



The American GARDENER[®]

The Magazine of the American Horticultural Society

March / April 2009

Native Plants for
Water Gardens

Colorful Coreopsis

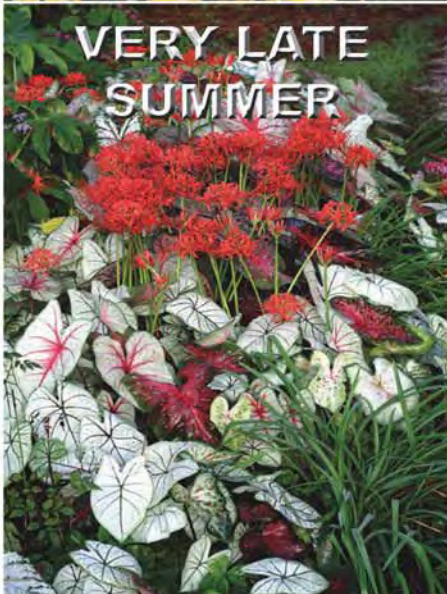
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Natives

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garden-fresh
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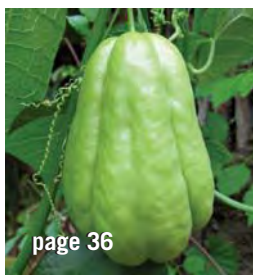
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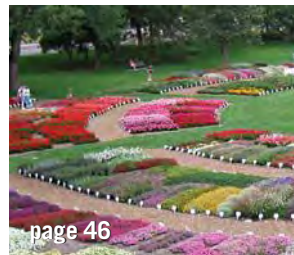
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NOTES FROM RIVER FARM

THE ARRIVAL of March and the first day of spring signal the beginning of the gardening season. Our gardens come alive with spring blooms and new growth, local garden centers swell to bursting with new plants and fresh stocks of garden supplies, and trays of seedlings begin to show up in windowsills, on porches, and in backyard greenhouses. And, what would spring be without the eagerly anticipated parade of wonderful horticultural events sponsored by public gardens, plant societies, garden clubs, and community groups across the country? Even year-round gardeners have a hard time not getting caught up in the heady promise of a new gardening season.

Whether you are seeking out new introductions, hard-to-find native plants, or tried-and-true successes for your garden, spring plant sales and garden shows are not to be missed. In addition to some great finds, these events offer the chance to talk

with growers and other experts who share your interests. As a bonus, your purchases will probably be supporting a worthy cause! This spring, we encourage you to show support for your local gardening organizations and let them know that their work is important. Check your *AHS Member Guide* or the "Regional Happenings" section of this issue for gardens and events in your region.

With Earth Day on April 22 and National Arbor Day on April 24, spring is also a great time to get involved. Many horticultural organizations—including the AHS—could not exist without the volunteers who help with special events, maintain gardens



and greenhouses, staff information desks, conduct tours, and teach classes. Volunteering offers a rewarding and meaningful way to give back to your community. It can also be a great way to learn, meet other gardeners, green up your community, and maybe even take a few extra cuttings home. Spend a morning or afternoon volunteering this season and help us make America a nation of gardens!

One thing you will definitely want to do this spring is make time for this issue of *The American Gardener*. You will learn about the genus *Coreopsis* from noted plantsman Allan Armitage, and discover the wealth of shade-loving native perennials developed by plant breeder Charles Oliver. For something out of the ordinary in your kitchen garden, see our feature on perennial vegetables. Finally, don't miss the first installment of our new department on growing edibles, "Homegrown Harvest."

Happy gardening!

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

MEMBERS' FORUM

RUDBECKIA HARDINESS

On page 17 of the January/February 2009 issue, you list *Rudbeckia hirta* 'Cherry Brandy' as an "annual/biennial/tender perennial," yet indicate it is hardy to USDA Zone 3. Does this mean it is an annual? I guess a lot of *Rudbeckia hirta* reseed, as I have many that fill my garden.



*Diane Beaudoin,
Andover, New Hampshire*

Editor's response: Cultivars of *Rudbeckia hirta* are usually short-lived and for the most part tend to be grown as annuals, but they may overwinter under certain conditions. Thus 'Cherry Brandy' is technically hardy to USDA Zone 3, but most people pull them out—or they die on their own—after one season.

FLOWER SHOW COLLABORATION

As a member of the Springfest Flower & Garden Show Committee, I wanted to let you know we are excited to have the AHS presenting its Environmental Award to one of our Garden Exhibitors at this year's show. This partnership adds a great dimension to our show and allows our 8,000 visitors from the New York metropolitan area to become familiar with the AHS. Your top-notch magazine is familiar to me and many of the staff of our all-volunteer organization. We are all avid gardeners and produce this non-profit show from a garden lover's standpoint, with proceeds benefiting horticultural incentives and scholarships.

*Barbara Abita
Branchville, New Jersey*

Editor's note: Through our partnership with the Springfest Flower & Garden Show, AHS members were also eligible for free admission to the show, held March 12 to 15 at the Sussex County Fairgrounds in Augusta, New Jersey.

Member Services

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

New Website Password

The members-only section of the AHS website, www.ahs.org, provides convenient access to membership benefits as well as the contents of each issue of *The American Gardener* since 2001. To access the section, the user name is **ahs**. The password is **seeds**. The password is also listed on page 4 in each magazine issue. (Both the user name and password must be entered in lowercase letters.)

NOMENCLATURE PROCESS CORRECTION

In the lively and informative article about plant nomenclature by John Friel, published in the January/February issue, the governing body that oversees the process for plant name changes is misidentified. According to the article, name change proposals "are reviewed by specialist groups under the umbrella of the International Society for Horticultural Science (ISHS)."

In fact, rules for botanical names (Latin names) are revised at Nomenclature Section meetings of the successive International Botanical Congresses and published as the International Code for Botanical Nomenclature (ICBN). A botanist may effectively publish a botanical name for a new species or a new combination (for example, transferring a species from one genus to another) "by distribution of printed material to the general public or at least to botanical institutions with libraries accessible to botanists generally."

The new name must, of course, comply with the rules of the ICBN and contain a description or diagnosis in Latin. There is no prior review or approval by ISHS, however. If others have problems with a name, they may submit a proposal for its conservation or rejection to the International Association of Plant Taxonomists General Committee for study by a specialist committee and recommendation to the Congress for disposition.

The 2006 edition of the ICBN states: "Like other international codes of nomenclature, the ICBN has no legal status and is dependent on the voluntary acceptance of its rules by authors, editors, and other users of plant names." For more information about the ICBN, visit <http://ibot.sav.sk/icbn/main.htm>.

*Donald H. Voss
Vienna, Virginia*

OCOTILLO MISDIRECTION

I just got my first issue of *The American Gardener* and love it. However, I think I found a plant origin mistake in the November/December 2008 issue. On page 28, in the chart for the "Striking Stems" article, it says that *Ocotillo* is from the southeastern United States, but it is actually native to the southwestern U.S.

*Alexandra J. Flynn
Mt. Pleasant, South Carolina*

CORRECTIONS

In the books section of the January/February 2009 issue, the price for *Gardening with Hardy Heathers* by David Small and Ella May T. Wulff was listed incorrectly. The correct price is \$39.95.

Also in the January/February issue, in the source box with the article about Fraser's sedge on page 62, the phone number for Enchanter's Garden nursery should have been (304) 466-3154.

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.

Learn gardening techniques that will help you live more harmoniously with nature and the environment in this exclusive AHS Garden School offering.

AHS GARDEN SCHOOL

June 27, 2009

GREEN GARAGE®:

SUSTAINABLE AND EARTH-FRIENDLY SOLUTIONS FOR THE LANDSCAPE

presented in partnership with the City of Alexandria
Lee Center, Alexandria, Virginia

In our everyday choices, opportunities abound for making our gardens, landscapes—and even the earth—healthier and more beautiful places. From water conservation to creating wildlife habitats, this Garden School will explore a range of environmentally conscious practices through lectures and hands-on workshops. There also will be an exhibit hall featuring companies and organizations that offer green products, services, and tools.

Featured speakers will include: Paul Tukey, author of *The Organic Lawn Care Manual*, Douglas Tallamy, author of *Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens* and Jeff Lowenfels, soil health expert and author of *Teaming with Microbes: A Gardener's Guide to the Soil Food Web*.



Paul Tukey



Douglas Tallamy



Jeff Lowenfels



Visit www.ahs.org or call (703) 768-5700 ext. 121 for more information.

REGISTRATION OPENS APRIL 15

AHS Joins Sustainable Sites Initiative



TO HELP promote sustainable landscapes, the AHS has become a participant in the Sustainable Sites Initiative (SSI). A collaborative effort between the **American Society of Landscape Architects**, the **Lady Bird Johnson Wildflower Center**, and the **United States Botanic Garden**, in conjunction with partnering organizations, this initiative was created to promote sustainable land development and management practices that can apply to sites with and without buildings. “Sustainability is an important component of the American Horticultural Society’s mission, which is why we feel it is imperative to be actively involved in this program,” says AHS Executive Director **Tom Underwood**.

Just as green building standards—such as the Leadership in Energy and Environmental Design (LEED) program—provide guidance and motivation to reduce the environmental impact of buildings, the SSI is developing comprehensive guidelines and criteria for creating sustainable landscapes. With a focus on improving all the aspects of a landscape, from the soil to effects on human health, the SSI is working towards benefiting both natural and manmade sites.

After two years of input and research from a range of experts, SSI issued a draft report of its guidelines and performance benchmarks in 2008. The coordinators will use feedback collected during a public comment period last winter to create an updated set of guidelines this fall. The initiative also plans to issue a call for pilot projects this year, in order to evaluate “how well the rating system applies to design, construction, and maintenance practices.” To learn more, visit www.sustainablesites.org.

Members-Only Webinars for 2009

NOW IN ITS third year, the AHS webinar program, offered exclusively for members, is a great way to learn from and interact with leading horticultural experts without having to leave home. On March 11, author and garden designer **Julie Moir Messervy**



Norm Lownds gets a group of children excited about plants.

presented the first webinar for 2009, “Home Outside: Creating the Landscape You Love.” The next webinar, on May 5, will be “A Little Garden Magic: Connecting Kids to Plants” presented by **Norm Lownds**, curator of the 4-H Children’s Garden at Michigan State University. Registration will open on April 8 in the members-only area of the AHS website at www.ahs.org.

Other upcoming webinars are “Dry Beauty: Strategies for Designing a Water-Thrifty Garden,” presented by author and garden designer **Scott Calhoun** on July 9, and “Gardening for Wildlife” on September 9 with **Douglas Tallamy**, author of the highly acclaimed *Bringing Nature Home*.

Each of these online seminars will take place at 1 p.m. Eastern time and consists of an online slide show with the presenter’s voice streamed through a computer’s speakers or delivered by telephone. After the presentation, which lasts about an hour, the speaker will take questions from participants via a chat box. Space is limited so registration prior to the event is required. A high-speed Internet connection is strongly recommended for an optimum viewing experience during these online seminars.

New AHS Corporate Members

IN ADDITION TO individual memberships, the AHS relies on contributions from other organizations and businesses that support the Society’s mission. The Society recently welcomed several new corporate members: **Brent and Becky’s Bulbs** of Gloucester, Virginia; **Furbish Company** of Baltimore, Maryland; and **Renee’s Garden** based in Felton, California.

Brent and Becky’s Bulbs is a mail-order and retail purveyor of bulbs and other plants. Owners Brent and Becky Heath also are nationally renowned daffodil hybridizers, lecturers, and consultants. Thanks to the company’s generous donation of 15,000 tulips, daffodils, and other bulbs, this year’s spring display at River Farm promises to be especially spectacular.



Bulbs donated by Brent and Becky’s Bulbs will make spring colorful.

Known nationally for its innovative sustainable building practices, Furbish Company created a custom green roof for the AHS's Green Garage® display at the U.S. Botanic Garden last summer. This green roof is now part of the permanent Green Garage® display at River Farm. Furbish also installed a green roof on a well house in the newly renovated Garden Calm at River Farm, allowing visitors to view the plants up-close and learn about the sustainability of green roof projects.



Crew members from Furbish install a green roof on the well house at River Farm.

As the sponsor of this year's 50th anniversary members-only Seed Exchange, Renee's Garden donated thousands of dollars worth of flower, vegetable, and herb seeds and cookbooks. The company's seed offerings include both heirloom varieties as well as new and unusual selections from around the world. Renee's also supports sustainable growing practices for its seeds.

All three new corporate members will be participating in this year's first annual Community Green on June 14 at River Farm by offering lectures and workshops. For more details, see the ad directly below or visit the AHS website at www.ahs.org.

SYMPOSIUM KEYNOTE SPEAKER

Will Allen, co-founder and chief executive officer of Growing Power, will be the opening keynote speaker at the 17th annual AHS National Children & Youth Garden Symposium, "Common Ground: Gardens for a Greener Tomorrow."



Will Allen of Growing Power

Growing Power is a national nonprofit organization that helps communities "grow, process, market, and distribute food in a sustainable manner" by providing training and other assistance. Allen will share his experiences bringing young people with diverse backgrounds together to learn how to garden and produce healthy foods for their communities.

Hosted by the Cleveland Botanical Garden, the symposium will take place July 23 to 25 in Cleveland, Ohio. Participants will have the opportunity to explore ways to create inspirational and educational gardening experiences for children and youth. Registration will open on April 15. Visit the AHS website (www.ahs.org) and click on "Youth Programs" for more information, or call (703) 768-5700 ext. 121.

AMERICAN HORTICULTURAL SOCIETY

COMMUNITY GREEN

June 14, 2009
11 a.m.–6 p.m.
Alexandria,
Virginia

Join us for the first annual AHS Community Green at River Farm

Bring a picnic blanket and come spend the day relaxing, learning, and playing.

- Festive and fun green activities for all ages
- Entertainment, food, lectures, and demonstrations
- Learn how to be more earth-friendly in your garden and in your community

For more information about Community Green or to participate as a sponsor, exhibitor, vendor, or speaker, contact Sharon Grant at (703) 768-5700 ext. 114 or sgrant@ahs.org.

Homestead Gardens

Because Life Should Be Beautiful

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Green Garden School in June

THE AHS'S newest Garden School—Green Garage®: Sustainable and Earth-friendly Solutions for the Landscape—will take place on June 27 at the Lee Center in Alexandria, Virginia. Presented in partnership with the City of Alexandria, this intensive one-day program will include lectures, hands-on workshops, and an exhibit hall featuring companies that offer green products, services, and tools.



Jeff Lowenfels

Speakers will include **Douglas Tallamy**, author of *Bringing Nature Home: How Native Plants Sustain Wildlife in our Gardens*; **Paul Tukey**, author of *The Organic Lawn Care Manual*; and **Jeff Lowenfels**, an Alaskan garden radio show host and author of *Teaming With Microbes: A Gardener's Guide to the Soil Food Web*. For more information, e-mail education@ahs.org or call (703) 768-5700 ext. 121.

Spring Garden Market in April at River Farm

THE AMERICAN HORTICULTURAL SOCIETY'S eagerly anticipated annual plant sale at its River Farm headquarters in Alexandria, Virginia, is being expanded this year as the Spring Garden Market. In addition to the customary offerings of native plants, perennials, herbs, vegetables, annuals, and roses, vendors also will be selling garden supplies, garden art, and other related products. The AHS will be offering Flower Carpet® Amber roses, a new disease-resistant groundcover variety, along with memberships, books, and garden accessories.



Flower Carpet® Amber rose

April 16 from 4 p.m. to 8 p.m. is the special members-only preview evening. In addition to having first chance to peruse the plants and garden products on sale, members will enjoy refreshments; a talk by **David J. Ellis**, director of communications and editor of *The American Gardener*; and a silent auction of unique garden goods.

The event will be open to the public on April 17 from 9 a.m. to 6 p.m. and April 18 from 9 a.m. to 3 p.m. In addition to shopping the sale, on April 18 visitors may attend a lecture and book signing by **Jeff Kirwan**, co-author of *Remarkable Trees of Virginia*, presented by the Fairfax County Tree Commission. The lecture will begin at 10 a.m. in the estate house.

Admission to the Spring Garden Market is free to everyone. AHS members receive complimentary parking (parking is \$3 for non-members) by showing their membership card or a mailing label from the current issue of *The American Gardener* magazine.

Proceeds from the Spring Garden Market support the AHS's national educational programs and the stewardship of River Farm. For more information, visit www.ahs.org and click on "River Farm" or call (703) 768-5700 ext. 114.



AHS NATIONAL EVENTS AND PROGRAMS

2009 CALENDAR

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

- MARCH 18–MAY 31. **Epcot International Flower & Garden Festival.** Lake Buena Vista, Florida.
- APRIL 17 & 18. **Spring Garden Market.** River Farm, Alexandria, Virginia. (Note: AHS members-only preview sale is Thursday, April 16 from 4 p.m. to 8 p.m.)
- MAY 1. **Colonial Williamsburg Garden Symposium.** Williamsburg, Virginia.
- MAY 5. **"A Little Garden Magic: Connecting Kids to Plants."** Webinar presented by Norm Lownds.
- MAY 17. **Family Picnic.** River Farm, Alexandria, Virginia.
- JUNE 4. **Great American Gardeners Awards Ceremony and Banquet.** River Farm, Alexandria, Virginia.
- JUNE 14. **Community Green.** River Farm, Alexandria, Virginia.
- JUNE 27. **Green Garage®: Sustainable and Earth-friendly Solutions for the Landscape.** AHS Garden School. Lee Center, Alexandria, Virginia.
- JULY 9. **"Dry Beauty: Strategies for Designing Water-Thrifty Gardens."** Webinar presented by Scott Calhoun.
- JULY 23–25. **National Children & Youth Garden Symposium.** Hosted by Cleveland Botanical Garden. Cleveland, Ohio.
- AUG. 21–23. **The Homestead's 11th Annual "In the Garden With the Experts" Symposium.** Hot Springs, Virginia.
- SEPT. 9. **"Gardening for Wildlife."** Webinar presented by Douglas Tallamy.
- SEPT. 19. **AHS Annual Gala.** River Farm, Alexandria, Virginia.
- OCT. 1–3. **America In Bloom Symposium and Awards Ceremony.** Hershey, Pennsylvania.
- OCT. 23. **Dr. H. Marc Cathey Day.** River Farm, Alexandria, Virginia.





AMERICAN
HORTICULTURAL
SOCIETY

THE AMERICAN HORTICULTURAL SOCIETY TRAVEL STUDY PROGRAM 2009 DOMESTIC TOURS

Fascinating Gardens of Baltimore

with AHS host *Harry Risetto*

Tour escorted by *Diana Biras*

June 9–14, 2009

■ With summer in full glory, this tour will take you to some of Maryland's finest private and public gardens, including Ladew Topiary Gardens and gardens designed by Wolfgang Oehme of Oehme, van Sweden & Associates. We will also visit Kurt Bluemel, one of America's greatest plantsmen who has been instrumental in broadening the palette of perennials and ornamental grasses. Kurt will give us a private tour of both his nursery and private garden.

MAKE YOUR RESERVATIONS TODAY!



The Great Bowl, Ladew Topiary Gardens, Monkton, Maryland



Tara Wang / Courtesy of Manitoga/The Russel Wright Design Center

Manitoga, Garrison, New York

Gardens and Art of the Historic Hudson Highlands

with AHS host *Katy Moss Warner*

Tour escorted by *Stephanie Jutila*

October 14–18, 2009

■ Amid fiery autumn color, come discover the rich horticultural treasures of New York's Hudson River Valley and the art that complements the landscape. Highlights of this tour include Franklin Delano Roosevelt's Springwood estate; Olana, the estate of famed Hudson River School artist Frederic Edwin Church; Lisburne Grange, an estate designed by renowned landscape architect Fletcher Steele; and Manitoga, the modernist home and woodland quarry garden of industrial designer, Russel Wright.

AHS PRESIDENT'S COUNCIL EXCLUSIVE

Portland, Oregon with AHS host *Tom Underwood*

August 12–16, 2009

For AHS President's Council members only! Explore the Portland area's lush public gardens including: The Oregon Garden, the International Rose Test Garden, and the Portland Classical Chinese Garden, along with exquisite private gardens—including AHS Board Chair Susie Usrey's personal garden.

For more information about the President's Council, contact *Stephanie Perez* at (703) 768-5700 ext. 127.

For more information about the AHS Travel Study Program, visit
www.hiddentreasuresbotanicaltours.com
or call (573) 881-6316.

AHS Annual Report Online

IN AN EFFORT to save resources, the AHS's annual report, which previously has been delivered with the March/April issue of *The American Gardener*, will be available online only this year, beginning April 1. The report will cover the 2008 fiscal year, spanning July 1, 2007 to June 30, 2008. Visit www.ahs.org and click on "Organization Information" to view it as well as past annual reports. AHS members who do not have convenient access to the Internet may request a printed copy of the annual report by calling (703) 768-5700 ext. 119.

First Annual Community Green

ON JUNE 14, the AHS will hold its first annual Community Green at River Farm. This new tradition will be a fun-filled event focused on horticulture, the environment, and how nature plays a part in our daily lives. Businesses and organizations involved with "green," eco-friendly products and services will offer interactive activities for all ages, and visitors are encouraged to participate and ask questions. Look for more details in upcoming issues of *The American Gardener* and on the AHS website (www.ahs.org).



AHS Gala to Feature Top Chef

THE 2009 ANNUAL AHS fundraising gala, "Celebrating the Elegance of Simplicity," will be held on September 19 at the



Chef Cathal Armstrong

AHS's River Farm headquarters in Alexandria, Virginia. This elegant evening will include a menu created especially for the occasion by **Cathal Armstrong**, co-owner and Executive Chef of Restaurant Eve and The Majestic in Old Town Alexandria. Armstrong was named one of the "best new chefs" by *Food & Wine* magazine in 2006 and selected to the magazine's "Hall of Fame" in 2008.

Proceeds from the gala support the AHS's national educational programs and the stewardship of River Farm. For more information about the gala and to purchase tickets, e-mail events@ahs.org or call (703) 768-5700 ext. 114.

News written by Associate Editor Viveka Neveln and Editorial Intern Talia Goldman.

COURTESY OF RALPH ALISWANE

Gifts of Note

In addition to vital support through membership dues, the American Horticultural Society relies on grants, bequests, and other gifts to support its programs. We would like to thank the following donors for gifts received between December 1, 2008 and January 31, 2009.

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Mr. P. A. Smith
Ms. Julie Zeringue

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

Common Ground: Gardens for a Greener Tomorrow



The American Horticultural Society's
17th Annual

National Children & Youth Garden Symposium

July 23–25, 2009 • Cleveland, Ohio
Hosted by Cleveland Botanical Garden

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



AHS 2009 Great American Gardeners National Award Winners

THE AMERICAN HORTICULTURAL SOCIETY is proud to announce the distinguished recipients of the Society's 2009 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 communication, landscape design, youth gardening, teaching, and conservation. We applaud their passionate commitment to American gardening and their outstanding achievements within their fields.

The 2009 awards will be presented on June 4 during the Great American Gardeners Awards Ceremony and Banquet at River Farm, the AHS's headquarters in Alexandria, Virginia. For more information, visit www.ahs.org/awards or call (703) 768-5700 ext. 121.

LIBERTY HYDE BAILEY AWARD

Given to an individual who has made significant lifetime contributions to at least three of the following horticultural fields: teaching, research, communications, plant exploration, administration, art, business, and leadership.



THIS YEAR'S recipient of the AHS's most prestigious award, **Panayoti Kelaidis** is the senior curator and director of outreach at Denver Botanic Gardens (DBG) in Colorado, where he has worked for 29 years in many capacities. At DBG he has participated in major garden expansions and helped amass a plant collection of more than 15,000 taxa. He is also an adjunct faculty member of Colorado State University.



His specialty is high alpine plants, but his interests range from growing vegetables and cacti to unusual trees and shrubs. While Kelaidis has introduced a spectrum of American native plants to general cultivation—from buckwheats (*Eriogonum* spp.) to penstemons and phlox—he has also promoted awareness of hardy South African plants, especially ice plants (*Delosperma* spp.). He discovered many new plants on plant hunting expeditions within the United States and in Africa, South America, and Europe. Kelaidis was involved in the planning and development of the Plant Select® program, which introduces and promotes new plants suited to the Rocky Mountain region.

Kelaidis has written more than 100 articles published in plant society publications and popular gardening magazines and contributed chapters to several garden books. Among the numerous awards he has received are the Arthur Hoyt Scott Medal from the Scott Arboretum (2000) and the Marcel LePiniec Award from the North American Rock Garden Society (1994).



Denver Botanic Gardens

LUTHER BURBANK AWARD

Recognizes extraordinary achievement in the field of plant breeding.

James R. Ault is the director of environmental horticulture at the Chicago Botanic Garden, located in Glencoe, Illinois. His research includes conventional plant breeding, propagation, evaluation, and exploration with an emphasis on North American native species. His focus on interspecific hybridization has produced plants with unique traits, such as the first orange cone-flower, *Echinacea* Orange Meadowbrite®, and the first three-species *Echinacea* hybrid, *Pixie Meadowbrite*®. Prior to the Chicago Botanic Garden, Ault was the plant propagator-physiologist at Longwood Gardens in Kennett Square, Pennsylvania, where he developed new crops for conservatory displays.



PAUL ECKE JR. COMMERCIAL AWARD

Given to an individual or company whose commitment to the highest standards of excellence in the field of commercial horticulture contributes to the betterment of gardening practices everywhere.

Ronald E. Gass is president of Mountain States Wholesale Nursery in Litchfield Park, Arizona, which specializes in desert-adapted native and exotic plants. Since co-founding the nursery in 1969, Gass has collaborated with botanists and other nursery owners to collect and propagate water-thrifty plants throughout the Southwest and Mexico in an effort to promote their use in American gardens and landscapes. His work has resulted in the introduction of more than 150 new varieties of plants over the years, many of which have become popular landscape plants.



G. B. GUNLOGSON AWARD

Recognizes the innovative use of technology to make home gardening more productive and successful.

Soil Food Web, Inc., in Corvallis, Oregon, analyzes soil samples to determine the presence of a range of beneficial soil organisms that are key to sustainable landscapes. Led by Elaine Ingham, the president and director of research, Soil Food Web is a small business that grew out of Ingham's university research programs. Working with collaborators around the world, Soil Food Web has drawn attention to the importance of living organisms in healthy soil and fostered the use of compost, vermicompost, and compost tea as sustainable solutions to soil problems encountered by individual gardeners as well as larger public and private landscapes.



HORTICULTURAL THERAPY AWARD

Recognizes significant contributions to the field of horticultural therapy.

Karen L. Kennedy has spent 23 years using horticultural therapy to improve the lives of people with disabilities and chronic illnesses. Currently, she is the manager of wellness programs at the Holden Arboretum in Kirtland, Ohio. She also teaches introduction and programming courses in horticultural therapy for the Horticultural Therapy Institute in Denver, Colorado. She serves as a mentor for professionals and interns training in the field and speaks about horticultural therapy topics regionally and nationally. She has served on the American Horticultural Therapy Association's (AHTA) board of directors and on various committees for the organization. Kennedy received the AHTA's Rhea McCandliss Professional Services Award in 1994.



LANDSCAPE DESIGN AWARD

Given to an individual whose work has demonstrated and promoted the value of sound horticultural practices in the field of landscape architecture.

Paul Comstock is the head of Comstock Studio, a landscape architecture and planning practice that is part of the ValleyCrest Design Group in Malibu, California. Formerly the director of landscape design for Walt Disney Imagineering, Comstock is known



for the natural artistry and cross-cultural creativity of his designs. Among his most significant projects is his design of Disney's Animal Kingdom, a botanically rich theme park in Orlando, Florida. In his work, he often draws inspiration from his years as a classically-trained, professional musician. Just as he would consider individual notes and rhythms when writing a song, Comstock says he considers the habit and ecological needs of each plant in order to compose landscapes that are both evocative and horticulturally sound.

MERITORIOUS SERVICE AWARD

Recognizes a past Board member or friend of the American Horticultural Society for outstanding service in support of the Society's goals, mission, and activities.

Carol F. Carter Morrison of Barrington, Illinois, served on the AHS Board of Directors from 1999 to 2008. During that time, she was active in several AHS committees, including serving as chair of the membership committee. A business consultant who works with executives and managers of large international corporations and government entities, her group facilitation skills allowed her to make exceptional contributions to the Society's strategic planning processes, to the increased effectiveness of the AHS's governing Board, and fostering constructive dialogue when the Board was faced with difficult decisions.



B. Y. MORRISON COMMUNICATION AWARD

Recognizes effective and inspirational communication—through print, radio, television, and/or online media—that advances public interest and participation in horticulture.

Since 1972, **William C. Welch** has taught horticulture at Texas A&M University and he currently works for the Texas AgriLife Extension Service in College Station.



He has written several garden books, including *Perennial Garden Color* (Taylor Trade Publishing, 1988), and *Antique Roses for the South* (Taylor, 1990). Welch is also the editor of the Southern Garden website and he contributes regularly to *Southern Living* magazine and numerous other publications. Welch makes frequent presentations to garden clubs and nursery industry groups, and in 2008 he received the Garden Club of America Distinguished Service Medal.

PROFESSIONAL AWARD

Given to a public garden administrator whose achievements during the course of his or her career have cultivated widespread interest in horticulture.

Since 1990, **Claire Sawyers** has been director of the Scott Arboretum of Swarthmore



College in Swarthmore, Pennsylvania. Prior to joining the Scott Arboretum, she worked at Mt. Cuba Center, in Greenville, Delaware, for seven years. She is the author of *The Authentic Garden: Five Principles for Cultivating a Sense of Place* (Timber Press, 2007) which draws from her varied garden experiences. She has been recognized with distinguished alumni awards from Purdue University (2008, 1999) and the University of Delaware (2001), and received the Garden Club of America Zone V Horticulture Commendation Award (2008).

JANE L. TAYLOR AWARD

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

Shawn Akard is the outdoor education coordinator for Hollin Meadows Science



and Math Focus School in Alexandria, Virginia. The school's Outdoor Education Program started out in 2005 as a volunteer effort to beautify school grounds with native Virginia species. Under Akard's leadership, it has grown to include numerous working gardens that serve as active outdoor classrooms for 600 students and a resource for the community at large. This program is serving as a successful model and Akard is working with other local schools to establish their own children's gardening programs.

TEACHING AWARD

Given to an individual whose ability to share his or her horticultural knowledge with others has contributed to a better public understanding of the plant world and its important influence on society.

Michael N. Dana teaches horticulture in the department of horticulture and landscape architecture at



Purdue University in West Lafayette, Indiana. With colleagues in landscape architecture and history, Dana developed a multidisciplinary study-abroad course in English landscape and garden history that has been taught bi-annually for nearly a decade. A similar travel-study course for Master Gardeners grew out of that program and has recently expanded to include French garden history. Dana received the Purdue University Outstanding Academic Counselor Award in 2001 for his undergraduate teaching and advising and the Silver Seal from the National Association of State Garden Clubs in 1992.

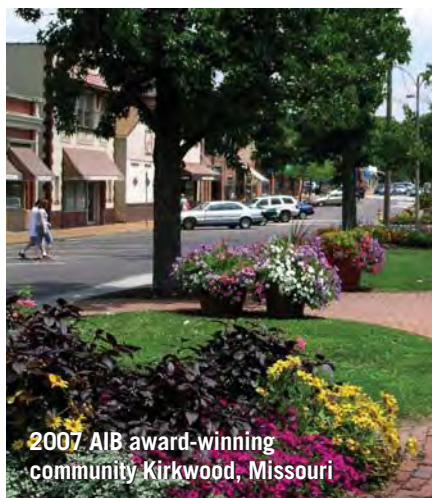
URBAN BEAUTIFICATION AWARD

Given to an individual, institution, or company for significant contributions to urban horticulture and the beautification of American cities.

America in Bloom (AIB) is an independent, non-profit organization based in



Columbus, Ohio, dedicated to promoting nationwide beautification programs and personal and community involvement through the use of flowers, plants, trees, and other environmental and lifestyle enhancements. AIB provides educational programs, resources, and the challenge of a friendly competition between partici-



pating communities across the country. In the first eight years of the program, more than 160 communities have participated in AIB, touching the lives of an estimated 21 million people across the country.

Nominations for 2010

If you would like to nominate someone for one of the 2010 Great American Gardeners Awards, please visit our website (www.ahs.org) and click on "Awards" for more information. The deadline for submissions is September 25, 2009.

2009 AHS Book Award Winners

Each year, the American Horticultural Society recognizes 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, and physical quality. This year's four recipients, selected from books published in 2008, are listed below.

The 2009 Book Award Committee was chaired by **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. Other committee members were **Scott Calhoun**, a garden designer and author based in Tucson, Arizona; **Thomas Cooper** of Watertown, Massachusetts, former editor of *Horticulture* and *The Gardener* magazine; **Jane Glasby**, associate librarian for the Helen Crocker Russell Library of Horticulture in San Francisco, California; **Doug Green**, a garden writer and online media entrepreneur based in St. Catharines, Ontario; **Doreen Howard** of Roscoe, Illinois, a former garden editor for *Woman's Day* who writes for various garden publications; and **Irene Virag**, a Pulitzer Prize-winning writer for *Newsday* who lives in Fort Salonga, New York.

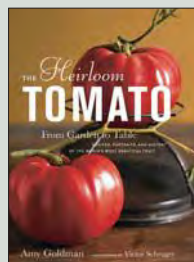
Hardy Succulents by Gwen Moore Kelaidis. Storey Publishing, North Adams, Massachusetts.

"Hardy succulents finally get the close-ups they've long deserved," says Irene Virag. "Saxon Holt's photographs are a stunning complement to Gwen Moore Kelaidis's words—together they inform and inspire," Virag adds. "This book pushes the boundaries beyond what has been done before on this subject," says Doug Green. "There was a real effort to pay attention to gardeners in colder climates where succulents are a challenge," notes Tom Cooper. "I was also struck by the effective use of boxes and captions, which have lots of useful information in them," he adds.



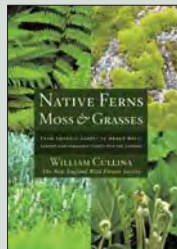
Heirloom Tomato by Amy Goldman. Bloomsbury USA, New York, New York.

"Much like Amy Goldman's previous award-winning books on melons and squash, this book is pretty enough to be a coffee-table book, but it is also a first-rate gardening book," says Marty Ross. "It is authoritative without being academic, and its photography and layout are exceptional," says Scott Calhoun. Jane Glasby notes that this book is "a celebration of biodiversity, with notes on origins and physical details, and best uses with appropriate recipes included."



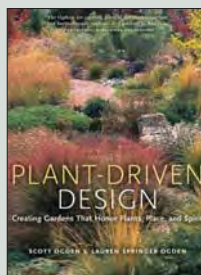
Native Ferns, Moss & Grasses by William Cullina. Houghton Mifflin, Boston, Massachusetts.

"This timely contribution to works on native plants gathers information on important but neglected groups of plants not readily found elsewhere," says Jane Glasby. She also found the book's appendices useful, "particularly the descriptions and tables about cultivation and propagation." "Cullina's plant portraits are fun to read as well as informative, which makes this more than just a reference book," says Irene Virag. Doreen Howard adds, "It's a gorgeous book with first-class photography."



Plant-Driven Design by Scott Ogden and Lauren Springer Ogden. Timber Press, Portland, Oregon.

"This book bucks a big trend in garden design that emphasizes hardscaping over plants," says Scott Calhoun. "I was particularly impressed by the extensive plant lists and the authoritative, compelling tone of the book," Calhoun adds. "The authors constantly bring up the idea of drawing influence from nature, reminding us we are all part of something larger," notes Marty Ross. Tom Cooper notes, "It's a useful and adventurous book, with terrific photography to illustrate its ideas."



Citation of Special Merit The AHS Book Award is given to publishers for a single book published in a specific year. However, the AHS Book Award Committee is also recognizing two reference books, whose various editions have made significant contributions to horticultural literature over time, with a Citation of Special Merit.

The Garden Primer by Barbara Damrosch. Workman Publishing, New York, New York. First published in 1988, this book has become a gardening classic, presenting a wealth of gardening knowledge in a clear and concise manner. The new edition, published in 2008, builds upon the original's strong foundation while incorporating the latest organic practices.

Herbaceous Perennial Plants by Allan M. Armitage. Stipes Publishing, Champaign, Illinois. Like the two previous editions released in 1989 and 1997, the 2008 edition of this treasured reference on perennial plants is a definitive guide to the hundreds of herbaceous perennial species and cultivars known and grown in North America.



Native Plants *for* Water Gardens

If you're creating a water feature—or redesigning an existing one—consider including some of these North American natives for their beauty and wildlife benefits.

BY LISA ALBERT

A POND WITHOUT plants is just a pool of water. It needs flowers and greenery along its edges and on its surface to enhance its beauty and foster a healthy aquatic ecosystem. And thanks to an increasing desire to garden with native plants, aquatic plants native to the continental United States have been an integral part of the water garden movement since the mid-1990s.

Serendipitously, most of the aquatic plants sold throughout the world are

North American natives. Some of these won accolades in Europe before gaining the attention of American gardeners. It's a perverse habit of gardeners everywhere to look elsewhere for beauty instead of discovering what exists in our backyards—or streams, ponds, and wetlands in this case. The appeal of our native aquatic plants lies in what they offer: beauty, wildlife habitat, and reduced potential to escape from our gardens and become thugs in natural areas.

When considering native water garden plants, it's important not to prejudge their aesthetic potential based on their appearance in their natural habitat. "Some of them aren't pretty in the wild," explains Greg Speichert, co-author of *Encyclopedia of Water Garden Plants* and director of Hilltop Garden and Nature Center in Bloomington, Indiana. "But when you take them out and cultivate them, you're amazed at how much prettier and how much bigger they are."

The eye-catching, yellow-and-white spikelike flowers of golden club emerge like tentacles along the shallow edges of ponds in spring.



Pickerel weed's spikes of deep purple flowers make it one of the most popular aquatic plants.

THINK REGIONAL

Before moving on to the plants, I want to reinforce an important caveat: This is a big continent, and not all plants native to the continental United States and Canada are suitable for growing outside their localized native range. Some may fail to thrive: the nights are too cool, the summers too warm, or the local water's pH is all wrong. In some cases, the days just aren't long enough. For instance, Arctic iris (*Iris setosa*), native to Maine, New Hampshire, and Alaska, requires 16 or more hours of sunlight. My Tualatin, Oregon, garden gets an average of 15 hours of summer sun, so I have a decent shot at growing this iris with success; however, anyone further south should select a more appropriate native iris.

Other plants grow so well that they become invasive. Aquatic plants aren't affected by climate in the same way as terrestrial plants. Even in bitterly cold winters, pond temperatures could be 45 degrees Fahrenheit deep below the surface, allowing aggressive plants to gain a foothold before their presence is known. (For more on invasives, see the box on this page.)

Additionally, the natural ranges for native water plants aren't as well documented as they are for terrestrial native plants. In some cases it is also difficult to determine whether a newly discovered plant population in remote areas was in existence before European settlers came to North America—the standard definition for determining native plant status—or whether it arrived on the scene more recently.

Now on to the plants themselves, organized by the different areas of water features to which they are best adapted.

SUBMERGED PLANTS

Because they live almost completely underwater, these behind-the-scenes workers are often overlooked for showier aquatics, but they are key to water quality and clarity. They efficiently absorb nutrients through their roots and leaves, out-competing undesired algae. They are effective dust busters: their foliage becomes statically charged during photosynthesis, attracting soil and other particles until their foliage is completely covered. If the water is too dirty, however, photosynthesis is in-

AVOIDING INVASIVES

Water gardens bring life to gardens and joy to homeowners, but they do come with some responsibilities, one of which is choosing plants that won't escape and damage local ecosystems.

"In the mid-1990s, we noticed that a lot of invasive species were being sold nationwide. We made a determined effort to purge our catalog of species that could be problematic in wild environments," says Eamonn Hughes, co-author of *Waterfalls, Fountains, Pools & Streams* and owner of Hughes Water Gardens in Tualatin, Oregon. "We tried to increase the use of native material—there are a lot of Northwest native wetland plants—because of the danger of invasive species that have either been brought in as ornamental plants or piggybacked in on other plant material brought from overseas."

Hughes experienced a recent, very surprising example of how easily a hitchhiker can find its way into water features. He discovered jellyfish—yes, *jellyfish*—in his pond, something he'd never seen, nor expected to see, despite 36 years of designing and constructing water features in Europe and the United States.

Many nurseries will note in their catalogs and on their websites if particular plants are prohibited for sale to specific states. However, it's wise to check your state's noxious weed list, too. These regulations aren't static; state and Federal weed control agencies update weed lists periodically. And, unfortunately, there are vendors that neglect to follow state and Federal weed laws.

"People need to be careful of what they are buying, either online or locally, and bringing into their ponds," says Hughes. "If they are going to be responsible stewards of the waterways, they shouldn't buy material that is invasive in their area."

And never, ever dump water plants—native or otherwise—anywhere but the compost heap or the trash. You never know what could be hitching a ride.

—L.A.

errupted and the plants eventually die.

Submerged plants are sometimes called oxygenators, but this is misleading, says Charles B. Thomas, editor-in-chief for the *Online Journal of Water Gardeners International*, past president of Lilypons Water Gardens in Adamstown, Maryland, and founder of the International Waterlily and Water Garden Society. “It’s true that in the presence of sunlight, these plants do produce a nice amount of oxygen...however, they consume oxygen at night,” notes Thomas. “They are beneficial but should not be relied on for oxygen production. The best thing to do is to let the water circulate, let it splash. That’s how the water will pick up oxygen.”

Thomas recommends at least one bunch of submerged plants for every square foot of water surface for ponds that are 100 square feet and smaller. For larger ponds, one bunch for every two square feet of water surface is sufficient.

Carolina fanwort (*Cabomba caroliniana*, USDA Zones 6–11, AHS Zones 12–6) and hornwort (*Ceratophyllum demersum*, Zones 6–9, 9–6) are two of the best water cleaners. To clean the plants and pond in one quick, slick action, use a bucket to scoop the plants from the pond, then rinse them off before returning them to do their job all over again.

Carolina fanwort, native to the southeastern United States, has fan-shaped, deep green leaves with dark red or purple

sunny to partly shaded ponds from one to 10 feet deep. Tiny white to creamy flowers appear in midsummer. In winter, it sinks to the pond bottom, providing valuable habitat for fish and other aquatic life. It’s been an excellent performer in my pond and a favorite egg repository for Pacific tree frogs.

Dwarf sagittaria (*Sagittaria subulata*, Zones 5–11, 12–5), a North American cousin of the more familiar arrowhead (*S. latifolia*), carpets the bottoms of ponds that are four inches to six feet deep. If planted at the right depth, the showy, half-inch diameter, white flowers will appear in summer just above the water’s surface. This easy grower thrives in full sun and tolerates slowly moving water.

Resources

Encyclopedia of Water Garden Plants

by Greg Speichert and Sue Speichert. Timber Press, Portland, Oregon, 2004.

International Waterlily and Water Gardening Society, www.iwgs.org.

Waterfalls, Fountains, Pools & Streams by Helen Nash and Eamonn Hughes. Sterling Publishing, New York, New York, 1999.

Water Gardeners International, www.watergardenersinternational.org.

Sources

Aqua Mart, Inc., Orlando, FL. (800) 245-5814. www.aqua-mart.com.

Lilypons, Adamstown, MD. (800) 999-5450. www.lilypons.com.

Paradise Water Gardens, Whitman, MA. (800) 955-0161. www.paradisewatergardens.com.

Scherer, S., & Sons, Inc., Northport, NY. (631) 261-7432. www.waterlilyfarm.com.

William Tricker, Inc., Independence, OH. (800) 524-3492. www.tricker.com.



Spreading slowly to form mounded clumps, umbrella plant (*Darmara peltata*), center, is an attractive marginal plant. A western native, it grows best where summer nights are cool.

undersides. Abundant tiny white flowers with yellow centers appear on or near the surface in summer. It grows in sun or shade in one to 10 feet of water. Speichert calls it a “versatile and attractive submerged aquatic” but warns that it can become weedy even within its native range, especially in newly built, clean ponds. Even small fragments will produce new plants. It’s banned in several states outside its native range.

Hornwort is native throughout North America and much of the world. Branches of thick, dark green, bristly foliage form large mats with no true roots in

FLOATING AND DEEP WATER PLANTS

Floating plants are among the easiest to grow. Potting is unnecessary, just toss them in the pond and let them float around. Their dangling roots draw in nutrients and filter suspended particles, limiting algae bloom and keeping the pond clear. Water depth is not a limiting factor for them, an adaptation unique to this plant category—and also a reason for caution. Case in point: the non-native water hyacinth is a major water pest, banned in warm winter states from Florida to California.

Deep-water plants—which include waterlilies, lotuses, and waterlilylike plants—

are sometimes incorrectly called floating plants because their foliage floats on the pond surface; however, their roots are anchored in soil. Water depth requirements vary, but in general they prefer still water.

Whether their roots dangle below the water surface or grow in soil, these plants serve similar purposes. They shade the pond, block ultraviolet light, and shelter pond life from predators. Reducing ultraviolet light, along with reducing the nutrient level, helps control the growth of algae. Shaded water is cooler, and cooler water holds more oxygen than warm water. Although it might seem, then, that completely covering a pond's surface would be best for pond denizens, too many plants deplete oxygen from the water, potentially reducing it to insufficient levels for fish and other aquatic animals. As a general rule, cover about one-third of the water surface with floating and deep-water plants. Container water gardens without aquatic life are an exception; you can fill every inch of water surface.

Fairy moss (*Azolla caroliniana*, Zones 4–II, 12–I) is a floating fern native to the eastern half of the United States from Texas to New England and as far north as Wisconsin and Michigan. Tiny bright green leaves that look like a cross between miniaturized arborvitae branches and spikemoss (*Selaginella kraussiana*) turn



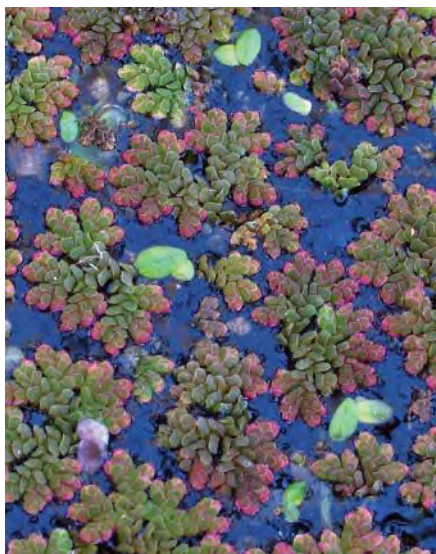
American lotus, above, has been used to develop many attractive hybrids such as 'Louise Slocum', left.

grows best in a couple of feet of water in sun or part shade.

American lotus (*Nelumbo lutea*, Zones 4–II, 12–I) is an enchantress with large, wavy-edged round foliage, pale to medium yellow flowers in summer, and intriguing seedheads. The flowers appear above the foliage and play a game of peek-a-boo during their three- to four-day life span, their color fading as they age. After the petals drop away, the lotus seedpods are decorative in their own right, gradually changing from yellow to green to brown. Native to the eastern United States, American lotus is a heat lover, growing best where summers are hot and humid. Plant it in a container to control its root spread

red in sunlight and in fall. It's a delicate-looking plant that can be invasive; high water turbidity and low nitrogen levels may limit its growth. Remove excess plants by net or pond skimmer and add them to garden beds—they dry out and break down almost instantly, like grass clippings—or to the compost heap.

Little floating heart (*Nymphoides cordata*, Zones 6–10, 10–4), is native to much of eastern North America. Its dainty two-inch leaves look like miniature lily pads and it bears starlike white flowers in summer. It



Covering some water surface with plants is important for keeping water gardens healthy. Above left: Fairy moss, a floating fern, appears kaleidoscopic. Above center: Cow lily is also known as spatterdock and pond lily. Above right: Little floating heart has dainty pads and flowers.

before placing it in your pond. Start young plants in shallow water—an inch or two over the soil surface—then gradually move them to deeper water as the stems lengthen. Thomas finds that once established, they perform well in six to 12 inches of water. Crosses between American lotus and other hybrids have yielded several popular selections, including those developed by the late water lily and lotus hybridizer Perry D. Slocum.

North American native cow-lily (*Nuphar lutea*, Zones 3–9, 9–1) has waterlilylike leaves (it is a member of the waterlily family) that either float or are held an inch or two above the water. Sphere-shaped, bright yellow flowers appear in summer two to four inches above the water. It can spread up to six feet wide with pond depths of one to two feet.

MARGINAL PLANTS

The margins of water features are suited to the broadest selection of native water garden plants. This grouping of plants goes by several different labels: shallow water plants, bog plants, and marginals; the last term is the one I have chosen to use.

Speichert describes these plants as the “most misunderstood and underrated components of the aquatic landscape.” He points out that “they are good for soil stabilization and water filtration, they add habitat diversity for animals and insects...they are the border perennials for the pond, they come into flower early, late, and add textural interest.”

Marginals grow in moist soils or in varying depths of water over their crowns. Most are fairly easy to grow in ponds with roughly neutral pH but there are exceptions—such as pitcher plants (*Sarracenia* spp.) and northern calla lily (*Calla palustris*)—that demand acidic conditions. Pitcher plants, as well as other carnivorous plants, also grow best in fertile soil. These requirements can make them fairly tricky pond compan-



Monkey flowers such as ‘Lothian Fire’ thrive in shallow, moving water in part shade.

ions, but they are great for growing in containers and bogs (to learn how to grow pitcher plants, click on “The Potted Bog,” a web special linked to this article on the AHS website at www.ahs.org).

Umbrella plant (*Darmera peltata* and its cultivar ‘Nana’), floating marsh marigold (*Caltha natans*), cowslip (*Caltha palustris*), and skunk cabbage (*Lysichiton americanus*) are good bets in regions with cool summer nights, but they will put in



Above: Marsh marigold signals spring in temperate regions. Right: Drooping flower spikes distinguish lizard tail.

hot weather, their growth generally diminishing each year until they completely fade away. Hot weather-loving natives include mallows (*Hibiscus coccineus* and *H. moscheutos*), and irises such as copper iris (*I. fulva*), the Louisiana iris hybrids, and Virginia iris (*Iris virginica*).

A grassy shoreline filled with open, reedlike plants, such as sweet flag (*Acorus calamus*, *A. americanus*), rush (*Juncus effusus*, *J. patens*) and water willow (*Justicia americana*), provides important habitat for frogs and other amphibians.

Lizard tail (*Saururus cernuus*, Zones 2–11, 12–1), native to the eastern U.S., has heart-shaped leaves and nodding spikes of sweetly scented, white

flowers that bloom for about a month in summer. Lizard tail spreads by underground runners, growing 12 to 36 inches tall. Plant it in moist soil or water up to six inches deep in sun to part shade, though it will flower even in deep shade.

Native to northern and western regions of the United States, bog bean (*Menyanthes trifoliata*, Zones 4–8, 8–1) is a low-growing, clump-forming aquatic



MORE NATIVE PLANT CHOICES FOR WATER GARDENS

These plants are suited to the margins of ponds or in bog gardens or moist containers; all tolerate wet feet and some (marked with an asterisk) will grow in shallow standing water. They all prefer full sun, except where noted.

Name	Height (feet)	Features	Origin	USDA Zones/ AHS Zones
* <i>Acorus calamus</i> 'Variegatus' (sweet rush)	2–3	clump-forming; irislike foliage is variegated cream and green	selection of broadly native species	3–10, 10–2
<i>Bacopa caroliniana</i> (lemon bacopa)	1–1½	groundcover with lemon-scented foliage and purple flowers	southeastern U.S.	9–11, 11–7
* <i>Crinum americanum</i> (Southern swamp lily)	1–3	clump-forming with upright leaves; 4-inch white flowers bloom in late summer	southeastern U.S.	8–11, 12–7
* <i>Darmera peltata</i> 'Nana' (umbrella plant, Indian rhubarb)	2–3	pinkish white flower clusters in early summer; rounded, toothed leaves open after bloom	California, Oregon, and Utah	7–9, 9–7
* <i>Decodon verticillatus</i> (water willow, swamp loosestrife)	3–4	shrubby perennial with willowlike leaves; tufted dark pink flowers bloom in late summer	eastern and central U.S.	3–10, 10–3
<i>Hibiscus coccineus</i> (Swamp hibiscus, scarlet rose mallow)	6–8	large deep red flowers bloom in late summer on semi-woody stems	southeastern U.S.	6–11, 11–5
* <i>Iris fulva</i> (copper iris)	1–2	clump-forming with linear leaves; pinkish red flowers bloom in early summer	southeastern and central U.S.	5–10, 10–4
<i>Mimulus guttatus</i> (yellow monkey flower, seep monkey flower)	1–3	annual or perennial with yellow flowers; needs full to part shade	western North America	7–9, 9–7
* <i>Peltandra virginica</i> (bog arum, green arrow arum)	2–3	clump-forming plant with arrowhead-shaped leaves; hooded flower often hidden by foliage	eastern and central North America	4–10, 10–3
* <i>Thalia dealbata</i> (purple thalia, powdery alligator flag)	2–5	clump-forming with gray-green leaves and purple flowers; sun to part shade	southern and central U.S.	5–10, 10–5




Bog bean bears fragrant, curious-looking white flowers in summer.

that will grow two to three feet out into the water with its roots dangling below, giving small fish a great place to hide. Pink flower buds open to fragrant, white blooms in early summer just above the foliage. Plant in one to three inches of water in sun to part shade.

Golden club (*Orontium aquaticum*, Zones 6–10, 10–4) is a tightly growing, clumping marginal species with velvety, lance-shaped foliage up to 18 inches tall. This arum family member is native from Massachusetts south to the Gulf Coast and Texas, but is listed as endangered in several states. Its intriguing white flower spikes, which terminate in a golden yellow spadix, appear in summer. Plant this easy grower in water up to 12 inches deep. It will grow best in sun to part shade, although it can survive in deep shade.

GOING BEYOND THE ORDINARY

With such a wonderful selection of native water garden plants to grace our gardens, gardeners should look beyond the familiar pickerel weed (*Pontederia cordata*) and cattails (*Typha latifolia*) to discover other aquatics that merit greater use. Some are widely available but you may need to seek out less common choices at native plant nurseries or mail-order companies. With careful selection and artful blending of shapes, textures, and colors of foliage and flowers, your pond will become a water garden that appeals to the senses, sustains wildlife, and treads lightly on the natural world. 

A freelance writer based in Tualatin, Oregon, Lisa Albert is a contributing writer for Sunset magazine and the Sunset Western Garden Book.

mining the potential of Shade-loving Natives

BY GRAHAM RICE



A tapestry of heucheras, top, grows in the western Pennsylvania test gardens at Primrose Path, the home and nursery of plant breeders Charles and Martha Oliver, above.

Without fanfare, Charles and Martha Oliver have expanded the palette of America's shade-loving native wildflowers.

IN A QUIET corner of Westmoreland County, Pennsylvania, there is an unmarked track off a country road in what used to be a highly industrialized and prosperous part of the Keystone state. This area southeast of Pittsburgh was at one time the heartland of the coal industry, run in the late 19th and early 20th century by Henry Clay Frick, once known as "America's most hated man" for his ruthless business methods. Brass and silver works, steel and iron factories, and machine shops, fuelled by local coke, were all significant local industries for decades.

At the end of the gravel track, nestled in woods growing on the spoil from the mines, now lies the Primrose Path, a small nursery and plant breeding operation focusing primarily on American native plants. From this isolated location, Charles and Martha Oliver have quietly launched an exciting range of foliage and flowering plants that has inspired gardeners to add new colors and textures to temperate gardens around the world.

For more than 20 years, the Olivers have dedicated themselves to the study of native plants and plant communities both in their backyard and on plant hunting trips to remote locations throughout North America. Along the way they have shared their insights and inspiration with those they encountered through their nursery business, their involvement with likeminded plant buffs in groups such as the North American Rock

PHOTOS ON THIS PAGE AND OPPOSITE: JUDYWHITE



Garden Society (NARGS), and their lectures to garden groups and college students. But they have influenced a much broader audience—gardeners around the world who grow any of their numerous plant introductions—through their plant breeding work.

IN THE AFTERMATH OF MINING

At the Primrose Path, the house, nursery, garden, and nature intermingle seamlessly. In spring, the woods are carpeted with phlox that spread almost up to the door. In early fall, the wingstem (*Verbesina alternifolia*) is like headhigh streaks of butter spread across the tree foliage; it stands alongside the tomatoes in the vegetable garden and sneaks up to the big shade house where potential new introductions are being assessed.

A century ago, this 107-acre tract was deep-mined for coal. Mining ended in

1914 and the woods have since re-asserted themselves. The fundamental soil is derived from a mix of shale, coal, sandstone, and limestone—with a pH that varies from neutral to acidic—but the residue of mining operations has left an unusual balance of metals that causes some new plantings to grow well at first before root growth stops.

Because of the demanding nature of their breeding program, the Olivers have created raised beds filled with their own soil mix for their trial gardens. This ensures that any observed variation in individual plants derives from the plants themselves and not from the mixed legacy of coal mining.

THE PRIMROSE PATH

When Charles and Martha Oliver moved to the property in 1972, they initially ran a laboratory for testing drinking water. They launched the Primrose Path nursery in 1985.

Charles majored in biology at Harvard, then, anticipating a career in college teaching, he earned a doctorate from Yale specializing in the evolutionary genetics of butterflies and moths. But he had started growing native plants at an early age and joined the American Fern Society while still in high school. Martha earned a master's degree in English at the University of Pennsylvania, taught English, and has written for many publications. Through study of native plants in the wild, she developed a rich understanding of their communities. Martha also named the nursery, inspired by a passage in Shakespeare's *Hamlet*.

At first the Olivers grew and sold a wide range of perennials, but it became clear that a more specialized focus was needed. So they drew on their love of native plants and their location in extensive woodlands to concentrate on native shade plants.

Perhaps unsurprisingly, Charles's background in genetics influenced him to look for ways of improving native plants. His first introductions came in 1988. These included a dwarf form of blue lobelia (*Lobelia siphilitica*), still growing in the garden at Primrose Path, and selections of native phlox: *Phlox* × *procumbens* 'Rosamund' and *P. subulata* 'Allegheny Smoke' and 'Green Ridge'. This was also the year Charles and Martha introduced their first hybrid heucheras. In 2001, the

Olivers discontinued the retail mail-order side of their business to concentrate on breeding and supplying young plants to wholesale growers.

Most of the plants raised at Primrose Path are propagated by tissue culture. Tiny pieces are cut from the growing point of the plant and placed under lights in sterile conditions on a nutrient medium. They can then be repeatedly split in the same sterile conditions, allowing a large number of plants to be propagated quickly. Each plantlet is then transferred into compost and grown on in the greenhouse.

The Olivers have their own tissue culture laboratory, housed rather incongruously, in an old barn. Here they maintain stocks of their varieties so that virus-free, true-to-name material can be supplied to other laboratories and wholesale growers.

PLANT BREEDING

In all, the Olivers have now introduced more than 80 new plants, including 39 heucheras (six became available to gardeners for the first time this year), 19 foamflowers (*Tiarella* spp.), nine heucherellas (×*Heucherella* spp.)—intergeneric crosses between heucheras and foamflowers—12 phlox, and a variety of other plants.

The success of their breeding program is evident from the growing list of wholesale growers that have signed on to sell their plants, including Blooms of Bressingham, Walters Gardens, Skagit Gardens, and North Creek Nurseries. In 2008, Monrovia, one of the largest wholesale plant



In the tissue-culture laboratory, Charles Oliver examines flasks filled with plant cuttings.

suppliers in North America, included four of the Olivers' heucheras—"Crystal Spires", 'Caroline', 'Moonlight', and 'Rose Majestic'—in its line of new plant introductions.

"What initially piqued my interest in the Olivers was their breeding program, which focuses on including indigenous plant species rather than just crossing hybrids that are already in the business," says Nicholas Staddon, Monrovia's director of new plant introductions. According to Staddon, two attributes distinguish the Oliver-bred heucheras Monrovia is introducing—a vigorous growth habit and larger and more attractive flowers. "A lot has been done with foliage color in heucheras," says Staddon, "but Charles's focus on flowers is of particular interest to us."

Almost all the selection and plant breeding at Primrose Path is based on native species. A few of the Olivers' introductions, such as 'October Skies', an exceptional selection of *Aster oblongifolius* that has a shorter, bushier habit than the species, have been discovered growing on their property. Most, however, are hybrids of plants selected in the wild for special features or grown from wild-collected seed.

Bringing together native species from different regions that would not normally grow together—and so would normally not hybridize—and using forms with valuable ornamental features, the Olivers have created new garden plants that can take advantage of their thousands of years of adaptation to the rigors of the wild.

HEUCHERAS

Heucheras, sometimes called coral bells, have always been their priority, and from the beginning, one of the primary aims of the breeding program has been to develop plants that are tough and reliable in the garden. By using as parents species native to the eastern United States, such as *H. pubescens* and high-altitude forms of *H. alba* and *H. villosa*, the selections are naturally hardy.

"I'd collected seeds of *H. pubescens* from Larenim Park in the shale barrens of West Virginia," says Charles, recalling his early introductions, "and grew those with the best silvered foliage with a pink flowered form of *H. xbrizoides*. From that

***Heuchera* 'Moonlight' was one of four selections released by Monrovia last year.**



The Olivers selected 'October Skies' aster from a plant growing on their property.

came the 'Larenim Hybrids', with green foliage lightly marbled in silver and with pink or white flowers.

"At about the same time, I also grew *H. xbrizoides* 'White Cloud' alongside the marbled *H. pubescens* and this gave us 'White Marble', introduced in 1995, with attractive silvered green foliage and un-

usually large white flowers aging to pink," notes Charles. Crossing 'Montrose Ruby'—a vigorous hybrid of *H. americana* and *H. villosa* with silver-red leaves developed by North Carolina plantswoman Nancy Goodwin—with 'White Marble' created the exceptional hybrid 'Quilter's Joy', which remains one of the most popular Primrose Path plants. The foliage, with its bronze and silver mottling, set the tone for many later introductions and is complemented by contrasting white flowers. Being only two generations from its tough wild ancestors, 'Quilter's Joy' has proved a very hardy plant.

Crossing 'Quilter's Joy' with the very large-flowered 'Chatterbox', whose pink blooms are set against silvery patterned green leaves, begat the excellent 'Regina'.

Of course, the very best foliage color has always been a top priority, but other parent species, including *H. pubescens* and *H. sanguinea*, also bring large flowers. By the time 'Quilter's Joy' and its descendent 'Harmonic Convergence' were introduced in 1997, they mingled the





Attractive flowers and foliage make *Heuchera* 'Raspberry Ice' a striking garden plant.

blood of four species: *H. americana* for silver leaf patterns; *H. pubescens* for silver leaf patterns and large flowers; *H. sanguinea* for large and colorful flowers; and *H. villosa* for purple leaf color.

Charles also created the Petite Series, a range of neat and compact varieties best suited to raised beds and containers and very popular with rock gardeners. Again,



'Petite Marbled Burgundy' is one of six heucheras in the Petite Series.

wild species began the work. *H. pulchella*, from New Mexico and *H. hallii* from Colorado are both dwarf, sun-loving, high-altitude species, and crossing the two resulted in the six-inch-tall 'SanPico Rosita' with dark pink buds opening to pale pink flowers above green leaves. Crossing this with 'Regina' produced the six named forms that make up the Petite Series.

The crossing of 'Petite Bronze Pearl' and 'Harmonic Convergence' resulted in plants with highly silvered leaves and upright stems of white or pink flowers. Four were named, including 'Silver Scrolls', the most popular of the group, and 'Raspberry Ice', which the Olivers feel best combines excellence of both flower and foliage with bright silvery leaves. The large pink flowers also sit attractively close to the mound of leaves.

Heuchera alba, sometimes lumped by botanists with *H. pubescens*, came into the mix relatively recently as a result of breeding stock found high in the mountains of West Virginia. Using these plants, with their unusually large creamy flowers, the Olivers began to increase their focus on improving the flower power of their plants while maintaining excellent foliage color and pattern.

Using *H. alba* as a parent resulted in the unusually large, leafy, and colorful

Resources

The Primrose Path,
www.primrosepath.com.

**Heuchera, Tiarella and Heucherella:
A Gardener's Guide** by Charles and
Martha Oliver. B.T. Batsford Ltd.,
London, England, 2006.

Sources

Doyle Farm Nursery, Delta, PA. (717)
862-3134. www.doylefarm.com.

Lee's Gardens, Tremont, IL. (309)
925-5262. www.leesgardens.com.

Rare Find Nursery, Jackson, NJ.
(732) 833-0613.
www.rarefindnursery.com.

Sunlight Gardens, Andersonville, TN.
(800) 272-7396.
www.sunlightgardens.com.

'Shenandoah Mountain' as well as 'Purple Mountain Majesty' and the newly released 'Moonlight', all with unusually large flowers blooming above the familiar high standard of patterned leaves.

They brought the coloring of 'Bronze Wave', their selection of *H. villosa* with bronze-purple foliage which keeps its color well, into the mix by crossing it with a number of silver foliage types. However, out of many hundreds of seedlings, only 'Frosted Violet' stood out.

Relying again on wild populations, they crossed a very large-flowered form of *H. cylindrica* with 'Chatterbox' to create 'Coral Bouquet', which has showy pink flowers over lightly silvered leaves. This is now being crossed with the highly silvered forms to combine the largest, most colorful flowers with fine foliage.

When I visited Primrose Path last September, I was impressed by the heuchera trial bed. During a long drought, the plants had not been watered at all. The result, of course, was that many had simply died—but those that remained had proved they could cope with such harsh conditions. Combining drought tolerance with cold-hardy parentage ensures that the

Olivers will continue to create unusually robust plants capable of thriving in a wide range of conditions.

FOAMFLOWERS AND HEUCHERELLAS

Alongside the popular heucheras, the Olivers have worked to develop foamflowers (*Tiarella* spp.) that combine colorful flowers with attractive foliage. Starting with local wild-collected forms, selected plants of the eastern *T. cordifolia* were crossed together to create 'Tiger Stripe', with pale pink flowers and often boldly maroon-marked foliage. This was in turn crossed with a deeply dissected form of the western *T. trifoliata* forma *laciniata* leading to 'Martha Oliver', which has densely packed flower heads and deeply dissected foliage



Foamflowers such as *Tiarella* 'Pink Blushes' create striking spring flower displays.



A popular selection, *Tiarella* 'Elizabeth Oliver' is named for the Olivers' daughter.

striped in maroon. 'Elizabeth Oliver', with noticeably scented pink flowers and delightfully patterned daintily cut foliage, followed. The later 'Pink Brushes' is exceptionally prolific and has a longer flowering season, from spring into summer, a trait which they have succeeded in building in to later introductions.

It was perhaps only natural to start crossing the two genera to create heucherellas (\times *Heucherella* spp.) which, while combining the best of both parent genera, have proven overall less robust in the garden. Charles started making crosses in the late 1980s that led to 'Snow

White' and 'Pink Frost', both with silvered green foliage shading to maroon at the base. Later crosses produced the unusually vigorous 'Quicksilver'.

The necessity to pamper the heucherellas brings us back to the Olivers' enthusiasm for creating tough, gardenworthy plants. "Too many plants are out on the market," Charles says, "just because they look different, but an awful lot are not very good plants. I want to breed plants that will still be around in 20 or 30 years. I wish we could all think more about what sort of plants we really want, and test them more."

The Olivers' work on these heucheras, tiarellas, and heucherellas has inspired other breeders in North America and Europe to focus on these plants, which have now become far more valuable in the garden—and immensely valued by gardeners. And they collaborated on an



'Spring Sunshine', one of the Olivers' primroses

influential book, *Heuchera, Tiarella and Heucherella: A Gardener's Guide*, published in 2006 by B.T. Batsford, Ltd.

Primrose Path has also selected and introduced other fine plants and continues to develop others. There have been a number of woodland phlox, a sedum, an evening primrose (*Oenothera* spp.) called 'Sunrise', and a lovely yellow primrose called 'Spring Sunshine' that resembles a large-flowered form of *Primula elatior*.

EXPANDING NATIVE OPTIONS

When time allows in their schedule, the Olivers continue to explore natural areas looking for potential breeding stock. And there are other projects underway closer to home. For instance, Charles has been working with a number of well-marked forms of native Jack-in-the-pulpit (*Arisaema triphyllum*) he has selected from the Olivers' woodlands. "He thinks it might be interesting to cross them with some of the Japanese arisaemas," notes Martha.

For nearly a quarter century, the Olivers have drawn on their passion for native plants and their understanding of how to grow them. Combining this with their scientific background and artistic sensibilities, they have expanded the palette of native plants available to gardeners. In so doing, they've also helped heucheras become among the most popular perennials in the country.

Graham Rice is the author of numerous books and is editor-in-chief of the AHS Encyclopedia of Perennials (DK, 2006).



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Coreopsis reconsidered

BY ALLAN M. ARMITAGE

THE NAME *Coreopsis* translates to “like a bug”—that should tell you something right there. If that is not enough, its common name, based on the size and color of its seeds, is tickseed. How many bugs (or ticks) do you cherish? Most of us spend our lives trying to exterminate bugs. And as for ticks, well, my dog, Hannah, can give you her opinion of those itchy things.

Although saddled with the common name tickseed, a number of perennials in the diverse genus *Coreopsis* have become garden mainstays. In this overview of the genus, horticulturist Allan Armitage doesn't mince words about his likes and dislikes of these top-selling perennials.

These plants, however unpleasant the name, have been an important part of the American perennial plant palette for some time. For starters, there are lots from which to choose—between 80 and 120 species, depending on who's counting—all native to North America. And certainly for a rookie gardener or a beginning landscaper, coreopsis is often a staple, because some of them—especially the familiar common tickseed (*C. grandiflora*), which is *not* one of my favorites, as you'll see later on—are among the easiest plants to produce and therefore are always available to unsuspecting gardeners in the spring.



Coreopsis flowers come in a variety of shapes and colors. Top: The hybrid ‘Autumn Blush’ bears soft yellow flowers with contrasting red markings. Above, left: ‘Sunfire’ is a variety of common tickseed with fringed petals. Above, right: ‘Pinwheel’ features distinctive, narrowly fluted petals.

TOP: COURTESY OF TERRA NOVA. BOTTOM (L): ALLAN ARMITAGE

Most of the species are described as perennials, but in reality many of them perform in the garden more like annuals or biennials. In talking about coreopsis with a number of gardeners, I find that sentiments differ, but the comment of Judy Laushman, who is director of the Association of Specialty Cut Flower Growers and a gardener in northern Ohio, struck a chord. “When I thought about it, I realized coreopsis is one of

asts, especially those in the Midwest, who have been extolling the virtues of some of our lesser-known native *Coreopsis* species.

I should mention that, in preparing this article, I consulted Nick Lomas, a student at the fabulous Niagara Parks School of Horticulture in Niagara Falls, Ontario. Lomas, whom I met last year during a sabbatical from the University of Georgia, is a terrific horticulturist with the potential to be one of Canada’s finest.



‘Jethro Tull’, a mouse-ear coreopsis selection, bears fluted golden ray flowers.

those plants that I buy one spring, tend lovingly throughout the season, then a couple years later think, ‘Hey, didn’t I...wasn’t there...? I could’ve sworn I planted some coreopsis there.’”

In my travels around the country I have closely scrutinized these plants growing in many different regions; I have also grown many of the newer cultivars in the University of Georgia’s trial gardens in Athens. So before I start to sound like a coreopsis scrooge, let me make it clear that I applaud the work of plant breeders who are providing some outstanding hybrids. I also want to tip my hat to some of the native plant enthusi-

So, between the young lad and the old man, here are a few coreopsis to consider.

GETTING STARTED WITH TICKSEEDS

Native from Georgia south to Florida and west to Kansas and New Mexico, common tickseed (*C. grandiflora*, Zones 4–9, 12–1), is a great beginner’s plant. It is so easy to grow in the nursery that most plants are in full flower in their containers as we push our carts through the aisles. Plants grow 12 to 15 inches tall and may bear single, double, or semi-double yellow flowers most of the season. The yellow flowers glow above the dull green leaves in the spring and continue to

bloom after planting. I recommend grouping at least a half-dozen plants in the front of the garden or two to three in a container so the flowers and foliage can be appreciated. But I know you’re thinking, if this plant is so good, why am I one of its biggest critics?

The answer is that this is a great annual, or a biennial at best, and if sold as such I would be its biggest supporter. It tolerates cold temperatures, but suffers badly in the heat of the summer, often contracting diseases such as leaf spot and botrytis. It does not tolerate wet soils, so excellent drainage is essential. One of its greatest assets is also one of the gardener’s greatest challenges—Flowers are produced constantly but only if the spent flowers are deadheaded. If not removed, they become blackened and diseased and, by midsummer, the plant stops flowering, resulting in a wet dog look that over time becomes a dead dog look.

Make no mistake, I recommend this species to my daughters because of its ease of culture, but I tell them to put it somewhere accessible so flowers can be easily removed. They nod their heads, accept Dad’s free flowers, and hope he doesn’t visit in the middle of the summer.

Improved cultivars have been developed, and although I don’t feel many are a great deal better than the species, here are a few that are worth a try.

‘Early Sunrise’ was an All-America Selections winner in 1989. Plants are easily raised from seed and bear bright yellow, semi-double, two-inch-wide flowers. It was a breakthrough plant for producers that allowed coreopsis to be in flower for spring sales. Although not persistent, it’s excellent for a couple of years.

Flying Saucers (‘Walcoreop’) offers good flower productivity and a compact habit. Its flowers are yellow to gold.

‘Rising Sun’ has earned some accolades from the Europeans, being named a FleuroSelect Gold Medal winner in 2005. Its large double flowers are yellow with a mahogany base.

‘Sundancer’ is an exceptionally good plant from Dupont Nursery in Plaquemine, Louisiana. Plants, which were selected from ‘Sunray’ in 1992, exhibit a dwarf habit, semi-double flowers, and a long bloom period. They have looked very good in our trial gardens.

‘Sunfire’ has fringed yellow ray flowers

and wine-red markings in the center.

'Sunray' is an old-fashioned selection that has stood the test of time. Plants bear two-inch-diameter double flowers on two-foot plants for eight to 12 weeks.

'Tequila Sunrise', sometimes listed as a hybrid, is either the ugliest or the prettiest plant you have ever seen. Its variegated foliage is green and white with a hint of pink, topped by golden single flowers. I have always enjoyed the plant, but I seem to be in a minority. It does not have great vigor and will likely not persist for more than two years.

Lanceleaf coreopsis (*C. lanceolata*, Zones 3–8, 9–1) has a similar native range to common tickseed and behaves in much the same way in the garden. It grows one to two feet tall and bears golden yellow flowers on slender stems from spring to early summer. Because it tends to reseed, it is often used in roadside wildflower plantings and meadows. 'Goldfink', a dwarf selection growing to 10 inches tall with handsome yellow flowers that have an orange eye, is probably the best of the cultivars.

My experience with mouse-ear coreopsis (*C. auriculata*, Zones 4–9, 9–1) has been much more positive, but this native of the American Southeast is an early



Growing to eight inches high, *Coreopsis auriculata* 'Nana' is an early-spring bloomer.

spring-flowering plant only. Stay away from this plant if the label does not say 'Nana' or one of the other cultivars listed below, because the species itself is quite tall—to two feet—and not as useful for the garden.

'Nana' grows to about eight inches and produces dozens of bright yellow flowers over foliage that remains in good condition all season if moisture is provided. If

plants dry out, however, the foliage self-destructs. Don't expect flowers after late June in the North, late May in the South.

By the way, flowers of the true 'Nana' are sterile and the leaves are less than an inch long. It seems that over time, some natural hybridization has occurred with cultivars of *C. grandiflora*. The resultant hybrid is taller than 'Nana', shorter-lived, not as stoloniferous, and the flowers are not sterile. If plants are grown from seed, it is probably not 'Nana'.

In addition to 'Nana', a couple of newer selections I quite enjoy are 'Jethro Tull' and 'Zamphir'. These are usually listed as cultivars of mouse-ear coreopsis, but there seems to be some hybrid vigor involved. 'Zamphir' is not as good a performer as 'Nana', but has proven to be a winner. Plants are also dwarf, usually reaching 10 to 15 inches. The flowers are a golden yellow, but what is most unusual is that the ray flowers are "open" at the ends, and look like wine flutes, quite different from other cultivars. 'Jethro Tull', which originated from ItSaul Plants in Georgia, resembles 'Zamphir' but is even better. It has more consistently fluted ray flowers. We have enjoyed this 12- to 15-inch-tall selection in the trial gardens because it has a long flowering period and quite special flowers.

In my travels, pink coreopsis or rose tickseed (*C. rosea*, Zones 4–7, 8–1) strikes me as a Jekyll-and-Hyde plant. I have observed lovely stands in northern Ohio and in parts of Canada, but elsewhere have

COREOPSIS BASICS

Members of the aster family (Asteraceae), tickseeds resemble many of the other composites that have daisylike, usually yellow, flowers. One distinguishing characteristic is that they have two distinct circles of bracts, or modified leaves, around each flower head; the outer bracts are generally green and the inner ones are broader and often yellowish.



Low-growing 'Autumn Blush' coreopsis is well suited to the front of a sunny border.

Generally drought tolerant, tickseeds grow best in sunny sites with well-drained soil. The lower-growing ones fit in well at the front of a sunny border, while the taller varieties look best in a more naturalistic setting such as a meadow or cottage garden.

Perennial species, which spread slowly via underground stems called rhizomes, can be propagated by division in spring. Both annuals and perennials are fairly easy to grow from seed sown at 70 degrees in late winter to early spring.

—A.M.A.

seen way too many spotty plantings to get really excited about it. But if you can grow it, enjoy it. The plants are characterized by thin foliage and rose flowers with yellow centers. They generally grow only about eight to 10 inches tall and, at their best, form lovely colonies through a rhizomatous root system. At their worst, they send up a few spindly stems and flowers, which should be ripped up and put out of their misery. Full sun and excellent drainage are necessary. Consider placing them on a sloping bank to enhance the drainage and provide a better view of the flowers. Plants do far better in cooler climates and should be avoided south of USDA Zone 6.

A selection called 'Sweet Dreams' seems to have a good bit of *C. rosea* blood, but is more heat tolerant and vigorous. We grew these in our trial gardens for many years and they always stopped people in their tracks. They grow 12 to 15 inches tall, but need to be cut back hard in late spring or early summer, especially in warm climates. Doing so stimulates growth of many thin stems that carry white daisy flowers with a wonderfully contrasting red center.

THREADLEAF COREOPSIS

Probably the most forgiving and revered tickseed is threadleaf coreopsis (*C. verticillata*, Zones 4–9, 9–1). Actually the species toiled in abject anonymity until cultivars such as 'Zagreb' and 'Moonbeam' put better plants with interesting flower colors in front of gardeners. This species is the most heat tolerant of all the common coreopsis mainly because the whorled leaves are so thin that they lose



Cut back *Coreopsis rosea* 'Sweet Dreams' in late spring or early summer to stimulate a second flush of blooms.



The soft-toned flowers and fine-textured foliage of threadleaf coreopsis 'Moonbeam' create a pleasing contrast with the magenta blooms of bloody cranesbill (*Geranium sanguineum*).

very little moisture during the season. The bright yellow flowers are lovely and continue for many months. They still benefit from deadheading, but not to the extent of common tickseed. The following selections are all excellent choices.

'Golden Gain' is one of my favorites, forming two-foot-tall mounds covered with golden flowers most of the season. Nothing fancy, just good performance.

'Golden Shower' grows 18 to 24 inches tall and produces two-and-a-half-inch-diameter bright yellow flowers. It stands out even in a crowded border.

Selected as Perennial of the Year in 1992 by the Perennial Plant Association, 'Moonbeam' was the most popular cultivar for years and performs well throughout the country. Plants grow 18 to 24 inches tall and bear many soft-yellow flowers. These open continuously from late June to October, combining well with purple-foliaged plants.

The toughest and best performing cultivar is 'Zagreb', which has deeper yellow flowers than 'Moonbeam'. The compact, upright plants grow only eight to 12 inches tall in the North but can reach 18 inches in southern gardens.

UNDERSUNG NATIVES

All tickseeds are native to North America, but only a half dozen or so are in mainstream gardening, which tells me that there is still a great deal of room for improvement. Plant conservation, land reclamation, meadow gardening, and simple love of native plants have resulted in some of our lesser-known natives becoming more popular. Here are a few species worth seeking out.

Chipola River coreopsis (*C. integrifolia*, Zones 6b–9, 9–6) is native to northwest Florida, Georgia, and Alabama and produces dark-eyed daisies in August and September. They spread by rhizomes, but are



Because of its height, tall coreopsis (*C. tripteris*) is best used in large gardens. 'Lightning Flash', left and above, is a new variety with bright chartreuse leaves.

believes that with a little more vigor, these plants could be extraordinary.

EVALUATING THE HYBRIDS

If anything in the horticulture industry has changed in the last 10 years, it is the modernization of native plants, including tickseeds. Some people hate the idea that our native plants have been used in commerce as parents for hybrids, but without a doubt, if it were not for selection and breeding, many of our native plants would not be nearly as popular.

Some hybrids are spectacular, some are not, and the introductions have been coming so fast and furious that little performance data have been collected—and in many cases parentage is uncertain. Here are a few that seem to have merit;



Vigorous 'Full Moon' has a long flowering period and withstands heat and humidity.

not rapid colonizers. Plants are indigenous to moist areas, but do fine under normal garden conditions.

Stiff coreopsis (*C. palmata*, Zones 4–8, 8–1) is native to the American prairies and bears distinctively pale yellow ray flowers with flat yellow centers in late spring to fall. The stiff and upright two- to three-foot stems seldom need staking.

Tall coreopsis (*C. tripteris*, Zones 3–8, 9–1) is one of my favorites even though it can be quite a monster, reaching anywhere from four to 10 feet tall. Plants are native from southern Ontario to Wisconsin, south to Florida, Louisiana, and west to Kansas. Both the leaves and the flower heads have a faint smell of anise when crushed. Plants flower in mid- to late summer and are excellent for areas with poor, dry soils. It tends to reseed freely, however. 'Lightning Flash', a new selection, grows four to five feet tall with chartreuse leaves. My colleague Lomas, however, was disappointed because of this cultivar's apparent lack of vigor in his garden on the shore of Lake Erie (USDA zone 5b/6). Yet he be-

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there are many more out there, and on most of these, you take your chances, but what fun that is!

'Autumn Blush' (Zones 5–7b, 8–5) is becoming more popular as more people try it. In Athens' harsh summer conditions, many of the low-growing forms tend to melt out but we have had good success with this hybrid. It grows about a foot tall and at least as wide, and at its best is covered with light yellow daisy flowers with a copper-colored center. I noticed that the flowers changed color over the season, but I was not nearly as impressed as Lomas, who says, "As the seasons change and days lengthen, the flowers change from French-vanilla and subtle strawberry to a full blown decadent strawberry-vanilla swirl." Ah, the romance of youth!

'Crème Brûlée' (Zones 5–7b, 8–5) has proven to be tougher than I thought. It



Above: 'Limerock Ruby', shown here with *Heuchera* 'Stormy Seas' performs best when treated like an annual. Right: The pink flowers of 'Heaven's Gate' bear some resemblance to cosmos.

likely includes *C. verticillata* 'Moonbeam' and *C. grandiflora* in its parentage, and its flowers are characterized by the lovely color of the former. Plants are about 18 inches tall in our trial gardens. Despite the hardiness rating, we have had some trouble overwintering plants, although I admit our beds are not particularly well drained. I love the color but its vigor is still a little suspect in challenging climes. Lomas reports that plants reliably bloom from June through October in his Ontario garden.

'Full Moon' (Zones 5–9, 9–5) really caught my eye this past season. The plants grew well, flowered for a long period, and showed few signs of decline even in our miserable summer. Plants bear two-inch-wide, creamy yellow flowers on two-foot-tall plants. Lomas was even more impressed. He treated his young plants



badly, yet he says they not only survived but produced "some of the largest flowers I've ever seen on a tickseed. Large flowers, great vigor, great performer—what else is there to ask for!" This selection arose from the breeding program of Darrell Probst of Garden Vision Nursery and is the first of his "Big Bang" series.

'Gold Nugget' (Zones 6–8, 8–5) was new for 2008, so little information is available. However, where I have seen it, I have been impressed with the gold flowers, each

with an obvious red eye. In locations where summer nights are cool, plants should remain in bloom for months.

'Heaven's Gate' (Zones 5–8, 9–5) is another one of the many colorful dwarf cultivars that have arisen lately. This one has thin stems topped with rose-pink flowers, each with a darker center. Plants grow about a foot tall and equally wide.

The Limerock series brings gardeners either frustration or pleasure. When 'Limerock Ruby' (Zones 7–9, 9–6) was introduced, it was touted as being quite hardy. Beautiful it is, with ruby flowers and a short, compact habit, but you are better off treating it as an annual. However, 'Limerock Passion', with pink-lavender flowers, has proven to be more vigorous and hardier (probably to USDA Zone 5), particularly in a site with excellent drainage.

'Moonlight' (Zones 6–8, 9–6) was also new in 2008, and produces soft yellow flowers on two-foot-tall mounding plants.

'Pinwheel' (Zones 5–8, 9–5), from Terra Nova in Oregon, bears handsome, creamy yellow, fluted ray flowers with darker centers. Plants are about two feet tall. These look good so far.

'Sienna Sunset' (Zones 5–8, 9–5) is a sport of 'Crème Brûlée' and shows the obvious parentage of threadleaf coreopsis. I have not yet trialed the plant, but the burnt sienna flowers are interesting.

'Snowberry' (Zones 6–9, 9–6) may have some *C. auriculata* in its parentage. Creamy white flowers with wine-red eyes bloom in late spring and summer. The foliage is a good dark green.

BEAUTY IS IN THE EYE OF THE BEHOLDER

Like the dozens of flavors of ice cream, some coreopsis are better than others, but, to be sure, all taste good somewhere. I have learned that a plant lover is simply the other side of a plant critic. What both sides have to realize is that although gardening is national, plant selection is local. Climate, soils, water, and other factors influence plant performance, and regardless of the extensive travels of this writer, all edicts of ecstasy and mutterings of gloom have to be taken with a grain of salt.

A horticulture professor at the University of Georgia, Allan M. Armitage is the author of the award-winning Herbaceous Perennial Plants, now in its third edition (Stipes, 2008).

Perennial Vegetables *beyond asparagus*

BY ERIC TOENSMEIER

For something out of the ordinary in your garden and in your cuisine, try some of these intriguing edibles, many of which also have ornamental appeal.



FOR MOST American gardeners, perennial vegetables bring to mind asparagus or rhubarb. Californians might add globe artichokes to the list. Yet there are many more species of perennial vegetables around the world, and well over one hundred can be grown in the United States. Some have been cultivated for millennia and are truly excellent vegetables that are highly esteemed in their homelands; others are productive but obscure semi-domesticates or gourmet wild edibles.

Like asparagus, rhubarb, and artichokes, these crops can offer years of har-

vests from a single planting. They range in form and size from trees to ground-covers and everything in between. Most do not require tillage, which fosters increased levels of humus and populations of beneficial soil-building organisms. Their deep root systems, which help prevent erosion, also contribute to their resistance to pests, disease, and drought. Many can grow in niches of your garden where no other vegetable will—including those dry, wet, and shady patches that are a challenge to fill productively.

An interest in edible landscaping and low-maintenance food gardening has led

me to spend much of the past decade investigating perennial vegetables. They seem to have fallen between the cracks, perhaps because they do not fit into standard categories in catalogs, books, and gardens. Some of these crops have been stewarded by small nurseries and dedicated plant collectors. A few are common ornamentals whose edibility has been largely overlooked. But most receive little or no attention from gardeners.

Yet the examples of asparagus, rhubarb, and artichokes illustrate what perennial vegetables offer us. More and more gardeners are incorporating resilient and

The culinary uses of sea kale (*Crambe maritima*), top left, and ramps (*Allium tricoccum*), top right, are becoming more widely appreciated.

long-lived edible perennials in their landscapes. And although they will never replace tomatoes or carrots, these crops can provide a reliable and nutritious supplement to annual vegetables and fill in early and late-season harvests to complement more familiar foods.

HERBACEOUS PERENNIAL VEGETABLES

Herbaceous perennial vegetables require different management than annual vegetables. They should be placed out of the tiller's way and given a rich soil and plenty of mulch. Although it may take a few seasons, once established they can be harvested for years. Make sure to completely remove perennial weeds such as quackgrass (*Elymus repens*) and field bindweed (*Convolvulus arvensis*) as you prepare your site, because weed control options are limited once your crops are planted. Practicing good garden sanitation—thorough fall cleanup and removal of diseased plant parts—is essential, because you may not get the chance to practice crop rotation for a decade or more!

Sea kale (*Crambe maritima*, USDA Hardiness Zones 6–9, AHS Heat Zones 9–6) is a hardy perennial member of the mustard family (Brassicaceae) grown throughout much of North America as an ornamental. Its cream-colored flowers are indeed beautiful and smell like honey. But at the turn of the 19th century, sea kale was a very popular vegetable; its blanched shoots, which have a sweet, nutty, cabbage flavor, were readily found in the finest markets and restaurants. I find the flower buds, which are similar to broccoli, delicious and I enjoy the collardlike leaves in fall. Sea kale thrives in full sun and fertile, well-drained soil.

Gardeners throughout the country grow cannas for their outstanding ornamental leaves and flowers. Achira (*Canna indica*, syn. *C. edulis*, Zones 8–II, 12–I), however, is a species grown for its edible tubers, which are large, starchy, and very sweet when baked. (Tubers of ordinary cannas are also edible, although some varieties are rather fibrous.) Achira is an important crop in Australia, where the plant is called Queensland arrowroot. Its shoots

can be eaten like asparagus. This crop grows in sun or part shade and tolerates wet and poor soils, although it prefers a rich garden soil. Achira grows in the same range as most other cannas. In colder regions, it can be grown as a tender perennial; tubers should be dug and stored indoors over winter in a dark, cool place. In short-season climates, it may take two growing seasons to obtain full-sized roots.

Some perennial vegetables are popular wild edibles that are only beginning their journey toward domestication. An exam-



An important vegetable in Australia, achira, above, is a type of canna that produces large, starchy tubers, left. Its shoots are also edible.

ple is ramp (*Allium tricoccum*, Zones 4–8, 8–I), a native woodland onion. Ramp festivals are held every spring in Appalachia to celebrate the plant's sweet greens and pungent garlic-flavored bulbs. Ramps, sometimes called wild leeks, are ephemeral bulbs; their leaves appear briefly in the spring in moist deciduous eastern forests, disappearing by the time the tree canopy provides full shade. Only a small flower reveals the bulb's location in late summer. Overharvesting is taking a toll on some wild ramp populations, but the species is well suited to cultivation in much of the East and Midwest. Although ramps can be

planted almost any time, fall planting of dormant bulbs is recommended. They thrive in a humus-rich soil and at least part shade, and benefit from spring moisture.

AQUATIC OPTIONS

A water garden can be an elegant addition to your yard, attracting wildlife and creating a sense of serenity. Although widely appreciated for their ornamental qualities, many popular water garden plants are actually cultivated as vegetables in their native lands. Edible water garden plants are generally best grown in submerged pots with plenty of fertilizer. Avoid planting non-native aquatic plants in natural bodies of water because they are prone to naturalize aggressively. Artificial ponds are surprisingly easy to create—and you can grow many species of productive aquatic vegetables in a simple plastic kiddie pool.

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With its outstanding blooms, sacred lotus (*Nelumbo nucifera*, Zones 4–11, 12–3) is a central feature in many water gardens, but it has been grown for centuries for its edible roots—technically tubers—which are considered a delicacy in Asian cuisine. The mild-flavored roots remain firm after cooking, and, when sliced, reveal an interesting honeycomb pattern of air tubes.

Native to Australia and eastern Asia, sacred lotus is surprisingly hardy and will spread aggressively if uncontained. It survives in cold regions as long as it is planted deeply enough that the mud around its roots does not freeze. If you are concerned about freezing, lift potted plants and store them indoors in a cool, dark place until spring. In short-season regions, plants need two summers to produce full-size roots. Plant in full sun for best flowering and root production.

One aquatic perennial that has become a staple in my garden in the last few years is water celery (*Oenanthe javanica*, Zones 9–11, 12–1). Its mild parsley- or celery-flavored foliage is used like celery, to which it is related. Cultivated from Korea to Hawaii, many sources rate it as a tropical, although it apparently overwinters quite far north. In my own Massachusetts garden, water celery often sprouts



Revered for its beautiful flowers, sacred lotus (*Nelumbo nucifera*), left, is also an important food source in Asian countries, where its knobby underwater roots, above, are sliced and used in many forms of cooking.

up under the snow, offering a welcome snack during midwinter thaws.

Water celery grows much like watercress—it is best grown in water in a pot for upright foliage, but it will also send floating runners across the surface of the water. This versatile species grows on land as well; it even thrives in part shade as a delightful groundcover. But be warned—it can spread great distances in a single season, on land or in water. Planting it within a rhizome barrier or mowed pathway helps keep it under con-

trol. ‘Flamingo’ is a variegated variety with purple foliage.

Other aquatic perennial vegetables include watercress (*Nasturtium officinale*), arrowhead (*Sagittaria* spp.), and taro (*Colocasia esculenta*).

LONG-LIVED VINES

Climbing annual members of the bean family (Fabaceae), such as peas and pole beans, and sprawling cucurbit (Cucurbitaceae) vines, including squashes, melons, and cucumbers, are well known to vegetable gardeners.

Several members of these families are larger, more vigorous, and much longer-lived. Accordingly, the supports on which they grow must be more robust—the pea fence built to last one season will quickly succumb beneath the weight of these perennial vines. But they can be grown on sturdy fences, pergolas, or covered walkways, and often make beautiful additions to a landscape. All they need is full sun and a rich, well-drained soil.

Gardeners in warm regions can grow the ‘Seven Year’ variety of lima bean (*Phaseolus lunatus*, Zones 9–10, 10–9). This variety originated in arid regions of Africa, where it is grown over houses to provide shade as well as food. Many climbing lima bean varieties are perennial in warm regions, but all bush types are annual. Climbing varieties of runner beans (*Phaseolus coccineus*, Zones 10–11, 12–10) are also perennial in mild climates; some live up to 20 years in parts of the United Kingdom. Of course, lima and runner



The multi-colored edible leaves of ‘Flamingo’ water celery are also highly ornamental.

MORE PERENNIAL VEGETABLES

Name	Height (ft.)	Form/Edible Parts	Sun/Shade	Moisture Needs	Native Range	USDA Hardiness/AHS Heat Zones
<i>Apios americana</i> (groundnut)	5	herbaceous vine/ tubers	sun to part shade	wet to moist	eastern U.S.	4–10/10–3
<i>Bambusa oldhamii</i> (clumping bamboo)	60	clump-forming evergreen/shoots	sun to part shade	moist	Asia	8–11/12–8
<i>Bunias orientalis</i> (Turkish rocket)	4	herbaceous/ leaves, stems	sun	moist	Europe	4–8/8–4
<i>Cnidocolus chayamansa</i> (chaya)	12	shrub/leaves	sun	dry	Mexico and Central America	9–10/12–9
<i>Colocasia esculenta</i> (taro)	4	herbaceous/ corm, leaves	sun	aquatic to moist	Asia	9–11/12–7
<i>Helianthus tuberosus</i> (sunchoke)	10	herbaceous/ tubers	sun	moist	southeastern U.S. and Canada	7–9/9–7
<i>Musa</i> spp. (green banana, plantain)	20	herbaceous/fruit, cooked as vegetable	sun	moist	Asia	11–11/12–10
<i>Petasites japonicus</i> (fuki, Japanese coltsfoot)	3	running herb/leafstalk	shade	wet to moist	Asia	5–9/9–5
<i>Sagittaria latifolia</i> (arrowhead)	3	herbaceous/tubers, shoots	sun	aquatic	North America	5–11/12–5
<i>Sium sisarum</i> (skirret)	3	herbaceous/tubers	sun	wet to moist	Eurasia	4–8/8–4

beans can be grown as annuals throughout most of the country.

Chayote (*Sechium edule*, Zones 9–10, 12–9) is a wonderful vegetable from Mexico and Central America that has yet to fully catch on in American cuisine. The vines yield pear-sized fruits that range in color from white to dark green; some have spines. Some varieties are reminiscent of crisp summer squash, others are similar to potatoes when cooked. If care is taken to avoid damaging the plant, the sweet tubers can also be harvested. This



A warm-region vine, chayote produces fruits that are popular in Mexican cuisine.

productive and reliable perennial vegetable can be grown in warm, long-season regions of the United States.

Perennial vegetable vines for cooler regions include groundnut (*Apios americana*), which features edible tubers, and Caucasian spinach (*Hablitzia tamnoides*), a Scandinavian leaf crop, although seed sources are limited. (For additional perennial vegetables, see the chart above.)

TASTY TREES AND SHRUBS

Gardeners in warm climates can cultivate some truly world-class vegetables that literally grow on trees. The tree and shrub vegetables profiled here have been cultivated for centuries. While many of them are tropical, their range can be extended significantly if they are grown as perennials that die back to the ground in winter. As long as the roots do not freeze, stems will re-sprout in spring.

Moringa, or horseradish tree (*Moringa oleifera*, Zones 10–11, 12–9) is a remarkable tree vegetable native to tropical Asia. In frost-free areas it produces edible pods that are eaten much like green beans. These beans have been an important cultivated vegetable in India for centuries, and many named varieties have been developed. A



The tender leaves of drumstick tree (*Moringa stenopetala*) are rich in vitamin C and calcium.

relative, *M. stenopetala* (Zones 10–11, 12–9), is native to eastern Africa.

Moringa can be grown over a much broader range, however, as a resprouting perennial for the production of leaves, which are exceptionally nutritious. Pound for pound, they contain seven times the vitamin C of oranges, four times the calcium and twice the protein of milk, four times the vitamin A of car-

rots, and three times the potassium of bananas. The leaves can be cooked like spinach or dried and added to soups. Not surprisingly, the tree is becoming an important crop in the developing world, including very arid areas.

Even if you live in colder climates you can grow moringa as an annual—in my Massachusetts garden, it has reached six feet tall in a single season. In warm regions, moringa plants can send up multiple shoots 15 feet high following a frost. Moringa will grow in any sunny site with well-drained soil, but is more productive with plenty of nitrogen and organic matter.

Nopale cactus (*Opuntia ficus-indica*, Zones 8–10, 12–7) is a prickly pear cactus with edible pads and fruit. The pads are a very popular vegetable in Mexico and the American Southwest, with a flavor and texture between green beans and okra. As a bonus, this vegetable has been shown to lower LDL cholesterol. But make sure to remove the tiny hairlike spines that grow on the glochids—pea-sized bumps—on the pads. Spines can be removed with a vegetable peeler or knife, or by scrubbing with leather gloves.

Nopales can grow to 18 feet, but they are usually cut back to increase pad production. The fruit, known as *tunas* in Mexico and *sabras* in Israel, is commercially produced. Nopales require full sun and well-drained soil.



This lush landscape contains several attractive edible plants including taro, on the left side of the pond, variegated cassava (*Manihot esculenta*), which has edible roots, left center; and red-leafed cranberry hibiscus (*Hibiscus acetosella*), which bears edible leaves, center.

Tree collard (*Brassica oleracea*, Zones 8–10, 10–7) is a long-lived shrub kale for mild-winter regions that produces sweet, ornamental blue and purple leaves. Shrub kales may have been the first brassicas to be domesticated, although they are rare in cultivation today. Within their range, they are easy to grow as long as you provide full sun and fertile, well-drained soil.

Cold climate gardeners can grow tree vegetables too—notably the tender young leaves of linden (*Tilia* spp.), also called lime tree, and the spring foliage

of Chinese toon (*Toona sinensis*), which has a roasted-garlic flavor.

Tree vegetables are typically cut back annually, or even more frequently, to create flushes of tender growth and keep leaves in easy reach for harvest. For moringa, linden, nopale, and Chinese toon, you can either cut them back to major branches at a typical height of three to six feet, or cut them back to a few inches above the ground.

PART OF A NUTRITIOUS LANDSCAPE

When matched with low-maintenance fruits and nuts like persimmons, chestnuts, and kiwifruit, perennial vegetables make exciting edible landscapes possible. You can easily incorporate a few of these crops in perennial beds, at the edges of your annual vegetable garden, or beneath fruit trees. Some can be encouraged to naturalize in a far corner of your garden. And perennial vegetables, like other perennials, build healthy soil, prevent erosion, and create habitats for wildlife.

A vibrant, managed ecosystem of useful perennial plants could be a pathway to a new relationship with nature, an approach that provides a long-term local food source while having a positive influence on the environment.



Left: Both the fruits and pads of prickly pear cacti are edible. Above: Tree collard is a shrub that can grow over nine feet tall, but its purple and green leaves can be harvested as needed and eaten like kale.

Eric Toensmeier is the author of Perennial Vegetables (Chelsea Green, 2007), which received an AHS Garden Book Award in 2008.

Protecting One of Your Most Valuable Assets



Soil is the Key

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

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Rob Johnston Jr., Growing an Independent Seed Company

by Mary Yee

VEGETABLE GARDENING is on an upswing among American home gardeners, and for Rob Johnston Jr., it's good news. For more than 35 years, the founder of Johnny's Selected Seeds (JSS), located in Winslow, Maine, has been quietly espousing the merits of organic vegetable gardening and building an award-winning company. Small commercial growers are JSS's primary customers, but home gardeners also look to JSS for a variety of vegetable seeds, many of them organic and heirloom, some bred by Johnston himself. Last year, amid rising gasoline prices and the weakening U.S. economy, JSS experienced a dramatic surge in its home gardening base, a phenomenon also noted by many other seed companies. Gardening for food, which had long taken a backseat to ornamental gardening, is suddenly in fashion again. "We didn't see it coming," Johnston admits. "It was a huge surprise."



Johnston has seen many changes in the seed business. In 1973, when he founded JSS after dropping out of college to pursue farming, "organic" was far from mainstream. JSS was one of the few American sources for then-hard-to-find Asian produce (Johnston had to get seeds from Japan). Once operating from a farmhouse attic, JSS is now an employee-owned company with a staff of 100, a seed production facility, and a 100-acre organic trial and research farm, but its mission—with a nod to Johnny Appleseed, the inspiration for the company's name—remains simple: "Helping family, friends, and communities to feed one another by providing superior seeds, tools, information, and service."

Managing Editor and Art Director Mary Yee talked with Johnston before the start of the 2009 growing season to get his insights on the renewed interest in vegetable gardening, the potential impact of biotechnology on home gardening, and some of his new projects in breeding vegetables.

Mary Yee: JSS is one of the few American seed companies that is still independently owned. Does this offer an advantage in running the business?

Rob Johnston Jr.: As an employee-owned company, Johnny's is beholden only to our customers, and I think we're stronger this way than if we were part of a big corporation. We've grown the business entirely through the good graces of our customers, with no equity investment. From what I've observed, service to the customer generally diminishes with corporate consolidation—perhaps because of the diminished enthusiasm of the people involved.

What changes have you seen in vegetable gardening over the years?

During the 1970s, there was a back-to-the-earth movement and a vocational appeal to growing food at home, driven by the feeling that "maybe I'm going to have to know how to do this some day." But the



Johnny's organic trial farm in Albion, Maine, tests over 4,000 varieties each year.

1980s saw a back-to-the-office movement, so interest in home vegetable gardening went into a decline for about 25 years.

Last year, there was a big increase in home vegetable gardening in the U.S., Canada, and the U.K., which we think will continue in 2009. Along with an increase in garden size and number of gardens, we've also noted more gardeners growing high-caloric crops such as potatoes, winter squash, corn, and carrots—not just salad greens as in previous years.

What types of people are ordering vegetable seeds from JSS?

Many are gardeners who grew vegetables in the past and are coming back to it to save money, but there are also a lot of newcomers who are more interested in a better quality of life—eating the freshest food and knowing where it comes from. And with rising gasoline prices, many people are realizing that gardening is something fun and productive that they can do without driving someplace.

Most catalogs focus on selling products, but the JSS catalog contains so much information that it's almost a growing handbook. It must be time-consuming and expensive to produce each year. Why do you do it?

A great seed is only a concentrated bit of potential. We go to the trouble to supply good seeds, so we want to give gardeners the most detailed information—ideal sowing temperature, pests to watch for, and how to tell optimum maturity for harvesting—to give them the best chance to get optimal results.

JSS is among a list of seed suppliers who participate in the Safe Seed Initiative (SSI). Could you tell us what that is?

The SSI is a joint project of concerned seed growers, farmers, and scientists. As a participant in the SSI, Johnny's pledges to not knowingly buy or sell genetically modified (GMO) seeds or plants.

In the 1999 catalog, I wrote that while Johnny's didn't carry any GMOs, we were "open minded about this new technology," and that we would consider the new biotech seed varieties one at a time. I didn't think it was a provocative statement, but we received dozens of letters from people who were against GMOs

and found our open-mindedness so unacceptable that some of them organized a boycott. Our signing of the SSI pledge helped to reassure people that JSS was not abandoning its core values.

Does biotechnology have a legitimate place in horticulture?

I remain intrigued with the possibilities, but there haven't been any engineered traits in vegetable crops that aren't possible with conventional plant breeding techniques.

Other than a few summer squash and sweet corn varieties, there aren't any GMO vegetables on the market. Some compa-



Rob Johnston and other plant breeders at Johnny's Selected Seeds have developed several varieties that have received the All-America Selections award, including, above, 'Sunshine' squash (2004), and, left, 'Diva' cucumber (2002).

nies have developed varieties with GMO traits, such as herbicide-resistant lettuce, but they have yet to be marketed. The American public seems to accept GMO crops when the plant is invisible, such as syrup from engineered corn in a packaged food product, but it is not yet willing to buy a head of GMO lettuce for a salad.

One aspect of the business of genetic engineering that I'm against is its concentration in large corporations, which could put the control of the plants we eat into the hands of a very few.

You've been interested in plant breeding from the beginning and have developed many varieties for JSS. Of those, do you have some favorites?

It's hard for me to settle on my favorites,

For more information about Johnny's Selected Seeds and to see its online catalog, visit www.johnnyseeds.com.

but 'Lipstick' pepper comes to mind. It was one of my first sweet peppers in the mid-1980s. It's still as popular as ever. I selected this small, cone-shaped, very sweet-flavored pepper from a cross between two early bell peppers.

I also like 'Diva' cucumber, which won a 2002 All-America Selections award. It's a delicious, seedless, non-hybrid cucumber bred by my wife, Janika Eckert. When you taste it, you realize that simple pleasures can make the world a better place.

What goes into breeding a new variety?

It typically takes eight to 10 plant generations of breeding work to finish a new variety, and only one or two percent are named and marketed. It can be nerve-racking throwing out new plants, but breeding is both an art and a science. A good plant breeder makes the right choices in keeping the few winners.

So what do you consider when you're evaluating potential new varieties?

A typical Johnny's customer is a mixed market gardener with between five and 50 acres or an avid home gardener. Most aren't in an ideal location to grow anything, so we focus on wide adaptability—another way to say "easy to grow in diverse conditions"—and flavor.

Could you tell us about some of your current breeding projects?

We're working on lettuce that adapts to hot, humid summer weather, and early-maturing pumpkins with resistance to foliar diseases, especially powdery mildew. We're also looking at peppers for early maturity, tolerance to cool nights, and resistance to fruit rot and tomatoes with resistance to foliar diseases such as early blight, septoria leaf spot, and late blight.

What's been the most gratifying part of growing JSS the last 35 years?

Talking with a customer and learning that Johnny's has been important in the success of his or her farm or home garden. ☺

Mary Yee is managing editor and art director for The American Gardener.

Tender-hearted Artichokes

by Kris Wetherbee

I ENCOUNTERED my first globe artichoke (*Cynara scolymus*) as a young girl, at a friend's house. Dipping each leaf in melted butter and tugging the stem end through my teeth to draw off the tender meat seemed like child's play.

Years later I discovered the rewards of this vegetable go beyond its culinary appeal. Ornamentally, it makes a bold statement in the garden, with deeply serrated leaves spreading into a silvery green fountain to five feet tall and six feet across. But it's the flower bud that is harvested for consumption. Shaped like a pinecone with tough, prickly outer leaves—technically bracts—it contains layers of tasty, creamy-textured interior leaves and a sweet, oh so tender heart.

Although artichokes thrive where



The heart of the immature flower bud at the junction of the stem is the edible part an artichoke.

Planting Basics

GETTING STARTED

For annual production: Sow seeds eight to 10 weeks before your last spring frost date. Place young seedlings in a cold frame for two to six weeks to vernalize and harden off. Transplant to garden after danger of hard frost.

For perennial production: Sow seeds outdoors in fall, or plant container-grown plants or dormant roots in fall or winter.

PROPAGATION

To propagate from suckers, separate a rooted offshoot from an existing plant in early spring, using a serrated knife. Carefully dig out and replant.

SPACING

At least three to four feet apart.

DAYS TO MATURITY

110 to 160 days from seed, depending on variety.

summers are cool and moist and winters are mild (USDA Hardiness Zones 8–9, AHS Heat Zones 9–7), with the proper variety selection and a little planning, backyard gardeners in most regions can successfully grow this gourmet crop.

GROWING GUIDELINES

In USDA Zones 8 and 9, artichokes are grown as perennials, producing crops for about five years. They often survive in cooler climates when grown in well-drained soil and provided extra winter protection.

In cold-winter climates that have at least 90 frost-free days, artichokes are best grown as annuals. Plants require vernalization—exposure to a cold period—to induce flowering. This is achieved naturally for plants that winter outdoors, but if you are growing artichokes as an annual, place young seedlings with two or three leaves outdoors in a protected spot, such as a cold frame, for two to six weeks while temperatures are between 34 and 50 degrees

Fahrenheit. Or to make it easy on yourself, buy seedlings from a garden center.

Artichokes grow best in full sun—afternoon shade where summers are hot—and slightly acidic soil rich in organic matter. They are heavy feeders, so prior to planting, work a shovelful of rich compost, aged manure, or a half cup of complete organic fertilizer into each hole. Follow up with a mid-season application of compost or aged manure.

After years of growing artichokes, I learned moisture is key—plants need lots of water to produce big, succulent buds. Just be sure the soil drains well, especially in winter—poor drainage can cause the plant to rot at the crown.

Soil temperature is another vital part of bud development; a hot, dry spell can reduce the quality of the bud. Mulching with a two- to four-inch layer of straw, shredded leaves, or other organic matter helps moderate soil temperature and conserves moisture.



Above: The large, deeply cut leaves of artichoke add a bold touch to a garden. **Left:** The cultivar ‘Violetto’ is aptly named.

To overwinter artichokes that are grown as perennials, cut plants back to four to six inches above ground in fall or before a hard frost, then generously mulch with compost or straw.

PEST AND DISEASE PREVENTION

Besides crown rot, artichokes are rarely troubled by disease. Botrytis blight can develop on leaves and actively growing buds; left unchecked, it can progress into the main stem. An organic fungicide such as neem oil will help remedy the situation. To minimize occurrence of the disease, avoid planting in heavy wet soil and space

plants so they have good air circulation.

Snails and slugs are a problem in some areas. Natural solutions include non-toxic slug baits such as Slug Stop or Sluggo, and barriers, such as Safer’s Snail & Slug Copper Barrier Tape. Aphids can be controlled with a few applications of insecticidal soap or strong jets of water.

RECOMMENDED VARIETIES

- ‘Green Globe’: annual or perennial production; globe-shaped heads with spines.
- ‘Emerald’: annual or perennial production; tolerates frost and extreme heat, few spines.
- ‘Imperial Star’: annual production; two-week vernalization, nearly spineless.
- ‘Purple of Romagna’: perennial production; large, purple-headed heirloom.
- ‘Violetto’: perennial production; purple slightly elongated buds, late to mature.

ENJOYING THE HARVEST

Grown as an annual, flower buds form in summer through fall, depending on your

Sources

D. Landreth Seed Company,
New Freedom, PA. (800) 654-2407. www.landrethseeds.com.

Peaceful Valley Farm and Garden Supply, Grass Valley, CA. (530) 272-4769. www.groworganic.com.

Swallowtail Garden Seeds, Santa Rosa, CA. (707) 538-3585. www.swallowtailgardenseeds.com.

Resources

The Garden Primer (2nd ed.) by Barbara Damrosch. Workman Publishing, New York, New York, 2008.

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

Growing Artichokes by Harwood Hall, Susan Wada, and Ronald E. Voss. University of California Vegetable Research and Information Center. http://vric.ucdavis.edu/pdf/artichoke_GrowingArtichokes.pdf.

growing region. In warmer climates, seeds planted in fall yield a spring harvest. In my Oregon (Zone 7) garden, winter-protected perennial plants produce two crops a year: a generous crop in spring, and a second crop in midsummer to fall. After the spring harvest, I cut plants back to six to eight inches above the ground for an earlier and more productive second crop.

To harvest, select plump, tight buds, cutting the stem two inches below the bud’s base. Cut off the top inch and trim the sharp tips of the remaining outer leaves. Steam or boil for 25 to 35 minutes or until tender. To eat, dip each leaf base in melted butter, mayonnaise, or yogurt, and scrape off the flesh with your teeth. Once you get to the center, remove the fuzzy choke to reveal the ultimate delicacy—the tender and tasty heart!

Kris Wetherbee grows artichokes and many other vegetables in her western Oregon garden.

Horticultural News and Research Important to American Gardeners

BEES HAVE ROLE AS PLANT BODYGUARDS

While most people steer clear of busy honey bees, it seems some garden pests respond to the warning buzz, too. A study published in the December 23, 2008 issue of *Current Biology* reports that honey bees protect the plants they pollinate by simply buzzing about.

Researchers from the University of Würzburg in Germany discovered that when honey bees were present, beet armyworm caterpillars fed 60 to 70 percent less



on bell pepper plants than when the honey bees were absent. Using tiny hairs on their bodies, the caterpillars sensed the vibrations of approaching bees. Once alerted, the caterpillars temporarily stopped feeding, some even dropping from the plant—significantly reducing plant damage.

This research suggests that caterpillars cannot distinguish between the buzz of parasitic wasps and honey bees. Several types of parasitic wasps attack caterpillars by laying their eggs on them. When the larvae emerge, they parasitize and eat the caterpillars, so there is good reason for the caterpillars to avoid buzzing insects.

Researchers now plan to see if interplanting agricultural crops with flowers favored by honey bees may lead to higher yields and new biological pest controls. Since honey bees pollinate about 130 agricultural crops in the United States, this is good news for farmers and may offer more food sources and reduced pesticide exposure for declining honey bee numbers.

NEW PLANT PROMOTION GROUP FOR MID-ATLANTIC REGION

Numerous organizations and programs exist across the country for testing and selecting plants with outstanding performance in particular regions or states. Joining their ranks is the newly created Beautiful Gardens™, initiated by the Virginia Nurserymen's Association Horticulture Research Foundation Inc. for the Mid-Atlantic region. The program's purpose is to "test and promote new and underutilized plants with stable performance in [USDA Hardiness Zones 6–8, AHS Heat Zones 7–2], and with excellent ornamental display."

Among the program's nine "Plants of Distinction" for 2009 are flowering trees and shrubs such as 'Don Egolf' Chinese redbud (*Cercis chinensis*) and Snowflake oakleaf hydrangea (*Hydrangea quercifolia*



'Brido'), as well as perennials such as Midnight Blue® lily of the Nile (*Agapanthus 'Monmid'*) and Pine Knot Strains Lenten rose (*Helleborus x hybridus*). For a full list of the 2009 Plants of Distinction, visit www.beautifulgardens.com.

To view a list of other award-winning plants for 2009 selected by national and regional organizations, click on the web special linked to the online version of this issue on the AHS website (www.ahs.org).

TEMPERATE TREES AT RISK

The reduction of rainforests in the tropics has long been a cause for concern, especially since the trees help to mitigate the planet's rising carbon dioxide levels that are causing climate change. According to a study published in the January 23, 2009 issue of the journal *Science*, threats to trees in temperate regions are just as worrying. Researchers have found that old growth forests in western regions of North America are suffering widespread die-offs, which could have significant ecological and environmental ramifications.

Led by the U.S. Geological Survey, collaborators from several western universities studied 76 sites in Oregon, Washington, California, Arizona, Colorado, New Mexico, and southwestern British Columbia. They discovered that the trees are dying off at a faster rate than they are being replaced by new trees. Because this trend is occurring regardless of other factors such as tree age, species, or elevation, the researchers blame rising temperatures throughout the region. The resulting increase in droughts has stressed trees, making them more susceptible to pests and diseases.

The study warns that this trend could affect wildlife that rely on the trees and there is definitely an increased risk of wildfires. But perhaps most worrying, stressed forests like these give off more carbon dioxide than they absorb, exacerbating climate change. "Forest fires or major insect epidemics that kill a lot of trees all at once tend to get most of the headlines," says Mark Harmon, professor of forest ecology at Oregon State University and one of the study's co-authors. "What we're studying here are changes that are much slower and difficult to identify, but in the long run extremely important."

CELEBRATING PUBLIC GARDENS

The American Public Gardens Association (APGA) has declared May 8, 2009 to be National Public Gardens Day, an

PEOPLE and PLACES in the NEWS

Northwest and San Francisco Flower and Garden Shows Face Closure

In a year that has seen the cancellation of the long-running New England Flower Show by the Massachusetts Horticultural Society and the postponement of Cleveland Botanical Garden's May flower show until next year, gardeners are anxiously awaiting a decision on the fate of two of the largest and most popular flower shows in the country—the Northwest Flower and Garden Show held in Seattle, Washington, and the San Francisco Flower and Garden Show in California. Duane Kelly, the owner of Salmon Bay Events, which produced these two shows, recently announced he will close the company and retire. Unless a buyer who can maintain the quality of both shows is found, this year's Northwest Flower and Garden Show, held February 18 to 22, and the San Francisco Flower and Garden Show to be held March 18 to 22, will be the last. For more information about these shows, visit www.gardenshow.com.

Raven is 2009 Scott Medal and Award Recipient

Peter H. Raven has been chosen as the recipient of the 2009 Scott Medal and Award, given by the Scott Arboretum of Swarthmore College in Swarthmore, Pennsylvania, for his contributions to the world of horticulture, both in the United States and internationally. Currently professor of botany at Washington University in St. Louis and of biology at St. Louis University, Raven is also president of the Missouri Botanical Garden, where he has played a key role in its development for 40 years. He serves as a member of the academies of sciences of many different countries, and has received numerous awards, including the International Prize for Biology from the government of Japan and the Liberty Hyde Bailey award from the AHS.



Construction Accident at Atlanta Botanical Garden

Tragedy struck the Atlanta Botanical Garden when, in mid-December 2008, part of the new Canopy Walk under construction collapsed, injuring 18 and killing one of the workers who had been building it. Thanks to the swiftness and capability of the emergency response team, all of the injured victims were brought to the hospital in time for critical care. When the garden reopened three days later, admissions proceeds and donations were allocated to a fund set up to help the workers and their families. Mary Pat Matheson, executive director of the Atlanta Botanical Garden, has announced that the garden is still committed to building the Canopy Walk and the rest of its expansion, to be completed by 2010, despite the construction accident. In the interim, Matheson expressed her hope that the garden will continue to provide a place of healing and solace for the construction workers, their families, and the community at large.

—T.G.

annual day of celebration of America's gardens. In partnership with Rain Bird, a leading manufacturer of irrigation products, the APGA created this event to promote awareness of the important role that public gardens play.

"National Public Gardens Day will not only be a time for families and enthusiasts to enjoy the gardens," says Dan Stark, executive director of the APGA,

"but will also showcase the achievements and expertise provided by public gardens as well as their commitment to education and outreach programs that are vital to people's appreciation and understanding of the irreplaceable value of plants."

According to the APGA, many of its 500 member gardens and other institutions will hold special events and activities in celebration of this day. For example,

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<p>③ BARE ROOTS</p>	<p>④ FLOWERING And TO GET MORE FLOWERS, LONGER and MORE BEAUTIFUL</p>
<p>⑤ SEEDLINGS</p>	<p>TO PLANT THEM ALL SAFELY, UNIFORMLY — and GROWING MORE STRONGLY</p>
<p>⑥ TREES TO GET "TWO YEARS' GROWTH IN ONE"??</p>	<p>⑦ FRUITING For EARLIER, HEAVIER, BEARING?</p>
<p>⑧ BULBS</p>	<p>TO START THEM VIGOROUSLY, Beating Soil-rot, Hastening Better BLOOMING</p>
<p>⑨ SEEDS</p>	<p>To Help GERMINATION Percentage and SPEED EARLIER, BETTER YIELDS, including Vegetables</p>
<p>⑩ LAWNS</p>	<p>To Make QUICKER, deeper, TOUGHER TURF from SEED, SOD, Stolons, Sprigs, HYDRO-seeding</p>

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GARDENER'S NOTEBOOK NEWS SPECIAL

University Trial Gardens Put Plant Performance to the Test

BY ERIN MELVILLE

WITH SO MANY new plants coming on to the market each year, it can be a challenge to know exactly how they will perform in your garden or region. One useful but often overlooked resource for finding out about great new varieties is university trial gardens. “Trial gardens answer the question, ‘How do we make the plant buying experience better? By having better plants,’” says Allan Armitage, the director of the University of Georgia (UGA) trial gardens in Athens. Norm Lownds, the director at Michigan State University’s (MSU) trial gardens, agrees, pointing out that they “are a way to make sure that the money you spend on plants will be well spent.” They also “showcase the beauty and new varieties of the plants that are available,” says James Klett, director of the Colorado State University (CSU) trial gardens.

Each year, plant development companies give seeds or vegetative samples to specific universities for testing. Students, Master Gardeners, and university staff help gather and analyze data, ranging from bloom time to cultural requirements. At the end of the year, outstanding varieties are given special recognition. For example, UGA has the Athens Select program, CSU has the Best of the Trials program, and MSU has the Spartan Selects program, all of which help to promote top-performing plants to consumers and the horticulture industry.

However, university trial gardens serve as more than just clearing houses for new plants. These gardens provide a resource for horticulture students and the plant industry. For students, the gardens are outdoor classrooms for learning identification and garden management practices. For plant breeders, growers, and marketers, the gardens serve as a testing area for new plants in various environments. Evaluations from trial gardens help guide future breeding programs and marketing campaigns.

Many trial gardens are open to the public, and offer open house events for both home gardeners and professionals. For example, Armitage leads tours during annual open houses at the University of Georgia’s gardens, scheduled for July this year. According to Armitage, these open house events offer visitors

the opportunity to ask questions and rate the plants in the gardens, which include more than 600 taxa of bedding plants, as well as tropicals, vines, specialty annuals, and perennials.

At MSU in East Lansing, visitors can participate in two sets of annual open houses. The first set, a “spring into gardening” day on March 14 and a “garden day” on August 7 are open to the public. For green industry professionals, MSU also hosts the Garden Plant Showcase on the first Wednesday in August, which Lownds says is a “great opportunity to see new introductions and get unbiased evaluations.” As an official All-America Selections (AAS) trial garden site, MSU evaluates about 1,000 annual cultivars throughout its Horticulture Demonstration Gardens, which span nearly 14 acres. AAS is an organization that collects trial data



Visitors to the colorful trial gardens at Colorado State University in Fort Collins can compare hundreds of plant varieties side by side.

from gardens across the country to determine which plants are top performers on a national level.

Colorado State University’s trial gardens—comprising approximately 1,000 cultivars of annuals, a cool-season pansy crop trial, and a two-year perennial trial—also offers annual open house events in summer. “The gardens bring together professional horticulturists, growers, seed companies, and vegetative propagators to observe how new and proven varieties perform in our sunny, dry climate,” says Klett.

Even if you are not able to visit in person, many university trial gardens offer plenty of helpful information—such as top performers, regional ratings, and photos of trialed plants—on their websites. (For a list of university trial gardens across the United States and links to their websites, visit the online version of this issue on the AHS website, www.ahs.org.) As you plan your garden this spring, be sure to tap into the resources your university trial gardens offer so you can zero in on the plants with proven performance in your region.

Erin Melville, special correspondent to The American Gardener, is a student in the horticulture program at the University of Georgia in Athens.

Chicago Botanic Garden in Glencoe, Illinois, will offer special tours of gardens bursting with color and fragrance, including its new Model Railroad Garden.

To learn more about National Public Gardens Day, visit www.publicgardens.org.

US NATIONAL ARBORETUM INTRODUCES NEW EGOLF VIBURNUM

After 20 years of research and evaluation, the United States National Arboretum has released the newest *Viburnum* cultivar from its shrub breeding program. Developed from a 1988 cross of *V. 'Eskimo'* and *V. macrocephalum* forma *keteleeri*, 'Nantucket' is the 20th viburnum cultivar released by the arboretum's Floral and Nursery Plants Research Unit. Each of these introductions was developed by the late Don Egolf, who bred woody plants at the arboretum for 30 years.

'Nantucket' is a semi-evergreen shrub that grows to 12 feet tall and half as wide with narrow, dark green leaves. Lightly fragrant, white flowers neatly adorn the shrub in May. It is recommended for use as a hedge, mass planting, shrub border,



'Nantucket' viburnum

and it even performs well as a container plant. Currently, it is in wholesale production and it should be readily available at garden centers in two years. It is rated for USDA Hardiness Zones 6 to 8, AHS Heat Zones 9 to 6.

ECONOMY SPELLS BAD NEWS FOR GARDEN MAGAZINES

In the last few months, publishers of garden and shelter magazines have felt the pinch of the economic downturn. Lagging

advertising sales have caused several publishers to cease production of various titles in an effort to cut their losses.

Time Inc., the publisher of magazines such as *Time* and *Southern Living*, ended the four-year run of *Cottage Living* with the November/December 2008 issue. It will also close www.cottageliving.com. The January/February 2009 issue is the final one for *Growing Edge*, a trade magazine about hydroponics, after nearly 20 years of production. The publisher, Tom Alexander, plans to continue selling back issues online and will expand www.growingedge.com beyond hydroponics information. And in January, Meredith Corporation, which publishes *Better Homes & Gardens* and numerous other titles, announced it would lay off 250 people, about seven percent of its workforce. Additionally, it will cease publishing *Country Home* with its March 2009 issue.

News written by Associate Editor Viveka Neveln, Editorial Assistant Caroline Bentley, and Editorial Intern Talia Goldman.

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Potting Soil and Mixes: Properties and Priorities

by Rita Pelczar

A GROWING MEDIUM that provides a healthy environment for roots is essential for successful container gardening, and for propagating many plants from seed or cuttings. Good drainage and adequate water-holding capacity are important characteristics to consider. Weight is another; your medium should have enough weight to support the plant without its toppling over, but should not be too heavy if you plan to lug the container from place to place. How easily the medium accepts water, how much it

shrinks when it dries, its pH, its lack of weed seeds, insects, and disease, and how well it holds up over time are further factors influenced by the specific make up of the mix. Although some potting mixes contain soil, many do not. If soil is part of the potting mix, it should be pasteurized (see “Pasteurizing Soil,” page 53).

Another point for environmentally conscious gardeners to consider is this: How sustainable are the practices involved in producing and distributing your potting soil?

ORGANIC COMPONENTS

Organic ingredients such as peat moss, coconut coir, compost, and tree bark make up a significant portion of most potting mixes. Peat is the lightweight remains of certain plants—most commonly sphagnum moss—that have been preserved in a high acid environment such as bogs. Peat moss retains a lot of water and is extremely stable—it decomposes very slowly. It is also acidic and has no nutrient value. Although relatively inexpensive to harvest and package, there are concerns about its environmental sustainability (see “The Issue of Peat Moss,” page 51).

In recent years, several renewable alternatives to peat moss have emerged on the market. A processed by-product of the dairy industry called **RePeet™** is produced by Organix, Inc., in anaerobic digesters at regional facilities located near large dairy operations. Sold as a soil amendment, its primary component is dairy cow manure. When processed, it shares many traits with peat moss, including water retentiveness and porosity.



A high-quality potting mix is essential to successful container gardening.

With a pH of 6.5, it is closer to neutral than peat moss, which has a pH around 4.0. “We are just now moving to our first full-scale production facility near Stephenville, Texas,” says Organix President Russell V. Davis. “RePeet cannot be



An alternative to peat moss, Organix’s RePeet™ is produced from dairy cow manure.

found in any off-the-shelf potting mixes as of now, but should start showing up in stores later this year.”

Coir is the pith that surrounds a coconut; it is fibrous, lightweight, resistant to decay, and it adds significant porosity to a potting mix. “Coir is much easier to remoisten than peat, and not nearly as acidic. It does not last in a container forever, but I would guess about three times longer than peat moss,” says Brooklyn-based garden writer and photographer Ken Druse.

A natural by-product of processing coconuts, coir is renewable and would seem to be ideal for a potting mix except that, unless you live where coconuts grow, the material has to be shipped, often long distances. Many manufacturers, however, feel that coir is still a better choice, environmentally, than peat.

Gardens Alive’s **Natural Beginnings Seed Starting Mix** is one coir-based mix enhanced with worm castings and mealworm guano as nutrient sources. It’s great for starting seeds where maintaining balanced moisture is critical.

Compost is frequently included in potting mixes, and local sources are available no matter where you live. It is a major component of the **Organic Mechanics** mixes. “We use locally made compost to replace peat,” says Mark Highland, president of the Organic Mechanics Soil Company, which distributes its peat-free products to the Mid-Atlantic region. “To further reduce the energy consumed in the manufacturing process, we’ve begun replacing perlite with rice hulls in some of our blends.”



Fafard's "3 B" Professional Formula mix contains sphagnum peat moss, processed pine bark, perlite, vermiculite, nutrients, limestone, and a wetting agent.

White Oak Farm Premium Organics also uses compost from local sources, including food processing residuals such as Ocean Spray's cranberry pulp, as the basis of their soil mixes. "We manufacture all of our own compost at two southeastern Wisconsin compost facilities," says owner Sandy Syburg. The company distributes their products in the Midwest. "The mission of White Oak Farm," says Syburg, "is

THE ISSUE OF PEAT MOSS

About 90 percent of the peat used in this country is harvested from bogs in Canada. According to the Canadian Sphagnum Peat Moss Association (CSPMA), of the 279 million acres of Canadian peatland, less than .02 percent (42,000 acres) is being used for harvesting approximately 1.4 million tons of sphagnum peat each year. According to CSPMA President Paul Short, this amount "is well within the sustainable allocation limits of natural resource availability." Furthermore, CSPMA has adopted a preservation and reclamation policy to help restore bogs to a functional wetland ecosystem.

Yet many still question the sustainability of peat moss harvesting. The harvesting process involves draining the bogs by digging a network of ditches and basins. This may have long term effects on local water tables.

Although the Canadian bogs are extensive, and peat moss often starts to re-grow within five years after it is harvested, it grows at an extremely slow rate, about one millimeter per year. And according to the North American Wetlands Conservation Council, it may simply be impractical to return some harvested bogs to peatlands. In these cases, they recommend converting the area to farmland, wetland, or planting trees. The result is a significant disruption of a highly specialized ecosystem and endangerment of the many organisms that inhabit it. —R.P.

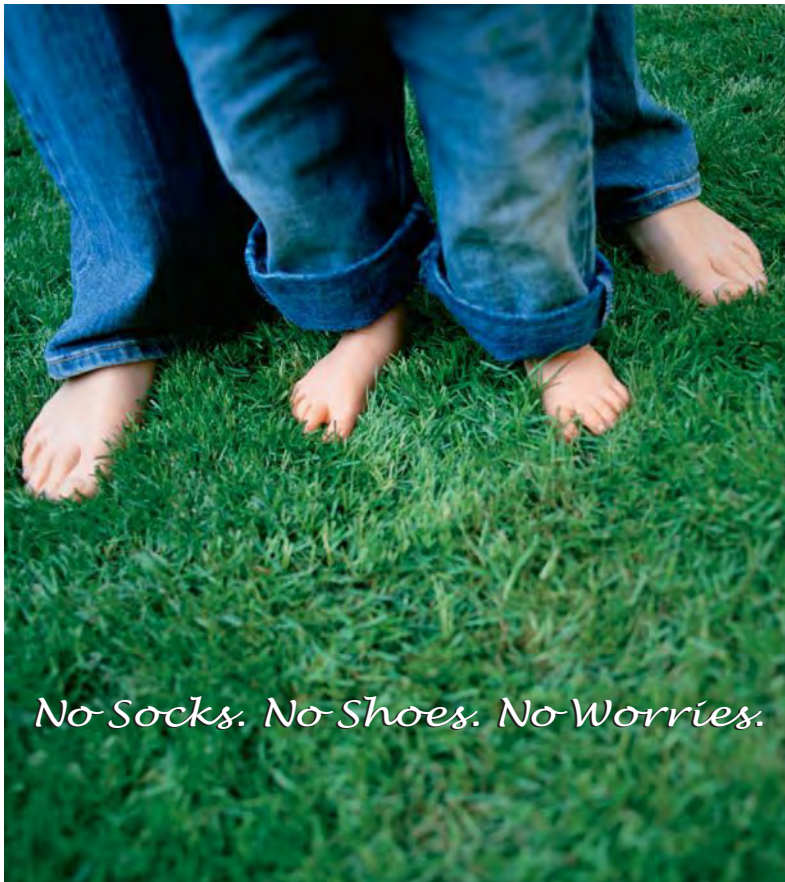
to return the organic resources as close to their origin as possible."

Other companies that manufacture and market their potting soils regionally include **Coast of Maine** in the Northeast, **Lady Bug Natural Brand** in the South, and

Sun-Gro in the West. Locally produced and distributed potting soils reduce transportation costs, both monetarily and environmentally.

Some companies with a wider distribution eliminate the need for long-

RITA PELCZAR



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www.espoma.com

Resources

Canadian Sphagnum Peat Moss Association, www.peatmoss.com.

“The Dirt on Potting Soil” by Craig Idlebrook. *Maine Organic Farmer and Gardener*, Summer, 2006. www.mofga.org/tabid/477/default.aspx.

“Is Peat P.C.?” by Chris Bright. *American Horticulturist*, Vol. 72, No. 12, American Horticultural Society, December, 1993.

Potting Mixes for Certified Organic Production by George Kuepper. National Sustainable Agriculture Information Service, 2004. <http://attra.ncat.org/attra-pub/potmix.html#making>.

Sources

Coast of Maine, Portland, ME. www.coastofmaine.com.

Fafard, Greensboro, NC. www.fafard.com.

Gardener’s Supply, Burlington, VT. www.gardeners.com.

Gardens Alive, Lawrenceburg, IN. www.gardensalive.com.

Lady Bug Natural Blend, Austin, TX. www.ladybugbrand.com.

Monrovia, Azusa, CA. www.monrovia.com/learn/soil_story/soils_and_amendments.php.

Organic Mechanics, West Chester, PA. www.organicmechanicsoil.com.

Organix, Inc., Walla Walla, WA. www.organix.us.

Sun Gro, Bellevue, WA. www.sungro.com.

White Oak Farm Organics, Oconomowoc, WI. www.whiteoakfarmorganics.com.

range shipping by maintaining multiple manufacturing facilities that serve specific regions. For example, **Monrovia** produces potting soils at eight different facilities in the United States.

Fafard has three U.S. production facilities, in South Carolina, Florida, and Texas, and three more in Canada. “Fafard’s premium retail potting soils are sold only in independent garden centers. Because of our plant locations, retailers



Fafard sells several different potting mixes.

that carry Fafard soil tend to be up and down the East Coast,” says Ann Bryan, Fafard’s marketing services manager. Bark is included in many of Fafard’s U.S. mixes. “All bark is southern yellow pine and comes from vendors within a 100-mile radius of our plants,” says Bryan.

INORGANIC INGREDIENTS

Inorganic components commonly included in potting soils are sand, perlite, and vermiculite. Coarse sand, also called builder’s sand, adds both porosity and weight to a mix. For top heavy plants its weight provides stability.

Perlite is a volcanic rock and vermiculite is a micaceous mineral. Both are mined materials that are heated until they expand, adding significant porosity to a mix. Much of the perlite and vermiculite used in potting soil is imported. For example, although Fafard obtains its perlite from several southeastern suppliers, it is originally mined in Greece.

Vermiculite is mined in many locations, including a few sites in North America. In the 1980s, asbestos, a material that has proven carcinogenic if the



Perlite is added to mixes to provide porosity.

fibers are inhaled, was found in vermiculite mined in Libby, Montana; the mine was closed in 1990. According to the National Sustainable Agriculture Information Service, all sources of natural vermiculite apparently contain some asbestos, although levels may be very low.

No safety labeling is required on vermiculite products, however, the U.S. Environmental Protection Agency suggests that if vermiculite is used, it should be handled outdoors or in a well-ventilated area and moistened to reduce the potential release of asbestos fibers. When vermiculite is included in a moist growing mix, the likelihood of problems is lessened.

PRE-MIXED OR HOMEMADE?

For occasional use, it’s probably easiest to purchase a good commercial mix. There are many available, but because little label information is required, you take your chances with an unknown brand. Ask for recommendations at local garden centers or from neighbors who have container gar-



Pro-Mix is a popular soil-less media often used by professional growers.

dens. Finding a good local—or at least regional—source of high-quality potting soil will go a long way to help your container plants thrive and minimize the energy used in its distribution.

Premixed potting soils often contain fertilizer. While this may be desirable for outdoor container plants that are in active growth, it may not be appropriate for many houseplants and seedlings. “In my experience, the fertilizers are released to house plants when they want to be dormant and burn their roots,” says Druse.

If you do use a lot of potting soil, consider making your own—it affords you the option of tweaking the recipe for specific plants—more or less acidic, more or less water retentive, etc. Local sources of sand and municipal composting sites can provide those ingredients inexpensively. You can also make high-quality compost in your own backyard—the ultimate local ingredient.

“My general medium is coir and perlite—only,” says Druse. “Sometimes I use compost as well for outdoor containers.

PASTEURIZING SOIL

If you want to use soil in your potting mix, it should be pasteurized to kill diseases, weeds, and insects, particularly if you are using it for indoor plants or starting seeds or cuttings. The object is to heat the soil to 180 degrees and maintain that temperature for 30 minutes. You can do this in your kitchen by following the steps below:



- Spread slightly moistened soil in a pan, no more than four inches deep.
- Cover the pan with aluminum foil. Place the pan of soil and an oven thermometer in the oven; set the temperature to 250 degrees.
- When the thermometer indicates the temperature has reached 180 degrees, reduce the oven temperature to 180 degrees and set your timer for 30 minutes.
- After 30 minutes, remove the soil from the oven. Allow it to cool thoroughly before using it for planting.

—R.P.

Depending on the drainage requirements, I use a ratio of one to three to one to five perlite to coir—and I try to use finely chopped coir that is neither too stringy nor ‘coir dust’, which it is sometimes sold as.” (For additional potting mix recipes and recommendations from experts around the country, see a web special linked to this article on the AHS website, www.ahs.org.)

Another standard potting mix recipe that I like to use for outdoor containers is equal parts garden loam, coarse sand, and good quality compost. It’s a heavy mix, so it’s not for large pots that you plan to move around, but it retains moisture well, and the compost provides the nutrients my plants need. Furthermore, at least two-thirds of the ingredients only have to travel a few yards in my wheelbarrow to reach their destination.

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

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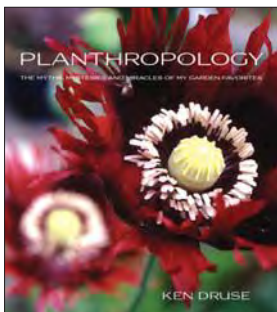
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Recommendations for Your Gardening Library

Planthropology: The Myths, Mysteries, and Miracles of My Garden Favorites

Ken Druse. Clarkson Potter, New York, 2008. 288 pages. Publisher's price, hardcover: \$50.

I MUST BE ONE of the few plant lovers who hadn't read any of Ken Druse's 10 other highly acclaimed books before discovering his most recent offering, *Planthropology*. The advantage of my ignorance was that I experienced this book as innocently as when, as a new gardener nearly two decades ago, I discovered plants like the marvelous seven son flower (*Heptacodium miconioides*)—one of my first exotic purchases that is still thriving in my overgrown New Jersey garden.



Whether you, too, are new to Druse or an established fan, *Planthropology* is sure to engage you as it did me.

In this ambitious and satisfying book (an excerpt of which appeared in the November/December 2008 issue of *The American Gardener*), Druse takes readers deep into the mysteries of the plant kingdom, revealing little-known botanical facts as well as esoteric tidbits that will amaze and educate even the most experienced gardener or horticulturist. Who knew that Pythagoras invented vegetarianism or that figs have flowers *inside* their fruit? Additionally, *Planthropology* is elegantly designed not only to show to best advantage Druse's bountiful knowledge and love of plants, but also to present his eye-popping photography.

The word “planthropology” is Druse's own creation, coined to describe the study of plants and their histories. While the word may not ultimately make it into the permanent lexicon of gardening (though, personally, I hope it does), it is an apt reflection of the author's genuine passion, knowledge, and respect for his subject.

With this book, Druse expands our understanding of how to take care of the plants we grow, and broadens our appreciation for the way our plants in turn take care of us. “When every person learns more about plants,” writes Druse, “they will discover what we gardeners already know—there are miracles all around us. But the precious living things in our care are not only fascinating, they are necessary to all life on earth.”

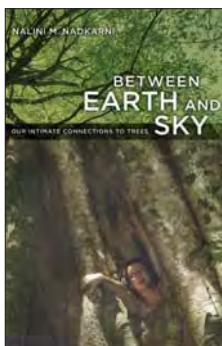
—Betsy Hays

Betsy Hays writes and gardens in northwestern New Jersey. Her blog can be found at www.betsyhays.com.

Between Earth and Sky: Our Intimate Connections to Trees

Nalini M. Nadkarni. University of California Press, Berkeley, California, 2008. 322 pages. Publisher's price, hardcover: \$24.95.

DO YOU RECALL reading recently that a famous forest ecologist had computed that there were only 61 trees for each person on our planet? What about the experiment where Inuit people who had never seen trees in their polar homelands were brought to the tropical rain forest? Have you heard of the ecological organization International Canopy Network that began with treetop studies by a talented, tree-climbing biologist? If not, then you have now been exposed to a tiny bit of Nalini Nadkarni's work.



Between Earth and Sky's title evolved from Nadkarni's childhood experience

of seeing the giant National Christmas Tree in Washington, D.C., and thinking of it as a connection between the earth and the sky, and from climbing high into the maples in her parents' yard. In this book, she brings to life myriad examples of biological events, such as the destruction of the oldest living tree, a Nevada bristlecone pine dubbed Prometheus, by a researcher trying to establish its age. The tree's name, from Greek mythology, means “forethought,” which is ironic, given that none was evident before the tree was cut down, but Nadkarni places such events into sympathetic, meaningful historic context.

Nadkarni's well-researched book is packed with interesting information woven together from disparate sources in a well-organized way. For example, she flows seamlessly through an adaptation of Maslow's Hierarchy to baby blocks, poikilohydric foliage, and Deuteronomy. She reviews the importance of the earth's radioactive strontium layer, formed in 1954, to dendrochronology (the science of using tree rings as a way to date historic events) in a way that a lay person can comprehend. Each page reinforces the importance of trees in our lives and to our planet.

If you open this book to a random chapter and read it, you will come away more enlightened. I recommend, however, starting at the beginning. The book is a multi-course banquet of information, and it is best digested in the order it is presented.

—Guy Sternberg

Founder of Starhill Forest Arboretum in Petersburg, Illinois, Guy Sternberg is also the award-winning co-author and photographer of Native Trees for North American Landscapes and Landscaping with Native Trees.

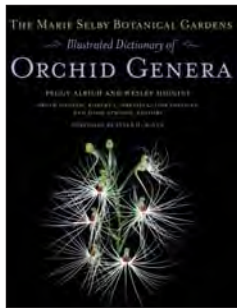
The Marie Selby Botanical Gardens Illustrated Dictionary of Orchid Genera

Peggy Aldrich and Wesley Higgins. Cornell University Press, Ithaca, New York, 2008. 482 pages. Publisher's price, hardcover: \$49.95.

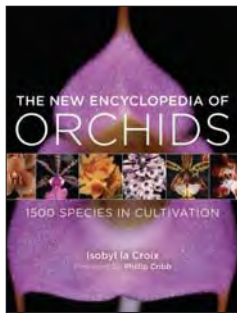
The New Encyclopedia of Orchids

Isobyl la Croix. Timber Press, Portland, Oregon, 2008. 524 pages. Publisher's price, hardcover: \$59.95.

THE RELEASE OF these two enormously important works in the same year offers a unique snapshot of the "State of the Orchid" at this point in time. The snapshot aspect of the books is significant because, as noted in *The Marie Selby Botanical Gardens Illustrated Dictionary of Orchid Genera* (IDOG), orchid taxonomy is "presently unstable." In other words, five or 10 years from now, the names used for the plants in these volumes may be rather different.



IDOG is from America's preeminent center of orchidology, the Marie Selby Botanical Gardens in Sarasota, Florida, while the *New Encyclopedia of Orchids* (NEO) is a product of the British orchid establishment, which Isobyl la Croix represents admirably. Both books feature wonderful illustrations and photographs and superbly written text. However, there are differences in the two books that can help the casual orchidist to decide which he or she needs, if acquiring both is not an option.



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IDOG is precisely as advertised: an illustrated dictionary of orchid genera. It lists all orchid generic names, past and present, with the most current status along with an illustration of a representative species and a brief description of the genus as a whole. No species, no hybrids, no cultural information. As a basic reference—one that would enable the seeker to discover the most current genus name—it is certainly without modern peer.

On the other hand, NEO is an encyclopedic treatment of 1,500 orchid species currently in cultivation. Its introductory section covers general orchidology (i.e., what is an orchid, how did they evolve, where do they grow) and has cultural information that is far more useful than is typical of most British orchid books, which tend to be parochial in approach. Illustrations are larger and show more of the flower habit than those in IDOG.

If you are looking for the most exhaustive contemporary listing of orchid genera, I recommend the dictionary. For information about culture, habitat, and particular species, the encyclopedia is the better choice. However, both of these volumes deserve to be part of any serious horticultural library.

—Ned Nash

Ned Nash has grown orchids most of his adult life, both professionally and as a hobbyist. He has written about orchids and orchid-related subjects almost as long as he has grown them.

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REGIONAL HAPPENINGS

Horticultural Events from Around the Country

NORTHEAST

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

RAP THROUGH APR. 12. **The Orchid Show: Brazilian Modern.** New York Botanical Garden. (718) 817-8700. www.nybg.org.

RAP MAR. 24. **Landscape Maintenance: An Organic Approach.** Lecture. Arnold Arboretum of Harvard University. Boston, Massachusetts. (617) 524-1718. www.arboretum.harvard.edu.

MAR. 27–29. **Capital District Garden and Flower Show.** Troy, New York. (518) 786-1529. www.gardenandflowershow.com.

APR. 14. **Moving Toward a Toxic-Free Community: Going Beyond Pesticides with Jay Feldman.** Lecture. Garden Education Center of Greenwich. Cos Cob, Connecticut. (203) 869-9242. www.gecgreenwich.org.

RAP APR. 23. **Wise on Weeds.** Workshop. The Nature Conservancy. Hildene, the Lincoln Family Home. Manchester, Vermont. (802) 229-4425 ext. 120. www.vtinvasiveplants.org.

APR. 25. **Combined Plant Sale.** New England Gesneriad Society and Boston Branch Begonia Society. Josiah Smith Barn. Weston, Massachusetts. (617) 479-3680. E-mail: wmacnair@msn.com.

APR. 26. **NYC GROWS Garden Festival.** Union Square Park. New York, New York. (802) 863-5251. www.nycgrows.org.

RAP APR. 29. **Creating a Rain Garden.** Workshop. Brooklyn Botanic Garden.

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.

Lewis Ginter Celebrates 25th Anniversary

THIS SPRING, Lewis Ginter Botanical Garden (LGBG) in Richmond, Virginia, will be in full bloom as it celebrates its 25th anniversary. Beginning on April 1, the garden's spring celebration, "A Million Blooms," will feature a spectacular succession of blooms—including daffodils, cherry blossoms, tulips, irises, roses, and peonies—as well as wine tasting, music, plant shows, and other events throughout the spring months.

On April 28 and 29, the garden will host an anniversary year symposium, "No Child Left Inside: Restoring Nature to Early Childhood." Part of an on-going "Metamorphosis" symposium series exploring LGBG's commitment to community and education, this symposium will focus on "the critical relationship between direct exposure to nature and healthy childhood development."

Also part of the metamorphosis theme of the anniversary celebrations, the "Butterflies LIVE!" exhibit will be returning to LGBG. From May 22 to October 11, it will feature hundreds of tropical butterflies, allowing visitors an up-close and personal opportunity to walk among them and to learn about the lifecycle of butterflies.

To find details on these and other anniversary events, go to www.lewisginter.org or call (804) 262-9887. LGBG is a participant in the AHS's Reciprocal Admissions Program, so AHS members receive free admission to the garden and a 10 percent discount in the gift shop.

—Talia Goldman, Editorial Intern



Spring blooms will provide a colorful backdrop for celebrations at Lewis Ginter Botanical Garden.

Brooklyn, New York. (718) 623-7200. www.bbg.org.

Looking ahead

RAP MAY 9. **Spring Symposium at the Gardens.** Coastal Maine Botanical Gardens. Boothbay, Maine. (207) 633-4333. www.maine gardens.org.

MID-ATLANTIC

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

THROUGH APR. 19. **African American Gardens: Places for the Spirit.** Exhibit. United States Botanic Garden. Washington, D.C. (202) 225-8333. www.usbg.gov.

RAP MAR. 18. **Making and Maintaining a Wildflower Meadow.** Lecture. Delaware Cen-

ter for Horticulture. Wilmington, Delaware. (302) 658-6262. www.dehort.org.

AHS MAR. 19–22. **Washington Home and Garden Show.** Washington Convention Center. Washington, D.C. (703) 823-7960. www.washingtonhomeandgardenshow.com.

RAP MAR. 28. **Lahr Native Plant Symposium and Plant Sale.** United States National Arboretum. Washington, D.C. (202) 544-8733. www.usna.usda.gov.

APR. 4. **How to Design Your Garden.** Workshop. Scott Arboretum of Swarthmore College. Swarthmore, Pennsylvania. (610) 328-8025. www.scottarboretum.org.

AHS APR. 17 & 18. **Spring Garden Market.**

Plant sale and lectures. American Horticultural Society. Alexandria, Virginia. (703) 768-5700. www.ahs.org.

AHS APR. 18. **76th Historic Garden Week in Virginia.** Alexandria garden tours. Alexandria, Virginia. (703) 370-5220. www.VAGardenweek.org.

RAP APR. 25. **Arbor Day Plant Sale.** Tyler Arboretum. Media, Pennsylvania. (610) 566-9134. www.tylerarboretum.org.

RAP APR. 25. **Rare Plant Auction.** Delaware Center for Horticulture. Kennett Square, Pennsylvania. (302) 658-6262. www.dehort.org.

APR. 25–MAY 17. **Maryland House and Garden Pilgrimage.** House and garden tours. Towson, Maryland. (410) 821-6933. www.mhgp.org.

Looking ahead

RAP MAY 9. **Spring Native Plant Sale.** Adkins Arboretum. Ridgely, Maryland. (410) 634-2847. www.adkinsarboretum.org.

JUNE 4–6. **The Native Plants in the Landscape Conference.** Millersville, Pennsylvania. (717) 871-2189. www.millersvillenateplants.org.

SOUTHEAST

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

RAP MAR. 21 & 22. **Hidden Gardens Tour.** Heathcote Botanical Gardens, Inc. Fort Pierce, Florida. (772) 464-4672. www.heathcotebotanicalgardens.org.

RAP MAR. 21 & 22. **Spring Plant Sale.** Harry P. Leu Gardens. Orlando, Florida. (407) 246-2620. www.leugardens.org.

RAP MAR. 21 & 22. **Spring Plant and Garden Festival.** Marie Selby Botanical Gardens. Sarasota, Florida. (941) 366-5731. www.selby.org.

MAR. 26. **Creating an Ornamental and Sustainable Kitchen Garden.** Workshop. The South Carolina Botanical Garden. Clemson University. Clemson, South Carolina. (864) 656-3311. www.clemson.edu/scbg.

MAR. 26–29. **Plant Fair and Sale.** Callaway Gardens. Pine Mountain, Georgia. (800) 225-5292. www.callawayonline.com.

MAR. 26–29. **Savannah Tour of Homes and Gardens.** Savannah, Georgia. (912) 234-8054. www.savannahtourofhomes.org.

RAP MAR. 28. **Butterfly Gardening.** Workshop. Heathcote Botanical Gardens, Inc. Fort Pierce, Florida. (772) 464-4672. www.heathcotebotanicalgardens.org.

Missouri Botanical Garden's 150th Anniversary

THIS YEAR marks the 150th anniversary of the oldest botanical garden in the United States still operating—the Missouri Botanical Garden (MBG), founded in 1859. Throughout the year, MBG will be celebrating its sesquicentennial anniversary with special events and displays to honor and remember its founder, Henry Shaw. Excerpts from Shaw's travel journals will be regularly posted on MBG's website to provide a glimpse backwards in time, and into the trips that inspired Shaw to give St. Louis a garden that compared with the great formal botanical gardens of Europe.

The past echoes again through one of the highlights of the anniversary commemoration—a custom-designed floral clock, 20 feet in diameter, intended to recapture the grandeur of a floral clock displayed in St. Louis at the 1904 World's Fair. The floral clock will be open for viewing beginning after the planting in April, and will be fully grown by the beginning of May. It will showcase “seasonal flowers of varying colors and textures, moving clock hands, and a working cuckoo bird chirping every quarter hour,” and will be on display until October.

Among the other anniversary events will be the Green Living Expo, from May 1 to October 31, where visitors can “peruse select booths showcasing goods, services, and information with an environmental edge.”

For more information about the Missouri Botanical Garden and its 150th anniversary celebration, visit www.mobot.org or call (800) 642-8842. MBG is a participant in the AHS's Reciprocal Admissions Program, so AHS members receive free admission to the garden and a 10 percent discount in the gift shop.

—Talia Goldman, Editorial Intern



This floral clock at the Missouri Botanical Garden is inspired by one shown at the 1904 World's Fair.

NORTH CENTRAL

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

RAP APR. 4 & 5. **Michigan State African Violet Show and Sale.** University of Michigan Matthaei Botanical Gardens and Nichols Arboretum. Ann Arbor, Michigan. (734) 647-7600. www.mbgna.umich.edu.

RAP APR. 18. **Plant Information Fair.** Minnesota Landscape Arboretum. Chaska, Minnesota. (952) 443-1400. www.arboretum.umn.edu.

AHS APR. 18–26. **Cincinnati Flower Show.** Cincinnati Horticultural Society. Cincinnati, Ohio. (800) 670-6808. www.cincyflowershow.com.

APR. 24–26. **Wildflower Foray.** Hiking and workshops. T.C. Steele State Historic Site. Nashville, Indiana. (812) 988-2785. www.tcsteele.org.

RAP APR. 25 & 26. **American Daffodil Society Annual Show and Conference.** Chicago

AHS APR. 3–5. **Bloom 'n' Garden Expo.** Williamson County Master Gardeners Association. Ag Expo Center. Franklin, Tennessee. (615) 973-2112. www.wcmga.net.

RAP APR. 4. **Spring Plant Sale.** State Botanical Garden of Georgia. Athens, Georgia. (706) 542-1244. www.uga.edu/botgarden.

APR. 8. **Creating a Drought-Resistant Garden.** Workshop. The South Carolina Botanical Garden. Clemson University. Clemson, South Carolina. (864) 656-3311. www.clemson.edu/scbg.

APR. 17–19. **Savannah Garden Exposition.** Historic Savannah Foundation. Savannah, Georgia. (912) 236-4795. www.savannahgardenexpo.com.

Looking ahead

RAP MAY 2 & 3. **Rhododendron Show.** American Rhododendron Society Southeastern Chapter. North Carolina Arboretum. Asheville, North Carolina. (828) 665-2492. www.ncarboretum.org.

Botanic Garden. Glencoe, Illinois. (847) 835-5440. www.chicagobotanic.org.

RAP APR. 25 & 26. **Daffodil Show.** Fellows Riverside Gardens. Mill Creek Metro Parks. Youngstown, Ohio. (330) 740-7116. www.millcreekmetroparks.com.

RAP APR. 25 & 26. **In Celebration of Trees.** Festival. Whitnall Park, Wehr Nature Center, and Boerner Botanical Gardens. Milwaukee, Wisconsin. (414) 525-8550. www.countyparks.com.

Looking ahead

AHS MAY 1-3. **Orchard in Bloom.** Flower show. Indianapolis, Indiana. (317) 713-5720. www.orchardinbloom.org.

RAP MAY 8 & 9. **Plant Sale with the Pros.** Olbrich Botanical Gardens. Madison, Wisconsin. (608) 246-4550. www.olbrich.org.

RAP MAY 15-17. **A Bloomin' Sale.** Plant sale. Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440. www.chicagobotanic.org.

SOUTH CENTRAL

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

RAP MAR. 28. **Rainwater Harvesting.** Workshop. South Texas Botanical Gardens & Nature Center. Corpus Christi, Texas. (361) 852-2100. www.stxbot.org.

RAP APR. 9 & 10. **Plant and Garden Sale.** Myriad Botanical Gardens. Oklahoma City, Oklahoma. (405) 297-3995. www.myriadgardens.com.

RAP APR. 20 & 21. **Garden Symposium.** Biedenharn Museum & Gardens. Monroe, Louisiana. (318) 387-5281. www.bmuseum.org.

RAP APR. 24-26. **Hot Springs Environmental Film Festival.** Garvan Woodland Gardens. Hot Springs National Park, Arkansas. (800) 366-4664. www.garvangardens.org.

APR. 25 & 26. **Earth Day and Oleander Festival.** Moody Gardens. Galveston, Texas. (800) 582-4673. www.moodygardens.org.

Looking ahead

RAP MAY 9. **Gardens on Tour.** Lady Bird Johnson Wildflower Center. Austin, Texas. (512) 292-4200. www.wildflower.org/gardentour.

SOUTHWEST

AZ, NM, CO, UT

RAP MAR. 7-MAY 31. **Spring Butterfly Exhibit.** Desert Botanical Garden. Phoenix, Arizona. (480) 941-1225. www.dbg.org.

RAP MAR. 26. **Bringing Wildness Home:**

Nature as Everyday Inspiration. Lecture. Denver Botanic Gardens. Denver, Colorado. (720) 865-3500. www.botanicgardens.org.

APR. 2 & 9. **Garden Workshop.** Utah Botanical Center. Kaysville, Utah. (801) 593-8969. <http://utahbotanicalcenter.org>.

APR. 18. **Children's Seed Festival.** Rio Grande Botanic Garden, Albuquerque Biological Park. Albuquerque, New Mexico. (505) 768-2000. www.cabq.gov/biopark/garden/index.html.

RAP APR. 25. **Arbor Day.** Tours, demonstrations, and tree planting. The Arboretum at Flagstaff. Flagstaff, Arizona. (928) 774-1442. www.thearb.org.

Looking ahead

AHS MAY 1-3. **Maricopa County Home & Landscape Show.** Arizona State Fairgrounds. Phoenix, Arizona. (602) 485-1991. www.maricopacountyhomeshows.com.

RAP MAY 7-9. **Spring Plant Sale.** Denver Botanic Gardens. Denver, Colorado. (720) 865-3690. www.botanicgardens.org.

WEST COAST

CA, NV, HI

RAP MAR. 26-29. **International Conference on Japanese Gardens Outside Japan.** Earl Burns Miller Japanese Garden, CSULB. Long Beach, California. (562) 985-5930. www.csulb.edu/~jgarden.

RAP MAR. 28 & 29. **Growing Natives: Celebrating California's Beauty in Dry Times.** Symposium. California Native Plant Society, Friends of the Regional Parks Botanic Garden, and *Pacific Horticulture*. Berkeley, California. (510) 849-1627. www.nativeplants.org.

APR. 4 & 5. **Cutting Sale.** Southern California Plumeria Society. Casa Del Prado, Balboa Park. San Diego, California. (619) 461-5942. www.socalplumeriasociety.com.

APR. 5. **Garden Tour.** Rancho Los Cerritos Historic Site. Long Beach, California. (562) 570-1755. www.rancholescerritos.org.

RAP APR. 11. **Designing Great Gardens.** Lecture. Descanso Gardens. La Cañada Flintridge, California. (818) 949-4200. www.descansogardens.org.

APR. 17. **Practical Pruning: A Workshop for Arborists and Landscapers.** University of California Davis. Davis, California. (800) 752-0881. <http://extension.ucdavis.edu/agriculture>.

RAP APR. 18. **Nature's Table.** New garden opening. Descanso Gardens. La Cañada Flintridge, California. (818) 949-4200. www.descansogardens.org.

RAP APR. 18 & 19. **Green Scene Plant and Garden Show.** Fullerton Arboretum. Fullerton, California. (714) 278-3407. www.fullertonarboretum.org.

APR. 19. **Going Native Garden Tour.** Middlebrook Gardens. San Jose, California. (408) 292-9993. www.goingnativegardentour.org.

APR. 25. **Spring Garden Festival.** Cuyamaca College. El Cajon, California. (619) 660-4262. www.cuyamaca.edu/ohweb.

NORTHWEST

AK, ID, MT, OR, WA, WY

AHS MAR. 27-29. **Energy Trust Better Living Show.** Portland Expo Center. Portland, Oregon. (503) 736-5200. www.betterlivingshow.org.

RAP APR. 3 & 4. **Annual Meeting and Spring Garden Conference.** Alaska Botanical Garden. Anchorage, Alaska. (907) 770-3692. www.alaskabg.org.

RAP APR. 25 & 26. **FlorAbundance Spring Plant Sale.** Washington Park Arboretum. Magnuson Park. Seattle, Washington. (206) 325-4510. www.arboretumfoundation.org.

APR. 25 & 26. **Glide Wildflower Show.** Glide Community Center. Glide, Oregon. (541) 496-3323. www.glidewildflowershow.org.

APR. 26-MAY 9. **The Bug Zoo.** Exhibit. Sawtooth Botanical Garden. Ketchum, Idaho. (208) 726-9358. www.sbgarden.org.

Looking ahead

MAY 13. **Gardening and Sustainability.** Lecture. Northwest Horticultural Society. Kenmore, Washington. (206) 780-8172. www.northwesthort.org.

CANADA / INTERNATIONAL

RAP MAR. 21. **Heather Lecture and Sale.** Glendale Gardens & Woodland. Victoria, British Columbia. (250) 479-6162. www.hcp.bc.ca.

MAR. 27. **An Ecological Vegetable Garden.** Class. Arboretum at the University of Guelph. Guelph, Ontario. (519) 824-4120 ext. 52113. www.uoguelph.ca/arboretum.

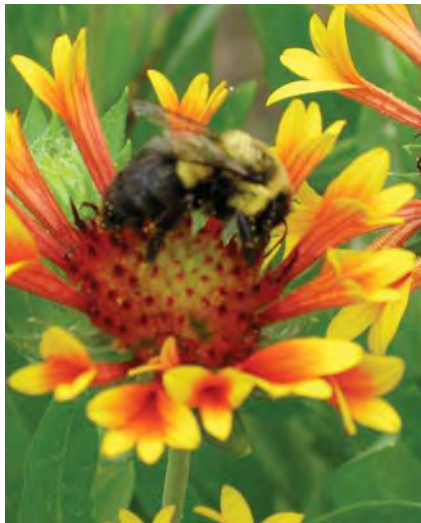
MAR. 28-APR. 24. **Vancouver Cherry Blossom Festival.** Vancouver, British Columbia. (604) 257-8120. www.vcbf.ca.

Looking ahead

MAY 9. **Perennial Plant Sale.** University of British Columbia Botanical Garden and Centre for Plant Research. (604) 822-9666. Vancouver, British Columbia. www.ubcbotanicalgarden.org.



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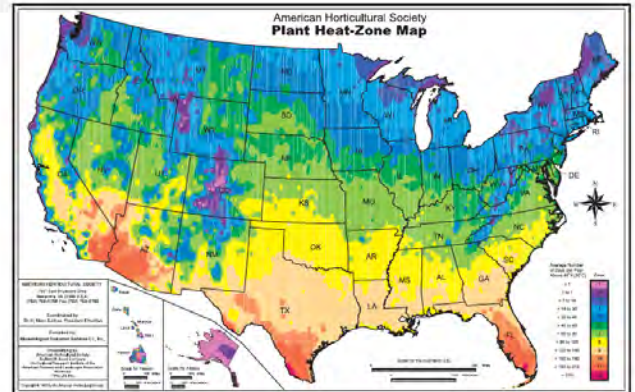
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PRONUNCIATIONS AND PLANTING ZONES

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–C

- Acorus americanus** AK-or-us uh-mair-ih-KAN-us (USDA Zones 3–10, AHS Zones 10–3)
A. calamus A. KAL-uh-mus (3–10, 10–2)
Allium tricoccum AL-ee-um tri-KOK-um (4–8, 8–1)
Apios americana AY-pee-oss uh-mair-ih-KAN-uh (4–10, 10–3)
Arisaema triphyllum air-ih-SEE-muh try-FIL-lum (4–9, 9–1)
Aster oblongifolius ASS-ter ob-lon-jih-FO-lee-us (3–8, 8–1)
Azolla caroliniana ah-ZOL-luh kair-o-lin-ee-AN-uh (4–11, 12–1)
Bacopa caroliniana buh-KO-puh kair-o-lin-ee-AN-uh (9–11, 11–7)
Bambusa oldhamii bam-BOO-suh old-HAM-ee-eye (8–11, 12–8)
Brassica oleracea BRASS-ih-kuh o-luh-RAY-see-uh (8–10, 10–7)
Bunias orientalis BYEW-nee-us aw-ree-en-TAL-iss (4–8, 8–4)
Cabomba caroliniana kuh-BOM-buh kair-o-lin-ee-AN-uh (6–11, 12–6)
Calla palustris KAL-uh pah-LUS-triss (4–8, 8–1)
Caltha natans KAL-thuh NAY-tanz (3–7, 7–1)
C. palustris C. pah-LUS-triss (3–7, 7–1)
Canna indica KAN-nuh IN-dih-kuh (8–11, 12–1)
Ceratophyllum demersum seh-rah-toh-FIL-um deh-MUR-sum (6–9, 9–6)
Chnidoscolus chayamansa nih-DOS-ko-lus chay-uh-MAN-suh (9–10, 12–9)
Colocasia esculenta kol-o-KAY-see-uh es-kyew-LEN-tuh (9–11, 12–7)
Coreopsis auriculata kor-ee-OP-sis aw-rik-yew-LAY-tuh (4–9, 9–1)
C. grandiflora C. gran-dih-FLOR-uh (4–9, 12–1)

- C. integrifolia** C. in-teg-rih-FO-lee-uh (6–9, 9–6)
C. lanceolata C. lan-see-o-LAY-tuh (3–8, 9–1)
C. palmata C. pal-MAY-tuh (4–8, 8–1)
C. rosea C. ro-ZAY-uh (4–7, 8–1)
C. tripteris C. trip-TAIR-iss (3–8, 9–1)
C. verticillata C. vur-tih-sih-LAY-tuh (4–9, 9–1)
Crambe maritima KRAM-bee muh-WRIT-ih-muh (6–9, 9–6)
Crinum americanum KRY-num uh-mair-ih-KAN-um (8–11, 12–7)
Cynara scolymus SIN-uh-ruh SKOH-lih-mus (8–9, 9–7)

D–I

- Darmera peltata** DAR-mer-uh pel-TAY-tuh (7–9, 9–7)
Decodon verticillatus DEK-o-don vur-tih-sih-LAY-tus (3–10, 10–3)
Edgeworthia chrysantha edj-WORTH-ee-uh krih-SAN-thuh (8–10, 10–8)
Habitia tamnoides huh-BLIT-zee-uh tam-NOY-deez (3–9, 8–1)
Helianthus tuberosus hee-lee-AN-thus too-bur-O-sus (7–9, 9–7)
Heuchera alba HYEW-kur-uh AL-buh (4–8, 8–1)
H. americana H. uh-mair-ih-KAN-uh (4–8, 8–1)
H. xbrizoides H. bry-ZOY-deez (4–8, 8–1)
H. cylindrica H. sih-LIN-drih-kuh (4–8, 8–1)
H. hallii H. HAL-lee-eye (4–8, 8–1)
H. pubescens H. pyew-BESS-enz (4–8, 8–1)
H. pulchella H. pul-KEL-uh (4–8, 8–1)
H. sanguinea H. san-GWIN-ee-uh (3–8, 8–1)
H. villosa H. vih-LO-suh (4–9, 9–1)
Hibiscus coccineus hy-BISS-kus kok-SIN-ee-us (6–11, 11–5)

- H. moscheutos** H. mos-KOO-tos (5–10, 12–1)
Iris fulva EYE-ris FUL-vuh (5–10, 10–4)
I. setosa I. seh-TOH-suh (3–8, 8–1)
I. virginica I. vir-JIN-ih-kuh (4–9, 9–4)

J–O

- Juncus effusus** JUNG-kus eh-FEW-suss (6–9, 9–6)
J. patens J. PAY-tenz (7–9, 9–7)
Justicia americana jus-TISH-yuh uh-mair-ih-KAN-uh (3–10, 10–3)
Lobelia siphilitica lo-BEEL-yuh sih-fih-LIH-tih-kuh (4–7, 9–2)
Lysichiton americanus ly-sih-KITE-on uh-mair-ih-KAN-uh (5–8, 7–1)
Menyanthes trifoliata men-ee-AN-theez tri-fo-lee-AY-tuh (4–8, 8–1)
Mimulus guttatus MIM-yew-lus gyew-TAY-tus (7–9, 9–7)
Moringa oleifera mo-RIN-guh o-lee-IF-ur-uh (10–11, 12–9)
M. stenopetalata M. sten-o-PET-uh-luh (10–11, 12–9)
Myosotis scorpioides my-o-SO-tis skor-pee-OY-deez (5–9, 9–5)
Nasturtium officinale nas-TUR-shum oh-fiss-ih-NAL-ee (5–11, 12–5)
Nelumbo lutea neh-LUM-bo LEW-tee-uh (4–11, 12–1)
N. nucifera N. new-SIH-fer-uh (4–11, 12–3)
Nuphar lutea NOO-far LEW-tee-uh (3–9, 9–1)
Nymphoides cordata nim-FOY-deez kor-DAY-tuh (6–10, 10–4)
Onenathe javanica ee-NAN-thee juh-VAN-ih-kuh (9–11, 12–1)
Opuntia ficus-indica o-PUN-shuh FIE-kus-IN-dih-kuh (8–10, 12–7)
Orontium aquaticum o-RON-tee-um ah-KWAT-ih-kum (6–10, 10–4)

P–Z

- Peltandra virginica** pel-TAN-druh vir-JIN-ih-kuh (4–10, 10–3)
Petasites japonicus pet-uh-SY-teez jah-PON-ih-kus (5–9, 9–5)
Phaseolus coccineus fas-see-O-luss kok-SIN-ee-us (10–11, 12–10)
P. lunatus P. loo-NAY-tus (9–10, 10–9)
Phlox xprocumbens FLOKS pro-KUM-benz (3–8, 8–1)
P. subulata P. sub-yew-LAY-tuh (3–8, 8–1)
Physostegia leptophylla fy-so-STEE-juh lep-toh-FIL-uh (6–10, 10–6)
Pontederia cordata pon-tuh-DEER-ee-uh kor-DAH-tuh (3–11, 12–1)
Primula elatior PRIM-yew-luh ee-LAY-tee-or (4–8, 8–1)
Sagittaria latifolia saj-ih-TAY-ree-uh lat-ih-FO-lee-uh (5–11, 12–5)
S. subulata S. sub-yew-LAY-tuh (5–11, 12–5)
Saururus cernuus saw-RUR-us sur-NOO-us (2–11, 12–1)
Sechium edule SEK-ee-um ed-YEW-lee (9–10, 12–9)
Selaginella kraussiana sel-ah-jih-NEL-luh krow-see-AN-uh (7–10, 12–1)
Sium sisarum SEE-um sih-SAY-rum (4–8, 8–4)
Thalia dealbata THAY-lee-uh dee-al-BAY-tuh (5–10, 10–5)
Tiarella cordifolia tee-uh-REL-luh kor-dih-FO-lee-uh (3–8, 7–1)
T. trifoliata forma laciniata T. tri-fo-lee-AY-tuh forma luh-syn-ee-AY-tuh (4–7, 7–1)
Toona sinensis TOO-nuh sih-NEN-siss (5–8, 12–10)
Typha latifolia TY-fuh lat-ih-FO-lee-uh (2–11, 12–1)
Verbesina alternifolia vur-beh-SY-nuh al-tur-nih-FO-lee-uh (5–8, 8–1)

GARDEN MARKET

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

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Edgeworthia chrysantha: Fragrant Flowers for Early Spring

by Andrew Bunting

IFIRST SAW *Edgeworthia chrysantha* growing at the State Fairgrounds in Raleigh, North Carolina, in 1993 during a tour of the gardens and collections. It was only late March and this broadly rounded, deciduous shrub—commonly known as paperbush or edgeworthia—made quite an impression on me because it was in full flower.

A relative of daphnes, paperbush (USDA Zones 8–10, AHS Zones 10–8) develops multiple stout stems that arise from its base. (Specimens trained as single-stemmed topiaries, like the one shown here, are sometimes available.) Over time, it can reach six feet tall with an equal spread. The straplike leaves are six to eight inches long, providing a tropical effect.

Toward the end of summer, flower buds form for the following spring. These hang at the branch tips, creating a striking, silky white display in winter. In late March to early April, the buds open to reveal clusters of sweetly fragrant, tubular, yellow flowers. The blooms fill a void between the witch hazels (*Hamamelis* spp.) and winter hazels (*Corylopsis* spp.)—which flower ahead of edgeworthia—and flowering cherries (*Prunus* spp.) and magnolias, which bloom slightly after.

Although I have grown edgeworthia in part shade here at the Scott Arboretum in Pennsylvania, it requires nearly full sun to develop its best form. Because it is not particularly drought tolerant, supplemental watering may be necessary during prolonged dry spells.

ONE SPECIES OR TWO?

There is significant confusion among botanists regarding edgeworthia nomen-



Edgeworthia's fragrant yellow flowers appear in early spring well in advance of its leaves.


clature: Some distinguish two or more species, others a single species with variants. Summing up the current understanding, plant explorer Dan Hinkley says, “No one seems to know what species they have and few seem to know if more than one species actually exists.”

References that distinguish between species consider *Edgeworthia papyrifera* less robust than *E. chrysantha* and more diminutive. Many sources suggest that neither species is hardy north of USDA Zone 8. At the Scott Arboretum (USDA Zone 6b/7a), we have found, however, that even though flower buds are set in the fall and exposed to the rigors of winter, edgeworthia makes a fine early-flowering shrub for

the Philadelphia area, as it does throughout the southeastern United States, California, and the Pacific Northwest.

Some catalogs and references also list a selection of *E. papyrifera* called ‘Red Dragon’, which I have coveted for years. I first encountered this selection growing at the world-renowned Eisenhut Nursery near Ticino, Switzerland. Like *E. chrysantha*, it has early spring flowers, but these are a vibrant reddish orange! ‘Red Dragon’ is said to be less hardy than the species, but given my experience with supposedly tender plants at the Scott Arboretum, experimentation with it is warranted.

SUITED TO SMALL SPACES

Edgeworthias are appealing in small gardens. Mass them to maximize their effect; small plants can become well-formed shrubs in just a few years. To more easily appreciate their early spring fragrance, plant them close to entryways. 

Andrew Bunting is curator of plants at the Scott Arboretum of Swarthmore College in Swarthmore, Pennsylvania.

Sources

Forestfarm, Williams, OR. (541) 846-7269. www.forestfarm.com.

Gossler Farms Nursery, Springfield, OR. (541) 746-3922. www.gosslerfarms.com.

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