

The American GARDENER

The Magazine of the American Horticultural Society

March / April 2007

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NOTES FROM RIVER FARM

SO MUCH has transpired in the last couple of months that when I sat down to write my first column for *The American Gardener*, I was initially at a loss on how to begin.

Let me lead off by saying how honored I am to have been selected as the 33rd president & CEO of this venerable institution. The American Horticultural Society's Board of Directors has entrusted this organization to my staff and me at a very exciting time in its history. Together, we are going to work to secure the future of the AHS and move our initiatives in education and horticultural "best practices" forward.

As we look ahead, it is important to understand our past. I am not sure that the small group of dedicated horticulturists and plant scientists who gathered in the auditorium of the Old National Museum in Washington, D.C., in 1922 to form the American Horticultural Society had any idea how the organization would evolve.

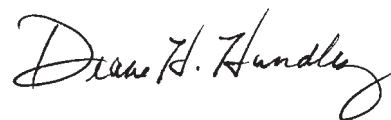
Yet here we are today, with a beautiful national headquarters at George Washington's River Farm, more than 25,000 members worldwide, and a host of successful programs, partnerships, and publications that are described in the *Annual Report* that is bound into this issue. We are truly the beneficiaries of the wisdom and vision of all those who came before us.

Despite the success and growth we have enjoyed, we must not become complacent. We should not be lulled into a false sense of security that charitable dollars will just come. Today, all successful charitable organizations recognize that they are viewed as legitimate businesses. Yes, philanthropy is at an all time high in this country. But with increases in support, a greater accountability for the use of the resources is also needed. People are amazingly supportive of places that have strong commitments to their missions and do a superb job of cultivating and stewarding their loyal supporters.

As an organization with a national mission and audience, it is imperative for us to diversify and expand upon our collaborations with partners and colleagues across the country and throughout the world. To reach this widespread audience with our educational programs, we must embrace the effective use of technology. In the weeks and months ahead, we will be announcing innovative new educational programs such as the three online seminars that AHS Board member Allan Armitage will be hosting this year (see page 9 for more details).

If you are receiving this magazine, then I know you are one of the many members, friends, and partners who already support our mission and the programs by which we accomplish it. In the weeks, months, and years ahead, I look forward to getting to know as many of you as possible. On behalf of everyone at the AHS, I thank you for caring about what we do and who we are.

If I can ever be of any assistance to you in any way, please don't hesitate to contact me. I can be reached by e-mail at dhundley@ahs.org or by phone at (800) 777-7931.



—Deane H. Hundley, *President & CEO*



KASSIE BAKER

MEMBERS' FORUM

PLAUDITS FOR PATHS

My husband and I have been AHS members for over two years and have enjoyed and benefited from your magazine, which has provided interesting articles and useful ideas for our garden.



We especially enjoyed “Paths of Discovery” in the January/February issue because this past summer we created a flagstone path in our backyard [shown in photo above]. We have more than 100 Japanese maples along with hundreds of conifers and ornamental grasses planted throughout our garden, and the pathway not only provides for easier maintenance but really connects the garden and allows visitors to see all the plantings. Articles like yours are so helpful to the do-it-yourself gardeners like us.

*Beverly and Steve Green
Eugene, Oregon*

ANOTHER OPTION FOR PATHWAYS

Kris Wetherbee's article, “Paths of Discovery” (January/February) omits one path material that I employ extensively for paths in my woodland garden: Plain old dirt. But not so plain, because it soon forms the base for a carpet of moss, which is attractive throughout the year, especially in winter, when the rest of the woods is covered with fallen leaves.

*William A. Plummer
Painted Post, New York*

KEEP THE ISSUES COMING

I wanted to let you know that I love your magazine. I just wish it were available every month. I enjoy reading about other members' favorite plants and swapping seeds and plants. I was always taught: If something's not broke, don't fix it. Keep up the good work! And I can't wait for the next issue.

*Terry Shelton
Seymour, Indiana*

VEGETABLE IDENTIFICATION

Would you please tell me the identity of the squash or zucchini plant pictured in Doreen Howard's interview with Rosalind Creasy in the November/December 2006 issue? The large spotted-leaf plant is the one I'm interested in.

*Linda Stull
East Springfield, Pennsylvania*

Editor's response: Ros Creasy says she believes the plant is a zucchini cultivar called ‘Gold Rush’, which produces yellow fruit. One mailorder source for this plant is Shady Acres Herb Farm in Chaska, Minnesota [visit www.shadyacres.com or call (952) 466-3391].

MORE DESIGN WITH NATIVES, PLEASE

I'm writing in response to your request for feedback from members. I, for one, would like to see more articles on landscaping with native plants in *The American Gardener*.

About 16 years ago, I became concerned about the future of native New England flora and began to read and study native landscape design. I took workshops and seminars at nearby Conway School of Landscape Design with Darrel Morrison, and I attended seminars sponsored by the

New England Wild Flower Society. I looked—usually in vain—for other venues to pursue my interests. Most of the workshops, books, and magazines I encountered favored the old tried-and-true English gardens. Out of 10 years of this, I came away with only Morrison's good teaching and Rick Darke's *The American Woodland Garden* to help me select microclimates and groupings of plants that looked natural. Occasionally, your magazine would have a very helpful article.

After much searching for lists of plants and shrubs native to my area, I discovered “Vascular Plants of Massachusetts: A County Checklist,” a publication from the Massachusetts Division of Fisheries and Wildlife. This helped me eliminate from all of the other lists those plants that had never been sighted in my county.

But combining and placing these plants effectively was still hit or miss. Last spring, however, I attended an outstanding seminar sponsored by the Coastal Maine Botanical Gardens. Most helpful to me was a presentation by Larry Weaner of Glenside, Pennsylvania, who meticulously described how to landscape from start to finish.

There are currently no other publications besides your magazine addressing native landscaping; many of them claim they are devoted to native flora, and then proceed to feature the same old newest, biggest plants. There is a knowledge gap that your magazine and the AHS's other programs can close.

Please continue your dedication to native plants. Do more to emphasize native plant landscape design—first, how to combine plants in certain microclimates and then how to combine those groupings into an entire naturalistic landscape design.

*Jerrilee Cain
Worthington, Massachusetts*

2007 Website Password

Effective February 1, 2007, the password you should use to access the members-only portion of the AHS website, www.ahs.org, is **dogwood**.

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



the AHS GARDEN SCHOOLS for 2007

Immerse yourself in the intricacies of gardening for evening enjoyment and the amazing world of plants at these exclusive AHS Garden School offerings.

Through a variety of presentations, demonstrations, and specially planned activities, participants will learn practical tips and techniques for creating landscapes for evening enjoyment and discovering the amazing world of plants. Avid garden enthusiasts and horticultural professionals alike will benefit from these inspirational and informative two-day workshops.

The AHS Garden Schools offer a truly unique environment for life-long learning: These intimate, in-depth workshops feature personal instruction from noted garden authorities, as well as opportunities for practical application and hands-on experiences in inspirational settings.

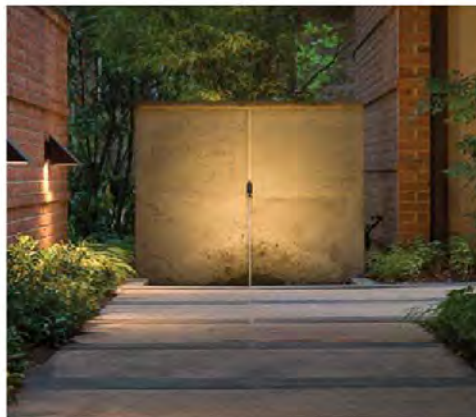


Visit www.ahs.org or call (703) 768-5700 ext. 137 for more information about how you take part in these exciting events.

April 26 & 27, 2007 **REGISTRATION NOW OPEN**

After Dark in the Garden: Creating Landscapes for Evening Enjoyment

AHS Headquarters at River Farm, Alexandria, Virginia



Discover how to optimize your garden for evening enjoyment through plant selection, garden design, and lighting with "After Dark in the Garden: Creating Landscapes for Evening Enjoyment" at a truly inspirational setting—the Society's River Farm headquarters overlooking the beautiful Potomac River.

Featuring guest horticulturist **Robert Lyons** of the Longwood Graduate Program and professor at the University of Delaware, along with **Scott Ogden** author of *The Moonlit Garden*; **Karen Bussolini**, co-author and photographer of *Elegant Silvers: Striking Plants for Every Garden*; **David Inouye**, professor of biology at the University of Maryland, College Park; garden writer **Suzu Bales**; **Mark Oxley** of Outdoor Illumination; and award-winning photographer **Roger Foley**.



Robert Lyons

October 4 & 5, 2007 **REGISTRATION OPENS JULY 15**

The Amazing World of Plants

Yew Dell Gardens, Crestwood, Kentucky

Learn about horticultural gems, noteworthy plants for the landscape, and garden design for the plant collector with "The Amazing World of Plants" among the remarkable plant collections at Yew Dell Gardens, the former estate of the late plantsman, Theodore Klein.

Green Garage® Gets Warm Reception in Seattle

THE AHS'S Green Garage® exhibit was the new kid on the block among the 25 major exhibits at this year's Northwest Flower & Garden Show in Seattle, Washington, held February 14 to 18. The exhibit, which earned a bronze medal at the show, emphasizes eco-friendly gardening through the plantings around a model garage as well as the "green" tools, products, and gardening methods on display.

"One of the most exciting aspects of the show," says **Tom Underwood**, AHS director of member programs and chief operating officer, "was the great support we received from the local gardening community." Dozens of volunteers helped set up and build the display, and then spent time at the show explaining the Green Garage concept to visitors.

Another positive aspect of the show was the strong interest in the Green Garage's earth-friendly gardening message, a unique focus for a flower show setting where displays often emphasize glamour at the expense of practicality. Visitors to the Green Garage "responded really well to the feasibility of the design for their home garden," explains **Laura Alexander**, AHS membership and marketing coordinator.

Molbak's, a garden center and nursery in Woodinville, Washington, contributed to the success of the Green Garage in Seattle by collaborating with the AHS to offer a store discount as part of an AHS membership promotion.

"Given the great success we had with this exhibit last year at the Philadelphia Flower Show, we were really pleased and proud to find an even more receptive audience here in the Pacific Northwest," says Tom. "It was encouraging to see so many people excited about the Green Garage and environmentally responsible gardening."



Above, left to right: Project Coordinator **Lois Pendleton**, volunteer **Nancy Evans**, and **Tom Fitzpatrick** from Lakeview Stone & Garden helped to create a successful Green Garage exhibit in Seattle, right.



AHS Garden Schools Begin in April

ON APRIL 26 AND 27, the first 2007 AHS Garden School will be "**After Dark in the Garden: Creating Landscapes for Evening Enjoyment**," held at the AHS's River Farm headquarters in Alexandria, Virginia.



Robert Lyons

Guest horticulturist **Robert Lyons**, director of the Longwood Graduate Program in Public Horticulture and professor at the University of Delaware, will be leading the program, which focuses on ways gardeners can use plants and design techniques to extend their enjoyment of gardens into the evening hours.

Other speakers are **Scott Ogden**, a Texas-based writer, garden designer, and author of *The Moonlit Garden*; **Karen Bussolini**, a garden photographer and co-author of *Elegant Silvers: Striking Plants for Every Garden*; **Suzy Bales**, a garden writer and lecturer who is author of *A Garden of Fragrance*; **Roger Foley**, a garden photog-

rapher who specializes in landscape architecture and garden design; and **David Inouye**, a biology professor at the University of Maryland whose specialty is pollination biology.

In addition to these speakers, landscape lighting specialists from **Outdoor Illumination** will lead an evening field study, during which attendees will interactively explore the lighting and design techniques discussed.

The second AHS Garden School, focusing on "**The Amazing World of Plants**," will be held October 4 and 5 at Yew Dell Gardens in Crestwood, Kentucky.

For more information and to register, visit www.ahs.org or call (703) 768-5700 ext. 137.

OXO Partners with the AHS

THE AHS'S newest corporate partner is **OXO International**. Based in New York City, OXO International specializes in producing easy-to-use products with a "Universal Design" philosophy. The company has signed on as a special Education Sponsor for many of the AHS's programs such as the National Children

& Youth Garden Symposium and the AHS Garden Schools.

"We are very pleased to announce this new partnership for our educational programs," says AHS President **Deane Hundley**. "OXO is a prominent international company that is respected throughout the gardening industry for its commitment to quality garden tools and other products."

OXO International creates more than 500 products ranging from cooking, cleaning, and storage items to a wide collection of gardening and hardware tools. As part of its arrangement with the AHS, OXO has donated an assortment of tools for use in the gardens at River Farm.

For additional information about OXO, visit www.oxo.com.

New AHS Online Lecture Series

ON MARCH 29, University of Georgia horticulture professor and author **Allan Armitage** will host "**Perennials That Work**," the first of three online seminars—or webinars—available exclusively to AHS members.

In preparation for spring, Allan will profile eight of his favorite perennial plant groups for the garden. "For each group, I'm going to cover some of the best cultivars, both time tested and new," says Allan. Participants will view the 30-minute, live lecture on their personal computer, and then have the opportunity to ask questions following the presentation. As an added bonus, participants will be eligible to receive a special discount on any of Allan's many gardening books.

COURTESY OF BOB MURRAY

Nikolai Antuychin Artwork at River Farm

From March 5 through June 28, visitors to the AHS's headquarters at River Farm will have the opportunity to view the impressive floral artwork of Russian artist Nikolai Antuychin. Ranging in style from the traditional realistic mode of the Moscow School of Art



to the Russian Impressionists, Antuychin's pastels and oil compositions have caught the attention of collectors around the world. Antuychin has also served as graphic arts instructor at the Moscow Pedagogical Institute and is a current member of the Russian Union of Arts.

Upcoming art exhibits at River Farm include collections from Sara Poly and students from July 2 through August 3, and Donna Sturm of Salon Eight from September 1 through October 31.

WIDENING THE CIRCLE

AMERICAN HORTICULTURAL SOCIETY

The American Horticultural Society's 15th Annual

National Children & Youth Garden Symposium

July 19–21, 2007
Chaska, Minnesota

Hosted by the Minnesota Landscape Arboretum's Public Policy Programs

For more information or to be added to the mailing list, go to www.ahs.org or call 703-768-5700 x 132.



AHS NATIONAL EVENTS AND PROGRAMS

2007 CALENDAR

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

- APR. 2–28. **Washington Blooms!** George Washington's River Farm. Alexandria, Virginia.
- APR. 9–12. **AHS President's Council Trip.** Charlotte, North Carolina.
- APR. 5–JUNE 3. **Epcot International Flower & Garden Festival.** Lake Buena Vista, Florida.
- APR. 21 & 22. **Friends of River Farm Plant Sale.** George Washington's River Farm. Alexandria, Virginia. (Please note: Member's-only preview sale is from 4 p.m. to 8 p.m. on April 20.)
- APR. 26 & 27. **AHS Garden School.** "After Dark in the Garden: Creating Landscapes for Evening Enjoyment." George Washington's River Farm. Alexandria, Virginia.
- APR. 29–MAY 2. **Colonial Williamsburg Garden Symposium.** Williamsburg, Virginia.
- MAY 4. **Magic of Landscapes.** Lake Buena Vista, Florida.
- MAY 12. **Mother's Day Concert.** George Washington's River Farm. Alexandria, Virginia.
- MAY 20. **Friends of River Farm Family Picnic.** George Washington's River Farm. Alexandria, Virginia.
- MAY 31. **Taste of River Farm.** George Washington's River Farm. Alexandria, Virginia.
- JUNE 1. **Great American Gardeners Award Ceremony and Banquet.** George Washington's River Farm. Alexandria, Virginia.
- JULY 19–21. **National Children & Youth Garden Symposium.** Chaska, Minnesota. Hosted by the Minnesota Landscape Arboretum Public Policy Programs.
- AUG. 24–26. **Homestead Resorts Garden Symposium.** Hot Springs, Virginia.
- SEPT. 20–22. **Fashion in Bloom.** George Washington's River Farm. Alexandria, Virginia.
- SEPT. 29. **AHS Annual Gala.** George Washington's River Farm. Alexandria, Virginia.
- OCT. 4 & 5. **AHS Garden School.** "The Amazing World of Plants." Yew Dell Gardens. Crestwood, Kentucky.
- OCT. 23. **Dr. H. Marc Cathey Day.** George Washington's River Farm. Alexandria, Virginia.
- DEC. 3–21. **Holiday Trees Display.** George Washington's River Farm. Alexandria, Virginia.

The next webinar, "**Annuals That Work,**" will be offered on May 10, during which Allan will highlight successful annuals that are sure to brighten any garden. The series concludes on September 25 with Allan's timely discussion of "**Bulbs That Work.**"

While there is no fee for AHS members to participate, space is limited. To register, go to www.ahs.org.

Magic of Landscapes Symposium

THE MAGIC OF LANDSCAPES SYMPOSIUM, an AHS Horticultural Partner, will feature **Carol R. Johnson** at the Epcot® International Flower & Garden Festival at Walt Disney World's Epcot Center in Lake Buena Vista, Florida, on May 4.

Carol is the founder and board member of Carol R. Johnson Associates, Inc., a landscape architectural design and environmental planning firm with offices in Boston, Massachusetts, and Knoxville, Tennessee. A winner of the American Society of Landscape Architects Medal as well as a Gold Medal recipient from the Massachusetts Horticultural Society, Carol has proven to be a luminary in her field. She taught for seven years at the Harvard University Graduate School of Design and lectures at colleges and universities throughout the world.

For more information on the Epcot International Flower & Garden Festival, visit www.magicoflandscapes.com.

AHS Receives ExxonMobil Grant

FOR THE SECOND YEAR in a row, the AHS will participate in the ExxonMobil Community Summer Jobs Program (CSJP), which will provide a grant for a youth programs intern to spend the summer at River Farm. The intern will assist with various AHS education programs, such as the National Children & Youth Garden Symposium July 19 to 21 in Chaska, Minnesota. He or she will also participate with other interns on a community service volunteer project.



A group of CSJP interns renovate an arbor at the Washington Youth Garden last summer.

"This internship was unique because I also gained career information through the ExxonMobil Community Summer Jobs Program," says **Mara Brettner**, last year's AHS youth programs intern funded by the grant. "This outside organization connected me with other college students working with non-profits in Fairfax County, Virginia," she adds.

For information about the youth programs intern position at River Farm, visit www.ahs.org or call (703) 768-5700 ext. 121.

AHS Spring Plant Sale

ON APRIL 21 AND 22, the AHS will hold its annual Friends of River Farm Plant Sale, offering hundreds of popular and unique garden plants from a variety of vendors. Shoppers will find a wide selection of vegetables, herbs, annuals, native plants, and many “hard to find, new introductions of trees, shrubs, and herbaceous perennials,” says **Peggy Bowers**, AHS horticulturist. Among the offerings will be many of Peggy’s favorite species and varieties, carefully chosen for their low maintenance needs, multiple seasons of interest, wildlife benefits, and proven garden performance in the Washington, D.C. metropolitan area.

In addition to the plants, garden books, tools, accessories, and other items will be on sale in the AHS Garden Shop.

AHS members presenting a valid membership card may attend the preview sale from 4 p.m. to 8 p.m. on Friday, April 20. The public is welcome on Saturday, April 21 from 9 a.m. to 6 p.m., and Sunday, April 22 from 9 a.m. to 3 p.m. For additional information, visit www.ahs.org or call (703) 768-5700.

AHS Partners with American Society of Landscape Architects

THE AHS is once again partnering with the American Society of Landscape Architects (ASLA) in support of National Landscape Architecture Month (NLAM). Throughout April, ASLA will hold various events across the country in support of this

Washington Blooms!

Thousands of daffodils, tulips, and other colorful bulbs will brighten the gardens of George Washington’s River Farm this



April during *Washington Blooms!* Thanks to our generous donors, **K. Van Bourgondien & Sons** and the **Royal Dutch Wholesalers Association for Flowerbulbs and Nurserystock**, more than 12,000 bulbs were planted last fall, adding to approximately 90,000 bulbs already established in the gardens at River Farm.

Special events include garden tours and the Friends of River Farm Plant Sale. For more information, visit www.ahs.org and click on “Events” or call (703) 768-5700.


year’s theme, “Discover Careers in Landscape Architecture.”

NLAM events held at the National Building Museum in Washington, D.C., include “Spotlight on Design: James Corner,” on April 3, and a panel discussion on “Greening a River: the Four Mile Run Restoration Plan” on April 26. For more information on NLAM chapter events offered in your region, visit www.asla.org or call (202) 216-2371.

News written by Editorial Intern Courtney Capstack.

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Deane Hundley is New AHS President

by Viveka Neveln

WHEN KATY MOSS WARNER stepped down as the American Horticultural Society's president in June 2006, the AHS Board of Directors faced the challenge of finding just the right person to become its next president and CEO. "With this organization's distinguished history and ambitious future plans in mind, the selection committee took its role very seriously," says AHS Board Chair **Susie Usrey**. After an extensive six-month national search, the Board ultimately found the leadership skills and experience it was looking for in someone who was already a familiar face.



Deane Hundley

Deane H. Hundley, who was selected from a pool of extremely talented and well-qualified applicants, had been serving as a consultant for the AHS with the fundraising firm Ketchum, Inc. since the spring of 2006. "The more I worked with the AHS," says Deane, "the more I saw

the incredible potential it has." Excited by the opportunity to bring this potential to fruition, he accepted the position of the AHS's 33rd president last December.

"Deane not only brings with him an enthusiasm for the AHS's goals and mission," says **Tom Underwood**, the AHS's chief operating officer, "he also brings a diverse skill set that will help him to guide the organization in the next phase of its history."

A FLAIR FOR FUNDRAISING

Born and raised in rural Virginia, Deane graduated from Virginia Tech in Blacksburg with degrees in business and education. He began his career as a teacher and director of development at a boarding school, then worked with his father in his family's insurance agency for a decade. Over the years, he found time to volunteer with numerous organizations and discovered he had an aptitude for fundraising.

Deane's next move was to Florida, where he served as the chief development officer at Ransom Everglades School in Miami, orchestrating a successful \$10 million capital campaign. Nearby Fairchild Tropical Botanic Garden then recruited him as their chief operating officer. During his tenure there, he helped the garden launch its first capital campaign, raising more than \$13 million over two years, while also supervising the construction phase.

With the AHS poised to begin its own capital campaign, Deane's many years of fundraising experience will be invaluable. "My role," says Deane, "is to assist in procuring the re-

sources the AHS needs to accomplish its mission and to work with the Board to secure the organization's future."

Over the course of his career, Deane has observed that "people give to people, organizations, and causes they believe in." Because of that, he feels that raising the funds the AHS needs is as much about cultivating people as it is about cultivating plants. The AHS's donors and members tend to be "people who believe very strongly in environmental issues, nature, and plants, and in educating youth about their importance, as well as people who are simply wild about gardening," he says. "The AHS must work to serve the needs of these people as well as to encourage others to become more interested in plants and gardening."

"My role is to assist in procuring the resources the AHS needs to...secure [its] future."

—Deane H. Hundley

One way to increase the AHS's ability to reach a diverse national audience, says Deane, is to use technology in innovative ways. "This will help make the AHS's strong educational programs more accessible and useful across a broad geographic range." He also believes this strategy will be particularly important for connecting with youth. "The next generation is just as interested in plants and gardening, just in a different way, so the AHS must find ways to use technology to engage people of all ages."

GARDENING ROOTS

Deane's own interest in gardening began at an early age. He has fond memories from his childhood of visiting his grandfather's farm and helping with the harvest as well as from his experiences at home. "We had a big vegetable garden when I was growing up, and we were always working on landscaping the yard, so it came naturally to me when I had my own garden," he says. "I also have developed a tremendous appreciation for landscape and landscape design. During my time at Fairchild and since, I have enjoyed reading and learning about the Olmsted brothers, William Lyman Phillips, and Liberty Hyde Bailey, to mention a few. Additionally, I have thoroughly enjoyed the planning and implementation of my home garden first in Virginia and then in Florida."

While gardening can mean different things to different people, the word often makes Americans think of their backyards, observes Deane. "I see it as a much broader term. There are so many different applications of gardening and we should embrace them all."

Viveka Neveln is assistant editor for *The American Gardener*.

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AHS 2007 GREAT AMERICAN GARDENERS NATIONAL AWARD WINNERS

THE AMERICAN HORTICULTURAL SOCIETY is proud to announce the distinguished recipients of the Society's 2007 Great American Gardeners Awards. Individuals, organizations, and businesses who receive these awards represent the best in American gardening. Each has contributed significantly to fields such as plant research, garden communications, landscape design, youth gardening, horticultural technology, and conservation. We applaud their passionate commitment to American gardening and their outstanding achievements within their fields.

The 2007 awards will be presented on June 1 during the Great American Gardeners Awards Ceremony and Banquet at River Farm, the AHS's headquarters in Alexandria, Virginia. To register for the awards banquet or for more information, visit www.ahs.org or call (703) 768-5700 ext. 137.

LIBERTY HYDE BAILEY AWARD

Given to an individual who resides in North America and who has made significant contributions in at least three of the following areas of horticultural activity: teaching, research, writing, plant exploration, administration, art, business, and leadership.

Michael A. Dirr is a renowned author, professor, researcher, and speaker who has had an immeasurable influence on the horticultural world. In addition to his well-known *Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses* that was first published in 1975, Dirr has written or contributed to more than 300 publications and seven books.



Dirr served as the director of the State Botanical Garden of Georgia from 1979 to 1981, after which he began teaching at the University of Georgia. During his tenure, he established the Georgia Plant Introduction Program that has presented more than 50 new plant introductions. After Dirr's recent retirement, the university established an endowed professorship in woody plant instruction in his name.

Other accolades Dirr has received include the American Nursery & Landscape Association's L.C. Chadwick Outstanding Educator's Award, the Massachusetts Horticultural Society's Silver Medal for Excellence in Horticultural Writing, the Medal of Honor from the

Garden Club of America, the Linnaeus Award from the Chicago Botanic Garden, and the Georgia Green Industry Lifetime Membership Award.

LUTHER BURBANK AWARD

Recognizes extraordinary achievement in the field of plant breeding.

Elwin R. Orton is a researcher and professor at Rutgers University in New Jersey, where he spent many years teaching plant propagation. He also developed the Woody Ornamentals Breeding Program to produce new cultivars with increased winter hardiness, pest and disease resistance, low maintenance needs, and attractive, compact habits. His research has involved intra- and interspecific hybridization among more than 20 species of hollies, six species of *Pyracantha*, and three species of dogwoods (*Cornus* spp.), as well as intergeneric hybridization of *Franklinia alata* and *Gordonia lasianthus*.



Orton has introduced many varieties of plants, including *Ilex opaca* 'Portia Orton' and the Stellar® series of hybrid dogwood (*C. kousa* × *C. nuttallii*). He considers *C. × Venus*® from his Jersey Star® series (*C. kousa* × *C. nuttallii*), selected as one of the Pennsylvania Horticultural Society's 2007 Gold Medal Plant Award winners, to be the best large-bracted dogwood he has ever seen.

PAUL ECKE, JR. COMMERCIAL AWARD

Awarded to an individual, firm, or company whose commitment to the highest standards of excellence in the field of commercial horticulture contributes to the advancement of gardening practices everywhere.

Paul Saunders is the owner—along with four of his sons—of Saunders Brothers Nursery & Orchard in central Virginia, founded in 1915 by Paul's father and his four brothers. Saunders is a leading authority on boxwoods, working to increase



their use in American landscapes and gardens. To contribute to the knowledge of which boxwood cultivars will thrive in various regions, Saunders coordinates the National Boxwood Trials, which involves more than 30 botanical gardens and arboreta as well as several nurseries throughout the East Coast. He also has exchanged cuttings with gardens in England, China, Ukraine, and the Republic of Georgia for evaluation.

In 2001, he wrote the *Best of the Best Boxwood* manual that is widely used as a guide for boxwood cultivar selection.

G. B. GUNLOGSON AWARD

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

Gardener's Supply (GS) was founded by Will Raap in 1983. As an employee-owned

company of avid gardeners providing garden-tested, earth-friendly products combined with practical information, it has won many awards for its products, website, online gardening information, and innovative management.

GS donates eight percent of its pretax profits to environmental and gardening-related initiatives. The Garden Crusader Award program gives cash and prizes to individuals who are improving the world through gardening. The company also speaks out on issues such as the decline of pollinators, and in 1989, GS was the first national company to take a stand against genetic engineering.

The company has led the effort to restore the 700-acre floodplain in Burlington known as the Intervale, and founded the Intervale Center (IC). The IC is headquarters to 350 acres of organic farms, a composting project, a riparian nursery for growing native plants to restore streambeds, a farmer-in-training program, bike trails, and more.



HORTICULTURAL COMMUNICATION AWARD

Recognizes effective communication using media and research techniques for the purpose of expanding horticultural awareness.

Kathleen Norris Brenzel began her career as an editorial assistant at *Sunset*



magazine and has served as its senior editor since 2000. While overseeing the magazine's garden content, she edited three editions of the popular *Sunset Western Garden Book* and a companion volume, *Sunset's Western Landscaping Book*, as well as *Sunset's Gardening in the Northwest*, *California's Top 10 Garden Guide*, and *Gardening in the Southwest*.

Brenzel has appeared regularly on television gardening programs, including the HGTV's "Grow-It" series, and PBS's "The Victory Garden." She lectures on gardening topics throughout the country and on the garden show circuit in Los An-

geles, San Francisco, Seattle, Philadelphia, and Boston.

In 2000, Brenzel's interest in Hawaii's native and endemic plants earned an Environmental Journalism Fellowship at the National Tropical Botanical Garden in Lawai, Kauai. Her latest publishing effort is the eighth edition of the *Sunset Western Garden Book*, which was published in February 2007.

HORTICULTURAL THERAPY AWARD

Recognizes significant contributions to the field of horticultural therapy.

Teresia M. Hazen has been a registered horticultural therapist and coordinator



specializing in gerontology and addictions counseling for the Legacy Therapeutic Gardens at the Legacy Health System in Portland, Oregon, for 15 years. She has developed six gardens within that time and created five more garden designs cur-

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March 29: "Perennials that Work"
May 10: "Annuals that Work"
Sept. 25: "Bulbs that Work"

Registration is on a first-come, first-serve basis and space is limited, so be sure to reserve your chance to participate in one or more of these interactive online presentations.

For more information and to register, visit www.ahs.org and click on the "Armitage Gardening Webinars" link.

rently awaiting funding. Three of the gardens have been recognized by the American Horticultural Therapy Association's Therapeutic Garden Design Award.

Hazen was awarded the Legacy Core Values' Oscar and Helen Gustafson Award in 2004, the American Horticultural Therapy Association's Rhea McCandliss Professional Service Award in 2003, and the Wistar Morris Society's Treasure of Good Samaritan Hospital in 1997.

LANDSCAPE DESIGN AWARD

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

Steve Martino, FASLA, has earned a national reputation for design excellence. He is widely recognized for his pioneering work with native plants and developing a desert-derived aesthetic. Juxtaposing manmade elements with ecological processes is a recurring theme in his designs.



Martino's projects have received more than 100 awards, including nine national design awards from the American Society of Landscape Architects. In 2006, he received the American Society of Landscape Architects' top design award for his Quartz Mountain Residence, as well as the society's Design Medal for 2006. His work has been published in more than 250 books and periodicals.

A Phoenix native and resident, Martino studied art and architecture at Arizona State University. His project experience ranges from urban development and remote large-scale communities to public art and private gardens. Currently, Martino is focusing his work on contemporary garden design for private gardens.



If you know someone you would like to nominate for one of the 2008 Great American Gardeners Awards, please visit our website (www.ahs.org) and click on "Awards" for more information.

MERITORIOUS SERVICE AWARD

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

The late Honorable **Lauralee M. Peters** was a member of the U.S. Senior Foreign



Service who held various positions in Paraguay, Vietnam, Thailand, and Pakistan. She also served on the National Security Staff for Latin America, worked at the State Department of Middle Eastern Affairs, and was ambassador to Sierra Leone for three years.

As well as volunteering with Meals on Wheels, Peters was a long-time member of the AHS who actively volunteered at River Farm, the Society's headquarters. Her contributions to the Society included generously donating a truck to facilitate work around the grounds.

PROFESSIONAL AWARD

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

For 30 years, Chicago Botanic Garden Executive Vice President and Director **Kris**



S. Jarantoski has contributed to the development of the 385-acre site and its plant collections, which attract three-quarters of a million visitors each year. His research at the garden includes the selection and hybridization of dieback shrubs to evaluate their adaptability to the Chicago area.

Jarantoski is also active in the American Public Gardens Association. He has served as chair of the Awards and Collections Committees, as a member of the Board of Directors, and is currently a member of the Design and Planning Section and the Plant Collections Section. Jarantoski has also been involved with the Garden Conservancy, the American Association of Museums, and the Holly Society of America,

and has written many articles for the *American Nurseryman* and other publications.

JANE L. TAYLOR AWARD

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

Norman Lownds is an associate professor at Michigan State University. He has



worked with the Michigan 4-H Children's Gardens for the past 10 years promoting curiosity and wonder in children of all ages. He has integrated technology into the garden and has helped create numerous interactive computer explorations. His recent work has focused on new learning programs including Seeds of Science, where students visit the 4-H Children's Gardens for multiple field trips and get involved in authentic science experiments, and the online Wonder Wall, where students and teachers can stay in contact with "Dr. Norm" before and long after they have visited the 4-H Children's Gardens.

TEACHING AWARD

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

Thomas MacCubbin is an Extension environmental horticulturist with the Uni-



versity of Florida in Orange County. MacCubbin offers a variety of information through his "Better Lawns & Gardens" radio program, Orange County Gardening TV, Central Florida News 13, and his question-and-answer gardening columns, feature articles, and blogs for *The Orlando Sentinel* newspaper.

His efforts have been acknowledged with numerous awards from the National Association of County Agriculture Agents, including best state personal column, news photo story, news column,

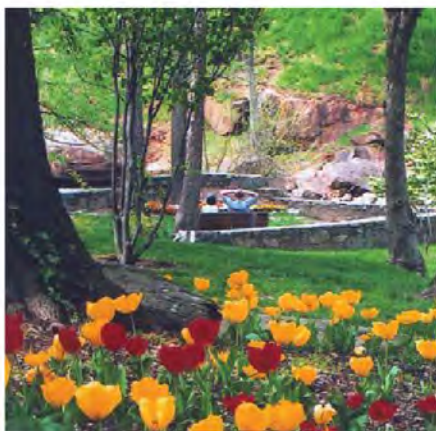
and television program. "Better Lawns & Gardens" was judged best radio program for 1998 and 2000. In 2001 he received an Award of Excellence from the National Council of State Garden Clubs.

MacCubbin is the author of many books including *Florida Home Grown: Landscaping*, *Florida Home Grown 2: The Edible Landscape*, *Month-by-Month Gardening in Florida*, and *The Perfect Florida Lawn*.

URBAN BEAUTIFICATION AWARD

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

Since 1938, **Carolina Foothills Garden Club** has been focusing on preservation, conservation, and civic planting, including the renovation and development of urban



green space. In 1967, Falls Park was a kudzu-covered "jungle" surrounding a polluted urban river. With a vision for the area, Carolina Foothills Garden Club partnered with the city of Greenville and Furman University to acquire the property and champion the use of this green space.

In September 2004, Falls Park underwent a massive redevelopment, a long-time vision for Greenville and the Garden Club. This newly developed 20-acre park features an award-winning pedestrian suspension bridge over urban waterfalls surrounded by specialty gardens and world-class sculpture. Two members of Carolina Foothills Garden Club, Anna Kate Hipp and Pedrick Stall Lowrey, co-chaired a \$3.6 million endowment campaign to perpetuate the development and ensure ongoing maintenance of Falls Park.

2007 AHS Book Award Winners

THIS YEAR marks a decade that the American Horticultural Society has recognized outstanding gardening books published in North America with its annual Book Award. Nominated books are judged by the AHS Book Award Committee on qualities such as writing style, authority, accuracy, design, and physical quality. The committee also looks for trailblazing topics, books that celebrate our horticultural heritage, and books that emphasize our connection to nature. This year's three recipients, selected from more than 40 nominated books published in 2006, are listed below.

Keith Crotz, owner of American Botanist Booksellers in Chillicothe, Illinois, served as chair of the 2007 committee. Other committee members were **Gene Bussell**, a garden editor for *Southern Living* magazine in Birmingham, Alabama; **Thomas Cooper** of Watertown, Massachusetts, former editor of *Horticulture* and *The Gardener* magazine; **Susan C. Eubank**, a horticultural librarian for the Los Angeles County Arboretum and Botanic Garden in Arcadia, California; **Marty Ross**, a regional contributor for *Better Homes & Gardens* and writer for Universal Press Syndicate who lives in Kansas City, Missouri, and in Hayes, Virginia; **Marcia Tatroe** of Centennial, Colorado, a writer for the *Denver Post* and *Sunset* magazine; and **Marty Wingate** of Seattle, Washington, a columnist for the *Seattle Post Intelligencer*.

Hellebores: A Comprehensive Guide by C. Colston Burrell & Judith Knott Tyler. Timber Press, Portland, Oregon. Publisher's price, hardcover: \$34.95.



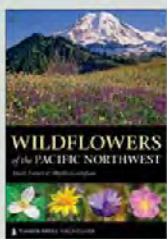
The committee was impressed by the thoroughness and overall quality of the first American book on this genus published in decades. "It achieves a very nice balance between being an authoritative monograph and a practical guide with lots of good photographs," says Tom Cooper. "What I loved most about it was all of the history concerning the breeders who developed the cultivars and hybrids," says Marcia Tatroe.

Defiant Gardens: Making Gardens in Wartime by Kenneth I. Helphand. Trinity University Press, San Antonio, Texas. Publisher's price, hardcover: \$34.95.



This groundbreaking book stood out because of its timely and timeless subject and the comprehensive way in which it was handled. "This book shows why people enter the world of gardens, especially in times of crisis," says Keith Crotz. "It grounds the reader in the historical and social period, but it never forgets it's a garden book," says Marty Wingate. "The photographs are fascinating, and the book is very well documented," says Marty Ross.

Wildflowers of the Pacific Northwest by Mark Turner and Phyllis Gustafson. Timber Press, Portland, Oregon. Publisher's price, softcover: \$27.95.



"Some of the best gardening books are field guides because they contain a lot of cultural information about native plants by describing the environment where the plant grows," says Susan Eubank. For this reason, the committee felt this field guide should be recognized as one of the best currently in print. "The photographs are excellent and the book is very readable," says Marty Wingate. "Maps are a big help in the field and these maps are clear and easy to understand," says Marcia Tatroe, "And I particularly appreciated the colored page edges for looking up a flower by color."

AHS INTERN PROFILE

An Intern Project Helps Shape River Farm's Future

by Heather Robbins

M ELODY GRAY vividly remembers the first day of her internship at the American Horticultural Society's River Farm headquarters, because, she recalls with a laugh, it involved "helping to rescue a snake that had become entangled in garden netting." That was during the summer of 2003, when Melody was working toward a degree in landscape architecture from Texas A&M University.

As it turned out, snake wrangling was only a minor aspect of Melody's internship. She spent a large part of her time working with **Tom Underwood**—who at the time was AHS director of gardens and buildings—completing detailed surveys of the grounds as background work for a proposed new Master Plan for River Farm.

Participating in the research for the Master Plan inspired Melody to pursue a career designing for public gardens. Tom and **Katy Moss Warner**—who was then AHS president—encour-



Melody Gray

aged her to consider entering the Longwood Graduate Program in Public Horticulture, a two-year program jointly administered by Longwood Gardens and the University of Delaware that culminates in a Master of Science degree.

After graduating from Texas A&M, Melody was accepted to the Longwood Graduate Program. For her thesis, Melody decided to focus on the conceptual plan for the Liberty Hyde Bailey Walk, one of the key elements of the River Farm Master Plan. As envisioned by **Missy Marshall**, a principal in M·T·R Landscape Architects—the firm engaged to develop the Master Plan—the walkway is the central axis leading visitors from a proposed new visitor's center to the administrative and educational buildings and a vista down to the Potomac River.

Because Liberty Hyde Bailey, Jr. is often described as the "father of American horticulture," showcasing his life and achievements along this major walkway was seen as a fitting tribute. "One of the major goals of the Master Plan is to allow River Farm to tell the story of American horticulture," says Tom, "so an introduction to Bailey seemed like a logical starting point for visitors to the AHS's headquarters."

WALKWAY CELEBRATES LIBERTY HYDE BAILEY'S LEGACY

In her Master's degree thesis, former AHS intern Melody (Gray) Shaddix provided valuable background and concepts for the planned Liberty Hyde Bailey Walk in River Farm's Master Plan. As the primary walkway and the area that will provide visitors with their first experiences on the grounds of the American Horticultural Society's headquarters, the Bailey Walk must fuse aesthetic appeal with functionality and horticultural relevance.

Melody's research indicated that Bailey's influence on American horticulture fell into four principal categories—education (especially relating to horticulture), technology, community, and publication—so she decided that all these components should be represented in the walkway's design. For instance, gardens devoted to plants that were Bailey's specialties (including palms, cabbages, brambles, bellflowers, pinks, and delphiniums) might branch off a main walkway. And some of Bailey's famous quotations could be incorporated into the design elements.

The biography of Bailey (1858–1954) includes many "firsts:" He was the first scholar to use a camera for herbarium taxonomy, he established Michigan State University's Horticulture Department as well as the Nature Study Program at Cornell University (which evolved into the 4-H program), and he chaired the Commission on Country Life, which facilitated the extension of the electrical grid and the U.S. Postal Service system into rural areas. A tireless writer, Bailey authored some 60 books on topics ranging from horticulture to philosophy, weather, and politics. Many of his publications were inclusive of several disciplines.

To Melody, Bailey's interdisciplinary approach to horticulture is a vital part of his legacy and still holds value as an approach to the design of public gardens. "Bailey imparted his passions to those around him. Public gardens should do the same: expand horizons through publications, educate to instill knowledge, utilize available technologies to reach audiences in meaningful ways, and above all recognize the responsibility to do all of this with the local community involved." —H.R.



This sketch, part of Melody Gray's thesis, shows how a section of the Liberty Hyde Bailey Walk might look.

Robert Lyons, director of the Longwood Graduate Program, supported Melody's interest in the project. "I certainly encourage students in our program to consider possible professional interactions with the AHS," he says. "The networking that the AHS provides is very valuable to the professional growth and development of my students."

RESEARCHING A LEGEND

When Melody began her research, all she knew about Bailey was that he'd compiled *Hortus*, an influential plant dictionary first published in 1930. A revised edition, *Hortus Third*, is still often used as a college textbook. "The more I learned about him, the more amazed I was at how much this man had accomplished and the ideals we had in common," says Melody. "I really respect and relate to the way he made public horticulture accessible; he took people out of the classroom and into the garden to look at the plants instead of just showing slides in a dark lecture hall."

Melody's biographical research complemented her efforts to gather input for the design of the Liberty Hyde Bailey Walk. "Melody did a thorough review of the literature on Bailey, then contacted prominent landscape architects and horticulturists to get their perspective on the influence of his work," says Tom.

While working closely with Missy Marshall, Melody also conducted extensive interviews and focus groups with AHS

Internship Opportunities

The AHS offers internships in communication/editorial, horticulture, and youth programs (summer only). Application deadlines are March 1 for Summer, August 1 for Fall, and November 1 for Winter/Spring. For additional information, visit www.ahs.org/river_farm/internships_employment.html.


staff. Based on the resulting feedback, she worked on ways to create a visitor experience that captured the essence of Bailey's contributions while being sensitive to the site and its operational needs.

TAKING THE NEXT CAREER STEPS

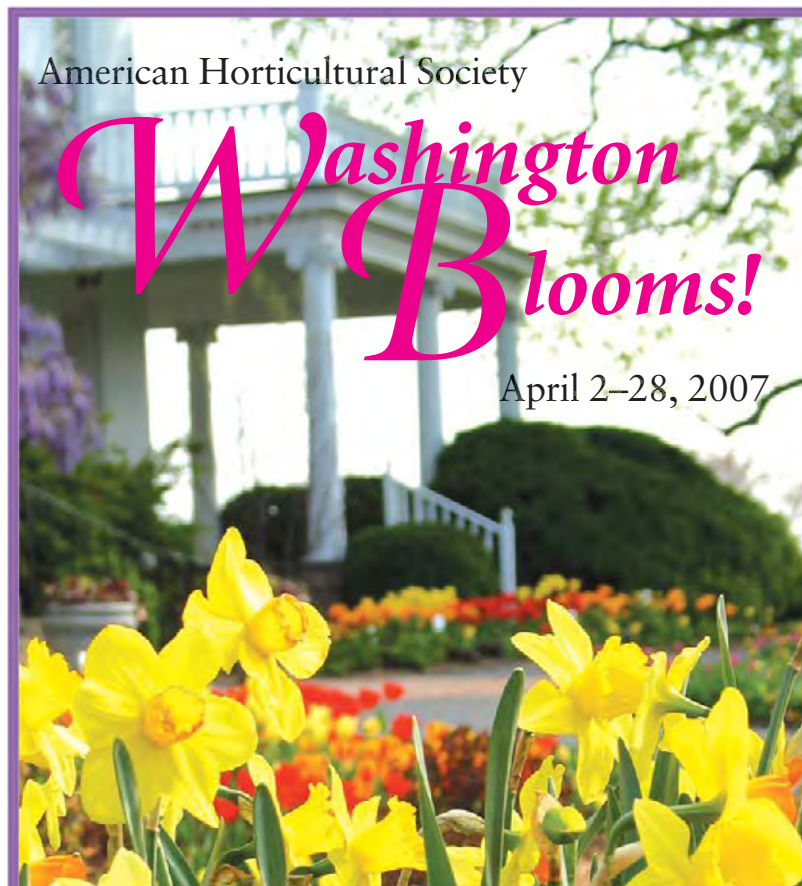
After Melody graduated from the Longwood program in May 2006, life didn't slow down a whit. She got married that summer—she is now Melody Shaddix—

and accepted a job as the development and operations manager for the Arts Council of Brazos Valley in College Station, Texas. "The staff at the AHS supported me and nurtured me during my time with them and continued to do so after I left," says Melody. "Working on the Bailey Walk was an amazing opportunity to learn and give back to an organization that has given me so much."

As the Master Plan continues to evolve, this former intern's research and creativity will have influenced a tangible element of River Farm's identity.

"Bailey's words and ideas will not only live on as the backbone of American horticulture," Melody noted in her thesis, "but as the backbone of the garden that bears his name: The Liberty Hyde Bailey Walk." 

Heather Robbins recently completed an editorial internship with The American Gardener.



Join us this April for *Washington Blooms!* at River Farm. Nothing compares with the beauty of the early spring blooms in the National Capital area. Cherry blossoms, daffodils, and tulips herald the arrival of spring in an explosion of color. Mark your calendar and plan to visit River Farm and the National Capital area this April—you'll find a variety of spring delights with something for every gardener and garden enthusiast, no matter what your passion!

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



2007 *Washington Blooms!* Events at River Farm

- April 7 • Spring Garden & Bulb Tour
- April 14 • Spring Garden & Bulb Tour
- April 20 • Members-Only Preview Night for Friends of River Farm Plant Sale
- April 21 & 22 • Friends of River Farm Plant Sale
- April 28 • Spring Garden & Bulb Tour

Ongoing for the month of April at River Farm

- Thousands of spring blooms!
- AHS Garden Shop
- Botanical art exhibit

More reasons to visit the National Capital Area in April

- National Cherry Blossom Festival (March 31 – April 15)
- Historic Garden Week in Virginia (April 21 – 28)



Best of the Best

With All-America Selections (AAS) celebrating its 75th anniversary this year, here's a look at AAS Award-winning plants that stand the test of time.

BY DOREEN G. HOWARD

PHOTOGRAPHS BY DONNA AND TOM KRISCHAN



'Bright Lights' Swiss chard

THE NON-PROFIT organization All-America Selections (AAS) was founded in 1932 as a way for seedsmen to learn which new, unsold varieties were truly improved by trialing them and selecting the best. The organization's slogan, "Tested Nationally and Proven Locally," is validated by the continuing demand for these winning varieties in gardens throughout the country. As part of its 75th anniversary celebration, AAS has selected five plants from its long list of winners that demonstrate superior breeding efforts. These have been dubbed the "All-America Classics" (see sidebar on page 23).



PATH TO GLORY

In the past 75 years, AAS has recognized 666 Award Winners and 46 Gold Medal Winners. Before a plant is designated an AAS Winner, it's grown at 35 independent test sites across North America, from Vancouver, British Columbia, to Disney World in Orlando, Florida. Each trial ground has at least one official AAS judge who supervises the trial and evaluates entries for AAS at no charge. Every garden contains all entries to demonstrate each plant's performance in varied climates.

"The Gold Medal is reserved for a 'breeding breakthrough', a new variety to which all other varieties in its class will be compared," explains Nona Koivula, executive director of AAS and the National

Top: An All-America Selections trial field in 1941. Eighteen plants received AAS recognition that year. Opposite page: AAS winner 'Indian Spring' hollyhock, a garden favorite since 1939.

Garden Bureau. "A Gold Medal is usually given to a new cultivar once a decade. It is a rare occurrence," says Koivula. Previous Gold Medal Winners include 'Straight-8' cucumber (1935), 'Sugar Snap' pea (1979), and 'Profusion Cherry' zinnia (1999).

Flower entries are evaluated for desirable qualities such as novel form, color, flower show above foliage, fragrance, length of flowering season, and disease and pest tolerance or resistance.

Vegetables are judged for such traits as earliness to harvest, total yield, taste, quality, ease of harvest, plant habit, and disease and pest resistance. The judges assess entries all season and then send their evaluations to an independent accounting firm that tallies the scores from each of the trial gardens. The plants with the highest scores are declared that year's AAS Winners.

Each spring, the names of these winners are touted in magazines, newspapers, television programs and radio garden shows, and at garden centers as the "must-have plants" for the upcoming season. But what about the staying power of AAS Winners?

A MEASURE OF ENDURANCE

To get the true story, I surveyed 24 experts who evaluate the AAS Winners in trial plots, grow them in AAS display gardens, and sell them to the gardening public. These horticulture professionals, ranging from botanical garden directors to Extension agents to garden center owners, assessed the plants for a multitude of desirable characteristics, including beauty, taste, and disease resistance. From the AAS Winners that are still available in the marketplace, I asked these experts to name the ones that they love and gardeners seek out.

The majority of these pros selected '**Bright Lights' Swiss chard** (1998), a vegetable-ornamental crossover, as their favorite. "Give it a gold star," says Rose Marie Nichols-McGee, president of Nichols Garden Nursery, a 65-year-old retail and mailorder business in Albany, Oregon. "It's always a top-seller in our catalog and at our store." An old AAS Winner, '**Indian Spring' hollyhock**, is also popular with her customers. "We've carried it since it came out in 1939," Nichols-McGee says. "Customers love the old-fashioned single flowers." Other AAS



'Profusion' zinnias

favorites that sell consistently include **'Sensation' cosmos** (1936) and **'Fairy Bouquet' linaria** (1934). "They've become standards by which others are judged, and they're inexpensive," says Nichols-McGee. **'Sweet Dani' basil** (1998), **'Wee B Little' pumpkin**, and **'Eight Ball' squash** (both 1999 AAS vegetable winners), sell briskly, too.

Brian Minter, who owns the 27-acre display and retail Minter Gardens near Vancouver, British Columbia, recognizes true winners immediately. Among these is the Gold Medal Winner **Profusion series zinnias** (white [2001], cherry, and orange [both 1999]). "We use masses of them in our display gardens because of their tolerance to both wet and hot weather," says Minter, who observes that their resistance to mildew extends their useful bedding life by four to six weeks. **'Sundial Peach' portulaca** (1999) is another AAS Winner that Minter's customers love. "Wow, what a unique color. It blooms two weeks earlier than other varieties with huge two-inch flowers," Minter says.

One AAS Winner that has become a sensation among gardeners was the result of a fortunate accident. Harlan Hamernik, owner of Bluebird Nursery in Clarkson,



Nebraska, saw **'Purple Majesty' ornamental millet**, which won a Gold Medal in 2003, in a University of Nebraska trial field of millet being bred as a food crop. "I always have my eyes peeled for something stunning," he says, "and there it was in the middle of a grain field." He encouraged David Andrews, the breeder, to enter the plant in AAS trials. Not only did **'Purple Majesty'** earn a 2003 AAS Winner slot, but it received the rare Gold Medal.

Although Bluebird is primarily a wholesale perennial nursery, Hamernik

has planted an AAS Display Garden since 1989. The current Bluebird Nursery wholesale catalog contains 21 AAS flowers and six AAS herbs. **'Tidal Wave Silver' petunia** (2002), **'Lady' lavender** (1994), and **'Golden Jubilee' agastache** (2003) are some of Hamernik's favorites. **'Lady' lavender** is easy to start from seed, very uniform, and hardy, he says. It will tolerate a Nebraska winter with mulch or pine bough cover while other lavenders die. It's the foliage fragrance of **'Golden Jubilee' agastache** that sets it apart, in Hamernik's

opinion. "The purple perfumed flowers and chartreuse foliage are stunning, too," he says.

Hamernik's wife and business partner, Shirley, has been an AAS judge for 18 years. "Many older AAS Winners are still contenders in the marketplace," she says. Flowers such as **'McKana Giant' columbine** (1955), **'Connecticut Yankee' delphinium** (1963), and **'Early Sunrise' coreopsis** (1989) became standards and are still in gardens across the country.

Colorful **rudbeckia**, which creates instant landscape impact with little maintenance, is another easy-to-grow-from-seed perennial—three varieties have achieved AAS Winner status in the past 12 years. **'Indian Summer'** (1995),



Sources

Gurney's Seed and Nursery Co.,
Greendale, IN. (513) 354-1491.
www.gurneys.com.

Harris Seeds, Rochester, NY. (800)
514-4441. www.harrisseed.com.

Henry Field's Seed and Nursery Co.,
Aurora, IN. (513) 354-1494.
www.henryfields.com.

Johnny's Selected Seeds, Winslow,
ME. (877) 564-6697.
www.johnnyseeds.com.

Nature Hills Nursery, Omaha, NE.
(402) 934-8116.
www.naturehills.com.

Park Seed Co., Greenwood, SC. (800)
213-0076. www.parkseed.com.

A CELEBRATION OF CLASSICS

To celebrate their success over the past three-quarters of a century, AAS has designated five of its most popular winners as “All-America Classics.” These varieties—four flowers and one vegetable—have stood the test of time, remaining popular choices for gardeners across the country.

The hybrid **‘Majestic Giants Mix’ pansy** (1966) was the first pansy that could initiate flowers with or without cool temperatures—a real breakthrough that made fall plantings practical in the South. The small but vigorous plants produce large flowers in a wide range of colors. **‘Ultra Crimson Star’ petunia** (1988) won the first AAS Bedding Plant Award—a category that requires outstanding performance in both the greenhouse and the garden. Its large flowers are clearly marked with a white star; they appear early and



‘Majestic Giants Mix’ pansy

continue throughout the season. Crosses between two *Dianthus* species resulted in the free-flowering **‘Ideal Violet’ dianthus** (1992), which displays remarkable tolerance to both heat and cold. Another petunia was selected as a Classic for its unique habit and outstanding vigor. **Wave® ‘Purple’ petunia** (1995) has been credited with renewing gardener interest in an entire genus. And **‘Big Beef’ tomato** (1994) boasts superior size, flavor, earliness, and disease resistance. Since its introduction, it has remained one of the most popular tomato varieties for American gardens.



‘Big Beef’ tomato

All five of the Classics will be grown at this year’s AAS Display Gardens. For additional information on these

plants and the All-America Selections Diamond Anniversary, visit www.all-americaelections.org.

—D.H.

‘Cherokee Sunset’ (2002), and **‘Prairie Sun’** (2003) are outstanding for any garden,” Shirley Hamernik says.

Early AAS Vegetable Winners have stood the test of time, too, and continue to be garden favorites. Shirley cites **‘Straight-8’ cucumber** (1935), **‘Jubilee’ tomato** (1943), **‘Great Lakes’ lettuce** (1944), **‘Cherry Belle’ radish** (1949), **‘Topcrop’ bean** (1950), and **‘Iochief’ corn** (1951), all introduced more than a half century ago. “That says a lot about the quality of AAS Winners,” she declares. “This phenomenon exists only because AAS Winners continue to perform well throughout the country, in every climate.”

John Arnett, nursery manager at Historic Bok Sanctuary in Lake Wales, Florida, uses AAS Winners on a regular basis throughout the public garden. “We grow all of them during the cooler months. Our growing seasons are reversed from the rest of the country. Early spring is in October for most of our flowers,” he explains. A fall favorite of Arnett’s is **‘Sparkler Blush’ cleome** (2002), because of its uniform size and blooms. **‘Purple Majesty’** ornamental millet, **‘Cosmic Orange’ cosmos** (2000), **‘Janie’ marigold** (1980), and **‘Indian Sum-**

mer’ rudbeckia do well during Florida’s torrid summers if started in early spring, says Arnett. He’s learned what works and what doesn’t in the 10 years he was the AAS gardener at Disney World and his stints at Harry P. Leu Gardens in Orlando and now at Bok Sanctuary. “‘Early Sunrise’ coreopsis...is still one of the best; it grows and blooms fast before the heat knocks it down.” **‘Indian Summer’ rudbeckia** draws raves from Arnett, too. “Some rudbeckias take a long time to flower and don’t bloom,



‘Cherry Belle’ radish

because heat and disease overwhelm them. **‘Indian Summer’**, however, will bloom anytime here in Florida.”

‘Lavender Wave [Wave® ‘Lavender’] (2002) is one of the first petunias to really last in the Houston summer heat,” says Bill Adams, retired University of Texas Extension service agent who trialed AAS plants for a decade. “Petunias are considered early spring annuals in Texas and are pulled up when the heat hits at the end of May. Lavender Wave extends the season through the summer.”

Adams also likes **‘Sundial Peach’ portulaca**. “Its intense color doesn’t fade in the sun. **‘Black Pearl’ pepper** (2006) makes it through the Texas summer, too, and has great ornamental value,” he notes. **‘Fresh Look Red’ celosia** (2004) does very well in the Texas heat, lasting from early spring through fall, he says.

‘Fresh Look Red’ also does well in more temperate climates such as Pennsylvania, according to Denny Heilman, co-owner of Dan Schantz Farm & Greenhouses in Zionsville. The company has two retail garden stores and supplies Wal-mart garden centers in the region. “The flower’s stunning deep red is a huge winner with

customers,” he says. “We’ve found that AAS Winners make even the most casual gardener look like a professional.”

All of the Wave® series petunias are perennial favorites, reveals Heilman. “**Purple Waves** are the most popular, because their color is so vibrant.

And, blue petunias, like ‘**Merlin Blue Morn**’ (2003), fly out the door, too. ‘**Sugar Snap**’ peas are the leader in our vegetable seed sales every year,” he says. The company grows ‘Indian Summer’ rudbeckia in eight-inch pots for a “wow” effect, to quote Heilman. “It takes off like crazy in the garden for instant gratification. ‘Indian Summer’ rejuvenates tired gardens at the end of August, as does ‘Sundial Peach’ portulaca.”

Another AAS all-star popular with customers is ‘Sparkler Blush’ cleome. Its lower stature makes plants wind-resistant, a significant problem with taller cleomes, and the flowers keep coming all season. “Great for borders and beds,” Heilman concludes.

AAS HISTORY GROWS IN WISCONSIN GARDEN

While AAS Display Gardens show off the latest AAS Winners, visitors to Rotary Gardens in Janesville, Wisconsin, last year were treated to the rare opportunity to view and compare AAS Winners dating from the program’s inception in 1932 to today. The exhibit was created by Mark Dwyer, director of horticulture at Rotary Gardens.

Dwyer started the 20-acre, private, non-profit botanical garden’s AAS Winners journey in December 2003, when he began poring over seed catalogs to find as many past AAS Winners as possible to create a historical display. “I wondered how many winners from ‘way back’ were still out there,” says Dwyer. He found a number of older winners, which inspired him to continue his search. From 40 seed sources, Dwyer was able to obtain 170 varieties, including two 1933 winners. The plants in the Janesville AAS garden were arranged chronologically by date of introduction.

This historic display won the AAS Display Garden Exemplary Education



‘Sugar Snap’ pea

Award. Two years later, Dwyer built upon his success to create a more dramatic AAS history garden on a larger scale. This time, 200 AAS Winners were planted. Four 40-foot-long and three 20-foot-long berms were constructed for planting beds, to allow viewing from all sides.

Plants tapered down on both sides from the top of each berm, with the shortest ones in the foreground. Nine-foot-tall cedar obelisks at the berms’ crests provid-

public gardens—and home gardeners—to plant older AAS Winners this season to add a bit of history to their displays.

Cantigny Park in Wheaton, Illinois, and Denver Botanic Gardens are among those who are answering the challenge. Both have planned AAS historic gardens for this year. A parade of 16 mammoth containers filled with eight decades of AAS Winners will line a broad walkway at the Illinois park. The lush display will show gardeners, especially those with limited gardening space, the merit of AAS Winners, says Joe Sable, production director at Cantigny. “It’s important for home gardeners to see up close the value of AAS Winners,” he says. “They can see



Decades’ worth of All-America Selections winners fill the display beds at Rotary Gardens in Janesville, Wisconsin, providing visitors with a glimpse into AAS history.

ed support for AAS Winner morning glories such as ‘Scarlet O’Hara’ (1939) and ‘Pearly Gates’ (1942).

Dwyer says that of all the plants in the display, three drew the most comments. “Everybody asked what the heck ‘Purple Majesty’ ornamental millet was and where could they buy it,” he recalls. Other favorites were ‘Merlin Blue Morn’ petunia and ‘Prestige Scarlet’ celosia.

As a result of the display’s success, All-America Selections is challenging other

how breeding has changed the brightness of flowers, the compactness of plants, and their overall quality.”

“There are so many new plants introduced each year, it makes your head spin,” says Koivula. “The AAS Award helps gardeners invest in plants that have been tested and proven their performance under independent testing conditions.”

Award-winning garden author and editor Doreen Howard lives in Roscoe, Illinois.

Gardening *for* Good Health

BY PAMELA BAXTER

Research validates what many of us already know: Getting out in the garden is great exercise for body and mind.

OVER THE PAST three decades, a number of health studies have challenged the perception of gardening as a “lightweight” hobby and elevated it to the status of a moderately strenuous exercise. Other research has revealed that gardening on a regular basis relieves stress, improves cognitive function, and may help people who suffer from certain psychological disorders.



It turns out that gardening may well be the perfect exercise. It provides a good, all-around workout that can be as easy or as vigorous as you desire—burning calories, strengthening and toning muscles, exercising your heart and lungs, and enhancing flexibility. Having a garden is like having your own outdoor fitness center with a variety of “stations” through which you can rotate for a balanced program.

If you’ve spent any time actively gardening, you know exactly what I’m talking about. There are plenty of activities in the garden that can get your heart pounding. Digging, edging, pushing a manual or power mower, roto-tilling, and turning compost are the heavy hitters. But even pruning and weeding provide exercise, along with walking and picking up branches and other yard debris. Throughout a “workout,” which might last from a half hour to several hours, gardeners are bending, stretching, kneeling—keeping in almost constant motion.

So let’s say you’ve spent a few hours in your garden and your muscles tell you you’ve been working. But just how much exercise did you get? Does it “count?” Or do you still need to do some “real” exercise like weight lifting, jogging, or aerobics? What are the tangible health benefits of gardening, and how do you know if you are getting them?

Whether you prefer growing vegetables, left, or roses, above, regularly working in the garden is an important component of a healthy lifestyle.

WHAT STUDIES SHOW

It was a Harvard study, initiated in 1960, that began to change how the medical profession perceives gardening. The study has tracked nearly 40,000 alumni from Harvard University and the University of Pennsylvania.

That study, and others since, have led to reports from the Surgeon General and the National Institutes of Health recommending the now-familiar minimum exercise amounts: 30 minutes of moderate exercise, at least three days a week. The list of specific health benefits that such an exercise program yields is enough to make almost anyone get off the couch and start digging.

Moderate to moderately strenuous gardening on a regular basis:

- Helps prevent heart disease, diabetes, colon cancer, high blood pressure, obesity, and osteoporosis
- Helps manage existing conditions such as diabetes, high blood pressure, and high cholesterol
- Builds muscle strength, improves balance, and reduces the risk of falling
- Enhances and maintains overall flexibility and helps with arthritis
- Reduces stress, counteracts depression, and improves sleep
- Adds to lifespan and improves the ability to enjoy one's "mature" years

Another influential study, published in 2002 in the *Journal of Women and Aging*



Researchers have found that even relatively simple garden tasks such as gathering debris and pushing a loaded wheel barrow exercise a variety of muscle groups.

(see "Resources," page 27), linked regular yard work with a reduced risk of osteoporosis, a degenerative bone disease. In the study, women age 50 and older who gardened at least once a week showed higher bone density readings than those who participated in a variety of more conventional exercise programs, such as jogging, aerobics, and bicycling. The only exercise

that showed as much benefit as gardening was weight-training. "The important thing about yard work is that so many people are willing to do it. They don't dread it as exercise," says the study's lead author Lori Turner, a professor of health science at the University of Alabama.

Turner acknowledges that the study's findings initially took even the researchers by surprise. "We hadn't expected yard work to be so significant," Turner says. "But there's a lot of weight-bearing motion going on in the garden—digging holes, pulling weeds, pushing a mower."

THE THIGHS HAVE IT

"The most important muscle for the gardener is the quadriceps (thigh muscle)," says Jane Reinsch, a physical therapist in Windsor, Connecticut, "what we call the lifters. They're the muscles that allow you to get down on your knees and, more importantly, to get back up. If the quads are weak, this puts more strain on the knee joints, and also on the back."

For strengthening the quads, Reinsch recommends doing leg lifts—either sitting or lying down—lifting from the hips, not the knees. If necessary, stabilize your back while doing this exercise. Over time, strengthening one part of the body will strengthen the others, since quads, back, and joints all work together. —P.B.



WEEDING OUT OLD THINKING

Despite these studies, the health benefits of gardening still have not been fully recognized by the medical profession. Karen Peters of Portland, Oregon, recalls, "When we first moved here back in 1985 and I had my intake visit with my new GP, she asked me what I did for exercise. I told her, hiking, sailing, swimming, and gardening. She glared at me, like I was some kind of slacker, and said, 'Gardening isn't exercise!' I remember retorting, 'It is, the way I do it!'" Says Peters, "I knew I was right, but it's nice to have my experience backed up by science now."

Dr. Kenneth Frank, who practices at

the Philadelphia Veteran's Association Medical Center in Philadelphia, Pennsylvania, says that people may still get this kind of response from their physicians. "Common wisdom—what's still published in medical texts—is that you have to get your heart rate way up for exercise to be worth anything." He adds, "This is why the studies are important. They show that less vigorous exercise, even done in small amounts, is beneficial. And this specifically includes gardening."

Even more, gardening is an activity that Frank can "prescribe" for his older patients, who he knows won't go to a gym. "Unlike jogging, or even working out on a machine, gardening uses every muscle," he says. "Plus, while you're stretching and getting good cardiovascular exercise, you're also getting the psychological benefits of being outside and of being productive."

PERSONAL EXPERIENCE TELLS THE STORY

Eric Cole of Cochranville, Pennsylvania, didn't realize how much he relied on gardening for staying in shape until a major work project kept him away from his usual outdoor work. "2006 was the first year I've missed gardening in 15 years," he says. "I noticed that without that physical activity, I wasn't sleeping very well and I put on weight. Overall, I just felt terrible."

According to Cole, he wasn't aware how much he'd lost until he got back to gardening. "I noticed, for instance, that mulching one large area used to take me one day. This year, it took two, and I was sore for days after that."

Mary and Alan Sargeant garden in the challenging climate of Jamestown, North Dakota. In the past decade, Alan has planted 7,000 trees on their 25-acre property, all by hand. "Gardening as good exercise? You bet!" he says. "That's one of the reasons we enjoy it." Sargeant, 69, says he has no physical complaints. "If you keep in good shape, you tend to stay in good shape."

For those who rebel against the idea of formal exercise, gardening can literally be a lifesaver. "I had heart trouble six years ago and my cardiologist credits my continued success to a lot of outdoor activity," says gardener Bill Renner of Mead, Colorado. Renner, who is 68, appreciates the fact that his gardening activities keep him in shape so he doesn't have to "waste time running or exercising on machines."

STRENGTHENING THE BODY, CALMING THE MIND

Some gardeners, like Betty Smalley of Alexandria, Virginia, don't think of their outdoor work as exercise, but notice a benefit nonetheless. Smalley, a volunteer at the American Horticultural Society's River Farm headquarters, puts in about four hours of gardening four days a week. "I just like being outdoors, seeing what's surrounding me in nature," she says. "I feel refreshed, and better overall."

Dr. Benjamin Rush, the "father of American psychiatry," noticed this beneficial effect in his work with psychiatric patients at Friends Hospital in Philadelphia, Pennsylvania, in the early 1800s. Says Karin Fleming, a horticultural ther-



For Betty Smalley, a volunteer at the AHS's River Farm headquarters, gardening provides a satisfying encounter with the natural world and an overall feeling of wellness.

apist at the Bryn Mawr Rehab Hospital in Malvern, Pennsylvania, "Rush assigned various chores to his patients—gardening, working in the kitchen, maintenance projects. Over time, he noticed that those patients who worked in the garden were calmer and less agitated." Despite that insight, Fleming notes that horticultural therapy did not gain popularity until after the return of veterans from World War II.

"One of the main benefits of garden-

Resources

Activity Calorie Counter (allows you to estimate calories burned doing different kinds of exercises and garden tasks). www.primusweb.com/fitnesspartner/jumpsite/calculat.htm.

Circuit Training In The Garden— an Online Guide to a Garden Workout by Vicki Pierson. www.primusweb.com/fitnesspartner/library/activity/garden.htm.

Feldenkrais: Bodywork and Movement and the **Effortless Gardening** video and audio cassette. www.feldenkrais.com and www.effortlessgardening.com.

Fitness the Dynamic Gardening Way by Jeffrey P. Restuccio, Publishers Distribution Service, Traverse City, Michigan. 1992. www.ritecode.com/aerobicgardening.

"Influence of Yard Work and Weight Training on Bone Mineral Density Among Older U.S. Women" by Turner, L.W., Bass, M.A., Ting, L., & Brown, B., *Journal of Women and Aging*, 14, 139–148, 2002.

"Gardening is Really Good Exercise." Virginia Tech Cooperative Extension publication. www.ext.vt.edu/departments/envirohort/articles/misc/exercise.html.

Stretching by Bob Anderson. Shelter Publications, Bolinas, California, 1975. (A DVD and video of the same name is also available.)

ing as therapy," says Fleming, "is there is a purpose to it. Patients can either be in a room, putting pegs into holes, or they can be planting seedlings. The motor skills are the same, but one activity is productive while the other is meaningless."

NO PAIN, NO GAIN?

From a distance, gardening is like sailboat racing: it looks effortless. But as any gardener knows, this "leisure" activity

can be quite strenuous, especially when digging, turning compost, or operating a roto-tiller. Even raking—where the body remains relatively stationary—can elevate one’s heart rate. The flip side of this is that even less strenuous activities can cause discomfort or injury if done improperly or for too long. The key is to work slowly and steadily, and avoid overusing any one muscle group.

The term “no pain, no gain” may be relevant for athletes, but muscle soreness should not be seen as a good benchmark for a garden workout. Instead, it probably indicates that you did not stretch adequately or that you spent too long working one particular muscle group. “Each fall, we get a lot of people in our office from raking leaves,” says Jane T. Reinsch, a physical therapist based in Windsor, Connecticut. “Instead of doing

Vigorous garden tasks such as spreading mulch, top right, and pushing a lawn mower, bottom right, can provide an aerobic workout, but be sure to stretch beforehand and take regular breaks, especially during hot weather.

their lawn a portion at a time, they’ll rake for eight hours, then come to see me because they’re hurting.”

Acknowledging gardening as a “legitimate” form of healthful exercise may offer the side benefit of making gardeners aware that proper warm-up and stretching—as well as pacing themselves and not trying to do too much at one time—are important to protecting themselves from injury and will keep them “in the game” much longer. The goal is to feel pleasantly fatigued but not sore or overly stiff.

To protect muscles, health professionals recommend starting off with some basic stretches that address the main muscles you’ll be using. To get the maximum benefits of fresh air and exposure to the calming influence of plants, take a yoga mat or old blanket outside and do the stretching in your garden, advises Jeffrey Restuccio of Cordova, Tennessee, who is author of *Fitness the Dynamic Gardening Way* (see “Resources,” page 27). “You should also stretch again at the end, just before a ‘cool down’ session,” Restuccio says. It doesn’t have to take long. Just five minutes or so of good stretching before



TOP: SAXON HOLT. BOTTOM: SUSAN A. ROTH

and after engaging in gardening will make a difference.

It also helps to start slowly once you go out to your garden. For example, begin by walking around your property and taking a mental inventory of the chores that need attention. By stopping to pick up sticks or other debris as you go, you can add stretching to your warm-up walk. This is Alan Sargeant's approach. "I don't do any specific warm-up," he says, "but I'll walk around first, get inspired, and then get working."

PAYING ATTENTION TO THE GARDENER

Just because you stretch before and after gardening doesn't mean you're home free, however. "It's important to be aware of how you are using your body," says Miriam Levenson of Ghent, Belgium. "If something hurts, pay attention!"

Levenson is a practitioner of Feldenkrais, a methodology that analyzes the way movement affects how people function. Her advice is to discontinue the activity or find another way to accomplish the task. For instance, if kneeling on the ground hurts or is uncomfortable, use a garden seat. Rotate among various activities so that you alternate between kneeling and standing and use different muscle groups: pruning, weeding, hoeing, raking, digging, dead-heading, refilling bird feeders, applying mulch, turning compost.

Levenson adds, "If people listen to their bodies and pay attention to how they are moving, most aches and pains from gardening can be avoided." She notes that as with any exercise, staying hydrated is also important.

Physical complaints from gardening were so prevalent among her clients that Levenson developed a program titled "Effortless Gardening," which shows specific exercises and practices that help to keep the body healthy and pain-free during and after gardening. One of the

BURN CALORIES WHILE YOU GARDEN

The following chart shows calories burned per half-hour of some of the most common gardening activities, along with comparisons with other exercise activities. These are estimates; the actual number of calories burned depends on body weight and the intensity of the activity.

If you want to turn up the octane on your gardening workout to burn additional calories or target muscles such as the abdominals that are not called upon as much in gardening, check out Jeffrey Restuccio's book, *Fitness the Dynamic Gardening Way* (see "Resources" on page 27).

Activity	Calories burned per half-hour
Watering lawn/garden	50–60
Walking while applying fertilizer or seeding lawn; riding mower	85
Gathering garden tools; picking fruits, vegetables, flowers [Home carpentry, bowling]	105
Weeding/cultivating garden; planting seedlings; raking, bagging leaves; trimming trees/shrubs with manual cutter [Doubles tennis, golf (carrying clubs), walking 4 mph]	150–180
Spading; tilling; walking with mower; using chain saw [Jogging, basketball, shoveling snow, swimming]	210–240

first things Levenson has gardeners do is to find their hips.

"Put your hands in your pockets, and then lift up one leg," she instructs. "That's your hip. Right there, where your fingers meet the crease at the top of your leg. And that's where you need to bend." Learning this one proper movement, says Levenson, immediately takes strain off the lower back.

Switching gardening tasks regularly, working both sides of the body, and slightly exaggerating the motion to make the activity more aerobic is also the advice of Restuccio, whose background in martial arts shaped his approach to gardening. "I analyzed the motions you make while gardening and came up with

a methodology that everyone can use," he says. "The idea is to alternate your stance when raking or doing other tasks, to bend from your knees rather than using your back, and to switch tasks regularly. From an exercise standpoint, this reduces the stress on your back, balances the muscles used, and reduces the risk of repetitive motion injuries."

To avoid fatigue or burnout, Restuccio advises keeping gardening sessions to no more than a couple of hours at a time. "Even if you have a small garden," he says, "you can work it purposefully for an hour or two at least three times a week." For Restuccio, gardening is a win-win situation, where you can accomplish a needed task while also getting a workout. "You can look at it as exercising to garden, or as gardening to exercise."

Restuccio sees gardening also as a way to get kids more active. "If we can only get this idea of aerobic gardening into school programs, we've got the solution for obesity," he says.

DO WHAT YOU LOVE. THE HEALTH BENEFITS WILL FOLLOW

For centuries, people have enjoyed a variety of "harvests" from their gardens. In addition

to fruits and vegetables, gardeners have reaped beauty, tranquility, optimism, wonder, and feelings of accomplishment. As if this weren't enough, gardeners now know that the activity they already enjoy is good for them in more tangible ways as well—protecting them from a host of medical conditions, and providing a better quality of overall physical health and well-being.

So go ahead—step outside your door and enjoy everything your garden has to offer. Trust me, you won't even know you are exercising!

Pamela Baxter writes a garden column for the Daily Local News in West Chester, Pennsylvania.

Ornamental Edibles

BY JANET DAVIS

Some edible plants are just too beautiful to relegate to the vegetable garden. Here are some tips for integrating vegetables, herbs, and fruits into your landscape.

DO YOU love garden-fresh vegetables and herbs, but own a property that seems too small to devote exclusive space to their needs? Are you fond of fruit and berries, but not ready to give up your sunny flower beds in order to grow them?

The good news is that many vegetables, herbs, and fruits don't need to be segregated in a suburban-style vegetable plot. Even in a small city garden, tomatoes and turnips are content growing alongside peonies and petunias, provided they receive sunshine and a little timely attention. Besides, many edibles are as beautiful as they are nutritious, so it's a shame to hide them away in what a friend of mine calls "vegetable prisons" when they can contribute their own charm to an informal border.

Another good option for city or patio gardeners is to grow some vegetables and herbs in containers or window boxes where they can be both decorative and readily available for harvesting when you need some fresh herbs to season a dish or a few cherry tomatoes for a salad. A half whiskey barrel can support a surprising variety of vegetables and herbs, and there are a number of self-contained growing systems—such as the EarthBox™—on the market that are ideal for raising veggies in a small space.

'Bright Lights Yellow' Swiss chard (*Beta vulgaris* subsp. *cicla* var. *flavescens*) is a beautiful centerpiece in this large container planting. Its translucent yellow-orange stems are echoed here in the bright hues of the chrysanthemums, petunias, and miniature peppers surrounding it, while the crinkled leaves provide an intriguing textural contrast to the variegated ornamental grass behind. The ornamental cabbage, while not usually grown as a vegetable, is also edible.





Some edibles have dramatically-colored leaves that rival any hosta or coleus. The reddish-black foliage of 'Bull's Blood' beet contrasts nicely with other ornamental foliage plants such as chartreuse sweet potato vine (*Ipomoea batatas* 'Margarita') and spiky New Zealand flax (*Phormium* 'Maori Maiden'). Nasturtiums, with their edible flowers, make colorful fillers.

ASSIMILATING EDIBLES

While medieval monastery gardens and ornate potagers such as France's Château Villandry provide the inspiration for using vegetables as ornamentals, today's gardener is less concerned about geometry and decoration and more interested in functionality and integration. In other words, how can edibles be assimilated into a mixed border?

The solution is to consider their requirements for soil, moisture, temperature, and sunshine, then match them with perennials, annuals (including edible flowers such as pansies, nasturtiums, and calendula), shrubs, and vines that share those cultural needs. As to functionality, food crops are meant to be eaten when they're ripe, so mixing edibles with ornamentals might mean the gardener must plug in some annuals in the border come harvest time or overlook a few bare spots.

Finally, as with traditional vegetable plots, it's important to remember the basic rules for crop rotation. Vegetables from the same family (tomatoes and potatoes are both in the nightshade family, for instance) should be planted in different locations from season to season to reduce the risk of diseases and insect pests.

COMBINATION IDEAS

There are so many possibilities for mixing edibles with ornamentals. Here are a few of my favorites:

- Salad greens such as leaf lettuce, mesclun, and spinach are easy to grow in rich, moist soil and make decorative front-of-border plants or leafy fillers between low perennials and annual flowers. Their preference for cool growing temperatures means they're best seeded in early spring for summer harvest and late summer for fall picking. Sow them with seeds of hardy annuals that also enjoy cool weather, such as poppies (*Papaver* spp.), larkspur (*Consolida ajacis*), and bachelor buttons (*Centaurea* spp.). Pansies and forget-me-nots (*Myosotis* spp.) also look lovely growing with salad greens.


- The leaves of alliums such as onions, garlic, chives, and leeks add a vertical or fountain-shaped accent to the garden that's equal to any ornamental grass. Think of pairing the zingy flowerheads of garlic chives (*Allium tuberosum*) with sturdy perennials such as purple coneflower (*Echinacea purpurea*) or garden phlox (*Phlox paniculata*).

- In warm-region gardens, try New Zealand spinach (*Tetragonia tetragonioides*), a tasty and nutritious green that is heat-tolerant and can be used as a front-

of-border groundcover. Southern gardeners can add intrigue to their borders with okra (*Abelmoschus esculentus*), a striking hibiscus relative that has attractive yellow flowers. Cultivars such as 'Burgundy' have the added benefit of decorative red seedpods that are almost too beautiful to eat.

- Vining tomatoes and runner beans can be eye-catching when grown on artful tripods or trellises. But they're even more beautiful in the company of an annual vine such as 'Heavenly Blue' morning glory, hyacinth bean (*Lablab purpureus*), or delicate canary creeper (*Tropaeolum speciosum*).

- Berried shrubs such as black currants (*Ribes* spp.), gooseberry, and Saskatoon berry (*Amelanchier alnifolia*) bloom alongside forsythias, lilacs, and spireas while lending structure to a border's all-season "bones." But they also provide a bounty of tasty fruit for jams and pies in late summer. Non-running fruits like these are better companions for a mixed border than raspberries, which will try to claim more space.

There are additional ideas for plant combinations on the following pages. Feel free to experiment and enjoy. 

Janet Davis is a freelance garden writer and photographer based in Toronto, Ontario.



As hot peppers mature from green to red, their ornamental value is kicked up a notch. Here, they provide a bold addition to late summer-flowering gloriosa daisies (*Rudbeckia hirta*) and mealycup sage (*Salvia farinacea*).

Herbs often have attractive flowers and leaves that look right at home in an ornamental border, and because you usually only need a little at a time for cooking or garnish, it is easy to pinch a few sprigs without affecting how they look. Sedums such as 'Meteor' or creeping 'Angelina' are good companions for edible sages (*Salvia officinalis*), especially those with colorful foliage like variegated 'Tricolor'. And pink-flowered thymes look delightful paired with creeping sedums such as gold-flowered *Sedum acre*.



TOP: ALAN AND LINDA DETRICK. BOTTOM: JANET DAVIS



With its dark, crinkled leaves and bold, statuesque presence, black Tuscan kale (*Brassica oleracea* 'Nero di Toscana') is enhanced in the border by a more ephemeral companion such as *Nicotiana mutabilis*, shown here, with its cloud of tiny pink-and-white blossoms. Considered one of the most nutritious vegetables, kale is a good source of beta-carotene and an excellent antioxidant.



Resources

All-In-One Garden: Grow Vegetables, Fruit, Herbs and Flowers in the Same Space by Graham Rice. Cassell Illustrated, London, United Kingdom, 2006.

The Complete Book of Edible Landscaping by Rosalind Creasy. Sierra Club Books, San Francisco, California, 1982.

The Complete Vegetable & Herb Gardener: A Guide to Growing Your Garden Organically by Karan Davis Cutler. Macmillan, New York, New York, 1997.

Herbs in Bloom: A Guide to Growing Herbs as Ornamental Plants by Jo Ann Gardner. Timber Press, Portland, Oregon, 1998.

Uncommon Fruits for Every Garden by Lee Reich. Timber Press, Portland, Oregon, 2004.

If you have a small garden, consider growing edibles such as cherry tomatoes, herbs, and salad greens in decorative containers on your patio where they are handy for harvesting. One of the advantages of growing in containers is that they can be moved around into optimal sunshine or shade as needed.



The compact habit of dwarf fruit trees such as the apple seen above makes them suitable for the rear of large borders. Be sure to give them lots of air circulation and leave a little room to provide access for pruning and harvesting. Another option for fruit trees is to espalier them against a sunny wall or fence.

Herbs can be every bit as beautiful as other flowering plants. In this fragrant combination, tall bronze fennel (*Foeniculum vulgare* var. *dulce* 'Atropurpureum') forms the background for white- and purple-flowered anise hyssop (*Agastache foeniculum*), a perennial whose leaves make a delicious tea. At the bottom is borage (*Borago officinalis*) with its edible, sky-blue flowers. Trimming herbs like these regularly will keep them bushy.



Beguiling Bellflowers

If you like campanulas, you will enjoy growing some of their charming and lesser known relatives in the bellflower family.

BY RAND B. LEE

ONLY ANOTHER plant nut would understand this, but some years ago, I conceived the mad notion of growing every bellflower species in the world. Then I did a little research—and quailed. For most of us, the name bellflower brings to mind the genus *Campanula*. Yet it turns out that the bellflower family (Campanulaceae) also contains 85 or so lesser-known genera distributed widely among both temperate and tropical regions. Taken together, these genera comprise well over 1,000 upright or climbing annuals, biennials, perennials, shrubs, and trees—far too many wonderful plants for anybody to grow in one garden, and far too many plants to cover in the scope of one article.

Because the true bellflowers have been well covered in other articles, I want to focus here on a few of my favorite *Campanula* relatives that I feel are undeservedly overshadowed by their more famous cousins. Most of the plants described here are suited to the mixed perennial border, but a few are best relegated to the rockery (I have reserved the rock garden types—along with a couple of tender exotics—for the chart on page 39.) The one *Campanula* relative I have omitted entirely is the genus *Lobelia*, which is so large and important that it merits its own article; look for that in a future issue.

FAMILY TRAITS

When exploring a plant family for the first time, I always ask myself, “What do the members have in common?” Most bell-

flowers possess a milky sap, which oozes out alarmingly when you pinch off a bud or branchlet; simple leaves that alternate up their stems; and bisexual, usually scentless flowers in which the petals have fused to create the five-lobed corollas that give bellflowers their name and charm. And



Balloon flower (*Platycodon grandiflorus*) is one of the better-known bellflower relatives.

while the blossoms are usually blue leaning toward lavender, bellflowers can also be white, lilac, pink, cream, true blue, or ruby. Some forms bear double blossoms.

Not all bellflowers have bell-like blossoms. The buds of *Platycodon* resemble unpopped balloons. The blooms of *Tra-*

chelium are clustered in rounded plates, like those of Queen Anne’s lace. The flowers of *Jasione* and *Phyteuma* appear as little clustered balls of blue. The flowers of what I call the *Isotoma-Laurentia-Pratia-Solenopsis* complex (because a complex is what you get trying to sort out the differences in these extremely similar genera) are exceedingly minute stars.

LADYBELLS

The ladybells or gland bellflowers (*Adenophora* spp.) look so much like true bellflowers that you can only really tell them apart from campanulas by dissecting one of the blossoms: If you find a cup-shaped or tubular disk around the base of the style, you’ve got an *Adenophora*. There are around 40 species in the genus, all possessed of fleshy, division-resenting roots (which is why they are almost always propagated from seed). Most are native to Asia, and while their long-livedness and readiness to set and spread from seed has given them a reputation for being mildly invasive, I have not found them so.

The first *Campanula* relative I ever grew was the lilyleaf ladybell, *Adenophora liliifolia* (syn. *A. liliiflora*, *A. fischeri*, USDA Zones 3–8, AHS Zones 7–1). It is a tough, drought-tolerant, heat-resistant perennial that got along famously (with supplemental water) in my Santa Fe garden. It gets 18 inches tall by about a foot wide, with longish, narrow, pointed, lilylike leaves and upright spikes of nodding, bell-shaped, lavender-blue flowers much of the summer if deadheaded.



Shown here growing with white lilies, *Adenophora liliifolia* makes an excellent, long-lasting cut flower. It is also fragrant—an unusual trait for a member of the bellflower family.

A. bulleyana (Zones 4–8, 8–1) is noteworthy not only for its 40-inch summer spikes of one-half to three-quarter-inch soft lavender-blue bells (often held in groups of three), but also for its serrated, willowy foliage, which is flushed an exquisite reddish-gold in spring to early summer. *Adenophora* ‘Amethyst’ (Zones 2–9, 9–1), a hybrid, bears large, nodding, purplish blue flowers in early to midsummer, arranged in pleasing symmetry around its three-foot stems. *A. remotiflora* (Zones 5–8, 8–1) makes three-foot-by-two-foot clumps, with long oval leaves to eight inches and large, drooping panicles of many bell-shaped, bluish flowers an inch or more wide. ‘Alba’ is a white-flowered cultivar. *A. triphylla* (syn. *A. verticillata*, Zones 7–9, 9–1) is a native of moist, acidic woodlands, standing up to three feet tall, with four-inch leaves usually held in whorls of four; its loose, stem-encircling clusters of hanging pale blue to violet blossoms appear from July to October.

ASYNEUMAS

The asyneumas (*Asyneuma* spp.) are another bellflower genus strangely underused in American gardens. The 50-odd perennial or biennial

species in the genus are native to southern Europe. All possess undivided leaves and rather lax flower spikes studded with starry, very deeply lobed blossoms in summer.

Asyneuma campanuloides (Zones 5–8, 8–1), native to the Caucasus Mountains, bears two-foot spikes of dark violet to blue flowers. *A. limonifolium* (Zones 6–8, 8–6) is interesting for its seven-inch-wide basal clumps of egg-shaped, wavy-edged leaves, from which arise 16-inch to three-foot



Phyteuma spicatum (Zones 5–9, 9–5), the spiked rampion, is perhaps the most upright species. The leaves composing its one-foot-wide basal clumps are oval to heart-shaped, double-toothed, and one to two inches wide. Its white, cream, or (occasionally) blue flowers, which are narrowly bracted, are held in densely clothed, one- to two-and-one-half-foot scepters in summer.

Phyteuma scheuchzeri (Zones 5–7, 7–1) is a long-lived shade lover from the Alps. It makes one-foot wide clumps of rather handsome, lance-like basal leaves, from which arise in summer thin, lolling, six- to 18-inch stems topped with one-inch, ball-like, dark violet-blue flower clusters. The roundheaded rampion, *P. orbiculare* (Zones 6–9, 9–6), is native to dry European grasslands. In summer, its clumps of four-inch, serrated, lancelike to heart-shaped leaves sport upright, 20-inch spikes ending in pointy-bracted, dense, globular clusters of dark blue to violet flowers. *P. ni-*

Providing a vertical accent with its tall spikes of summer flowers, *Asyneuma canescens* also bears soft-textured, silver-gray leaves.

spikes densely clothed with violet bells.

A. canescens (Zones 6–8, 8–6) from Greece has furry, silvery-gray foliage and branching, 32-inch spikes of small pale lilac flowers in summer. I adore furry plants and I want this one very much, perhaps interplanted (in the interests of global harmony) with *A. michauxioides* (Zones 6–8, 8–6), a variably hairy three-foot Turkish species whose dangling bells are pale blue to azure. All four of these *Asyneuma* species are perennials.

HORNED RAMPIONS AND JASIONE

Closely related to the asyneumas are the horned rampions (*Phyteuma* spp.), a genus of around 40 perennial species with spikes or heads of small white, cream, blue, or violet blossoms. Their “horns” are derived from the prominent, narrow, pointed bracts that surround their flowers and from the odd tendency of some of their blossoms to join at their petal-tips. Their lax stems and numerous flowers create a pleasant blue mist.

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Providing a vertical accent with its tall spikes of summer flowers, *Asyneuma canescens* also bears soft-textured, silver-gray leaves.

Sources

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www.alplains.com. Catalog \$2. (Seeds only)

André Viette Farm and Nursery, Fishersville, VA.
(540) 943-2315. www.viette.com. Catalog online.

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

Gardens North, Ontario, Canada. (613) 489-0065.
www.gardensnorth.com. Catalog \$4. (Seeds only)

Jelitto Perennial Seeds, Louisville, KY. (502) 895-0807.
www.jelitto.com. Catalog online. (Seeds only)

J.L. Hudson, Seedsman, La Honda, CA.
www.jlhudsonseeds.net. Catalog online. (Seeds only)

Thompson & Morgan, Jackson, NJ. (800) 274-7333.
www.thompson-morgan.com. Catalog online. (Seeds only)

Resources

Dwarf Campanulas and Associated Genera by Graham Nicholls. Timber Press, Portland, OR, 2006.

grum (Zones 6–9, 9–6) is an upright 10- to 20-inch-tall species from central Europe. Its lower leaves are bluntly heart-shaped, about two inches long, and its distinctive blossoms are pointy-bracted, curving dramatically in bud, and opening to a very dark, nearly black violet.

Another lovely ball-like belle is *Jasione laevis* (Zones 5–9, 8–6), the sheep's bit scabious (syn. *Jasione perennis*, *J. pyrenaica*), which bears its spherical heads of



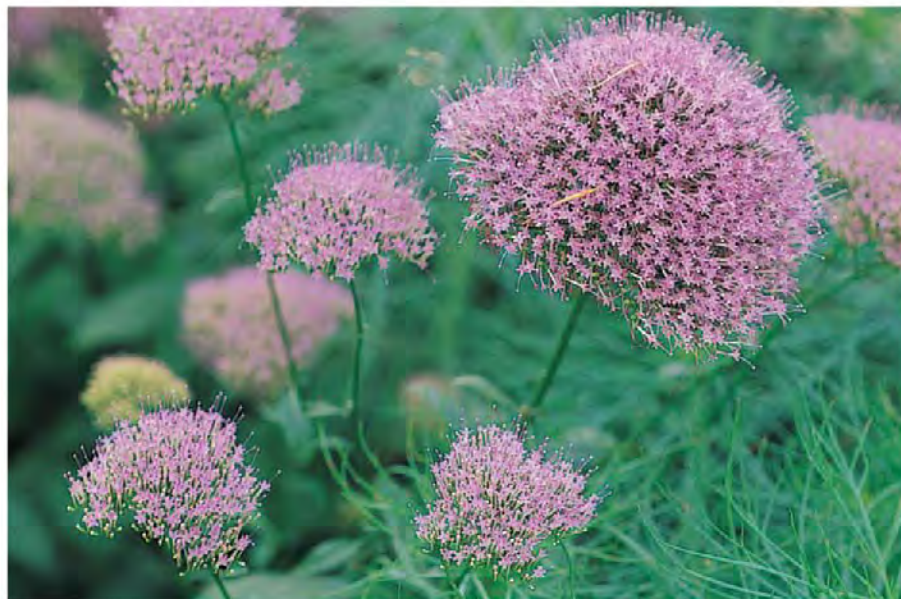
The ball-shaped flower clusters of *Jasione laevis*, above, appear in summer. Right: *Phyteuma scheuchzeri* thrives in shade in well-drained, neutral to alkaline soil.

tiny, bright blue blossoms atop 10-inch to two-foot stems in summer. It grows best in a well-drained, alkaline soil in full sun. 'Blue Light' is the azure-blue seed strain most often encountered.

BALLOON FLOWER

Chinese bellflower (*Platycodon grandiflorus*, Zones 4–9, 9–1), the only member





Although plants of *Symphandra hoffmannii*, left, are short-lived, deadheading the spent flowers, which last from midsummer to early fall, can help extend their life. The long-stemmed flowers of *Trachelium caeruleum*, above, are excellent for bouquets.

of its genus, is better known by its old-fashioned name of balloon flower. Native to hilly regions of Korea, eastern Siberia, and northern China, where it is cultivated for medicinal purposes, Chinese bellflower's thick roots sprout 16- to 40-inch stems clothed with pointed, oval, green leaves. They are topped late summer to early fall with large bluish, white, or pink five-lobed bells opening from nearly spherical buds. Very drought tolerant once established, balloon flower grows best in sandy or well-drained soils. The plants die back completely in the winter and are late to come up in spring, so it's best to mark their spot to avoid inadvertently digging them up.

Taller forms may still be found, though they seem in danger of becoming superseded by what I consider nasty little dwarf sorts. The 'Fuji' series, a Japanese strain, makes two- to two-and-a-half-foot-tall plants sporting two-and-a-half-inch blue, white, or pink flowers. 'Hakone Double Blue' bears delightful double violet bells on two- to two-and-a-half-foot plants. A cultivar 'Albus' (sometimes listed as a variety) bears large white flowers on two-foot plants. 'Mariesii' is a nice single blue that stands a little shorter, to 16 inches. 'Perlmütterschale' (Mother-of-Pearl) is a seed strain that produces exquisite flowers of palest pink on spikes to two feet.

And then there are dwarfs, many of which were developed for use as pot plants

but which also might look good in a rock garden. If you want to go this route, try the 'Apoyama' strain, to 10 inches, or 'Sentimental Blue', to eight inches.

RING BELLFLOWERS

Symphandra, the Eurasian ring bellflowers, includes several handsome upright species. *Symphandra hoffmannii* (Zones 4–8, 7–1) is a furry, drought-tolerant, thick-rooted Bosnian native bearing pendulous, one-and-one-half-inch-long by one-inch-wide, white, cream, or pale yellow bells on two-foot, lance-leaved spikes from July onwards. It needs good



The twining stems of *Codonopsis clematidea* will scramble among shrubs or cascade over a wall, producing late-season blooms.

drainage. *S. pendula* (Zones 5–8, 9–6), a closely related perennial species from the Caucasus region, differs in its more highly felted, sometimes heart-shaped leaves and uniformly cream blossoms. *S. armena* (Zones 7–9, 9–7) bears hundreds of nodding violet bells on 12- to 15-inch stems in summer. A short-lived perennial, it self-sows easily. Deadhead them regularly to prevent them from setting seed. All ring bellflowers dislike hot, humid summers.

CODONOPSIS

The genus *Codonopsis*, which I had always associated with scrambly climbers, turns out to contain several upright bellflowers, too. *Codonopsis clematidea* (Zones 5–9, 9–7) is native to rocky, mountainous Asian grasslands. In mid- to late summer, it raises two- to four-foot rather sprawly stems adorned with large, rounded bells, pale blue on the outside, marked within by maroon bands, darker blue veins, and orange basal blotches. Hairy little *C. ovata*, a Himalayan native (Zones 5–9, 9–7), is more dependably upright, making one-foot wide clumps of small oval leaves and raising in summer one- to two-foot spikes of pendulous pale blue bells marked dark blue or purple within.

THROATWORTS

Throatworts (*Trachelium* spp.) are so-called from the plants' supposed ancient

MORE BELLFLOWER RELATIVES

Botanical/ Common Name	Height	Characteristics and Bloom Time	Origin	USDA Hardiness, Heat Zones
<i>Canarina canariensis</i> (bicacaro)	10 ft.	vining perennial; succulent, reddish stems, arrowlike leaves, large, bell-shaped yellow to orange-red flowers with dark veins; summer	Canary Islands	9–11, 12–8
<i>Codonopsis pilosula</i> (tang shen)	5 ft.	hardy vine with hairy leaves, large pale blue to greenish flowers, flushed purple at base; summer	northeast Asia	7–9, 9–7
<i>Cyananthus lobatus</i> (trailing bellflower)	4–10 in.	fleshy perennial with deeply lobed leaves; bright purple to blue funnellike flowers, hairy within; summer	Asia	5–8, 8–5
<i>Downingia cuspidata</i> (toothed calicoflower)	3–10 in.	upright tender annual with fleshy, narrow leaves and pale purple-blue, two-lipped flowers; blotched white and yellow; summer	western U.S.	8–11, 12–8
<i>Edraianthus graminifolius</i> (grassy bells)	2–8 in.	perennial with narrow, downy leaves in rosettes; bright blue to violet funnel-shaped flowers in globular clusters; May to July	eastern Europe	5–8, 8–5
<i>Edraianthus pumilio</i>	2 in.	perennial with spiny, silvery haired leaves; large lilac to blue flowers; early summer	Croatia	6–8, 8–6
<i>Jasione crispa</i> (sheep's bit)	2 in.	perennial with furry, narrow leaves; blue flowers, in clusters, with narrow, oval, serrated bracts; summer	southeastern Europe	6–8, 8–6
<i>Legousia speculum-veneris</i> syn. <i>Specularia speculum-veneris</i> (Venus's looking-glass)	1 ft.	hardy annual with narrow leaves; violet, white, or mauve flowers with back-curving sepals; early summer to fall	Mediterranean, Middle East	6–9, 9–7
<i>Michauxia campanuloides</i> (rough-leaved michauxia)	5–6 ft.	biennial with feathery lancelike leaves; large white, purple-tinged wheel-shaped flowers with reflexed lobes and prominent, fuzzy styles; summer	eastern Mediterranean	7–9, 9–7
<i>Ostrowskia magnifica</i> (giant bellflower)	5 ft.	tender perennial with narrow, oval blue-green leaves; milky blue, bell-shaped flowers on terminal racemes; summer	central Asia	7–8, 8–7
<i>Pratia pedunculata</i> 'Country Park' syn. <i>Lobelia pedunculata</i>	1 in.	mat-forming perennial spreads to a foot; small oval leaves; tiny, starry, blue, scented flowers; late spring to fall	Australia	5–8, 8–5
<i>Solenopsis axillaris</i> syn. <i>Isotoma axillaris</i> (bluestar creeper)	6 in.	tender perennial with oval feathery leaves; pale to deep blue flowers, with long, narrow lobes; spring to fall	Australia	9–11, 8–5
<i>Wahlenbergia albomarginata</i> (rock bell)	1 in.	tender perennial with tufted rosettes of blue-green leaves; white to pale blue flowers; summer	New Zealand	7–9, 9–6

use against tracheal diseases. The florets are composed of five, exceedingly tiny, spreading lobes, just like the big bellflowers. The overall effect is not bellish, however, but Queen Anne's lace-ish, making it useful for the cutting garden.


The blue throatwort (*T. caeruleum*, Zones 8–12, 12–1), is currently in vogue as a florist's plant. It forms three- to four-foot-by-two-foot clumps of pointed, serrated, narrow, three-inch leaves. The somewhat rangy, narrow stems bear terminal flower clusters of lavender-blue, purple, or white. The 'Devotion' Series is my favorite strain;

'Devotion Purple' is particularly stunning, bearing dark-stemmed clusters of richest burgundy-violet on two-foot plants. While hardy only to USDA Zone 8, blue throatwort can be grown as an annual (it will flower the first year from seed), yielding lots of stems for summer bouquets.

COMPANIONS

For perennial border beauty, you can't beat the bellflower cousins, many of which tend to be more drought tolerant than the true campanulas. I like them partnered with the tallish, late- and long-

blooming *Dianthus* 'Rose de Mai'; the low-growing baby's breath, *Gypsophila* 'Kermesina'; *Gaillardia* *× grandiflora* 'Goldkobold' (syn. Golden Goblin) and its cousin 'Burgunder' (Burgundy).

I urge tropicals lovers and rock gardeners to also explore some of the rarer genera listed in the chart. But don't blame me if you get hooked. Ask not for whom the bellflower tolls: It tolls for thee. 

A frequent contributor to The American Gardener, Rand Lee bosses perennials around at a nursery in Santa Fe, New Mexico.



the Ash's Bane

BY JO ELLEN MEYERS SHARP

The growing threat of the emerald ash borer endangers America's ash trees—with potentially dire economic and ecological consequences.

IN FEWER than five years, an exotic insect the size of a grain of rice has felled more than 30 million ash (*Fraxinus* spp.) trees in the United States and Canada, driven dozens of scientists on a search for effective, affordable controls, and forced homeowners, municipalities, landscapers, and developers to seek out planting substitutes.

A hitchhiker in wood packaging materials from Asia, the emerald ash borer (*Agrilus planipennis*) was first detected in Detroit in July 2002. Since then the fast spreading metallic green beetle and its skinny white larvae have caused an environmental nightmare by devastating the urban canopy in hundreds of communities in Michigan, Ohio, Indiana, and Ontario, Canada.

Each month, there are reports of new infestations, most recently in Illinois. A shipment of infested trees also led to isolated outbreaks in Maryland and Virginia. Currently the USDA's Animal and Plant Health Inspection Service (APHIS) has imposed a federal quarantine on all ash trees and related products in the states of Illinois, Indiana, and Ohio, as well as the entire lower peninsula of Michigan.

The devastation associated with the emerald ash borer (EAB) eerily echoes that of previous imported arboreal epidemics such as chestnut blight and Dutch elm disease. If left unchecked, the pest poses a deadly threat to the nation's eight billion ash trees. Dave Bender, executive director of the Illinois Nurserymen's Association,



American ash trees, like this healthy one shown above, add stature and shade to any landscape. But our native ash species are now being threatened by an imported beetle.

notes that while comparing the ash borer's threat to these earlier disasters is still speculative, "it has the potential to be even more serious, as ash has been a 'perfect' tree for many to plant in various locations."

ECONOMIC AND ECOLOGICAL IMPACT

The 16 or so ash species native to the United States constitute about six percent of the nation's forests. Many

species—particularly the white ash (*Fraxinus americana*), green ash (*F. pennsylvanica*), and their cultivars—are also extensively planted as street, park, and landscape trees in the eastern United States and Canada because they are fast growing, sturdy, easily transplanted, and tolerant of urban sites. "Ash trees were widely planted throughout Michigan as well as the rest of the U. S. to replace the grand elm trees lost to Dutch elm disease," explains Angela Riess, EAB planning chief with the Michigan Department of Agriculture. Ironically, like the elms, avenues of ash trees are now being removed tree by tree.

"Here in southeast Michigan, we have really seen the devastation. Whole neighborhoods have lost ash trees," says Rebecca Salminen-Witt, president of the Greening of Detroit, a not-for-profit organiza-

tion that promotes reforestation projects in neighborhoods, parks, and boulevards. Ash trees have been removed from recommended urban tree planting lists in several states, says Salminen-Witt.

States and provinces bordering the infested regions are gearing up for the beetle's arrival by training arborists and municipal foresters to recognize signs of infestation and by planting trap or "sentinel" trees so that new infestations are detected early. At the University of Wisconsin in Madison, horticulturists are removing ash trees in poor health and replacing them with non susceptible species.

The spreading infestation is also having a significant economic impact. In hardwood forests, ash is harvested for building materials, garden tool handles, baseball bats, furniture, and other products. “With an estimated 130 million ash trees in the Illinois forest ecosystem, it is difficult to estimate the economic value that potentially could be lost—in the hundreds of millions, possibly more,” says Bender. And according to a recent survey, the loss to Illinois nurseries could be as much as \$100 million. Many nurseries in affected areas are scaling back production of ash trees and destroying excess inventory.



Left: Branch dieback, as shown in this stand of ash trees, is often the first indication of EAB infestation. Above: To be considered safe, infested ash trees must be reduced to chips of less than one inch.

DETECTION AND CONTROL ISSUES

In the case of other imported insect pests that have threatened America’s trees in the past few decades—such as the Asian long-horned beetle (*Anoplophora glabripennis*) and the gypsy moth (*Lymantria dispar*)—eradication, containment, or reduced spread has been achieved through early detection followed by the application of appropriate pesticides or biological controls.

An aggressive program of early detection, elimination of infested trees, followed by applications of pesticides on nearby, uninfested trees was effective in controlling the Asian long-horned beetle in Chicago and New York State. “The Asian long-horned beetle is a greater overall threat to the North American canopy because of its broad host range,” says Rex Bastian, vice president of field education and development at the Care of Trees, a national tree service company headquartered in Wheeling, Illinois. “However, the

emerald ash borers are more efficient at destroying the tree and they are running through the canopy much, much faster,” says Bastian.

The leaf-chomping caterpillar of the gypsy moth has ravaged woodlands, destroying dogwoods, oaks, aspens, and dozens of other species. Although repeated defoliation kills about 20 percent or more of trees in forests with a heavy concentration of gypsy moths, the moths respond to pheromone traps, which provide an efficient way to detect new infestations. Two biological pesticides have been effective in suppressing the gypsy moth. The U.S. Forest Service and other federal and state agencies have implemented a successful “slow the spread” campaign of integrated pest management in most affected states in the Northeast.

But the strategies used against the gypsy moth and the long-horned beetle have so far not adapted well to the emerald ash borer. Researchers have yet to identify pheromones that attract EABs; however, they have determined that EABs are attracted to volatile chemicals released by ash trees, as well as visual stimulants (the color purple). Efforts to develop effective traps and lures to aid detection continue.

In the meantime, “trap trees appear to be the best detection mechanism we have thus far,” says Ken Rauscher, director of the Pesticide and Plant Pest Management Division of the Michigan Department of Agriculture. These are ash trees that are set



A researcher sets traps to monitor the spread of emerald ash borer to uninfested areas.

out as “prey” to monitor for borer infestations. While trap trees are not ideal for large-scale use, they have been effective for monitoring the spread of EABs at isolated outbreak sites.

The EAB’s color, size, life cycle, and the speed with which it kills a tree complicate both detection and control. The adult beetle “is the size of a house fly. Three or four of them will fit on a penny,” says Robert Waltz, a member of the Emerald Ash Borer Science Advisory Panel, a USDA committee that advises on regulatory processes. Its D-shaped exit hole is a quarter the size of a No. 2 pencil eraser and very difficult to detect without hand inspection, says Waltz.

The adult beetle prefers to lay eggs in the upper third of the tree, where the insect often remains undetected until symptoms appear. Once the eggs hatch, the larvae bore into the cambium layer of the ash tree, creating serpentine tunnels that eventually girdle the tree, preventing nutrients from reaching the canopy. Symptoms of infestation are dieback of upper branches and sprouting of shoots from the area of the trunk below the girdling. Jagged holes caused by woodpeckers feeding on the larvae are also a sign of infestations. The tree often dies within three to five years of initial egg-laying.

QUARANTINE CONTAINS SPREAD

One of the first responses to an emerald ash borer sighting within a municipality is the quarantine of all ash products, including firewood, nursery stock, timber, and mulch larger than one-inch pieces.

A few instances of spread have been traced to contaminated trees shipped from nurseries. But the most serious risk



Tunneling below the bark by EAB larvae, above, prevents the flow of water and nutrients to the top of infested trees. Left: A larva chews its way through the cambium.

of infestation to new regions comes from people who cart contaminated firewood out of infested areas, spreading the insect much faster than its natural rate of spread. Transporting any hardwood firewood from EAB infested areas is against the law. Fines in Michigan for violating the EAB quarantine range from \$1,000 to \$250,000.

DESTROYING TREES

“Eradication of infested trees in isolated outbreak areas is a very good approach,” says Rauscher. “It is not cheap, but it really provides the only good eradication mechanism in areas such as Maryland.”

Maryland’s EAB outbreak originated from the illegal shipment of ash trees from a Michigan nursery in 2003. Approximately 1,000 ash trees in the area surrounding the outbreak were destroyed at the time. Before the infested trees were identified, several had been sold to a school in Virginia’s Fairfax County. These trees and others in the vicinity were also destroyed. In an attempt to track any beetles that might have escaped, sentinel trees were placed at dozens of locations around the two sites, including at the American Horticultural Society’s River Farm headquarters in Alexandria, Virginia.

In August 2006, just when state officials were beginning to hope the outbreak had been completely contained, EAB larvae were found in two sentinel trees near the site of the original infestation in Maryland. Removal of 25,000 ash trees began in January on 11,500 acres of developed and forested land.

CONTROLS

But destroying trees is not practical in areas where infestations have taken root. After spending millions on the destruction of ash trees within two miles of infested areas in the Midwest, officials have realized they don’t have the money to continue this method of control on such a wide scale. Priorities have shifted to stepping up the quarantine and research efforts to find effective controls.

Pesticides also have limited application because of the scope of the problem. Cur-

SAVING ASH TREE SEEDS

As a hedge against a worst-case scenario in which native ash tree populations are completely decimated by the emerald ash borer, the USDA’s Rose Lake Plant Materials Center in East Lansing, Michigan, has established the National Ash Tree Seed Collection Initiative. Under the initiative, seeds from various ash tree species and regional genotypes will be stored at the National Center for Genetic Resources Preservation, a USDA seed bank in Fort Collins, Colorado. If necessary, the stored seeds can be used as the genetic base to re-establish ash trees for future generations.

Volunteers are being sought to collect seed from ash trees throughout the United States. For more information on the initiative and how to identify and collect ash tree seeds, visit www.ashseed.org.

rently, imidacloprid (tradename Merit), marketed as Bayer Advanced Garden Tree & Shrub Insect Control, is the only approved insecticide for treatment of the emerald ash borer available to homeowners. This pesticide kills all boring insects on several kinds of trees. Timing is critical to the application of the insecticide, which is applied in spring as a soil drench or injected into the trunk.

The treatment is quite expensive, with cost estimates ranging from \$30 to \$200 per year per tree. Most state agencies are not recommending widespread use of pesticides by individual homeowners because,



“Sentinel” trees such as these placed in 2005 at the American Horticultural Society headquarters at River Farm in Alexandria, Virginia, currently provide one of the most reliable means for early detection of EAB introduction to new areas.

in many cases, it is more cost effective to replace individual trees if needed. “Only consider treating trees if you know there is an infestation within 20 miles or so,” says Rex Bastian of the Care of Trees.

The threat of emerald ash borer infestation has prompted town councils, tree boards, park departments, and other municipal and volunteer groups in affected regions to develop action plans. One of the most contentious issues for municipalities is getting consensus on treatment of ash trees on private land. “We’re looking at ash tree removal on public and private property as a remedy. The big discussion is what to do with ash trees on private property,” says village forester Jim Stier of Winnetka, Illinois, where the insect was discovered in

August 2006. (For tips on how to prepare your community for the threat of EAB infestation, see the web special linked to this article at www.ahs.org.)

RESEARCH AND OUTLOOK FOR THE FUTURE

The emerald ash borer is not a significant problem in Asia, where predatory insects or diseases have evolved along with it, helping to control populations. In a study conducted in Michigan in which different species of ash trees were exposed to the adult beetle, researchers found that Asian ash tree species had significantly fewer larvae than American ash trees, says ento-

mologist James Appleby of the Illinois Department of Natural Resources.

Appleby says the study offers an “indication that Asian ash species are more tolerant of emerald ash borer infestations than our native ash.” Researchers at the Ohio State University were recently awarded a grant to study the molecular biology of ash trees to see if the tolerance displayed by Asian species can be used in the struggle against the pest.

And entomologists at the U.S. Forest Service North Central Research Station in East Lansing, Michigan, are studying two parasitic wasps from China that may offer future options for biological control.

Because of the emerald ash borer’s widespread distribution, Robert Haack, ento-

Resources

Emerald Ash Borer,
www.emeraldashborer.info.

■ Developed through a partnership between various federal and state agencies and universities, this website contains helpful news and information about EABs, including a Michigan State University Extension Service Bulletin E-2925 that suggests replacements for ash trees.

Ohio State University Extension Fact Sheet: “Insecticide Options for Protecting Ash Trees from Emerald Ash Borer and Their Effectiveness” (HYG-2051-06), <http://ohioline.osu.edu/hyg-fact/2000/2051.html>.

Illinois Department of Agriculture Recommended Ash Tree Replacement List available at www.agr.state.il.us/Environment/Pest/northilreforestationlist.pdf.

USDA Forest Service,
www.na.fs.fed.us/fhp/eab.

mologist at the U.S. Forest Service Northern Research Station, doubts if complete eradication is possible. “But I hope that through education and compliance by the public to not move firewood and other potentially infested items, and the release of effective natural enemies, that the rate of EAB spread will be dramatically slowed and the impact lessened.”

“The emerald ash borer infestation has proven once again that overplanting and subsequent loss of a particular genus can have a dramatic impact on the urban and suburban landscape,” says Kerry Gray, emerald ash borer restoration coordinator with the Michigan Department of Natural Resources. “Our advice to communities and homeowners is to plant a variety of trees to minimize the impact that a particular insect or disease may have on your landscape.”

Jo Ellen Meyers Sharp is a freelance garden writer and photographer based in Indianapolis, Indiana. She is co-author of The Indiana Gardener’s Guide (2004).

Diane Relf: Promoting the Healing Power of Plants

by Doreen Howard

MORE THAN 25 YEARS AGO, Diane Relf, now professor emeritus in the Department of Horticulture at Virginia Tech in Blacksburg, Virginia, wrote that gardening is perhaps one of the oldest healing arts; yet, as a science, it is very new among therapeutic professions. She's made it her life's mission to champion horticultural therapy and communicate the positive effects that plants have on people. The People-Plant Council, an affiliation of horticulture-related organizations that Relf founded in 1991, focuses on the psychological, sociological, physiological, economic, and environmental impact of plants on people in schools, prisons, medical facilities, the workplace, and homes. Relf currently consults and lectures about the therapeutic value of plants. Most recently, she worked with community gardens in New Zealand.



Garden writer Doreen Howard talked to Relf about using the power of plants to improve human life at all levels.

Doreen Howard: How did your passion for promoting the people-plant connection come about?

Diane Relf: My first-grade teacher had a table-top garden in the classroom that initiated my interest in ways plants could be grown. Later, in high school, when I was writing a paper on terrariums, I interviewed a woman who taught children in a hospital how to build them. She didn't have answers to all their questions, so my paper focused on answering those questions. That sparked my curiosity about how plants can help people heal and learn.

What is horticultural therapy?

It's using plants in a treatment program to promote mental and physical well-being in people. Therapeutic benefits occur when people are placed in a plant-filled environment or when they take part in planting, growing, and caring for plants.

Horticultural therapy also teaches vocational skills that can be applied in many work settings. Some programs connected with social agencies such as homeless shelters and soup kitchens grow community food gardens for economically disadvantaged families. Participants in these programs gain self-esteem and a

rewarding sense of giving along with tending the gardens.

What is it about plants that makes people feel better?

The cycles of plant life play out in our view season after season. Seeing the constant process of renewal encourages positive responses and exerts a sense of calm to the distressed—people in severe pain, abuse victims, and those with mental problems or dementia.

For the mentally challenged, gardening is an activity that gives them a feeling of success and accomplishment.



Research shows that just being in the presence of plants promotes human health.

Could you tell us more about how horticultural therapy is being used today?

The most significant increase in the use of horticultural therapy is among the elderly. Many elderly people suffer from depression because they are housebound and have nothing to connect them to their communities. Just introducing plants in their environment has been shown to produce benefits such as lowering their blood pressure, prompting them to reach out to others, and even stimulating the memory of those with dementia or Alzheimer's. Alzheimer patients who are provided with landscaped settings also exhibit fewer violent outbursts than patients without interactions with plants.

With children, school gardens produce positive results, too. Kids who participate in gardening burn off some of the energy that builds up from sitting in a classroom. Behavior improves and there are fewer disruptive students.

It's important to note that you don't have to tend plants or "garden" to be positively affected. Studies have shown that just being in the presence of plants aids students with Attention Deficit Disorder (ADD), decreasing their symptoms. Similarly, landscaped roads and highways

result in a decrease in car speeds and accidents, and college students who live in dormitory rooms with views of gardens and natural settings show an increase in concentration over those without green views.

What needs to be done to encourage awareness of and opportunities for people-plant interactions in society?

In the long run, a change in priorities has to take place in the political and long-range planning arenas. City leaders and elected officials can't continue to put cars first! Plants have the potential to alleviate a host of social problems. Creating green spaces in inner cities, for example, has been linked to a reduction in the incidence of crime, littering, and prostitution. Plants can also play a part in addressing urban environmental concerns such as wastewater treatment, stormwater management, and removing carbon from the atmosphere.

Some cities are already recognizing how plants can improve urban life. Chicago is a good example: Mayor

For More Information

American Horticultural Therapy Association, Denver, CO.
(303) 322-2482. www.ahta.org.

People-Plant Council,
www.hort.vt.edu/human/PPC.html.

Richard Daley's initiative to plant rooftop gardens on city buildings and install flowers, shrubs, and trees in street medians is already paying off in lowering inner city temperatures during the summer, which, in turn, reduces cooling costs for buildings. There has also been an increase in commerce in retail areas because residents linger longer in the lushly planted settings.

How can people who don't have access to a yard or garden bring plants into their environment?

All you need is a windowsill or just a place to put a plant or two. Find plants that fit your lifestyle, job demands, and space.

Some plants require much more care than others, so choose those that match the time you're able to spend tending them. Also, make sure they will thrive in the amount of light available. If you have no natural light, use grow lights.

Incidentally, in addition to beautifying our surroundings, plants can improve indoor air quality by removing everyday pollutants such as formaldehyde and benzene, which are emitted by plastics, synthetic fibers, and the like. Dr. Bill Wolverton, who led the National Aeronautics and Space Administration's research on this subject for many years, found that in a controlled environment, common houseplants such as pothos (*Epipremnum aureum*) and airplane plant (*Chlorophytum comosum*) can remove up to 87 percent of indoor pollutants within 24 hours.

The good news is that having *any* plant around brings down your stress level and encourages a feeling of well-being.

Doreen Howard, former garden editor at Woman's Day, gardens in Roscoe, Illinois.

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Horticultural News and Research Important to American Gardeners

ZONING OUT

News reports about climate change—fueled by unseasonably warm early winter temperatures in many regions—have generated renewed questions about plant hardiness maps.

Most gardeners are familiar with the U.S. Department of Agriculture's (USDA) Plant Hardiness Zone Map. The map di-

vides North America into 11 zones based on average low temperatures and has served as a guide for choosing plants that will survive in a particular region since the first edition was published in 1960. However, the most recent version of this map, published in 1990 and based on weather data from 1974 to 1986, has been widely criticized as outdated given the trend toward warmer average winter temperatures over the last decade.

the map update. "We hope to release the revised map in the near future," says Kaplan. The revised map will be based on roughly 30 years of temperature data.

But in the interim, the National Arbor Day Foundation (NADF) recently released its own hardiness zone map based on weather data collected by the National Climatic Data Center from 1990 to 2004.

This new map has caused quite a stir in the media because, when compared to the 1990 USDA map, it shows a definite warming trend. In fact, NADF's website (www.arborday.org) features a color animation showing the northward shift of hardiness zones as well as static side-by-side comparisons of the two maps.

According to NADF, its map is "consistent with the consensus of climate scientists that global

warming is underway. Tree planting is among the positive actions that people can take to reverse the trend."

However, some gardening experts remain wary of "zone inflation." Tony Avent, owner of Plant Delights Nursery in Raleigh, North Carolina, and a member of the USDA's technical review committee, feels the difference in the maps is due to the fact that the 1990 USDA map used a "13-year data set, but one that was taken during a cold cycle. The Arbor Day map has a similar-length dataset, but one that was taken during a warm cycle."

So what's a gardener to do? Avent advises, "Until the new USDA map comes out—hopefully by year's end—keep using the old USDA map and you'll have the best chance for success." It wouldn't hurt to plant a few trees, too.



Research shows that poison ivy thrives with increased carbon dioxide levels.

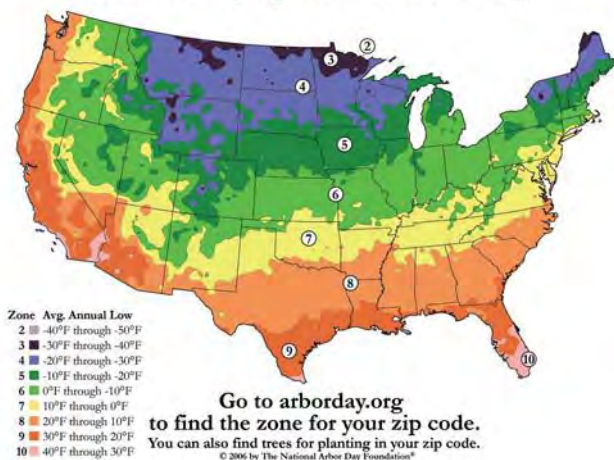
GLOBAL WARMING IMPACTS PLANTS

The National Climatic Data Center recently declared 2006 to be the warmest year on record in the contiguous United States. Globally, 2006 ranked as the sixth warmest year recorded, and according to Great Britain's Meteorological Office, 2007 is expected to be even warmer. Research indicates that these rising temperatures, compounded by increased carbon dioxide levels in the atmosphere (a major factor in global warming), are producing side effects on plant life that may have unpleasant ramifications for people.

Researchers at the University of California, Irvine, reported in the January 2007 issue of *Proceedings of the National Academy of Sciences* that plants with short life cycles adapt more quickly to climate change than slow-growing plants. These findings suggest rapid-growing plants—annual weeds for example—may fare better during global warming than plants with longer life cycles, ultimately changing the makeup of the plant population.

In the June 2006 issue of the same journal, a study by scientists at Duke and Harvard University indicated that poison ivy (*Toxicodendron radicans*) grows approximately three times larger and more vigorously when exposed to the carbon dioxide (CO₂) levels predicted by 2050. Increased

2006 arborday.org Hardiness Zones Map



CO₂ also produces a more potent form of urushiol, the compound responsible for poison ivy's itch.

Similarly, the USDA's Agricultural Research Service has reported that higher CO₂ levels may have doubled the amount of pollen produced by ragweed (*Ambrosia* sp.), a common weed affecting over 85 percent of the nation's allergy sufferers, within the past four to five decades. Another doubling is predicted by the end of the century.

STELLAR STACHYS FOR NORTHERN GARDENS

In the Chicago Botanic Garden's (CBG) plant evaluation trials, several species and cultivars of *Stachys* have received high marks during a six-year evaluation. Twenty-two *Stachys* taxa grown in a USDA Hardiness Zone 5, AHS Plant Heat Zone 5 garden environment were assessed for their "ornamental traits, disease and pest resistance, cultural adaptability, and winter hardiness," explains Richard Hawke, plant evaluation manager at CBG in Glencoe, Illinois.

Of the plants evaluated, *Stachys monieri*



Stachys macrantha 'Superba'

'Hummelo' received the highest rating. The common lamb's ears (*S. byzantina*) and several of its cultivars such as 'Big Ears' and 'Silver Carpet' received good ratings, although flowering was not a major evaluation characteristic for this group because

Nominations for "Heroes of Horticulture"

The Cultural Landscape Foundation (TCLF) and *Garden Design* magazine are seeking nominations for Landslide 2007: "Heroes of Horticulture." Landslide, an online resource created by TCLF, highlights significant landscapes and landscape features that are in danger of destruction.

This year's edition focuses on horticultural aspects that are linked with a historically important person or affiliated with an event that helped develop a community or culture. Nominations can include anything from special informal or formal plantings to a resilient horticultural characteristic that has withstood challenges.

Applications are due April 15 and can be found online at www.tclf.org/landslide/2007.

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of the “sporadic to nonflowering aspect of some cultivars.” Species and cultivars with showy flowers that received good ratings include *S. discolor*; *S. macrantha* ‘Robusta’, *S. macrantha* ‘Superba’, and wood betony (*S. officinalis*).

Stachys thirkei received the lowest rating overall due to its susceptibility to winter injury and low tolerance of wet conditions. One species, *S. palustris*, was eliminated from the trial after one year because of its aggressively weedy nature.

More information on this evaluation (“A Comparative Study of Cultivated *Stachys*,” *Plant Evaluation Notes*, issue 27) can be found online at www.chicago-botanic.org or by calling Chicago Botanic Garden at (847) 835-5440.

CELEBRATING WILDFLOWERS ONLINE

Wildflower and native plant fans will want to surf on over to the USDA Forest Service’s new “Celebrating Wildflowers” website. This award-winning online resource includes tips for gardening with native plants, helpful information about pollinators and invasive species, news about research and conservation efforts, and wildflower events around the country. There are even resources for teachers and a section for kids with games and activities. Visitors will also enjoy lots of beautiful and instructive images of wildflowers. Log on to www.fs.fed.us/wildflowers/index.shtml to begin your celebration of wildflowers.



PESTICIDES LINKED TO PARKINSON’S DISEASE

Recent studies from various universities suggest that exposure to pesticides may increase the risk of Parkinson’s disease, a life-threatening brain disorder that causes body tremors, speech impairment, and poor balance.

A study from the Harvard School of Public Health published in the July 2006 issue of *Annals of Neurology* showed that the incidence of Parkinson’s disease increased by 70 percent in those exposed to chronic, low doses of pesticides. Another study published last year by the Mayo Clinic in Rochester, Minnesota, suggests pesticide exposure “increases the risk of developing Parkinson’s disease” in men but

PEOPLE and PLACES in the NEWS

Fairchild Designated a Horticultural Landmark

Last December, the American Society of Horticultural Science (ASHS) named Fairchild Tropical Botanic Garden in Coral Gables, Florida, a Horticultural Landmark. This distinction recognizes “sites of horticultural accomplishment, selected for historical, scientific, environmental, and aesthetic value.”

Fairchild Tropical Botanic Garden, which opened in 1938 on 83 acres of land in Miami, works to “save tropical plant diversity by exploring, explaining and conserving the world of tropical plants.” Over the years, it has developed not only an outstanding collection of tropical and subtropical plants, but also premier research, conservation, and educational programs.

For more information about Fairchild, visit www.fairchildgarden.org.



Randy Woodson (right), president of the ASHS Board of Directors, presents the Horticultural Landmark award to Michael Maunder, executive director at Fairchild.

Allan Armitage Receives Scott Medal

Garden writer and University of Georgia horticulture professor Allan Armitage is receiving the Scott Medal and Award on March 18 at Swarthmore College in Swarthmore, Pennsylvania. This prestigious award is given in recognition of Armitage’s outstanding contributions to the horticulture field.

Over the course of his career, Armitage has written 11 books, including *Armitage’s Garden Perennials*, a winner of the 2001 Garden Writers Association Quill & Trowel Award. His *Herbaceous Perennial Plants* (first published in 1989) was named one of the AHS’s 75 Great American Garden Books. Armitage also received the AHS 2001 Book Award for *Armitage’s Manual of Annuals, Biennials and Half Hardy Perennials*. Additionally, he has written over 450 articles in various trade journals and consumer magazines and served as a guest host on PBS’s “Smart Gardening” television show. In 1994, Armitage received the AHS Teaching Award for his contributions at the University of Georgia. Armitage currently serves as an AHS Board member.

not women. “Pesticide use combines with other risk factors in men’s environment or genetic makeup, causing them to cross over the threshold into developing the disease,” reports Mayo Clinic neurologist and study investigator Jim Maraganore. “By contrast, estrogen may protect women from the toxic effects of pesticides.”

At the American Chemical Society’s national meeting last September, researchers from Emory University and the Georgia Institute of Technology reported that certain pesticides, namely the now banned but environmentally persistent pesticide dieldrin, could accelerate the onset of Parkinson’s. And a study in the *British Medical Bulletin*, published in January, stated that organochlorine insecticides and maneb have been consistently associated with the disease.

“Many classes of pesticides are associated with Parkinson’s and many other diseases,” says Eileen Gunn, project director of Beyond Pesticides, a non-profit organization that works to protect people and the environment from the misuse of pesticides. According to Gunn, these include the herbicide paraquat and the botanical insecticide rotenone.

“It is best to rely on biological, cultural, and mechanical controls, and ‘organic’ products where possible,” Gunn cautions. If pesticides must be used, make sure to follow label directions and take appropriate precautions to avoid exposure. For more information, visit www.beyondpesticides.org or call (202) 543-5450.

Written by Assistant Editor Viveka Neveln and Editorial Intern Courtney Capstack.

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Understanding Your Soil

by Rita Pelczar

THERE IS A lot to learn from a soil analysis. The more you know about your soil, the more effective you can be in your efforts to improve it and in selecting the kinds of plants that will thrive in your garden.

There is also a lot to be learned about soil analysis. For instance, not all soil tests are equal. Some tests focus on physical or chemical traits, while others measure the biological status of the soil. All three aspects contribute to soil fertility, and each influences the others. Soil tests examine this complex system and provide guidance for adding soil amendments and adjusting cultural practices to optimize plant growth. Achieving balance is the key.

SOIL CHEMISTRY

One of the most important chemical traits determined in a soil test is the **soil reaction**. More commonly known as **pH**, this is a measure of the soil's acidity or alkalinity, and it influences nutrient availability.

Soil tests can also reveal the amounts of essential plant nutrients. Levels of several **macro-nutrients**—those used in large amounts by plants—such as phosphorus, potassium, calcium, and magnesium are included in most standard tests. Sometimes nitrogen is not included because nitrogen levels can fluctuate dramatically during the year, causing misleading test results. Depending on which nutrients tend to limit plant growth in a region, other nutrients will be routinely tested. **Micro-nutrients**—essential elements plants use in small quantities—may be part of a routine test or can be requested if a deficiency is suspected.

The **cation exchange capacity (CEC)** estimates the soil's capacity to retain positively charged nutrients (cations) such as calcium, potassium, and magnesium.



The pH of soil affects plant growth. Azaleas require acidic soil for optimal performance.

The higher the CEC of a soil, the greater its ability to hold nutrients.

High levels of **soluble salts**, often caused by over fertilization, inhibit water uptake by plants and impair root growth. Testing for soluble salts is frequently advised when plants display symptoms such as foliar burn, reduced flowering, and lower yields.

Regionally, distinct tests have been developed that work best for the soils within that region. Bruce Hoskins, soil testing program coordinator for the University of Maine, explains that “geologic age of the soil, and especially climate, greatly affect soil pH and clay mineralogy, which in turn greatly affect the way nutrients are held and made available to growing plants.” For example, in arid portions of the western United States, soils tend to accumulate alkaline nutrients, resulting in a high pH (above 7). In the northeastern United States, where rainfall is abundant,

most alkaline nutrients are leached during the soil's formation, and the pH is usually low (5 or below). Different tests are used for acid soils and alkaline soils.

“There has been a concerted effort over the past 15 to 20 years to standardize test methods within each of these regions, but there will continue to be differences between regions, for very scientific reasons,” says Hoskins. It makes sense, therefore, to use a local or regional testing lab whenever possible. (For information on other types of soil tests, click on the link for this magazine issue on our website at www.ahs.org.)

SOIL PHYSICS

A soil is characterized by the parent material from which it was derived, as influenced by climate, topography, time, vegetation, and cultivation. Its texture is determined by the relative amount of various sized particles: sand, silt, and clay.

These traits are unlikely to change significantly from year to year unless you import soil from outside the garden area. Soil structure—how these particles are arranged and grouped—influences porosity, water holding capacity, drainage, and gas exchange.

Many home landscapes include more than one type of soil. “It’s not all that uncommon to find four or five different soil types on the same heavily landscaped property,” says Paul Wagner, manager of Soil Foodweb, New York. The introduction of foreign soil or organic matter,



This soil is high in clay and retains moisture.

grading for new construction, compaction, mulching, and tilling all influence the physical condition of the soil.

Assessing the **organic matter content** of a soil can reveal a great deal about both its physical and chemical condition. “Soil organic matter analysis can be an expensive and time-consuming test for many labs, but it is a key component in nutrient cycling and in determining soil nutrient and water holding capacity,” says Hoskins, who considers the test well worth any additional charge if it is not part of the routine package. It may also provide a clearer picture of a soil’s nitrogen, supplying capacity than a direct test for nitrogen, he says. “Most gardeners can infer an adequate nitrogen supply from an optimum organic matter content, provided they have achieved [it] by using animal manures and good quality compost,” says Hoskins.

The end product of organic matter decomposition is **humus**, which con-

tributes to soil particle aggregation, the gluing together of individual soil particles that improves soil structure. Because it carries a negative charge, humus also acts as a sponge to hold positively charged nutrients, preventing them from leaching out of the soil.

SOIL BIOLOGY

A key characteristic of a healthy soil is a diverse collection of life forms ranging from microscopic bacteria and fungi, to nematodes, worms, insects, and arthropods.

Soil fertility troubles frequently can be traced to a biological imbalance. Ironically, the imbalance is often caused by repeated use of chemical fertilizers that reduce the population of soil organisms. Soil tests that reveal both quantity and diversity of organisms in a soil have proven extremely useful in developing sustainable soil fertility programs for gardeners and commercial growers. A flourishing population of beneficial soil organisms positively influences nutrient availability and soil structure. A healthy “soil food web”—the interdependent food chains within a soil—requires a well balanced variety of organisms.

“The number one problem we see is a general deficiency of beneficial, predatory microbes such as protozoa and nematodes,” says Wagner of the samples he receives at the New York Soil Foodweb laboratory. Bacteria and fungi are effective in breaking down organic matter and retaining nutrients in the soil. But until they are eaten by microbes, most of the nutrients are not released to the soil where they are available to plants. Wagner explains that many gardeners become frustrated when they add an organic fertilizer such as feather meal. They don’t see results because their soil lacks sufficient predatory microbes to release the nutrients. This can be remedied by the addition of compost or compost tea that contains the needed organisms.

Another problem Wagner sees frequently is high levels of plant parasitic nematodes. “The best thing to do to reduce their population,” says Wagner, “is to encourage predatory nematodes.” Because predatory nematodes are some of the largest soil nematodes, they need more pore space than the tiny parasitic types. Because a compacted soil favors

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9 SEEDS To Help GERMINATION Percentage and SPEED EARLIER, BETTER YIELDS, including Vegetables

10 LAWNS To Make QUICKER, deeper, TOUGHER TURF from SEED, SOD, Stelons, Sprigs, HYDRO-seeding

11 XMAS TREES 17 HYDROSEEDING 22 FLOWERING PLANT

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the plant parasite, Wagner often recommends aerating the soil "to improve its structure and create a more conducive environment for the predatory nematodes." He also recommends adding compost that contains high predatory nematode populations.

TESTING FACILITIES AND KITS

Many soil test laboratories are associated with state universities and Cooperative

Resources

Teaming with Microbes: A Gardener's Guide to the Soil Food Web by Jeff Lowenfels and Wayne Lewis. Timber Press, Portland, Oregon, 2006.

Soils and Compost, National Sustainable Agriculture Information Service. www.attra.org/soils.html.

Sources for Soil Test Kits

Gemplers, Madison, WI. (800) 382-8473. www.gemplers.com.

LaMotte Company, Chestertown, MD. (800) 344-3100. www.lamotte.com.

Planet Natural, Bozeman, MT. (406) 587-5891. www.planetnatural.com.

■ Rapitest Soil Test Kits.

Woods End Laboratories, Inc., Mt. Vernon, ME. (207) 293-2457. www.solvita.com.

■ Solvita Garden Care Kits.

Extension offices, others are privately operated. The tests available vary from lab to lab, as do costs. For a listing of soil test labs and the types of testing they provide, visit our website at www.ahs.org and click on the link for this magazine issue.

To promote a healthy soil food web, a biological soil assay may suggest the addition of compost or compost tea. Some labs offer compost and compost tea testing in addition to soil testing to assure that the compost you add is top quality, fully ma-

VIVEKA NEVELN



PHOTO BY JAMES TRACY FROM 2006 GARDENER'S CALENDAR

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ture, and contains the types of organisms that will most benefit your soil.

Home soil test kits for nutrients and pH can also be purchased from sources such as LaMotte, Gemplers, and Rapitest. These range from inexpensive and simple to pricey and sophisticated. They have the advantage of immediate, or at least very quick results, but some may not be as accurate as the results provided by the advanced equipment available at a professionally staffed laboratory.

Woods End Laboratory has developed the Solvita Garden Care kit for testing the biological activity of both soil and compost (www.solvita.com). This home kit measures microbial respiration, a good indicator of overall soil quality, by



The paddle inside Solvita's soil-testing jar changes color to indicate CO₂ levels.

measuring the amount of carbon dioxide (CO₂) produced by a sample. In compost, both CO₂ and ammonia (NH₃) are measured. Their levels indicate the maturity, stability, and potential phytotoxicity of a compost sample.

WHEN TO TEST

It's always a good idea to test the soil in a new garden, and for any area where plants are not growing well. Never add lime or sulfur to adjust the pH without first testing your soil, because this can compound a problem. A soil test provides a snapshot of the soil at a given moment in time, so if you make major changes to the soil, such as adjusting the pH, annual tests are advisable to track the changes.

"If gardeners are installing landscaping where topsoil or amendments are to be imported to the site, then soil tests

HOW TO TAKE A SOIL SAMPLE

Taking a representative sample is critical to assure accurate results. Samples for most common soil tests can be obtained using the following procedure. For biological tests, however, sample directions may differ, so refer to the testing laboratory's directions for these. If you have observed an area where plants grow poorly, take a separate soil sample for that area. Also, collect separate samples for each unique area of your property, such as lawn or perennial beds, because the needs of the plants in these areas will differ.

1. For each sample, select six to 10 areas (depending on garden size) and remove any mulch or vegetation from the soil surface.

2. Using a clean trowel, dig a small hole seven or eight inches deep. (For lawn areas, the hole only needs to be about three inches deep). Slice a thin section from the exposed soil profile and place it in a plastic pail. A soil corer may also be used to collect the soil.

3. Repeat this procedure at each of the areas you selected, then thoroughly mix all the soil in the pail. If the soil is wet, allow it to air dry for a day or two. Do not apply heat.

4. Fill your sample container with soil from the pail—about a pint is usually sufficient. Discard any extra soil. If you have more than one sample, make sure each is clearly identified.

5. Complete any forms required by the testing laboratory and indicate the existing plants or the plants you intend to grow. Mail in a sturdy box or drop off the sample at the facility.



should be done to ensure that amendments have not been over-applied or that topsoil is not high in salts," says James Self, Extension soil testing specialist at Colorado State University in Fort Collins. Self adds, "The most common problem we see is that plants will not grow due to the over application of amendments high in salts or the grower has applied too much fertilizer."

Mike Murray of Soil Solutions, an organic lawn care business in Needham, Massachusetts, does a chemical soil test on the lawns he services at least every three years. He also uses Soil Foodweb, Inc., to test the biology of problem areas. "I find the organic recommendations particularly helpful," he says. "They may suggest fertilizers with long term sources of nitrogen such as feather meal, kelp for micro-nutrients, core aerating for com-

paction, or compost to boost organic matter or cation exchange capacity."

If your plants are doing well, testing the soil every two to four years is usually sufficient. "Routine testing is usually done at either end of the growing season—before planting in the spring or after harvest in the fall," says Hoskins. "Fall sampling gives the lab plenty of time to provide you with recommendations for soil amendments well in advance of the growing season," he adds.

When performed and interpreted carefully, soil tests identify problems and suggest amendments and cultural practices that lead to a healthy, well-balanced soil environment in which your plants will flourish.

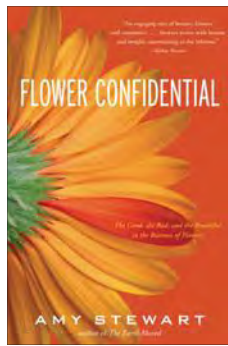
Rita Pelczar is contributing editor for The American Gardener.

Recommendations for Your Gardening Library

Flower Confidential: The Good, the Bad, and the Beautiful in the Business of Flowers

Amy Stewart. Algonquin Books. Chapel Hill, North Carolina, 2007. 306 pages. Publisher's price, hardcover: \$23.95.

IN THIS FASCINATING account of the cut flower industry, Amy Stewart takes a behind-the-scenes look at how flowers around the world are engineered, mass produced, and shipped far and wide, all to satisfy consumers' year-round demand for long-lasting, inexpensive—not to mention perfect—flowers.



Author of *The Earth Moved: On the Remarkable Achievements of Earthworms* (2004), Stewart brings her infectious curiosity to bear on the ins and outs of this \$40 billion global industry. She takes the reader on a journey from the wholesale flower market in San Francisco to the

high-tech flower auction in the Netherlands—"Imagine Wall Street in the Garden of Eden," writes Stewart. The story of the passionate breeder who created the famous 'Star Gazer' lily the old-fashioned way stands in stark contrast to that of the scientist trying to genetically engineer a blue rose. This becomes a recurring theme—old traditions giving way to new.

Throughout the book, Stewart tries to reconcile the inherent contradiction between the business perception of flowers as just another commodity and the common perception of flowers as something delicate, sentimental, and unspoiled. Indeed, while the flower business has become highly efficient, it's not always pretty. In the Netherlands, Stewart visits a greenhouse full of machine-fed roses growing in "surprisingly small containers—their roots confined to plastic wrapped rock wool cubes that were only about three inches high." At a large flower grower in California, she walks into a giant cooler filled with thousands of newly planted tulip bulbs sitting in black plastic crates waiting to be moved into greenhouses. "The place had the air of a morgue: chilled, clinical, and impersonal."

But Stewart also points out the bright spots; the rise of organic growers and "green label" certification programs in Europe and soon here in the United States, as well as increased awareness among consumers, could change the landscape in the coming years. And although Stewart's experiences have made her look at flowers a little differently, for her, they have not lost their magic.

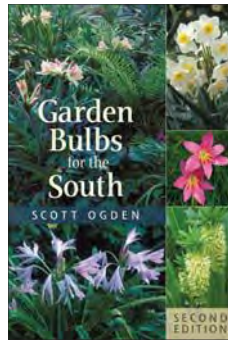
—Alexandra Goho

Alexandra Goho is a freelance science and technology writer based in Seattle, Washington.

Garden Bulbs for the South

Scott Ogden. Timber Press, Portland, Oregon, 2007. 396 pages. Publisher's price, hardcover: \$34.95.

THIS NEW EDITION of Scott Ogden's 1994 book on the bulbous (in its widest sense) plants suitable for the southern United States now appears in an updated and much expanded edition.



Like the first edition, it is an essential gardening book—but not only for the South. Ogden presents a broad palette for those gardening in favored locales on the Pacific Coast as well as for those following the current trend of growing tropical bedding plants in much colder climes. And where many authors merely repeat what has already been written, Ogden's closely observed peculiarities of his subjects make it outstanding horticultural literature.

As in the prior edition, Ogden emphasizes daffodils outside the usual sections of trumpets and large- and small-cupped types. He explicates the deliciously scented paperwhites and their ilk as well as the heavenly perfumed jonquil, both of whose groups abound in sturdy heirloom cultivars. He also includes newer clones that he has found reliable and likely to persist over many seasons.

Again, rain lilies (*Zephyranthes*, *Cooperia*, et al.), with their often recurrent flushes of smaller amaryllislike flowers, receive thorough treatment. The chapter on crinum and spiderlilies is likewise full of treasures with fascinating discussions about their histories and origins. The meaty chapter on cannas, gingers, and aroids offers many savory choices for the curious and discriminating gardener. And this constitutes only a tithe of the varied bulbs that Ogden describes and recommends.

The profuse color photographs are clear and apropos. Those displaying garden groups illustrate how suitable companions can transform a humdrum border into a thing of beauty. Even the florist amaryllis, which some consider to be merely big blobs of color, are used as attractive groups in mixed borders. For the most part the book's nomenclature and plant identification are very accurate; however, I noticed that the iris twice captioned as *Iris pallida* 'Dalmatica' is actually the tough and floriferous 'Violacea Grandiflora' of 1856 vintage.

This book makes one long for a warmer climate though not one caused by global warming.

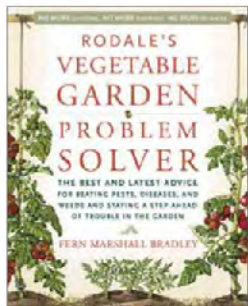
—Jerry Flintoff

Jerry Flintoff has been a plant addict since the age of six. He has the good fortune to garden on Vashon Island, Washington.

Rodale's Vegetable Garden Problem Solver

Fern Marshall Bradley. Rodale, Emmaus, Pennsylvania, 2007. 472 pages. Publisher's price, softcover: \$19.95.

FOR ALL THOSE who cultivate a vegetable patch—or aspire to start one—this book will be a welcome addition to your li-



brary. The detailed table of contents allows the reader to locate information fast and effectively. The introduction sets a solid foundation for why organic methods work: The healthier the soil, the healthier the plants. Healthy plants are better at withstanding diseases and pests. The bulk of the book contains alphabetically organized entries ranging from *Alternaria* blight to wireworms.

Along with entries for pests, diseases, and gardening techniques, the book includes entries for more than 60 vegetables with basic growing instructions, secrets for success, problem prevention, and troubleshooting. Where appropriate, there are helpful regional tips. For example, carrots left in the ground on the West Coast may be a source of virus problems in years to come. And in the East and the Heartland, squash plants are experiencing new types of yellow vine disease carried by squash bugs.

Each of the insect pests and diseases listed are described in detail with suggestions for how to combat them and handy

“control calendars” that are valuable for timing crops to miss the life cycles of various pests. Techniques such as crop rotation, cover crops, and companion planting also are clearly and concisely described. I especially appreciated the “Beyond the Basics” sidebars scattered throughout the text offering more in-depth discussions on various topics, such as soil solarization and how to control nematodes with cover crops.

The book's green-toned drawings of fencing, trellises, plants, roots, and pests are simple and easy to follow. I found myself diagnosing insect damage that I have seen in my own garden based on the clear illustrations of leaves! There is an illustrated key to insects in the back of the book, along with the page number for each insect, where detailed information awaits. The larva and nymph drawings are particularly instructive. My only complaints are that the Recommended Reading section was a little light and that Seed Savers Exchange in Decorah, Iowa, was not mentioned in the Resources for Gardeners section.

I know that I will use this book to keep me a step ahead of trouble in the garden this year. One tip I'm anxious to try is using an empty milk carton with the bottom cut out to blanch celery two weeks prior to harvest. I might also try the book's time-saving suggestion of following peas with tomatoes to get double duty out of my trellises.

—Keith Crotz

Keith Crotz owns American Botanist booksellers and grows organic vegetables on the family Centennial Farm in Chillicothe, Illinois.

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Confessions of the Plant-Obsessed

GARDENING HAS OFTEN been likened to a drug or even a disease because, as every plantaholic and garden geek knows, once you're hooked or stricken, your feverish desire to pay homage at Flora's altar will know no bounds. Several recently published books delve into this phenomenon, exposing a world rife with people willing to literally go to the ends of the earth or spend their grocery money to feed their all-consuming horticultural passions.

For James Dodson, a journalist and author from the golf world, his gardening disease developed latently for many years, until he began building his own garden in Maine (which he playfully refers to as his "Sissinghurst of the North"). Realizing he has been firmly bitten by the gardening bug, he embarks on a year-long quest to gain "a broader understanding of a garden's magical ability to enchant and elevate the human spirit," which he chronicles in *Beautiful Madness* (Plume, 2007, \$15). From the 175th Philadelphia Flower Show to the

South African bush, Dodson's journey brings him in contact with a cast of colorful, not to mention completely plant crazy, characters who astound him again and again with their generosity, knowledge, and total dedication to all things green.

"For me, the feeling that I am making something, or changing something, in my garden is an addiction," writes James

Raimes, an English transplant who also began gardening later in life when he purchased a several-acre property in the New York countryside. In *Gardening at Ginger* (Houghton Mifflin, 2007, \$23), he confesses his "seven-year obsession with designing and planting a personal landscape." Despite a trip to the emergency room for a gashed hand, contracting Lyme disease, unsuccessfully fending off marauding deer, and other mishaps,

nothing can deter Raimes from spending every spare moment out in his garden because, he observes, "the mind is very good at forgetting bad things." Instead, his mind is filled with to-do lists, plans, and ideas that betray his absolute enthrallment with gardening, come what may.

The siren song of land begging to be cultivated also ensnared William Alexander, who set about creating a large vegetable garden on an overgrown, soggy, sloping area of his newly acquired property. The *\$64 Tomato* (Algonquin, 2006, \$22.95) tells the

humorous tale of how he "nearly lost his sanity, spent a fortune, and endured an existential crisis in the quest for the perfect garden." Alexander battles all sorts of foes: groundhogs, weeds, weather, deer, and even his neighbors in his effort to achieve his goal of raising high-quality, fresh vegetables and developing a small orchard in his own backyard. Even when Alexander calculates the cost—physical, mental, and financial—he finds it impossible to kick



his habit of homegrown, sun-warmed Brandywine tomatoes and the other produce he manages to coax from the earth.

A single plant type can often inspire worshipful and even slightly deranged devotion, particularly when competition is involved, as evidenced by *Otherwise Normal People: Inside the Obsessive and Thorny World of Competitive Rose Gardening* (Algonquin, 2007, \$22.95). Curious about what makes rose competition participants tick, author Aurelia Scott discovered that it often starts innocently enough, say with a neglected rose bush that produces an unexpectedly exquisite bloom, and ends up as a life-changing compulsion to collect and show every

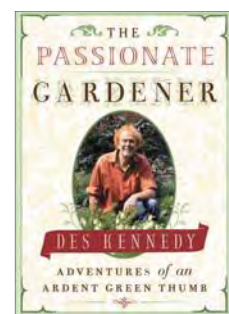
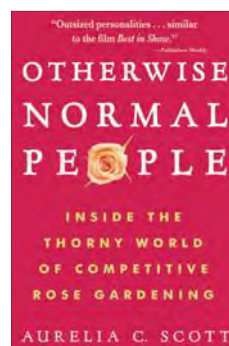
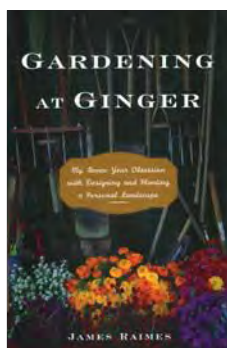
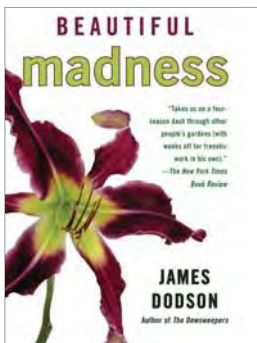
kind of rose imaginable. Among the stories of the rose maniacs she encounters, Scott also interweaves intriguing pieces of rose history and other fascinating bits of trivia.

Then there's Des Kennedy, hailing from British Columbia's Gulf Islands, who writes in *The Passionate Gardener*

(Greystone, 2006, \$16.95) that gardening burst into his life "like a howling southeaster" 35 years ago. Through a collection of satirical and sometimes serious essays, he shares the whirlwind adventure he's been on ever since. And while he knows there's no cure for those afflicted with an insatiable gardening passion, he does offer a few words of hope: "The first crucial step to recovery involves an

open confession of your plight. In doing so, you discover a wonderful thing: that you are not alone, that others have suffered through this same debilitating experience and emerged from it stronger than before."

—Viveka Neveln, Assistant Editor



REGIONAL HAPPENINGS

Horticultural Events from Around the Country

NORTHEAST

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

MAR. 23–25. **Orchid Sale.** Lyman Estate. Waltham, Massachusetts. (781) 891-4882. www.HistoricNewEngland.org.

RAP MAR. 30–APR. 1. **Corning Glass Comes to the Gardens.** Exhibit. Buffalo and Erie County Botanical Gardens. Buffalo, New York. (716) 827-1584. www.buffalogardens.com.

APR. 5. **Shade Gardening.** Lecture. Garden Education Center of Greenwich. Cos Cob, Connecticut. (203) 869-9242. www.gecgreenwich.org.

APR. 7. **Gardening in the North: Beautiful Gardens—Rational Gardening.** Symposium. New England Wildflower Society. Randolph Center, Vermont. (508) 877-7630. www.newfs.org.

APR. 27–29. **Adirondack Garden & Flower Show.** Cornell Cooperative Extension. Lake George, New York. (518) 786-1529. www.northeastshowpromoters.com.

RAP APR. 28 & 29. **25th Anniversary of Sakura Matsuri.** Cherry Blossom Festival. Brooklyn Botanic Garden. Brooklyn, New York. (718) 623-7200. www.bbq.org.

Looking ahead

RAP MAY 12. **Urban Beekeeping: Spring Hive Inspection.** Wave Hill. Bronx, New York. (718) 549-3200. www.wavehill.org.

MID-ATLANTIC

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

RAP APR. 13–15. **African Violet Show and Sale.** Lewis Ginter Botanical Garden. Richmond, Virginia. (804) 262-9887. www.lewisginter.org.

RAP APR. 17 & 24, MAY 1. **Become a Tree Tender.** Tree training workshop. Pennsylvania Horticultural Society. Ambler, Pennsylvania. (610) 489-4315. www.pennsylvaniahorticulturalsociety.org.

APR. 20 & 21. **Christopher Newport University Annual Gardening Symposium.** Newport News, Virginia. (757) 594-7568. www.cnu.edu.

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.

APR. 20–22. **Spring Festival.** MidAtlantic Bonsai Societies. East Hanover, New Jersey. (973) 379-3386. www.midatlanticbonsai.freeservers.com.

AHS APR. 21 & 22. **Friends of River Farm Plant Sale.** Alexandria, Virginia. (703) 768-5700. www.ahs.org.

AHS APR. 21–28. **Historic Garden Week in Virginia.** Tours. The Garden Club of Virginia. (804) 644-7776. www.VAGardenweek.org.

RAP APR. 26–28. **Spring Plant Sale.** Virginia Tech Horticulture Club and Hahn Horticulture Garden. Blacksburg, Virginia. (540) 231-5970. www.hort.vt.edu/hhg.

APR. 28. **Botanic Gardens Benefit Plant Sale.** University of Delaware. Newark, Delaware. (302) 831-4188. <http://ag.udel.edu/udbg>.

APR. 28. **Rare Plant Auction.** Delaware Center for Horticulture. Longwood Gardens. Kennett Square, Pennsylvania. (302) 658-6252. www.rareplantauction.org.

75th Anniversary of Garden in the Woods

THIS SPRING, the New England Wild Flower Society (NEWFS) will celebrate the 75th anniversary of Garden in the Woods, which is their headquarters in Framingham, Massachusetts. As part of the festivities, on May 18, they will present “The Art of Livable Landscapes” symposium, featuring author and horticultural consultant Rick Darke, landscape architect W. Gary Smith, and NEWFS Executive Director Gwen Stauffer. The symposium will be held at the Crowne Plaza hotel in Natick, Massachusetts.

“This is such a key offering,” says Debra Strick, marketing and public relations director of the NEWFS and Garden in the Woods, “because it explores completely new approaches to design with native plants that include highly ornamental uses...all within a framework of understanding impact on the natural landscape.”

Included in the symposium is a pre-view tour of the anniversary exhibition at Garden in the Woods, “Art Goes Wild: Innovation with Native Plants,” led by exhibit creator, W. Gary Smith. The symposium will conclude with a garden reception and book-signing event with landscape designer Rick Darke.

Other anniversary events include a plant sale and tours of the garden on April 14, and an “Art Goes Wild” art exhibit May 19 to October 31. An opening day party featuring music, tours, family events, and dedication kicks off the exhibit on May 19.

Call (508) 877-7630 for more information, or visit www.newfs.org.

—Courtney Capstack, Editorial Intern



Ricke Darke, left, and W. Gary Smith, right, will be among the featured speakers at the NEWFS's 75th anniversary symposium at Garden in the Woods.

AHS APR. 29–MAY 2. **Colonial Williamsburg Garden Symposium.** Williamsburg, Virginia. (757) 220-7255. www.history.org.

Looking ahead

RAP MAY 4–6. **Potomac Bonsai Association Show & Sale.** U.S. National Arboretum. Washington, D.C. (202) 245-2726. www.usna.usda.gov.

SOUTHEAST

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

RAP MAR. 24 & 25. **Annual Plant Sale.** Harry P. Leu Gardens. Orlando, Florida. (407) 246-2620. www.leugardens.org.

MAR. 24 & 25. **Orchid Society Annual Show & Sneak Peak at Spring.** North Carolina Arboretum. Asheville, North Carolina. (828) 665-2492. www.ncarboretum.org.

RAP MAR. 24 & 25. **Spring Garden Event.** Festival. Flamingo Gardens. Davie, Florida. (954) 473-2955. www.flamingogardens.org.

RAP MAR. 31. **New Perennials from Around the World.** Lecture. Aldridge Botanical Garden. Hoover, Alabama. (205) 682-8019. www.aldridgegardens.com.

APR. 7. **75th Anniversary Celebration.** Bellingrath Gardens and Home. Theodore, Alabama. (251) 973-2217. www.bellingrath.org.

RAP APR. 13 & 14. **Wildflower Plant Sale.** Dixon Gallery and Gardens. Memphis, Tennessee. (901) 761-5250. www.dixon.org.

AHS APR. 13–15. **Bloom 'n' Garden Expo 2007.** Franklin, Tennessee. (615) 790-5721. www.scmganet.net.

APR. 19 & 20. **Spring Plant Sale.** UNC Charlotte Botanical Gardens. Charlotte, North Carolina. (704) 687-2555. <http://gardens.uncc.edu>.

APR. 21 & 22. **An EPIC Celebration of Spring: Flower & Garden Expo.** Epic Community Services, Inc. St. Augustine, Florida. (904) 829-3295. www.epiccommunityservices.org.

RAP APR. 28. **Día del Niños (Children's Day).** An afternoon of storytelling and songs in Spanish. Atlanta Botanical Garden, Atlanta, Georgia. (404) 876-5859. www.atlantabotanicalgarden.org.

Looking ahead

AHS MAY 4. **Magic of Landscapes.** Epcot International Flower & Garden Festival. Lake Buena Vista, Florida. (800) 375-3642. www.magicoflandscaping.com.

RAP MAY 12 & 13. **Gardens for Connoisseurs Tour.** Atlanta Botanical Garden. At-

lanta, Georgia. (404) 876-5859. www.atlantabotanicalgarden.org.

NORTH CENTRAL

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

AHS APR. 21–29. **Cincinnati Flower Show.** Cincinnati Horticultural Society. Cincinnati, Ohio. (513) 872-5194. www.cincyflowershow.com.

RAP APR. 22. **Garden Author's Lecture: Whimsy in the Garden.** Fellows Riverside Gardens. Youngstown, Ohio. (330) 740-7116. www.millcreekmetroparks.com/riversidegarden.htm.

AHS APR. 27–29. **Orchard in Bloom Garden Show.** Indianapolis, Indiana. (317) 713-5765. www.orchardinbloom.org.

RAP APR. 28. **Spring Affair 2007.** Nebraska Statewide Arboretum. Lincoln, Nebraska. (402) 472-2971. www.arboretum.unl.edu.

RAP APR. 28 & 29. **Illinois Orchid Society Spring and Show Sale.** Chicago Botanic Garden. Glencoe, Illinois. (847) 835-5440. www.chicagobotanic.org.

APR. 29–MAY 1. **International Greening Rooftops for Sustainable Communities, Conference, Awards & Trade Show.** Minneapolis, Minnesota. www.greenroofs.org/minneapolis.

Looking ahead

MAY 5–12. **Tulip Time.** Festival. Holland, Michigan. (800) 822-2770. www.tuliptime.com.

RAP MAY 12. **Olbrich's Plant Sale with the Pros.** Olbrich Botanical Gardens. Madison, Wisconsin. (608) 246-4550. www.olbrich.org.

RAP MAY 24–28. **Cleveland Botanical Garden Flower Show.** Cleveland, Ohio. (216) 721-1600. www.cb garden.org.

SOUTH CENTRAL

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

APR. 7–18. **Tulip Time.** Festival. Binkley Gardens. Topeka, Kansas. (785) 273-0337.

APR. 12–14. **Texas State Master Gardener Conference.** Hill Country Master Gardeners. Kerrville, Texas. (830) 257-6568. www.hillcountrymastergardeners.org.

RAP APR. 17. **Biedenharn Garden Symposium.** Biedenharn Museum & Gardens. Monroe, Louisiana. (800) 362-0983. www.bmuseum.org.

RAP APR. 21. **Native Garden Maintenance.** Lecture. Lady Bird Johnson Wildflower Center. Austin, Texas. (512) 292-4200. www.wildflower.org.

RAP APR. 21 & 22. **Plant Sale.** Dallas Arboretum. Dallas, Texas. (214) 515-6500. www.dallasarboretum.org.

Looking ahead

RAP MAY 5. **Children's Garden Club Presentation with Doug Wolter.** Missouri Botanical Garden. St. Louis, Missouri. (314) 577-9400. www.mobot.org.

International Master Gardener Conference

THE UNIVERSITY OF ARKANSAS and Arkansas Master Gardeners are sponsoring this year's International Master Gardener Conference from May 2 to 5 in Little Rock, Arkansas. Hosted at the Peabody hotel and Statehouse Convention Center, the conference will feature various lectures and seminars as well as a trade show and tours of the surrounding area.

Keynote speakers include David A. Lipschitz, director of the Donald W. Reynolds Center on Aging at the University of Arkansas for Medical Sciences and author of *Breaking the Rules of Aging*. Lipschitz will discuss "Gardens and Gardening—The Keys to a Long and Better Life." Award-winning garden designer and public television host P. Allen Smith will present "Confessions of a TV Gardener." George Anderson, former head of the School of Horticulture at the Royal Botanic Garden Edinburgh, will talk about the "Gardens of Scotland," followed by a presentation by Ozark Folk Center head gardener and herbalist Tina Marie Wilcox. Wayne Pianta, a product technical specialist at PanAmerican Seed Company, will conclude the program with "Trends in Gardening."

Participants may choose among garden tours to country gardens, green roofs, Master Gardener projects, and much more. The conference will also include a trade show, plant giveaways, Awards of Excellence, and a "Taste of Little Rock."

For additional details and registration information, call (501) 671-2000 or visit <http://img2007.uaex.edu>. Registration closes April 1.

—Courtney Capstack, Editorial Intern

SOUTHWEST

AZ, NM, CO, UT

MAR. 31 & APR. 1. **Home Garden Tour.** Tucson Botanical Gardens. Tucson, Arizona. (520) 326-9686. www.tucsonbotanical.org.

RAP APR. 4. **Beyond Xeriscape: No-Water Plants for the Front Range.** Lecture. Denver Botanic Gardens. Denver, Colorado. (720) 865-3580. www.botanicgardens.org.

RAP APR. 18. **Attracting Butterflies to Your Yard.** Workshop. Western Colorado Botanical Gardens. Grand Junction, Colorado. (970) 245-9030. www.wcbotanic.org.

RAP APR. 21. **Waterwise Landscaping.** Lecture. Red Butte Garden and Arboretum. Salt Lake City, Utah. (801) 581-4747. www.redbuttégarden.org.

AHS APR. 27-29. **Maricopa County Home & Landscape Show.** Phoenix, Arizona. (602) 485-1691. www.maricopacountyhomeshows.com.

Looking ahead

MAY 12. **Migratory Bird Day.** Guided walk and lecture. Boyce Thompson Arboretum. Superior, Arizona. (520) 689-2811. <http://ag-arizona.edu/BTA>.

RAP MAY 19 & 20. **Celebrating Wildflowers Week.** Festival. Denver Botanic Gardens. Denver, Colorado. (720) 865-3562. www.botanicgardens.org.

WEST COAST

CA, NV, HI

APR. 9. **A Special Evening with Thomas Hobbs: Bel'Occhio: Finding and Gardening with Your Beautiful Eye.** Lecture. San Diego Horticultural Society. Del Mar, California. (760) 730-3268. www.sdhortsoc.org.

RAP APR. 12. **GreenSpeak: A Space in the Middle—Buildings Wrapped Around Gardens.** Lecture. Descanso Gardens. La Cañada Flintridge, California. (818) 949-4200. www.descansogardens.org/site.

APR. 21. **The Elfin Forest Garden Festival: "Hidden Treasures in the Valley of the Elves."** Elfin Forest, California. www.elfinforestgardens.info.

APR. 21. **Encinitas Garden Festival.** Encinitas, California. (760) 753-6041. www.encinitasgardenfestival.org.

APR. 27. **Practical Pruning.** Workshop. UC Davis Extension. Davis, California. (800) 752-0881. www.extension.ucdavis.edu/ag.

AHS APR. 27-29. **San Jose Home and Garden Show.** San Jose, California. (800) 321-1213. www.sanjosehomeshow.com.

Looking ahead

MAY 10. **The Livable Landscape.** Lecture. Southern California Horticultural Society. Los Angeles, California. (818) 567-1496. www.socahort.org.

NORTHWEST

AK, ID, MT, OR, WA, WY

RAP APR. 12. **Gardening on a Shoestring.** Lecture. Cheyenne Botanic Gardens. Cheyenne, Wyoming. (307) 637-6458. www.botanic.org.

RAP APR. 15. **Spring Garden Show.** Alaska Botanical Garden. Anchorage, Alaska. (907) 770-3692. www.alaskabg.org.

RAP APR. 20 & 21. **Spring Plant Sale.** Idaho Botanical Garden. Boise, Idaho. (208) 343-8649. www.idahobotanicalgarden.org.

RAP APR. 21. **Earth Day Celebration.** The Oregon Garden. Silverton, Oregon. (503) 874-8100. www.oregongarden.org.

APR. 28 & 29. **Glide Oregon Wildflower Show.** Glide Community Center. Glide, Oregon. (541) 677-7113. www.magick.net/magyan/GWS.htm.

Looking ahead

MAY 9. **Botanic Gardens at the Crossroads.** Lecture. Northwest Horticultural Society. Seattle, Washington. (206) 527-1794. www.northwesthort.org.

RAP MAY 12. **Plant Sale.** Native Plant Society. Bellevue Botanical Garden. Bellevue, Washington. (425) 452-2750. www.bellevuebotanical.org.

CANADA

RAP APR. 12. **Ontario Garden Show.** Royal Botanic Gardens. Burlington, Ontario. (905) 527-1158. www.rbg.ca.

RAP APR. 14. **Tree Pruning Workshop.** Muttart Conservatory. Edmonton, Alberta. (780) 496-8755. www.edmonton.ca/muttart.

APR. 21 & 23. **Creative Container Gardening for Patios and Balconies.** VanDusen Botanical Garden. Vancouver, British Columbia. (604) 257-8151. www.city.vancouver.bc.ca/parks/parks/vandusen/website/index.htm.

APR. 26. **Collectors' Plant Auction.** UBC Botanical Garden and Centre for Plant Research. Vancouver, British Columbia. (604) 822-3928. www.ubcbotanicalgarden.org.

MAY 10. **Woodland and Wildflower Garden Workshop.** The Arboretum University of Guelph, Ontario. (518) 824-4120 ext. 52113. www.uoguelph.ca/arboretum.

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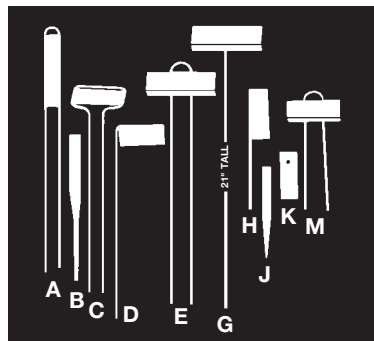
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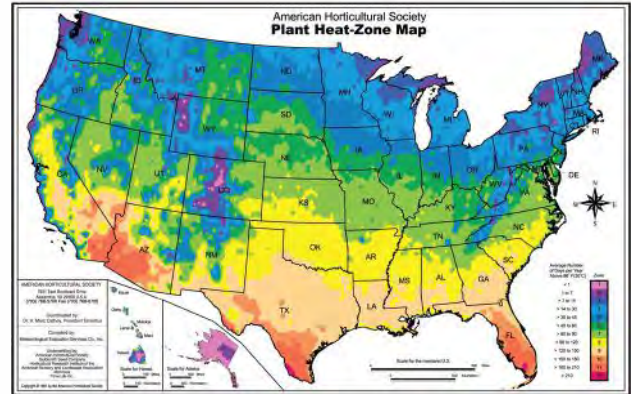
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PRONUNCIATIONS AND PLANTING ZONES

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

While the zones are a good place to start in determining plant adaptability in your region, factors such as exposure, moisture, snow cover, and humidity also play an important role in plant survival. The codes tend to be conservative; plants may grow outside the ranges indicated. A USDA zone rating of 0–0 means that the plant is a true annual and completes its life cycle in a year or less.

To purchase a two-by-three-foot glossy AHS Plant Heat Zone Map for \$9.95, call (800) 777-7931 or visit www.ahs.org.



A–E

- Abelmoschus esculentus** ay-bel-MOS-kus
es-kyew-LEN-tus (USDA 11, AHS 12–4)
- Adenophora bulleyana** ah-deh-NOF-or-uh
bul-lee-AN-uh (4–8, 8–1)
- A. liliifolia** A. lil-lee-ih-FO-lee-uh (3–8, 7–1)
- A. remotiflora** A. ree-mo-tih-FLOR-uh
(5–8, 8–1)
- A. triphylla** A. try-FIL-luh (7–9, 9–1)
- Agastache foeniculum** ah-guh-STAH-she
fee-NICK-yoo-lum (4–11, 12–5)
- Allium tuberosum** AL-ee-um too-bur-O-sum
(4–8, 8–1)
- Amelanchier alnifolia** am-eh-LANG-kee-ur
al-nih-FO-lee-uh (4–9, 8–3)
- Asyneuma campanuloides** ass-ee-NOO-muh
kam-pan-yew-LOY-deez (5–8, 8–1)
- A. canescens** A. kuh-NES-senz (6–8, 8–6)
- A. limonifolium** A. lih-mo-nih-FO-lee-um
(6–8, 8–6)
- A. michauxioides** A. mih-sho-ee-OY-deez
(6–8, 8–6)
- Beta vulgaris** BEH-tuh vul-GAIR-iss
(0–0, 12–1)
- Borago officinalis** bor-AY-go o-fiss-ih-NAL-iss
(0–0, 12–1)
- Brassica oleracea** BRASS-ih-kuh o-luh-RAY-
see-uh (0–0, 8–1)
- Codonopsis clematidea** ko-duh-NOP-siss
klem-uh-tih-DEE-uh (5–9, 9–7)
- C. ovada** C. o-VAY-duh (5–9, 9–7)
- Consolida ajacis** kon-SOL-ih-duh uh-JAY-cis
(0–0, 9–1)
- Echinacea purpurea** ek-ih-NAY-see-uh
pur-PUR-ee-uh (3–9, 12–1)

F–R

- Foeniculum vulgare** fee-NICK-yoo-lum
vul-GAH-ree (4–9, 9–1)
- Fraxinus americana** frak-SIH-nus uh-mair-ih-
KAN-uh (6–9, 9–3)
- F. pennsylvanica** F. pen-sil-VAN-ih-kuh
(4–9, 9–1)
- Gaillardia × grandiflora** gay-LARD-ee-uh
gran-dih-FLOR-uh (3–8, 8–1)
- Ipomoea batatas** ih-po-ME-uh buh-TAH-tus
(11, 12–1)
- Jasione laevis** jah-see-O-nee LEE-vis
(5–9, 8–6)
- Lablab purpureus** LAB-lab pur-PUR-ee-us
(9–11, 12–9)
- Nicotiana glutinosa** nih-ko-shee-AN-uh
mew-TAH-bih-liss (8–11, 12–8)
- Perovskia atriplicifolia** peh-ROV-skee-uh
at-rih-plih-sih-FO-lee-uh (5–9, 9–2)
- Phlox paniculata** FLOKS pan-ik-yoo-
LAH-tuh (3–9, 9–1)
- Phyteuma nigrum** fy-TOO-muh NY-grum
(6–9, 9–6)
- P. orbiculare** P. or-bik-yew-LAIR-ee
(6–9, 9–6)
- P. scheuchzeri** P. skook-ZEER-eye
(5–7, 7–1)
- P. spicatum** P. spy-KAY-tum (5–9, 9–5)
- Platycodon grandiflorus** plat-ih-KO-don
gran-dih-FLOR-us (4–9, 9–1)
- Rudbeckia hirta** rood-BEK-ee-uh HUR-tuh
(3–7, 7–1)

S–Z

- Salvia farinacea** SAL-vee-uh fah-rih-NAY-
see-uh (8–11, 12–1)
- S. officinalis** S. o-fiss-ih-NAL-iss (5–8, 8–5)
- Sedum acre** SEE-dum AY-kur (3–8, 8–1)
- Stachys byzantina** STAY-kiss bih-zan-TY-nuh
(4–8, 8–1)
- S. discolor** S. DIS-kul-ur (5–8, 8–1)
- S. macrantha** S. mak-RAN-thuh (5–9, 9–7)
- S. monieri** S. mo-nee-AIR-eye (5–8, 8–1)
- S. officinalis** S. o-fiss-ih-NAL-iss (5–8, 8–4)
- S. palustris** S. pah-LUS-triss (4–7, 7–1)
- S. thirkei** S. THIRK-ee-eye (4–8, 8–1)
- Symphandra armena** sim-fy-AN-druh
ar-MEE-nuh (7–9, 9–7)
- S. hoffmannii** S. hof-MAN-ee-eye (4–8, 7–1)
- S. pendula** S. PEN-dyew-luh (5–8, 9–6)
- Tetragonia tetragonioides** teh-truh-GO-nee-uh
teh-truh-go-nee-OY-deez (0–0, 12–1)
- Trachelium caeruleum** trah-KEE-lee-um
see-ROO-lee-um (8–12, 12–1)
- Tropaeolum speciosum** tro-PEE-o-lum
spee-see-O-sum (8–11, 12–8)



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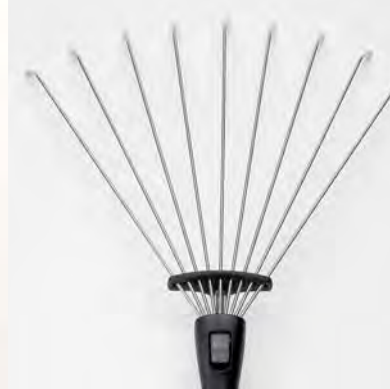
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