm texture, however, makes it valuable "breeding material" and worth preserving. At the other end of the scale is 'Red Brandywine'. Goldman describes the flavor of this beefsteak, which has been around since 1889, as "perfection." Try it in one of the four dozen recipes that are included—it's heaven sent for the Tomato and Fontine Panini.

—Karan Davis Cutler

*Karan Davis Cutler lives in Vermont, where she wrestles with heavy clay soil and cold, windy winters. Her most recent book is Burpee-The Complete Flower Gardener (Wiley, 2006).*

## Gardens from Garbage

Take a quick trip through this charming book and you'll never look at a turnip or pomegranate the same again. As its title implies, *Don't Throw It, Grow It!* by Deborah Peterson & Millicent Selsam (Storey Publishing, 2008, \$10.95) is an enchanting advocacy lesson in growing your own houseplants from your edible leftovers.

First published 30 years ago, this updated version retains its fresh step-by-step conversational-style instructions for starting plants from seeds, pits, roots, shoots, and tubers. These creative cultivation techniques are easier than ever these days, now that good soil mixes are widely available (the original book stressed creating your own). And some edibles formerly considered "exotic" and found only at ethnic shops—mangos, lichees, and papayas, for example—are now carried at many supermarkets. Thanks to globalization, it's easy to be a "pit" gardener and boast a sill of unusual species.

—Linda Yang, author of four books including *The City Gardener's Handbook* (Storey Publishing, 2002).



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Deadlines for 2009 internships are Nov. 1 for Winter/Spring; March 1 for Summer; and August 1 for Fall.

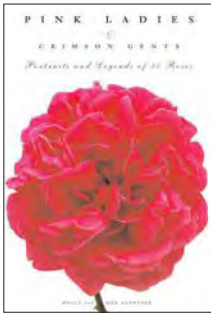
Visit [www.ahs.org](http://www.ahs.org) or call (703) 768-5700 ext. 121 for more information.



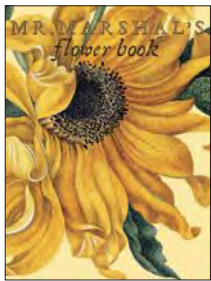
## Fascinating Flowers

**P**ICTURE A FLOWER in your mind. What do you see? Ask a thousand gardeners and you would probably get different answers from them all. A fragrant rose. A brilliant sunflower. A spray of tiny forget-me-nots. Though flowers may be composed of similar basic parts, what's fascinating is their sheer diversity. We can't get enough of their kaleidoscopic colors, seductive scents, myriad forms, and varied textures. So now that winter is setting in, if you find yourself missing summer's profusion of blooms, these books may alleviate your floral withdrawal.

In *Pink Ladies and Crimson Gents* (Clarkson Potter, \$22.50, 2008) Molly Glentzer provides a decadent dose of rose lore as she explores how 50 old-fashioned varieties got their names. Lifestyle editor for the Houston Chronicle, Glentzer delves into the "fascinating but relatively uncharted territory where horticulture and human culture collide," by examining the connections between roses and the intriguing personalities for which they are named. From 'Mozart', a pink and white hybrid musk introduced in 1937, to 'Mrs. Pierre S. duPont', a yellow hybrid tea introduced in 1929, Glentzer paints a compelling picture of why each rose is a fitting tribute to its namesake. Every essay is accompanied by a rose portrait, modeled after classic botanical illustrations.



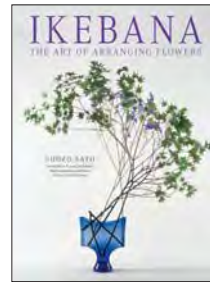
The beauty of flowers has inspired art of all kinds, and *Mr. Marshal's Flower Book* (Viking Studio, \$26.95, 2008) is a wonderful example of the art of botanical illustration. It features selections from *Florilegium*—the only surviving collection of flower watercolors from 17th-century England—containing paintings by horticulturist, entomologist, and self-taught artist Alexander Marshal. After a brief introduction that contains a biographical sketch of Marshal, this book showcases 140 of his illustrations organized by their season of bloom. These richly rendered paintings provide a captivating glimpse of the era's most fashionable flowers such as tulips, carnations, and primroses as well as native English wildflowers.



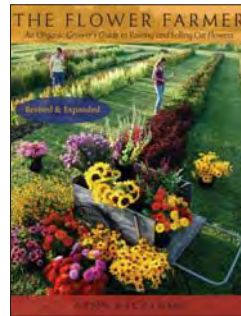
Creating arrangements with cut flowers is another popular floral art form. In *Simply Elegant Flowers* (North Light Books, \$30, 2008), Michael George—florist for big name designers such as Vera Wang and Giorgio Armani, not to mention

Martha Stewart who wrote the book's foreword—shares tips and techniques garnered from a lifetime of working with flowers. "In my philosophy, I attempt to arrange them as they are in nature, which is already perfect," he says of his modern, monochromatic style. The first section of the book brims with advice ranging from what to look for when buying flowers and how to maximize their vase-life to setting up an effective workspace with the appropriate tools. Part two takes a seasonal approach, suggesting arrangements to make when various flowers are typically in bloom. Many of the book's luscious color photographs are as artistic as the arrangements themselves, and how-to instructions are amply illustrated.

For another take on flower arranging, there's *Ikebana* by Shozo Sato (Tuttle Publishing, \$49.95, 2008). "Ikebana arrangements," writes Sato, "are expected not only to establish a link between man and nature but also to create a mood or atmosphere appropriate to the season, and even to the occasion—a tradition in keeping with the Japanese focus on the ephemeral nature of life, as well." The book begins with an overview of Ikebana's history in Japan. Subsequent sections explain the different styles—from the classic Rikka to the more contemporary forms—and cover the basic tools and techniques for creating each of these. Striking color photographs and line drawings provide further guidance for creating Ikebana arrangements of your own. You'll also find a list of plants that lend themselves well to this art form, along with the symbolic meanings they have in Japanese culture.



On the practical side, *The Flower Farmer* (Chelsea Green Publishing, \$35, 2008) by Lynn Byczynski, is a guide to growing and selling organic cut flowers. Originally published in 1997, this updated and expanded edition takes into account the effects of a changing climate, new flower selections that have been introduced, and changes in the flower marketplace that have occurred in the last decade. Along with everything from bed preparation and seed starting to harvesting, arranging, and marketing flowers, Byczynski has added a new chapter on strategies for extending the growing season. The book concludes with an appendix of nearly 100 recommended genera for fresh or dried cut flowers, as well as a helpful list of sources and resources.



—Viveka Neveln, Associate Editor



## REGIONAL HAPPENINGS

### Horticultural Events from Around the Country

#### NORTHEAST

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

**RAP** NOV. 19. **Gardens of the Gods.** Lecture. Cornell Plantations. Ithaca, New York. (607) 255-2400. [www.plantations.cornell.edu](http://www.plantations.cornell.edu).

DEC. 1. **How Plants Adapt in the Wild and in Our Gardens.** Lecture. New England Wild Flower Society. Conway School. Framingham, Massachusetts. (508) 877-7639. [www.newfs.org](http://www.newfs.org).

**RAP** DEC. 3. **Wreaths from the Wild.** Workshop. Berkshire Botanical Garden. Stockbridge, Massachusetts. (413) 298-3926. [www.berkshirebotanical.org](http://www.berkshirebotanical.org).

**RAP** DEC. 6. **Fresh Boxwood Tree Construction.** Workshop. Buffalo and Erie County Botanical Gardens. Buffalo, New York. (716) 827-1584. [www.buffalogardens.com](http://www.buffalogardens.com).

**RAP** DEC. 6. **Introduction to Winter Tree Identification.** Class. Arnold

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

Events hosted by botanical gardens and arboreta that participate in AHS's Reciprocal Admissions Program are identified with the **RAP** symbol. Current AHS members showing a valid membership card are eligible for free or discounted admission to the garden or other benefits. Special events may not be included; contact the host site for details or visit [www.ahs.org/events/reciprocal\\_events.htm](http://www.ahs.org/events/reciprocal_events.htm).

Arboretum of Harvard University. Boston, Massachusetts. (617) 524-1718. [www.arboretum.harvard.edu](http://www.arboretum.harvard.edu).

**RAP** DEC. 6 & 7. **Holiday Bazaar.** Plants, greens, and wreaths on sale. Merryspring Nature Center. Camden, Maine. (207) 236-2239. [www.merryspring.org](http://www.merryspring.org).

**RAP** DEC. 7. **Wonderful Winter Greens.** Family workshop. Brooklyn Botanic Garden. Brooklyn, New York. (718) 623-7200. [www.bbg.org](http://www.bbg.org).

**RAP** DEC. 19. **Holiday Bonfire Party.** Coastal Maine Botanical Gardens. Boothbay, Maine. (207) 633-4333. [www.mainebotanicalgardens.org](http://www.mainebotanicalgardens.org).

#### MID-ATLANTIC

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

NOV. 27–JAN. 4. **Windows to Wonderland.** Holiday exhibit. United States Botanic Garden. Washington, D.C. (202) 226-4082. [www.usbg.gov](http://www.usbg.gov).

NOV. 27–JAN. 11. **Longwood Gardens Christmas.** Holiday display. Longwood Gardens. Kennett Square, Pennsylvania. (610) 388-1000 ext. 100. [www.longwoodgardens.org](http://www.longwoodgardens.org).

**RAP** DEC. 1–31. **Holiday Festival of Lights.** Camden Children's Garden. Camden, New Jersey. (856) 365-8733. [www.camdenchildrensgarden.org](http://www.camdenchildrensgarden.org).

DEC. 5 & 6. **Holiday Wreath and Centerpiece Sale.** Brookside Gardens. Wheaton, Maryland. (301) 962-1400. [www.brooksidegardens.org](http://www.brooksidegardens.org).

**RAP** DEC. 6. **Arranging with Garden Greens.** Class and sale. Lewis Ginter Botanical Gardens. Richmond, Virginia. (804) 262-9887. [www.lewisginter.org](http://www.lewisginter.org).

**RAP** DEC. 6–14. **Winter Silhouettes: Bonsai and Penjing Exhibit.** United States National Arboretum. Washington, D.C. (202) 245-5898. [www.usna.usda.gov](http://www.usna.usda.gov).

DEC. 9. **Greens Sale.** Scott Arboretum of Swarthmore College. Swarthmore, Pennsylvania. (610) 328-8025. [www.scottarboretum.org](http://www.scottarboretum.org).

DEC. 10. **Native Holiday Centerpiece.** Workshop. Mt. Cuba Center. Greenville, Delaware. (302) 239-4244. [www.mtcubacenter.org](http://www.mtcubacenter.org).

DEC. 12–14. **Christmas Open House and Greens Sale.** Ladew Topiary Gardens. Monkton, Maryland. (410) 557-9570. [www.ladewgardens.com](http://www.ladewgardens.com).

### Gardens Under Glass in Iowa

EXPLORE THE tabletop world of terrariums at the Des Moines Botanical Center (DMBC) this winter. This collection of gardens under glass is on display in the DMBC's Gardeners Show House through February. Created by the Iowa State University Polk County Master Gardeners, the terrariums feature "ordinary plants suited to terrarium culture that can be found at local garden centers and nurseries as well as rare plants, including miniature begonias, miniature sinningias, and the miniature Boston fern" says the DMBC's executive director, Elvin McDonald. The exhibit aims to present terrariums as accessible to gardeners of all skill levels and budgets—starting with common ferns in simple glass urns and moving into more rare plants in antique glass jars.

Now entering its 30th year, the DMBC also features an indoor Dome—planted with tropicals and succulents in natural settings—and 14 acres of outdoor display gardens. Admission is free for AHS members carrying a current membership card; otherwise, the cost is \$4 for adults, \$2 for students/seniors, and free for children under five.

For more information, call (515) 323-9290 or visit [www.botanicalcenter.com](http://www.botanicalcenter.com).

—Caroline Bentley, Editorial Assistant



Terrariums of all sizes and shapes are on display at the Des Moines Botanical Center.



## SOUTHEAST

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

**RAP** NOV. 22 & 23. **Garden Festival.** Plant sale. Heathcote Botanical Gardens. Fort Pierce, Florida. (772) 464-4672. [www.heathcotebotanicalgardens.org](http://www.heathcotebotanicalgardens.org).

**RAP** NOV. 28–30. **Edison Garden Market.** Plant sale. Edison and Ford Winter Estates. Fort Myers, Florida. (239) 334-7419. [www.efwefla.org](http://www.efwefla.org).

DEC. 4 & 5. **Great Southern Tree Conference.** Florida Nursery, Growers and Landscape Association and University of Florida. Gainesville, Florida. (407) 295-7994. [www.greatsoutherntreeconference.org](http://www.greatsoutherntreeconference.org).

**RAP** DEC. 6. **Holiday Greenery Sale.** Aldridge Gardens. Hoover, Alabama. (205) 682-8019. [www.aldridgegardens.com](http://www.aldridgegardens.com).

DEC. 9–11. **Managing for Diversity Across Florida's Unique Landscapes.** Workshop. The Nature Conservancy and the University

of Florida. Disney Wilderness Preserve. Kissimmee, Florida. (352) 392-3210. <http://nata.snre.ufl.edu>.

DEC. 13. **Holiday Topiary or Centerpiece Workshop.** Callaway Gardens. Pine Mountain, Georgia. (800) 225-5292. [www.callawaygardens.org](http://www.callawaygardens.org).

**RAP** DEC. 18–21. **Celebrate the Holidays.** Festival. McKee Botanical Garden. Vero Beach, Florida. (772) 794-0601. [www.mckee garden.org](http://www.mckee garden.org).

### Looking ahead

**RAP** JAN. 10. **Natural History of Georgia Plants.** Lecture. The State Botanical Garden of Georgia. Athens, Georgia. (706) 542-1244. [www.uga.edu/botgarden](http://www.uga.edu/botgarden).

**AHS** JAN. 28–FEB. 1. **Southeastern Flower Show.** Southeastern Horticultural Society. Cobb Galleria Centre. Atlanta, Georgia. (404) 351-1074. [www.flowershow.org](http://www.flowershow.org).

## NORTH CENTRAL

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

**RAP** NOV. 22–JAN. 4. **WinterShow.** Display. Cleveland Botanical Garden. Cleveland, Ohio. (216) 721-1600. [www.cb garden.org](http://www.cb garden.org).

**RAP** NOV. 28–DEC. 28. **WPS Garden of Lights.** Festival. Green Bay Botanical Garden. Green Bay, Wisconsin. (920) 490-9457. [www.gbbg.org](http://www.gbbg.org).

**RAP** NOV. 28–JAN. 4. **Holidays at the Conservatory.** Display. Franklin Park Conservatory. Columbus, Ohio. (800) 214-7275. [www.fpconservatory.org](http://www.fpconservatory.org).

**RAP** DEC. 4. **Winter Containers at the Garden.** Tour. Chicago Botanic Garden. Glencoe, Illinois. (847) 835-5440. [www.chicagobotanicgarden.org](http://www.chicagobotanicgarden.org).

**RAP** DEC. 6–JAN. 18. **Holiday Flower Show.** Como Zoo and Marjorie McNeely Conservatory. Sunken Garden. St. Paul, Minnesota. (651) 487-8200. [www.comozooconservatory.org](http://www.comozooconservatory.org).

**RAP** DEC. 6. **Identifying Conifers.** Class. The Brenton Arboretum. Dallas Center, Iowa. (515) 992-4211. [www.thebrentonarboretum.org](http://www.thebrentonarboretum.org).

## SOUTH CENTRAL

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

**RAP** NOV. 22. **Natural Area Field Trip – Hillside Bog.** Tour. Crosby Arboretum. Picayune, Mississippi. (601) 799-2311. [www.crosbyarboretum.msstate.edu](http://www.crosbyarboretum.msstate.edu).

**RAP** NOV. 22–DEC. 31. **Holiday Lights—Lights on the Landscape.** Display. Garvan Woodland Gardens. Hot Springs National Park, Arkansas. (800) 366-4664. [www.garvangardens.org](http://www.garvangardens.org).

**RAP** DEC. 1–31. **Holiday Decorations.** Display. Longue Vue House & Gardens. New Orleans, Louisiana. (504) 488-5488. [www.longuevue.com](http://www.longuevue.com).

DEC. 4. **Water Issues in Horticulture.** Workshop. Department of Horticulture and Landscape Architecture. Oklahoma State University Botanical Garden. Stillwater, Oklahoma. (405) 744-7361. [www.osubotanicalgarden.okstate.edu](http://www.osubotanicalgarden.okstate.edu).

**RAP** DEC. 6. **Bird's Christmas Tree.** Children's workshop. Fort Worth Botanic Garden. Fort Worth, Texas. (817) 871-7686. [www.fwb.org](http://www.fwb.org).

**RAP** DEC. 13 & 14. **Luminations.** Garden celebration. Lady Bird Johnson Wildflower Center. Austin, Texas. (512) 292-4200. [www.wildflower.org](http://www.wildflower.org).

## Glen Echo Garden: A Dream Come True

NEWLY OPENED to the public in 2007, the 16-acre Glen Echo Garden in Bellingham, Washington, is a dream that was four decades in the making for creator and owner Dick Bosch. A retired landscaper and nursery owner, Bosch, 69, originally purchased the acreage in 1971 for its good soil, year-round salmon-spawning creek, and, especially, “the very large old cedar stumps that have trees growing out of the top of the stumps.”

To maintain the garden, Bosch explains, “We have one part-time employee, but it’s also a family project. My wife Jennie helps me a great deal, as well as my two daughters and their children, and my two sons, whenever they come home.” The Glen Echo Garden is still a work in progress, says Bosch. Currently, the established theme gardens include a begonia and fuchsia garden, an English garden, a rose garden, a “blue” garden, and a Gigantic Stump Garden that contains plantings surrounding the truncated remains of the centuries-old trees that were logged decades ago.

Plans for expanding the landscape include a forest garden with a lumber mill museum to house relics left by the previous owners, the Gooding Lumber and Shingle Mill. Also, a sunken garden with ferns and mosses and a Japanese garden will be created.

Admission is \$7.50 for adults and \$6 for seniors. For more information about visiting or reserving the gardens, call (360) 592-5380 or visit [www.glenechogarden.com](http://www.glenechogarden.com).

—Kirsten Winters, special from Corvallis, Oregon



Glen Echo Gardens in Bellingham, Washington, features colorful plantings among large cedar tree stumps.



## SOUTHWEST

AZ, NM, CO, UT

**RAP** NOV. 22. **Holiday Floral Arranging Workshop.** Red Butte Garden and Arboretum. University of Utah. Salt Lake City, Utah. (801) 581-4747. [www.redbuttegardens.org](http://www.redbuttegardens.org).

**RAP** NOV. 28–DEC. 23. **Luminaria.** Display. Desert Botanical Garden. Phoenix, Arizona. (480) 941-1225. [www.dbg.org](http://www.dbg.org).

**RAP** DEC. 7. **Landscape Design Theory.** Class. Denver Botanic Gardens. Denver, Colorado. (720) 865-3500. [www.botanicgardens.org](http://www.botanicgardens.org).

**RAP** DEC. 12–14. **Luminaria Lights.** Holiday display. Tucson Botanical Gardens. Tucson, Arizona. (520) 326-9686. [www.tucsonbotanical.org](http://www.tucsonbotanical.org).

### Looking ahead

**AHS** JAN. 16–18. **Maricopa County Home & Garden Show.** Arizona State Fairgrounds. Phoenix, Arizona. (602) 485-1691. [www.maricopacountyhomeshows.com](http://www.maricopacountyhomeshows.com).

## WEST COAST

CA, NV, HI

**RAP** DEC. 5–7. **Cactus and Succulent Show and Sale.** Fullerton Arboretum. Fullerton,

California. (714) 278-3407. [www.fullertonarboretum.org](http://www.fullertonarboretum.org).

DEC. 8. **Backyard Vineyards in San Diego County.** Lecture. San Diego Horticultural Society. Del Mar Fairgrounds. San Diego, California. (760) 295-7089. [www.sdhortsoc.org](http://www.sdhortsoc.org).

**RAP** DEC. 13. **Old-Fashioned Wreath Workshop.** Los Angeles County Arboretum and Botanic Garden. Arcadia, California. (626) 821-3222. [www.arboretum.org](http://www.arboretum.org).

### Looking ahead

JAN. 17–19. **Conservation Conference.** California Native Plant Society. Sacramento, California. (916) 447-2677. [www.cnps.org](http://www.cnps.org).

MAR. 22–26. **International Master Gardener Conference.** Las Vegas, Nevada. (702) 257-5587. [www.unce.unr.edu/imgc](http://www.unce.unr.edu/imgc).

## NORTHWEST

AK, ID, MT, OR, WA, WY

NOV. 15–30. **Dream Weaver: The Bamboo Art of Jiro Yonezawa.** Exhibit. Portland Japanese Garden. Portland, Oregon. (503) 223-1321. [www.japanesegarden.com](http://www.japanesegarden.com).

**RAP** NOV. 27–JAN. 3. **Winter Gardens aGlow.** Display. Idaho Botanical Garden.

Boise, Idaho. (208) 343-8649. [www.idahobotanicalgarden.org](http://www.idahobotanicalgarden.org).

**RAP** NOV. 29–JAN. 3. **Garden d'Lights.** Holiday display. Bellevue Botanical Garden. Bellevue, Washington. (435) 451-3755. [www.bellevuebotanical.org](http://www.bellevuebotanical.org).

### Looking ahead

**AHS** JAN. 28–FEB. 1. **Tacoma Home & Garden Show.** Tacoma Dome. Tacoma, Washington. (253) 756-2121. [www.otshows.com](http://www.otshows.com).

## CANADA

NOV. 22 & 23. **Winter Trees.** Class. The Arboretum at University of Guelph. Guelph, Ontario. (519) 824-4120. [www.uoguelph.ca/arboretum](http://www.uoguelph.ca/arboretum).

**RAP** NOV. 29. **Decorating with Natural Greens.** Workshop. Glendale Gardens & Woodland. Victoria, British Columbia. (250) 479-6162. [www.hcp.bc.ca](http://www.hcp.bc.ca).

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

DEC. 5–JAN. 4. **Festival of Lights.** Van Dusen Botanical Garden. Vancouver, British Columbia. (604) 231-7535. [www.vandusengarden.org](http://www.vandusengarden.org).

☞



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

### 2009 "Gardener's" Calendar

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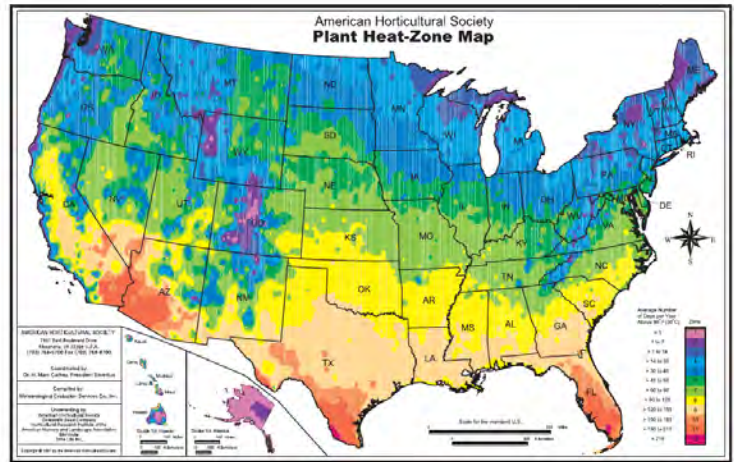


# PRONUNCIATIONS AND PLANTING ZONES

Most of the cultivated plants described in this issue are listed here with their pronunciations, USDA Plant Hardiness Zones, and AHS Plant Heat Zones. These zones suggest a range of locations where temperatures are appropriate—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).



## A–C

- Abies balsamea** AY-beez ball-SAY-mee-uh (USDA Zones 3–6, AHS Heat Zones 6–1)  
**Acer palmatum** AY-ser pal-MAY-tum (6–8, 8–2)  
**A. saccharum** A. sak-AH-rum (4–8, 8–1)  
**Arctostaphylos densiflora** ark-toh-STAFF-ih-loss dens-ih-FLOR-uh (7–9, 9–7)  
**A. uva-ursi** A. YOO-vuh-UR-sy (2–6, 6–1)  
**Berlandiera lyrata** bair-lan-DEER-uh ly-RAY-tuh (5–9, 9–4)  
**Betula albosinensis var. septentrionalis** BET-yew-luh al-bo-sy-NEN-siss var. sep-ten-tree-o-NAL-iss (3–8, 8–3)  
**Biophytum sensitivum** by-o-FY-tum sen-sih-TY-vum (10–11, 12–1)  
**Carpenteria californica** kar-pen-TAIR-ee-uh kal-ih-FORN-ih-kuh (8–9, 9–8)  
**Ceanothus cuneatus var. rigidus** see-uh-NO-thus koon-ee-AY-tus var. RIH-jih-dus (7–9, 9–6)  
**Celtis jessoensis** SEL-tiss jes-so-EN-siss (5–7, 7–5)  
**C. laevigata** C. lee-vih-GAY-tuh (5–9, 9–3)  
**C. occidentalis** C. ahk-sih-den-TAL-iss (2–9, 9–1)  
**C. sinensis** C. sy-NEN-siss (7–9, 9–7)  
**Chamaecyparis obtusa** kam-ee-SIP-uh-riss ahb-TOO-suh (4–8, 8–3)  
**C. pisifera** C. pih-SIF-ur-uh (4–8, 8–3)  
**Chamaedorea elegans** kam-ee-DOR-ee-uh EL-ih-ganz (minimum 60 degrees F, 12–1)  
**Cornus alba** KOR-nus AL-buh (2–8, 8–1)  
**C. sanguinea** C. sang-GWIN-ee-uh (4–7, 7–1)  
**C. stolonifera** C. sto-lon-IF-ur-uh (3–8, 8–1)  
**Corylus avellana** COR-ih-lus ah-vel-LAN-uh (3–9, 9–1)  
**× Cupressocyparis leylandii** kyew-press-o-SIP-ar-iss lay-LAND-ee-eye (6–9, 9–3)

## D–K

- Dionaea muscipula** dy-o-NEE-uh mus-KIP-yew-luh (8–10, 12–1)  
**Edgeworthia chrysantha** edj-WORTH-ee-uh krih-SAN-thuh (7–9, 9–7)

- Eriogonum giganteum** air-ee-OG-o-num jy-GAN-tee-um (8–10, 10–7)  
**Eschscholzia lobbii** es-SHOLTZ-zee-uh LOB-ee-eye (0–0, 9–1)  
**Ficus pumila** FIE-kus PYEW-mih-luh (9–11, 12–1)  
**Fittonia verschaffeltii** fih-TOH-nee-uh vur-shuh-FELT-ee-eye (minimum 60 degrees F, 12–1)  
**Fouquieria splendens** foo-kee-AIR-ee-uh SPLEN-denz (7–11, 12–6)  
**Fragaria virginiana** frah-GAY-ree-uh vir-jin-ee-AN-uh (5–8, 8–4)  
**Ginkgo biloba** GINK-go by-LO-buh (5–9, 9–5)  
**Heptacodium miconioides** hep-tuh-KO-dee-um my-kon-ee-OY-deez (5–9, 9–4)  
**Hydrangea quercifolia** hy-DRAN-juh kwer-sih-FO-lee-uh (5–9, 9–5)  
**Jasminum nudiflorum** jaz-MIN-um new-dih-FLOR-um (6–9, 9–6)  
**Kerria japonica** KAIR-ee-uh jah-PON-ih-kuh (4–9, 9–1)

## L–R

- Lagerstroemia indica** lag-ur-STRO-me-uh IN-dih-kuh (7–9, 9–7)  
**Larix laricina** LAY-riks lah-rih-SY-nuh (2–6, 6–1)  
**L. occidentalis** L. ahk-sih-den-TAL-iss (4–8, 8–1)  
**Magnolia figo** mag-NOLE-yuh FEE-go (8–10, 12–7)  
**Nemophila maculata** nee-MOF-ih-luh mak-YEW-lay-tuh (0–0, 8–1)  
**Ophiopogon japonicus** o-fee-o-PO-gon jah-PON-ih-kus (7–10, 12–1)  
**Pedicularis canadensis** ped-ik-yew-LAIR-iss kan-uh-DEN-siss (4–9, 9–1)  
**Penstemon heterophyllus** PEN-steh-mon het-ur-ah-FIL-lus (8–10, 10–7)  
**Phlox stolonifera** FLOX sto-lon-IF-ur-uh (4–8, 8–1)  
**Phyllostachys nigra** fil-lo-STAY-kiss NY-gruh (7–11, 12–4)  
**Picea abies** PY-see-uh AY-beez (3–8, 8–1)

- P. glauca** P. GLAW-kuh (2–7, 7–2)  
**P. omorika** P. o-MOR-ih-kuh (4–8, 8–1)  
**P. pungens** P. PUN-jenz (3–8, 8–1)  
**Pilea cadierei** PIL-ee-uh kad-ee-AIR-ee-eye (11–11, 12–1)  
**Pinus densiflora** PY-nus dens-ih-FLOR-uh (4–7, 7–1)  
**P. mugo** P. MYEW-go (3–7, 7–1)  
**P. resinosa** P. rez-ih-NO-suh (3–7, 7–1)  
**P. strobus** P. STRO-bus (4–9, 9–1)  
**Pseudotsuga menziesii** soo-doh-SOO-guh men-ZEES-ee-eye (5–7, 7–5)  
**Rhapis exelsa** RAY-pis ek-SEL-suh (minimum 60 degrees F, 12–10)  
**Rubus cockburnianus** ROO-bus cock-bur-nee-AN-us (6–8, 8–6)

## S–Z

- Salix alba var. vitellina** SAY-lik-AL-buh var. vy-tel-LEE-nuh (4–9, 9–1)  
**S. irrorata** S. ih-ro-RAY-tuh (4–8, 8–4)  
**S. purpurea** S. pur-PUR-ee-uh (4–7, 7–1)  
**S. sachalinensis** S. sah-kah-lih-NEN-sis (4–7, 7–1)  
**Saxifraga stolonifera** sak-sih-FRAY-guh sto-lon-IF-ur-uh (7–9, 9–5)  
**Selaginella kraussiana** sel-ah-jih-NEL-luh krow-see-AN-uh (7–10, 12–1)  
**Sisyrinchium bellum** siss-ih-RING-kee-um BEL-lum (7–9, 9–7)  
**Soleirolia soleirolii** sol-ay-ROL-ee-uh sol-ay-ROL-ee-eye (10–11, 12–10)  
**Stachyurus praecox** stah-kee-YEW-rus PREE-cox (6–8, 8–6)  
**Tetranema roseum** teh-truh-NEE-muh ro-ZAY-um (10–11, 12–1)  
**Theobroma cacao** thee-o-BRO-muh kuh-KAY-o (minimum 60 degrees F, 12–11)  
**Tsuga heterophylla** SOO-gah het-ur-ah-FIL-luh (6–8, 8–6)  
**T. mertensiana** T. mer-ten-see-AN-uh (6–8, 8–6)  
**Vaccinium corymbosum** vak-SIN-ee-um ko-rim-BO-sum (3–8, 8–1)



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*Index compiled by AHS Volunteer Barbara Lockett.*



## A Sweet Spot for Chocolate Flower

by Rand B. Lee

**I**N THE heavy clay at the edge of a sun-baked border in my front yard in Santa Fe, New Mexico, I grow a clumping, semi-erect, eight- to 18-inch-tall, lolling plant with nondescript gray-green foliage. Each morning, from May through October, it opens inch-wide, maroon-eyed little daisies with yellow ray petals striped maroon on their undersides.

One of countless gold daisy-like composites that limn the highway verges, back lots, and waste fields of northern New Mexico, *Berlandiera lyrata* (syn. *B. incisa*) is the sort of wildflower that the local nurseryfolk call, half-affectionately, half-contemptuously, LYJs (little yellow jobbies). What sets this plant apart from the herd is the aroma—reminiscent of the finest Belgian dark chocolate—that emanates from its glistening brown stamens. By mid-afternoon the ray petals drop, revealing the round, flat, green calyces that give the plant its official common name, lyreleaf greeneyes. Nobody in Santa Fe calls it “lyreleaf greeneyes,” however. We know it purely and simply as chocolate flower, for that is its *raison d'être*. The stamens are said to taste, as well as smell, of chocolate, but I have not been brave enough to try them.

Despite what some references say, chocolate flower is not an annual. Rather, it is a perennial hardy to at least the warmer portion of USDA Zone 5 and perhaps to Zone 4. Its native range runs from Mexico and Arizona east to Texas and north to Colorado, Kansas, and Oklahoma.

Chocolate flower is the best known of the five to seven species in the genus *Berlandiera*, named for Jean-Louis Berlandier (ca. 1805–1851), a French-Swiss physician, cartographer, pharmacist, and botanist. He fought for Mexico in the U.S.–Mexico border wars in the 1840s, then later worked with the International Boundary Commission to help define



**The short-lived yellow petals of chocolate flower (*Berlandiera lyrata*) drop at day's end, leaving behind the calyces that give the plant its other common name, greeneyes.**

the border between Mexico and the United States, botanizing along the way.

Among the others are the common or Florida greeneyes (*B. subacaulis*), native

to—you guessed it—Florida, where it blooms much of the year; Texas greeneyes (*B. betonicifolia*), an April-to-November bloomer native to well-drained sites in Arizona, Texas, Oklahoma, and Louisiana; *Berlandiera ×humilis*, called simply greeneyes, a hybrid found in Alabama, Florida, and South Carolina; and soft greeneyes (*B. pumila*), whose rather large, one- to three-inch-wide flowers bloom April to October on shady sand dunes along the southeastern and southern coastal plain. All are hardy, adapted to very poor soils, extremely drought tolerant, and, except for chocolate flower, virtually unknown in cultivation.

Chocolate flower is available from some specialty nurseries (see “Sources,” below), and it is easy to grow from seed, which should be sown, barely covered, four to six weeks before the last frost date in your area. Catalogs often claim it is a plant for sandy sites, but chocolate flower is one of the best western wildlings for growing in dry clay. In very hot or dry sites, it will benefit from watering a couple of times a week during the summer. The one thing it will not tolerate is a site that is wet in wintertime, so if that’s the only kind of site you have, grow it in a container. A true chocohortiholic will find no effort too great.

### Sources

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

**Plants of the Southwest**, Santa Fe, NM. (800) 788-7333. [www.plantsofthesouthwest.com](http://www.plantsofthesouthwest.com).

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