



The American GARDENER[®]

The Magazine of the American Horticultural Society

September / October 2012

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handsome
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whole other
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NOTES FROM RIVER FARM

AT THE American Horticultural Society, we see our mission as encouraging everyone to garden. We emphasize this because there is a tendency to view gardening in a narrow, and potentially limiting, way. Often, the word “garden” conjures up an image of a discrete plot of land, such as a neighbor’s intricate bed of roses, or the community vegetable garden down the road. But any space can be a garden as long as plants are cultivated there. The key word is “cultivate,” which we define broadly as the planting, tending, or harvesting of plants.

Here at the AHS’s River Farm headquarters, we are fortunate to have plenty of space, so we cultivate everything from an orchard to formal flower borders and a four-acre meadow. Those who have more limited outdoor space or none at all may instead cultivate scaled-down versions of these sorts of plantings—perhaps a six-foot-square masterpiece in front of a townhouse, containerized edibles on a deck, or lush indoor gardens. All of these activities fall under the broad umbrella of gardening. Gardens are everywhere, and everyone can be a gardener!



One place where gardens are showing up more and more is schools. In this issue, there’s an article starting on page 41 that profiles an exemplary school garden program that was a featured tour during the AHS’s 20th annual National Children & Youth Garden Symposium, held in the Washington, D.C., area in July. The difference such gardens and programs is making

in the lives of young people is truly inspiring! The symposium aims to keep that momentum going by giving teachers, public garden staff, garden designers, parents, and others a national forum in which to exchange ideas and success stories.

Also in this issue of *The American Gardener*, editor David J. Ellis and the editorial staff have once again assembled an array of articles and news items designed to appeal to our diverse national membership. As you turn the pages, you’ll read about cool-season annuals that will keep the garden blooming from late fall to early spring. For woody plant aficionados, there’s a profile of Elwin Orton, a tenacious plant breeder renowned for his work with dogwoods and hollies. And for a celebration of seasonal color, check out the photoessay on specimen maple trees that would make a fitting centerpiece in an autumn garden.

If your gardening passion includes collecting and sowing seeds, don’t miss the information about how to donate seeds to the AHS’s annual members-only Seed Exchange, along with a donation form (you’ll find this on page 61). We have already been gathering seeds from our favorite plants at River Farm to share with all of you, and we know our members have many seeds they enjoy sharing with each other. Generous donations from a number of seed companies supplement the variety of seeds we are able to offer. Look for the complete catalog of available seeds on our website in mid-January.

Happy gardening,

Harry Risetto, Chair, AHS Board of Directors
Tom Underwood, Executive Director



CONTACTS FOR AHS PROGRAMS, MEMBERSHIP BENEFITS & DEPARTMENTS

For general information about your membership, call (800) 777-7931. Send change of address notifications to our membership department at 7931 East Boulevard Drive, Alexandria, VA 22308. If your magazine is lost or damaged in the mail, call the number above for a replacement. Requests for membership information and change of address notification can also be e-mailed to membership@ahs.org.

THE AMERICAN GARDENER To submit a letter to the editor of *The American Gardener*, write to The American Gardener, 7931 East Boulevard Drive, Alexandria, VA 22308, or send an e-mail to editor@ahs.org.

DEVELOPMENT To make a gift to the American Horticultural Society, or for information about a donation you have already made, call (800) 777-7931 ext. 132 or send an e-mail to development@ahs.org.

E-NEWSLETTER To sign up for our monthly e-newsletter, visit www.ahs.org.

INTERNSHIP PROGRAM The AHS offers internships in communications, horticulture, and youth programs. For information, send an e-mail to education@ahs.org. Information and application forms can also be found in the River Farm area of www.ahs.org.

NATIONAL CHILDREN & YOUTH GARDEN SYMPOSIUM For information about the Society’s annual National Children & Youth Garden Symposium, e-mail youthprograms@ahs.org or visit the Youth Gardening section of www.ahs.org.

RECIPROCAL ADMISSIONS PROGRAM The AHS Reciprocal Admissions Program offers members free admission and other discounts to more than 250 botanical gardens and other horticultural destinations throughout North America. A list of participating gardens can be found in the Membership area of www.ahs.org. For more information, call (800) 777-7931 ext. 119.

RIVER FARM The AHS headquarters at River Farm is open 9 a.m. to 5 p.m. weekdays year-round (except Federal holidays), and 9 a.m. to 1 p.m. Saturdays from April through September. For information about events, rentals, and directions, visit the River Farm section of www.ahs.org.

TRAVEL STUDY PROGRAM Visit spectacular private and public gardens around the world through the Society’s acclaimed Travel Study Program. For information about upcoming trips, call (703) 768-5700 ext. 132, send an e-mail to jsawczuk@ahs.org, or visit the Travel Study section of www.ahs.org.

WEBSITE: www.ahs.org The AHS website is a valuable source of information about the Society’s programs and activities. To access the members-only section of the website, the user name is **garden** and the password is **2012ahs**.

MEMBERS' FORUM

TERMINOLOGY CLARIFICATION

I enjoy *The American Gardener*, but as a long-time AHS member and past dahlia fancier and breeder, I was disappointed that the otherwise so well-researched and beautifully illustrated article on dahlias (July/August 2012) referred throughout to the storage organs of dahlias as tubers.

Tubers are stems, not roots—for example, tubers of potato (*Solanum tuberosum*) and Jerusalem artichoke (*Helianthus tuberosus*). The dahlia's storage organ is a root that was modified for food storage in a similar fashion to sweet potato (*Ipomoea batatas*). Note that the fleshy root of dahlia does not have buds and thus cannot produce shoots as can a potato tuber or many other stem structures; it needs a piece of stem with an "eye" (bud) attached to the tuberous root in order to be successfully propagated.

In my horticulture classes, I always emphasize to the students the importance of using correct terminology and vocabulary, suggesting that it is the mark of a professional horticulturist. Although I have encountered dahlia enthusiasts who refer to the storage organs of the dahlia as "tubers," that does not justify incorrect use of the term in *The American Gardener*.

Paul E. Read
Professor of Horticulture/Viticulture
University of Nebraska at Lincoln

Editor's response: We were remiss in not explaining the correct term for the rooting structure of dahlias. Thanks for helping us set the record straight.

MEADOW BURN HAZARD TO WILDLIFE?

I read the piece on the controlled meadow burn at River Farm (May/June 2012) with interest as I have a few acres of fields that I plan to slowly convert to native meadow grasses and flowering plants. My research on establishing meadows points to a controlled burn as a very good method of weed control but I question its effect on the wildlife—nesting birds, foxes, small mammals—that call



A controlled burn of River Farm's meadow in early spring helps keep weeds in check.

it home. Isn't their habitat destroyed in the process?

Deborah Starr
Merion, Pennsylvania

Editor's response: Yes, temporarily. You can minimize habitat disturbance by scheduling the burn before mating season begins for mammals and birds typically found in your region. Also, if you divide the burn area into two parts and burn only one part each year, the unburned section can be a safe haven for wildlife, including overwintering insects and invertebrates.

SOURCE OF RELIABLE GARDENING INFORMATION

In response to your request for suggestions about how the AHS can serve its members ("Notes from River Farm," July/August 2012), what comes to mind is that I, as a garden business owner, am struggling with how to engage a very wide range of baby boomers in all different facets of gardening. They are used to learning, researching, or being on top of their business and want to know all about their yard, the community garden, etc., at a time when Extension services

are virtually non-existent due to budget cuts. At the same time, I am also interacting with 30-somethings who are interested but are finding a confusing array of online gardening information. What is needed for both groups is a *Consumer Reports*-type organization that would focus on gardening issues, tried and true practices, tools, and proven plants.

Beverly Hill
Beverly Hill's Garden & Nursery
Burnsville, North Carolina

Response from Harry Rissetto, AHS Board Chair:

Historically the AHS has striven—through our books, magazine, programs, and website—to provide impartial and scientifically accurate gardening information relevant to our national audience. With the redesign of our website that is underway, we hope to enhance our outreach efforts and the scope of the horticultural resources we offer members and the general public. ☺

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.



Legacies assume many forms



Whether making estate plans, considering year-end giving, honoring a loved one or planting a tree, the legacies of tomorrow are created today.

Please remember the American Horticultural Society when making your estate and charitable giving plans. Together we can leave a legacy of a greener, healthier, more beautiful America.



For more information on including the AHS in your estate planning and charitable giving, or to make a gift to honor or remember a loved one, please contact Scott Lyons at slyons@ahs.org or call (703) 768-5700 ext. 127.

Making America a Nation of Gardeners, a Land of Gardens

The American GARDENER

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News from the AHS

September / October 2012

PROGRAMS • EVENTS • ANNOUNCEMENTS

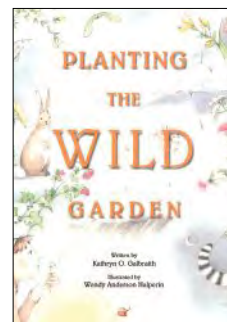
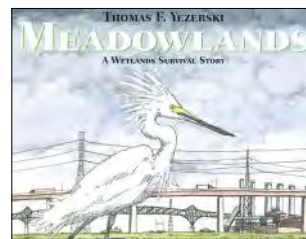
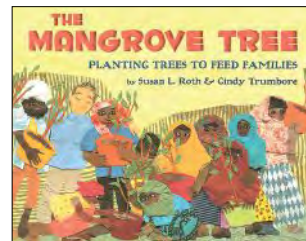
“GROWING GOOD KIDS” AWARD WINNERS ANNOUNCED

EACH YEAR during the National Children & Youth Garden Symposium, the American Horticultural Society (AHS) announces the winners of the “Growing Good Kids—Excellence in Children’s Literature” Awards. The awards program is a joint effort between the AHS and the National Junior Master Gardener Program that recognizes exceptional ecology-themed titles in children’s literature.

This year’s winners include two true stories, *The Mangrove Tree* by **Susan L. Roth** and **Cindy Trumbore**, and *Meadowlands: A Wetlands Survival Story* by Thomas F. Yezerksi, as well as **Kathryn O. Galbraith’s** educational narrative *Planting the Wild Garden*, illustrated by **Wendy Anderson Halperin**.

All three engage young readers with well told, imaginative stories while encouraging them to appreciate plants, gardening, and the environment. **Randy Seagraves**, the curriculum coordinator for the National Junior Master Gardener Program, says, “This year’s award winners will take kids to wetlands being reborn in a very well known urban setting, a wild garden being planted with and without the help of people, and an African village being transformed by some special trees. These newest and best plant-themed kids books will not only capture children’s imaginations but will also inspire them!”

Nominations for the best children’s gardening books published in 2012 will be accepted through April 23, 2013. For more information about this year’s winners or to make a nomination, visit www.jmgkids.us.



TGOA/MGCA PHOTO CONTEST WINNER

FOR THE SECOND YEAR in a row, the mushrooms have it. An image of yellow patches mushrooms from fungi photographer *extraordinaire* **Richard States** of Youngstown, Ohio, won “Best in Show” in the Gardeners of America/Men’s Garden Clubs of America (TGOA/MGCA) 2012 Photography Competition. States won last year’s competition with another mushroom photograph, and he has been the Sweepstakes winner since 2010. His images, as well as other winning photographs, will be featured in the upcoming TGOA/MGCA calendar.



Richard States’s “Best in Show” image

Through a special partnership between the organizations, AHS members can enter this annual photography contest. For more information, visit www.tgoa-mgca.org.

GARDEN WRITERS ASSOCIATION AWARD FOR MAGAZINE

THE AMERICAN GARDENER is the recipient of a Silver Award of Achievement from the 2012 Garden Writers Association (GWA) Media Awards program. The November/December 2011 issue of the magazine was selected as one of 30 Silver Award winners from over 200 entries in the field of garden



communication. “We are honored to receive this recognition for the American Horticultural Society’s flagship publication,” says **David J. Ellis**, editor of *The American Gardener*. “It’s a tribute not only to the dedication of our editorial staff, but to all the writers and photographers who regularly contribute their expertise to the magazine.”

This award means that *The American Gardener* is also a candidate for the Gold Award of Achievement for Best Product, selected from among all of the Silver Award winners in categories such as magazine, book, radio show, and newspaper column. The Gold Awards are the GWA’s highest honor.

The awards will be presented at the 64th GWA Annual Symposium on October 15 in Tucson, Arizona. The winners of the 2012 Gold Awards will also be announced at the Awards Banquet. To see a complete list of award recipients, visit www.gardenwriters.org.

TOMATO RAINBOW AT RIVER FARM

IN CELEBRATION OF the tomato’s prominent role in American gardens and kitchens, the AHS trialed five hybrid varieties and five heirloom varieties in the demonstration edible garden at its headquarters at River Farm this summer. Varieties were chosen based on their local availability and adaptability to growing conditions in the mid-Atlantic region. Altogether, almost every color of the rainbow was represented and sizes ranged from cherry to huge beefsteak varieties.

In August, AHS staff and volunteers conducted a taste test



AHS staff members and volunteers sampling a variety of tomatoes

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Bob Lund,
Arroyo Grande, CA
AIB participant since 2007

Plant Pride in Your Community
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The Gardener's Calendar 2012

2012 "Gardener's" Calendar

One of the benefits that TGOA/MGCA offers its members is the opportunity for TGOA/MGCA and AHS members to participate in our annual photography contest. From these entries, photos are chosen for our annual calendar. We encourage all men and women to become a member of TGOA/MGCA and enjoy the benefits of a worthwhile organization. For more information about TGOA/MGCA or to order calendars for \$6.95 postpaid, please call or e-mail:

**The Gardeners of America/
Men's Garden Clubs of America**

Box 241, Johnston, IA 50121-0241
(515) 278-0295 E-mail: tgoasecy@qwestoffice.net
Website: www.tgoa-mgca.org



AHS 2012 NATIONAL EVENTS CALENDAR

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

SEPT. 20–22. **America in Bloom Symposium and Awards Program.**

Fayetteville, Arkansas.

SEPT. 22. **AHS Annual Gala.**

River Farm, Alexandria, Virginia.

OCT. 26–NOV. 5.

Heritage and Gardens of Andalusia. AHS Travel Study Program. Spain.

DEC. 3–21. **Holiday Trees Display.** River Farm, Alexandria, Virginia.



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 July 1, 2012, and August 31, 2012.

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and evaluated the tomatoes on their flavor and appearance. After much deliberation and going back for seconds and thirds, the participants declared the hybrid tomato ‘Early Girl’ the winner for both appearance and taste. The hybrid varieties ‘Prize of Trials’ and ‘Golden Jubilee’ also received a number of votes for appearance, and ‘Mr. Stripecy’ and ‘Peacevine Cherry’, both heirlooms, were popular in the taste test.

“With our informal trial,” says River Farm Manager and Horticulturist **Sylvia Schmeichel**, “we hoped to expose River Farm visitors to the wonderful variety of tomatoes that are available, while encouraging them to try something new in their own gardens.”

SEED EXCHANGE DEADLINE REMINDER

THE NOVEMBER 1 deadline for submitting your seeds for the 2013 members-only Seed Exchange is approaching quickly.



The seed exchange is a great way to share your favorite plants with other AHS members and maybe discover some new favorites. The 2013 list will be available on the AHS website in mid-January, and members who

donate seeds will have first pick from the available seeds. For more details, visit www.ahs.org/members/seed_exchange.htm or turn to page 61 for instructions and a donation form.



2013 PRESIDENT'S COUNCIL TOUR TO SOUTH CAROLINA

EACH YEAR the AHS thanks its most dedicated supporters through the President's Council Tour, which gives members of the President's Council a unique garden travel experience. The 2013 destination is Charleston, South Carolina, set for mid-March. Charleston is renowned for its fascinating history and its beautiful gardens.

Members of the President's Council are members whose cumulative annual giving to the AHS totals \$1,000 or more. To learn more about the trip and the President's Council, contact **Joanne Sawczuk** at (703) 768-5700 ext. 132 or send an e-mail to jsawczuk@ahs.org.

SAVE THE DATE FOR DENVER

THE AHS'S National Children & Youth Garden Symposium (NCYGS) is headed to the Rocky Mountains in 2013. The 21st annual symposium will be held in Denver, Colorado, from July 11 to 13 at Denver Botanic Gardens.

"To continue the wonderful energy from this year's symposium, held in the Washington, D.C., area," says AHS Executive Director **Tom Underwood**, "we are very excited to bring the event to Colorado for the second time in the symposium's history and to work with Denver Botanic Gardens to give participants a truly memorable and informative experience." One of the highlights will be the opportunity to get an in-depth look at Denver Botanic Gardens' recently completed three-acre Mordecai Children's Garden, where participants will be able to explore various habitats including Marmot Mountain, the Rooftop Alpine Garden, and the Glorious Grasslands.

Symposium participants will also have the option to visit Cheyenne Botanic Gardens in nearby Cheyenne, Wyoming, to see the Paul Smith Children's Village, which is designed to teach children about sustainability. **Shane Smith**, director of Cheyenne Botanic Gardens, received the AHS's 2012 Professional Award for his outstanding accomplishments in public garden administration.

Further information about the 2013 symposium will be available next spring on the AHS website at www.ahs.org.

News written by Editorial Intern Holly Bowers.

River Farm Autumnal Composition



A single, fan-shaped leaf fallen from a ginkgo tree (*Ginkgo biloba*) mingles with some of the tree's infamously malodorous fruit.

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AMERICAN
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AHS MEMBERS MAKING A DIFFERENCE: Peg Owens

by Holly Bowers

PEG OWENS'S love of gardening began when she was a girl growing up in Long Island, New York. "Everyone who gardens has a relative or mentor who gardened," she explains. For her, it was her grandmother. "She loved flowers, and so do I," says Owens.

Owens jokes that the reason she did not get a college degree in horticulture is because she has an irrational fear of worms. "It's crazy!" she laughs. "I used to think that everything in horticulture involved worms." Instead, she studied business but cultivated her gardening interest as a hobby. Everything she knows is "self-learned, and from becoming a Master Gardener," Owens says. Today, she enjoys sharing her knowledge with others, especially the gardening groups she belongs to.

A CELEBRATION GARDEN

The first time Owens realized that her gardening expertise could help others was when she and her husband Rod moved to a new community in Florida known as Celebration, established in 1994 by the Walt Disney Company as a model town. She remembers seeing families who had just moved to Celebration trying to plant petunias that quickly wilted in the Florida heat. Having moved to



As her alter ego, Poise N. Ivy, Peg Owens helped put new gardeners at ease.

Florida in the 1970s when she was in her early 20s, she had the "most background knowledge about the plants and the area out of everyone there," she recalls.

Owens decided to start a gardening group in Celebration. She contacted everyone she thought might be interested, and 14 people came to the first meeting. Thus the Garden Club of Celebration was born.

Owens also organized educational programs for the community to answer questions about what plants worked

well in Celebration's small yards or to demonstrate basic gardening techniques. She even adopted a character, the pearl-bedecked Ms. Poise N. Ivy, which helped her engage her audience while presenting gardening tips.

A TRUE MASTER

Owens and her husband left Celebration seven years ago to move north to Gainesville, Florida, which Owens calls "the Master Gardener's Mecca." Owens became a Master Gardener while she lived in Celebration in order to better educate the community's new gardeners, and it was through them that she joined the American Horticultural Society. She became a member in 2001 when the International Master Gardeners Conference was held in Orlando. Her AHS membership helps her feel connected to a national community of gardeners. In particular, "I enjoy seeing the magazine and finding out what's going on around the country," she says.

Today Owens is active in both the Gainesville Garden Club and the Master Gardeners. Her Master Gardener group has been very involved in Gainesville's elementary school gardens. She hopes that her gardening in schools will do for students what her grandmother did for her—give them a gardener to look up to and get them outside to foster an early love of planting and nature.

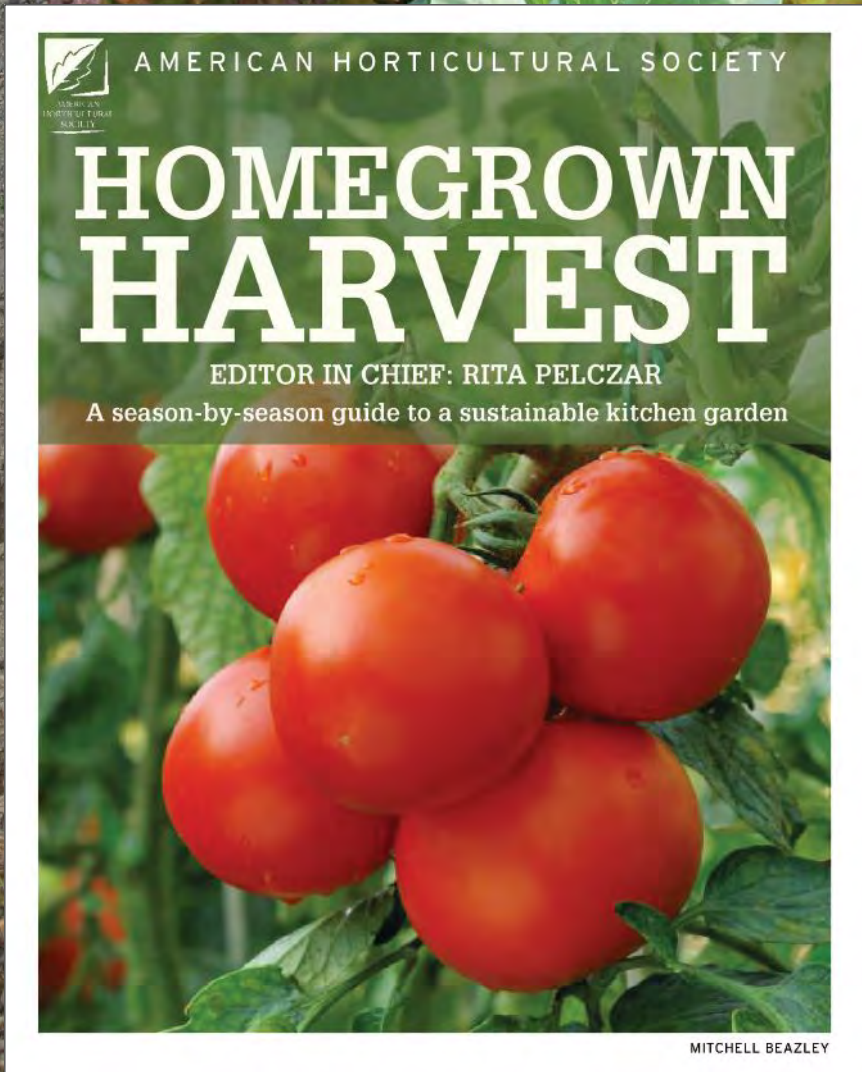
As for her original "students" in Celebration, she still visits from time to time, noting that the landscapes are maturing nicely and her garden club is going strong. Since she started the group in 1997, its membership has grown to 50 garden enthusiasts. "To see how the club has prospered, how friendships were made, and how the members' gardening knowledge has grown is very gratifying," she says. That's a gardening legacy truly worthy of celebration.

Holly Bowers is an editorial intern for The American Gardener.



Owens's former home in Celebration, Florida, is typical of the model community.

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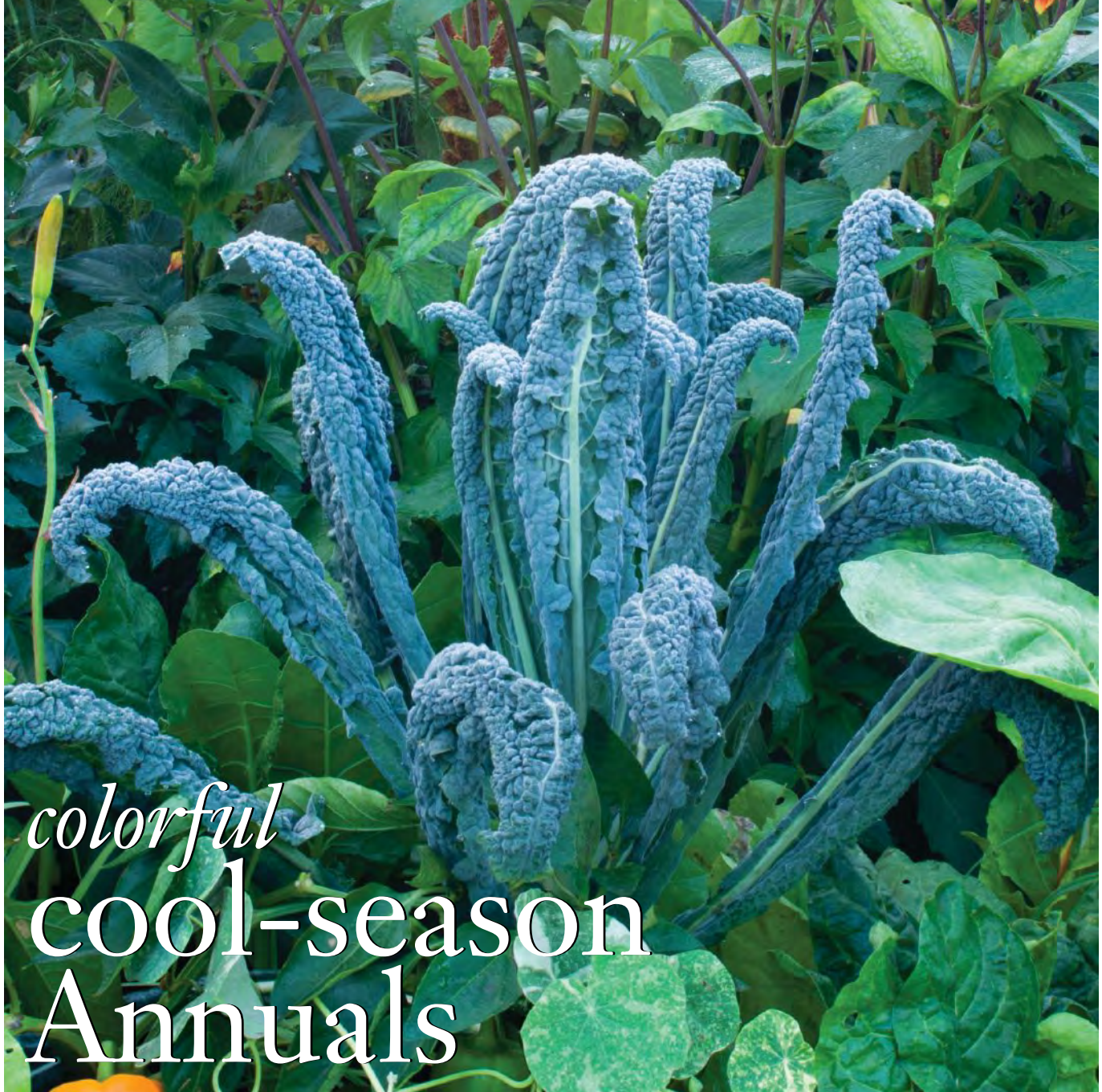
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colorful cool-season Annuals

Get started on next year's garden now with these eye-catching annuals.

BY LINDA ASKEY

IF YOU'RE going for a garden with colorful blooms for as many days of the year as possible, cool-season annuals are a must. For most of us, they extend the flowering season at both ends. Spring windowboxes and beds overflowing with lobelia, sweet alyssum, and kale are re-planted for summer with tough, heat-loving annuals. Then in autumn, gardeners return to planting violas, snapdragons (*Antirrhinum* spp.), and other

frost-tolerant choices to carry them into winter. In mild regions, blooms may continue through the winter.

Of course, the best time to set out cool-season annuals—and how long you can expect them to look their best—depends on where your garden is located. Personal experience and the wisdom of local garden experts in various regions provide reliable guidance on the questions of what and when to plant.

REGIONAL VARIATIONS

Gardeners living in USDA Hardiness Zone 7 and warmer usually sow seeds in November, when they may or may not germinate until spring. Those in cooler zones plant in spring, as early as possible, usually February or early March. Fall-transplanted pansies and violas often bloom intermittently through winter in regions where temperatures are relatively mild. The least a gardener can ask is that

In addition to being edible, 'Lacinato' Tuscan kale contributes blue-green color and strong form to the garden in fall and winter.



start, spring-planted seed grows very fast in response to the quickly lengthening spring days.

Where summer days are mild and summer nights cool, some cool-season annuals may continue to bloom all summer. If summer's heat does slow their growth and halt flower production, they may fade into the background, just surviving until cooler weather returns in autumn. Then they resume their growth and bloom through the first few frosts.



Two spiky-flowered annuals that thrive in cool weather include stock, left, and snapdragons, above.

their foliage remain green and attractive, setting up a bountiful early-spring bloom.

Renee Shepherd, owner of Renee's Garden seed company, grows many cool-season annuals in her USDA Hardiness Zone 7 trial garden in Felton, California. For gardeners in similar mild climates, Shepherd suggests planting cool-season annuals both in fall, for earliest blooms, and again in spring to extend the flowering season. Regular deadheading and frequent pruning are beneficial. "Cut them often and they'll bloom a lot longer," says Shepherd. To extend their display in areas where summer's heat comes early, Shepherd advises planting cool-season annuals where they receive morning sun and afternoon shade.

Winter survival of fall-planted cool-season annuals depends on more than just low temperatures, notes Allan Armitage, a professor of horticulture at the University of Georgia and author of several books about annuals and perennials. "The key is having an easy transition from fall into winter," explains Armitage. "With transition, a lot of these plants can take colder temperatures, but when they get frozen after a 50-degree day, they get beaten up."

In colder regions, where the ground freezes hard, cool-season annuals rarely survive the winter and need to be replanted in spring. Shepherd has a second trial garden in Vermont (USDA Zone 4), where she notes that despite the later

This is the case at Rotary Botanical Gardens, a public garden in Janesville, Wisconsin. "Cool-season annuals are important for us to add color earlier in the season," says Mark Dwyer, director of horticulture. "We'll frequently plant 5,000 to 10,000 cool-season annuals in mid- to late April." The plants, which include violas, stock (*Matthiola* spp.), twinspurs (*Diascia* spp.), pot marigolds (*Calendula* spp.), 'Brazen Brass' mustard (*Brassica juncea*), snapdragons, nemesias, and others—are started from seed sown under glass in late February. Dwyer says some are still looking good in mid-June, when they are replaced by summer annuals as part of the garden's normal rotation schedule.

A slightly earlier schedule is observed at the University of Nebraska in Lincoln. Extension educator John Fech says that cool-season annuals are planted in the garden in mid-March, and replaced around Memorial Day.

In the warmest regions of our country, including subtropical Florida, some of the Gulf Coast, and areas of the Southwest and southern California with sufficient moisture for these plants, the cool season in winter is the primary garden season. Frost-free nights and mild days are ideal for impatiens, Madagascar periwinkle (*Catharanthus* spp.), dianthus, and violas.

TOP PERFORMERS

Although there are many species that qualify as cool-season annuals, “the big three have always been pansies and violas, snapdragons, and dianthus,” says Armitage. “Iceland poppies can take a lot of cold, and of course there’s kale, parsley, and the mustards. They take cold temperatures, but it depends on how long the cold lasts.”

“Violas and pansies have been vastly improved by modern breeding,” says Shepherd. Jimmy Turner, senior director of gardens at the Dallas Arboretum and Botanical Garden in Texas, agrees. “We are up to our eyeballs in pansies,” he says, “and there is no such thing as a bad pansy.” While pansies are reliable, violas and the recently developed panolas—which have blooms smaller than pansies but larger than violas—have proven to be stronger plants, resisting cold and heat better than their larger-flowered counterparts.

Armitage forecasts, “The next great pansy is one called Cool Wave™, a cascading pansy.” Gardeners may already have had a preview under its cultivar name, ‘Plentifall’, but whatever name is on the tag, these trailing pansies have been impressive in trials, growing only six to eight inches tall and as much as two feet across. Whether in a container, hanging basket, or in the ground, the appeal is obvious. These will truly grow

‘Snow Princess’ sweet alyssum has shown good tolerance for summer heat.



Cool Wave™ pansies come in a variety of colors and have a trailing, spreading habit.

into an even blanket of color instead of bumps and blobs.

These were the first; now competing lines of trailing pansies include ‘Wonderfall’, ‘Waterfall’, and ‘Freefall’. While garden performance of the original ‘Plentifall’ pansies has been outstanding, both during heat and cold extremes, the available color range left room for improvement. But Turner, with insider knowledge, predicts the color palette will expand in the next few years. “Cascading pansies are the new annual that everyone is breeding,” he says.

Pansies are not the only plants benefiting from breeders’ renewed focus on extending the flowering season of plants

once considered fall and winter annuals. Diane Blazek, executive director of All-America Selections, based in Columbus, Ohio, recalls, “At the 2012 California spring trials, the mantra I heard time and time again was heat and drought tolerance.”

When the sweet alyssum *Lobularia* ‘Snow Princess’ arrived in May for a summer trial, Jason Reeves of the University of Tennessee at Jackson put it in a little shade to protect it. “When the company representative came to

see it, it looked pretty bad,” says Reeves. “He said, ‘Why didn’t you plant it in the sun?’” Since moving it, the results are impressive. “Although it has not survived our winter,” Reeves notes, “‘Snow Princess’ doesn’t mind a light frost and is practically a summer annual.”

The ultimate heat-tolerance test for cool-season annuals may well be Turner’s trial gardens in Dallas. “Lobelia in Texas used to be like a popsicle on the 4th of July,” says Turner. But times have changed. He says that both the ‘Techno Heat’ series of lobelia and ‘Snow Princess’ sweet alyssum can be planted in fall or spring, and they continue to perform well into July. “‘Snow Princess’ is the kudzu of winter tolerance, taking a day that goes from 70 to 20 degrees and still looking good on June 1st,” he says. “It



TOP: COURTESY OF COOL WAVE™. BOTTOM: COURTESY OF PROVEN WINNERS

A LITTLE CLOSER TO HOME

Not all annuals come from distant lands or intensive breeding programs. There are some American natives that contribute to the cool-season garden, as well. For gardeners seeking plants that offer a sense of place, these may be more appealing. You're unlikely to find them at local garden centers, but they may be available through specialty mail-order nurseries or seed exchanges.

American bellflower (*Campanulastrum americanum*, syn. *Campanula americana*) is widely native east of the Rocky Mountains. Growing three to four feet tall, it bears spikes of pale blue, star-shaped flowers in mid- to late summer. The open flowers are something of an anomaly in this genus named for its bell-shaped blossoms.

Spring blue-eyed Mary (*Collinsia verna*) is easy to love with its uncommonly blue-and-white spring flowers. This low-growing woodland native ranges from New York west to Michigan and Iowa and south to Oklahoma, Tennessee, and Virginia. It thrives in full to part shade and moist soil.

California poppies (*Eschscholzia californica*) are widely distributed through much of the western United States and adaptable everywhere else. Growing to about a foot tall and wide, the species bears bright orange flowers, but selections with a variety of flower colors are available.

Texas bluebonnets (*Lupinus texensis*), the state flower of Texas, are originally native only to Texas but have naturalized in some other southern states. Growing one to three feet tall, they thrive in full sun and alkaline soil. Their distinctive

spikes of tightly clustered blue flowers with conspicuous white tips open in spring to early summer.

Fernleaf phacelia (*Phacelia bipinnatifida*) is a one- to three-foot-tall biennial species native to woodland sites in the eastern United States. Loose clusters of lilac-blue flowers bloom in spring to very early summer. It self sows readily but not enough to become a nuisance.

Drummond phlox (*Phlox drummondii*) is an annual phlox that grows up to a foot tall. Originally native primarily to Texas, it has naturalized along the Gulf Coast and in scattered locations up the East Coast as far north as Vermont. The attractive flowers, borne in terminal clusters in spring to early summer, come in a variety of hues from white to lavender and red. Drought tolerant, it thrives in full sun or part shade.

Guyandotte beauty (*Synandra hispidula*) calls the Midwest and mid-Atlantic states home. The one-and-a-half-inch white flowers, borne along upright stalks two to three feet tall, could be mistaken for those of penstemon at first glance. It's showy enough that I'm surprised it hasn't found its way into more gardens.

—L.A.



Eschscholzia californica



Phlox drummondii 'Crystal'

dies when the nights are 90 degrees or above, so if it's not growing in Texas, it will grow all summer long."

Another favorite from the Texas trials is the 'Candy' series of trailing snapdragons. "There are a lot of plants that get big enough and fall down," says Turner. "But this really has a pendulous habit."

Calendulas, or pot marigolds, have languished in the herb garden. However, *Calendula maritima* 'Skyfire Yellow' with its masses of two-inch yellow flowers, is reason enough to take another look

at this genus. This species is native to Sicily, and it has a rugged disposition, tolerating both cold and drought. "One plant sends runners and makes a basket plant two to three feet across," says Turner. "If planted in fall it goes through the coldest winter and most of the summer, for easily six months of color."

FOR SOMETHING A LITTLE TALLER

Gardeners in zones too warm for delphiniums can plant a snapdragon called 'Arrow'. Strong-stemmed, it grows two- to

two-and-a-half feet tall, and doesn't need staking. Clear colors and early blooms are appealing; lateral branches from the central stalk ensure a long season.

Larkspur (*Consolida ajacis*) produces lovely upright spikes of densely spaced single- or double-spurred flowers in pastel shades of pink, blue, white, and lilac. Dwarf varieties are one to two feet tall, but the 'Giant Imperial' series grows three to four feet.

Another selection for height is the 'Amazon' dianthus, a series of inter-

specific hybrids resulting from crossing sweet William (*Dianthus barbatus*) with Chinese pinks (*D. chinensis*). ‘Amazon’ is big—two-and-a-half to three feet tall. It will bloom for two months and re-bloom if cut back. Remarkably fragrant, it will benefit from a little shade as the season heats up. Other dianthus hybrids worth growing are the ‘Bouquet’ series and the ‘Melody’ series.

Foxgloves (*Digitalis* spp.) include biennial/perennial selections that can be grown as cool season annuals to add height to the spring border. Fall-planted ‘Camelot’ foxgloves get Turner’s endorsement. With flower stems three to four feet tall, they make quite a statement in the garden.

GOOD GARDEN GREENS

Gardeners who grow vegetables understand cool-season annuals. In fact, salad and pot greens are frequently grown as ornamentals because they offer bountiful foliage and height at a time when so many plants are ground-hugging. Picture a glossy, vase-shaped plant of ‘Red Giant’ mustard or a stately stalk of blue-green ‘Lacinato’ (dinosaur) kale. These have a presence that a pansy will never have. Together they make a planting that has structure as well as color.

Kale seems to be the toughest of the bunch, and ‘Red Bor’ and ‘Lacinato’ are long-time favorites. These are tougher than mustards, and their purple and blue-green foliage makes a great background for seasonal flowers.

“Ornamental kale hasn’t changed much in 20 years, but there’s a new one I like called ‘Glamour Red,’” says Turner. “It starts to color early, and the foliage looks varnished. It grows about 12 by 12 inches and has good cold hardiness.”

For saturated color, little can top the heirloom called ‘Bull’s Blood’ beet. Glossy burgundy, this foliage grows from six to as much as 18 inches tall, depending upon conditions. Unlike many other greens, it will tolerate light shade.

‘Bright Lights’ Swiss chard brought a carnival of color when it was introduced in 1998. Its brilliant ribs of yellow, red, and orange make a strong vertical line in cool-season combinations. Like newer introductions, ‘Bright Lights’ is remarkably heat tolerant, looking great



Foxgloves, top, provide height in the garden. For color a little closer to the ground, try *Dianthus* ‘Melody Pink’, above.

long after the lettuce and mustard have gone to seed. However, old-fashioned red-and-white-ribbed chard should not be overlooked for impact in the spring and fall garden.

Leaf lettuce offers tremendous potential where winters are mild, and for repeated plantings in fall and spring elsewhere. Starting with the brilliant lime-green ‘Simpson Elite’ gardeners can enliven the garden with the energy of a spring green. For glossy, saturated red lettuce, ‘Galactic’, ‘Merlot’, ‘Sea of Red’, or ‘Silvia’ will pull the rosy tones from nearby pansies and add drama when grown *en masse*.

Mustard’s poster child seems to be ‘Red Giant’, but when it comes to textural cool-season greens, this is a group worth another look. Mark Dwyer is a fan of ‘Brazen Brass’ mustard, which has large, glossy, eggplant-purple leaves with contrasting green undersides. There are cutleaf burgundy mustards such as ‘Scar-



The colorful stalks of aptly named 'Bright Lights' Swiss chard make it as valuable in the ornamental garden as the vegetable garden.

let Frills' and 'Ruby Streaks'. Like the green version called 'Golden Frills', these grow 12 to 18 inches tall and offer a fine texture to cool-season plantings (not to mention something to nibble on).

A couple of Asian greens offer cool-season ornamental opportunities. Mizuna is a short, fast-maturing, Asian mustard that is finely dissected and

bright green, while pac choy, particularly the green forms, grows into a pleasing rosette of smooth, flawless foliage.

GET A LOT FROM A LITTLE

The cool season yields much from a packet of seeds, just as much as warm season favorites. Many are flowers steeped in tradition, traded in farmers' bulletins and

shared among friends. For generations gardeners have sown seeds of cornflowers (*Centaurea* spp.), larkspur, poppies (Shirley, breadseed, and California), sweet peas, nasturtiums, and others for early spring flowers. And these cool-season bloomers offer an additional bonus: they provide a source of food for pollinating insects both early and late in the season.

Some of these annuals self sow, dropping seeds for the next generation into the soil in late spring or early summer.

If re-seeding is doubtful due to mulch or cultivation, saving seeds is usually a simple matter of drying a few stalks upside down in a paper bag stored in a cool, dry place for the summer.

CELEBRATING THE CYCLE OF THE SEASON

Whether you want to keep your garden blooming into winter or get a jump start on spring, there are lots of good plant choices to work with. So just because your neighbors are putting away their tools for the winter doesn't mean the gardening season is over. Use cool-season annuals to create an extended show. 🌱

Linda Askey is a gardener and horticulturist who lives in Birmingham, Alabama.

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Growing Plants *for*



A network of government agencies, botanical gardens, and private companies is working together to collect, preserve, and cultivate a diverse array of native plants for restoration projects.

ENVISION YOUR favorite wilderness camping site, or perhaps a secluded location in a national park where you've taken a family hike. Wherever that place is, ask yourself what makes it special. Chances are that one component is the indigenous plant communities that frame spectacular views, provide shade and beauty, and offer food and shelter to regional animal life.

Now ask yourself: How would you react if that landscape were destroyed by a wildfire, overuse, or a natural disaster? You're likely to feel that something precious has been ripped out of your life.

Anyone who's followed the national news this summer knows that wildfires are a growing concern. In 2011, the third most active fire season on record, a total of 73,484 wildfires burned an estimated nine million acres of land in the United States; projections for this year are higher. Natural disasters like floods and other extreme weather events strip vegetation off thousands more. And human activities like logging, mining, power production, and recreational pursuits damage additional acreage. Once the plant communities are destroyed or severely damaged, it takes decades—or

even centuries—for the trees, shrubs, and wildflowers to grow back even if restoration efforts are attempted.

“Our natural landscapes are an American treasure,” says Peggy Olwell, director of the Federal Bureau of Land Management's Native Plant Material Development Program. “These landscapes and the plants that grow in them are the stage for our lives. We don't always comprehend how the individual plants work together as part of a complex ecosystem, but they are always in the background making a place special and different.”

REPAIRING NATURAL LANDSCAPES

Olwell knows from personal experience that the task of restoring natural landscapes is daunting. She oversees a large public and private partnership of Federal, state, and private land managers, botanists, ecologists, foresters, and nursery growers whose task is to make sure that those special landscapes can be restored and maintained. Together these groups manage nearly 644 million acres of public land scattered all over the country, with the majority in the western United States.

The approach to public land management has changed radically in the last two decades as scientists have come to understand the critical role regional native plant communities play. Prior to the 1980s, restoration efforts often failed because the seed and plant varieties used were not able to adapt and thrive. “We didn't recognize the diversity of the natural landscape when the plants were simply the backdrop for our activities,” notes Olwell. “So we therefore undervalued the role native plant communities play in maintaining public land.”

Legislation played a major role in altering the philosophy and practices used in plant restorations. The first catalyst was in 1977, when Congress passed the Surface Mining Control and Reclamation Act that regulated strip mining for coal. For the first time, mining compa-

Wildfires, like this one on grasslands in eastern Washington, destroy millions of acres of natural habitats each year, affecting both wildlife and human populations.

Wild Places

BY PAT MUNTS

nies were required to prepare a plan for restoring and replanting the land after mining was completed.

Even with these new regulations, early restoration efforts were often less than successful. “We were putting a lot of non-native seed out on projects, and it wasn’t properly adapted to the sites,” says Olwell. Land managers realized they needed a better understanding of the localized ecology of native plant populations, as well as a way to collaborate with each other to gain information and locate seed sources.

To facilitate this process, in 2001 the Native Plant Materials Development Program (NPMDD) was created under Congressional mandate to oversee a unified system for basic research on native plant communities and the development of native seed stocks. Managed by the Bureau of Land Management (BLM), the long-term goals of the program are to establish ecoregion-specific seed collection programs, to develop protocols for expanding collections to the point where private growers can take over seed production, and to archive the genetics of the seed collections for future use. “When Congress asked us to develop this, the vision was that it would be a private sector enhancement program in which we partner with farmers and growers who will then sell the seeds back to us,” says Olwell.

ESTABLISHING PARTNERSHIPS

Under this initiative, the NPMDD created a series of public-private partnerships. One, called the Seeds of Success Project, was created in 2001 and expanded in 2008 for the purpose of doing basic research on the protocols needed to collect, propagate, and conserve native seed collections from specific sites. The BLM serves as the lead agency, working with regional partners such as the Chicago Botanic Garden in Glencoe, Illinois, the Lady Bird Johnson Wildflower Center in Austin, Texas, the New England Wild

SEED RESTORATION TERMS

Here are definitions of some of the terms mentioned in the article.

Biotypes

Biotypes are subtly different members of a species that are genetically very similar but have adapted to the conditions in a specific watershed, valley, or mountain slope. Much of the current research being done on native plants for restoration projects is at this level.

Ecoregions

Ecoregions are unique geographic areas with similar geology, physiography, vegetation, climate, soils, land use, wildlife, and water quality. Understanding the similarities within ecoregions allows restoration specialists to make sound decisions on the selection of appropriate restoration methods and plants. Currently the Environmental Protection Agency maintains a four-tiered system of maps that divides the country into progressively smaller unique geographic areas based on similar environmental characteristics (see “Resources,” page 23).

Native Plant

For restoration purposes, a native plant is considered to be any plant that existed in North America prior to European settlement in the 17th century. Native plant communities evolved and adapted over millennia, often in concert with distinct communities of microorganisms, insects, mammals, fish, and birds. —P.M.

Flower Society in Framingham, Massachusetts, the New York City Department of Parks and Recreation, the University of North Carolina at Chapel Hill, and the Zoological Society of San Diego.

Each year, the program and its partner agencies send out specially trained teams to make comprehensive seed collections of all the plants in specific, small geographic areas. To date, nearly 13,000 collections have been made.

To preserve the genes, a portion of each type of seed collected is archived in seed banks such as the USDA National Center for Genetic Resources Preservation in Fort Collins, Colorado. The remainder is grown out so researchers can learn the germination and harvesting methods needed to reliably reproduce the seed. The seed is then grown in garden studies to determine the growth habits and potential range (known as the “seed transfer zone”) the plants can adapt to. With these protocols established, foundation seed collections are created to provide stock for commercial reproduction.

Another key player is the Native Seed Network, which serves as a clearing house for information on scattered research efforts and an online seed sourcing system that allows land managers, researchers, and growers to locate genetically appropriate seed collections. “Native seed producers are often small scale growers who can be hard to find,” says Rob Fiegner, director of the Native Seed Network. “The network allows them to list their seed and for land managers to put out inquiries for specific types of seed.” Allowing seed growers and buyers to find each other makes locating genetically appropriate seed easier and more affordable.

To leverage the financial and information resources of other public and private groups, the Plant Conservation Alliance (PCA) was created in 1994 to coordinate the efforts of 10 federal agencies and 290 private cooperating organizations from a broad range of natural resource management disciplines. Working through the Washington, D.C.-based National Fish and Wildlife

Foundation, the PCA serves as a forum for the exchange of information and expertise on ecosystem preservation. The program also helps leverage funds of cooperating members to implement restoration projects through a cost-matching grant program.

REGIONAL EFFORTS

Across the country, the demand for native seed varies depending on the type and scale of the restoration projects. Because the western United States is home to a majority of the publicly managed land—and is also hardest hit by wildfires—the bulk of native seed production is geared for projects in this region.

In the Upper Midwest, prairie and wildlife restoration projects make up the bulk of the restoration work. “Disturbances in the Upper Midwest tend to be much smaller,” says Kayri Havens-Young, director of Plant Science and Conservation for the Chicago Botanic Garden. Ecoregions tend to be larger in the eastern United States, meaning seed from one specific area can generally be used in a much broader area than in a western ecoregion.

The Chicago Botanic Garden is a leader in the development of tall-grass prairie seed collections in the Upper Midwest. Through the Seeds for Success program, it has created the Dixon National Tall Grass Prairie Seed Bank, which preserves seed collections from tall-grass prairie remnants throughout the Midwest and Upper Great Plains.

In the Northeast, the New England Wild Flower Society (NEWFS) has been actively preserving native plants throughout the region for over 100 years. Much of its emphasis has been on the preservation of showier species at its Garden in the Woods headquarters in Framingham, Massachusetts. “We traditionally have used seed to grow plants for direct planting and sale,” says Bill Brumback, the society’s conservation director.

But more recently, NEWFS has begun to produce more plants genetically adapted to regional conditions at its Nasami Farm in Whately, Massachusetts. These plants are made available to the public and to regional nurseries. Under contract with the Green Mountain National Forest in Vermont, the NEWFS is

HOW YOU CAN HELP



If you’re interested in getting involved with restoration work, many organizations train volunteers to work with native seed and plant projects. For instance, field collectors are needed to harvest seed, and volunteers are needed at seed banks to clean, sort, package, and inventory seeds. Check with local native plant societies, universities, and public gardens to see if they are in need of volunteers. —P.M.

also collecting seeds of native plants from various areas of New England. Seeds of the same species from different locations are pooled to provide broader genetic diversity. The Forest Service uses the seed mixes for a variety of projects, including habitat restoration along logging roads.

In the southeastern United States,



At the New England Wild Flower Society’s Nasami Farm, plant propagator Kate Pawling displays a flat of roseshell azalea (*Rhododendron prinophyllum*) seedlings.

native plant communities are under pressure from well-adapted, non-native plants that have made the region home during 300 years of European settlement. According to Janet Grabowski, manager of the Natural Resources Conservation Service’s (NRCS) Brooksville Plant Materials Center in Brooksville, Florida, while the NRCS’s Conservation Reserve Program and the Wildlife Habitat Improvement Program have increased the demand for native seed, actually growing out the appropriate species has proven challenging. The extended growing season and ample rainfall fosters rampant weed growth, making it difficult to propagate and establish some of the native species needed for restoration projects.

NATIVE SEED VENDORS FLOURISH

Collecting and then growing out native seed populations is very intense and detailed work. And because seeds native to very specific ecoregions and even biotypes (discrete areas such as watersheds or mountain slopes) are needed for restorations, a cottage industry of regional seed vendors has sprung up over the last two decades.

Jerry Benson, president of BFI Native Seeds in Worden, Washington, is very familiar with the challenges of growing native seeds for restoration. A wildlife ex-



Above: Accompanied by his dog, Roxy, Aaron Hull, a seed collector for BFI Native Seeds, uses a vacuum to gather seeds of thymeleaf buckwheat (*Eriogonum thymoides*) on Rock Island ridge in central Washington. BFI was founded by Jerry Benson, right, seen here surveying one of the company's fields of native grasses.

pert, Benson started the company after watching wildlife restorations repeatedly fail because the wrong types of seed were used. The company's 1,600-acre farm outside Moses Lake is a family operation that includes Benson's wife, Lorraine, and their son, Matt.

According to Benson, companies involved in the native seed industry range from those selling seeds by the ounce to "people like us who work with larger restoration projects dealing with pounds or hundreds of pounds." The regional diversity among native plants means most seed companies occupy a niche market, he explains. "We might have a buckwheat here in Washington that we consider very common, but a couple of hundred miles away nobody knows about it," he says. "Because of that, we only have a limited degree of overlap with people who are doing the same kind of thing in, for instance, Nevada and Colorado."

BFI collects and grows out seeds from a variety of ecoregions and biotypes. "We try to maintain the biotype or ge-



netic diversity within the individual species we grow," says Benson. "We grow out that seed into sufficient quantities to meet the needs of land managers for restoration work."

BFI's on-site botanists keep close tabs on seed maturity, harvesting only when seeds are fully ripe. Seeds are collected from a broad population of parent plants to preserve genetic diversity.

The seed is then grown out on the farm in much the same way as a crop of beans or corn would be. Each biotype is kept separate, but there's no effort to rogue out plants that exhibit slightly unusual characteristics. "This ensures that we preserve the genetic diversity

even within a small biotype," says Benson. After harvest, the seeds are carefully cleaned and sorted to produce a product that is 98 percent pure. "Our goal is to either have stored seed available from a particular ecoregion or be able to grow it out in one to two years," says Benson.

A BRIGHT FUTURE

Looking ahead, Olwell foresees the demand for seeds of native plants for restoration projects providing opportunities for the private sector. "Growing native seeds has become a new niche for the plant industry," she says. The unpredictability of climate change, she adds, is likely

Resources

EPA Ecoregions Map, www.epa.gov/wed/pages/ecoregions/level_iii_iv.htm.

Native Plant Materials Development Program, www.blm.gov/wo/st/en/prog/more/fish_wildlife_and/plants/1.html.

Native Seed Network, www.nativeseednetwork.org.

Plant Conservation Alliance, www.nps.gov/plants/faq.htm.

Seeds of Success, www.nps.gov/plants/sos.

to create even more demand. "Because we don't know what type of germplasm we'll need in the future for restorations, we must strive for even broader genetic diversity in our seed collections," she says.

Olwell also envisions the native seed industry will eventually benefit gardening and horticulture, citing the potential for nurseries to develop and market a wider variety of native plants that will be adapted to specific regions of North America. "This will allow gardeners to create thriving backyard habitats that attract pollinators and provide food and cover for locally native insects and birds," she says. "All of us can play a part in restoring our little corner of the world, even if it's one backyard at a time."

Pat Munts is an editor with Master Gardener Magazine and writes a garden column for the Spokesman-Review in Spokane, Washington.

PLANT GLUTTONS are condemned to the circle of hell reserved for those who lusted overmuch after plants. Swarms of mosquitoes and gnats can make being in the garden in summer a torture unless one is properly armored against these insects. And being armored against them—a hat, a coating of citronella oil, and long pants and long shirt—is itself a torture if the day is hot, which it always is.

Gardening during this period—which lasts from the first 80-degree day in May until sometime in September in my mid-Atlantic garden—boils down to choosing between sweltering or the

When cool nights and shorter days signal the arrival of fall, a few special perennials keep on blooming.

BY CAROLE OTTESEN

itch of dozens of insect bites, gritting my teeth and doing what has to be done, and longing for that fine day in September when the mosquitoes and gnats mercifully disappear.

When that blessed day arrives, the best revenge is not to have acquired even more plants, but to have stocked up on those that bloom late in the season. Fortunately, there is no dearth of late bloomers from which to choose. Some of the most welcome are those whose late summer appearance heralds the approach of relief.

HARBINGERS OF FALL

When turtlehead (*Chelone* spp.) starts blooming, you know summer's half-way over and fall is just around the corner. These wildflowers, native to creek banks and other moist-to-wet places in eastern North America, adapt well to ordinary garden soil and grow well in sun or part shade. The plant is upright to about three feet with dark green leaves. The flowers range from white (*Chelone glabra*), pale pink (*C. obliqua*), or hot pink (*C. lyonii* 'Hot Lips'). All are well adapted to USDA Zones 3 to 9 and AHS Zones 9 to 3.



Late Bloomers

Children love them because squeezing the snapdragonlike flowers will force open the “mouth,” revealing the turtle’s terrifying sickled fangs. Butterflies are not deterred by the threatening mouth parts, however, and flock to the flowers. Deer usually ignore the plants in my garden, and the flowers are good for cutting.

Another wildlife favorite that blooms on the cusp between August and Septem-

ber is obedient plant (*Physostegia virginiana*, Zones 4–9, 8–3). Native to much of eastern and central North America, it must have been named by the same wag who christened icy Greenland. Wildly disobedient, it refuses to stay in place, but erupts naughtily via rhizomes to form great colonies—which is less surprising when you learn it is a member of the mint family.



Above: Obedient plant provides a profusion of pink, late-season blooms. **Opposite:** ‘Autumn Joy’ sedum and rudbeckia are classic autumn-flowering plants that go well together.

But, in the right place, this vigor can be a boon. Grow obedient plant in the sunny, boggy places that are the undoing of other plants and enjoy the erect, two-foot stalks of pink flowers that this plant carries with geometric precision. Actually, it’s the flowers that are responsible for this plant’s common name—they will remain in any position they are moved to on the stalks. Freely produced for more than a month, the flowers are great for cutting (in fact, you may want to dead-head them to avoid self-sowing).

Several cultivars are available, including ones with white flowers (‘Summer

Snow’) and variegated leaves (‘Variegata’). Or plant one of the truly “obedient” cultivars: ‘Miss Manners’, a stay-put, clumping form with white flowers; or ‘Vivid’, a compact, later-blooming selection that has claret-pink flowers.

WAYSIDE BEAUTIES

While obedient plants attract hummingbirds, it is long-tongued bees and butterflies that search for nectar in the deep, rich purple flowers of New York ironweed (*Vernonia noveboracensis*, Zones 4–8, 8–3), an attention-riveter on roadsides in the fall.

The flowers, which open in August and continue into September, would be reason enough to grow it, but other attributes render it a must-have. A tough, upright stem, celebrated in the common name, keeps it from needing staking and an equally tough constitution precludes trouble of any kind, provided ironweed is grown in mostly sun and moist, but well-drained soil.

Native, despite its name, to much of the eastern United States, New York ironweed responds to site conditions. Abundantly rich soil and moisture can produce a nine-foot giant. Ordinary conditions will produce a husky six-footer. If height is a problem, ironweed can be lopped back in June. This not only controls size, but tends to delay bloom.

Other ironweeds worth considering include giant ironweed (*V. gigantea*), an eastern native that typically reaches seven or eight feet. The Missouri (*V. missouriica*) and western (*V. baldwinii*) ironweeds top off at about four feet. All attract such butterflies as swallowtails, whites, sulfurs, monarchs, and painted ladies. Unfortunately, these species are not widely available, although they can be found at native plant sales and through seed exchanges such as the North American Rock Garden Society.

One that is more readily available is the smooth ironweed (*V. fasciculata*), a two- to four-foot-tall plant that offers bright rose-purple flowers in late summer through early fall. Another is *V. lettermannii* ‘Iron Butterfly’, a notable selection from Allan Armitage’s plant trials at the University of Georgia. Growing to about three feet tall with an equal spread, this purple-flowered, narrow-leaved ironweed is native to Arkansas and tolerates drought.

The gold that accompanies ironweed’s purple on roadsides most often belongs to members of the sunflower tribe (*Helianthus* spp.). The perennial sunflowers are all late bloomers. Like their better-known annual relatives, they are generally tall plants that need full sun, but they produce sprays of smaller flowers.

One whose single stem makes a bouquet is Maximilian sunflower (*Helianthus maximiliani*, Zones 4–9, 9–4), a giant from the Southwest blessed with gray-green foliage and four-inch, bright



golden flowers that bloom in elongated clusters. Plunk just one stem in a low-slung container and you'll feel like an Ikebana master.

Depending upon garden conditions (it thrives in dry to slightly moist soil), Maximilian sunflower will grow from four to 10 feet tall and will spread nearly as wide. Plant it at the back of a border or as an anchor or spot screen. It draws birds and butterflies like a magnet and is a fine companion to tall prairie grasses such as Indian grass (*Sorghastrum nutans*) and switch grass (*Panicum virgatum*).

Smaller than Maximilian sunflower, the western sunflower (*H. occidentalis*, Zones 4–9, 9–4) is also more erectly narrow in habit, reaching about four feet in height but spreading to only two feet wide. It thrives in dry to average soil and full sun and produces blooms in a deep golden-orange color.

As the western and Maximilian sunflowers are in full bloom in September, a third native is just beginning to produce hundreds of yellow flowers with dark brown centers. This is the willow leaf sunflower (*H. salicifolius*, Zones 5–9, 9–4), which usually grows to about six feet and thrives in average soil and medium moisture. A shorter cultivar, 'First Light', grows to slightly less than four feet and another, 'Autumn Glory', is covered with golden flowers throughout the fall.

AWESOME ASTERS AND ANEMONES

Garden centers may push chrysanthemums as the official flower of fall, but for my money, it is asters that really light up fields and gardens beginning in late August and September.

The late, starry flowers of New England aster (*Symphyotrichum novae-angliae*, syn. *Aster novae-angliae*, Zones 3–9, 9–1) come

in a bevy of cultivars and colors ranging from the 18-inch-tall 'Purple Dome' to four-foot, rose-colored 'Alma Potschke' and red-purple 'September Ruby'. Generally bushy plants that may grow as tall as six feet, New England asters are easy to cut or pinch into more compact shapes. Native to much of the Northeast and the upper Midwest, they are well adapted to a wider range in gardens and thrive in moist to average soil and full sun.

Blooming at the same time, but tolerating drier soil in full sun, the smooth blue aster (*Symphyotrichum laeve*, syn. *A. laevis* 'Bluebird', Zones 4–9, 9–2) has a more slender, upright habit than its New England cousins. Its deep blue-green foliage grows to about three feet and sets off violet-blue flowers with yellow centers. Widely adaptable, smooth blue aster is native to fields, open woodland, and prairies over much of North America.



Opposite far left: *Symphyotrichum laeve* 'Bluebird', *Solidago rugosa* 'Fireworks', and *Panicum virgatum* 'Rotstrahlbusch' create a pleasing tableau. Left: The sunny blooms of *Helianthus maximiliani* light up a fall border. Above: A reticent plant most of the year, *Anemone* \times *hybrida* 'Honorine Jobert' comes into its own in late summer with an abundance of pure white blossoms.

Less forthcoming with its pale lilac August and September flowers, the bigleaf aster's (*Eurybia macrophylla*, syn. *A. macrophyllus*, Zones 3–9, 9–1) foliage is the weightiest part of this plant. It is dense, robust, dark green, and luxuriant in contrast to the slim, delicate flower stalks. Growing six inches to two feet tall, bigleaf aster forms a handsome ground cover in the wild or in naturalistic gardens. Native from Quebec to the Carolinas, this aster is very hardy; it thrives in full sun at higher elevations but elsewhere does best in dappled shade.

Unlike the thinly distributed flowers of bigleaf aster, white heath aster (*Symphyotrichum ericoides*, syn. *A. ericoides*, Zones 5–8, 8–5) is smothered in white, yellow-centered flowers from late August through October. Its stems grow three or four feet but tend to flop. Mulch to keep down weeds that grow through its su-

pine, branching stems. Native to the sunny prairies of the Midwest, white heath aster is at home in dry, hot places.

Not so the white wood aster (*Eurybia divaricata*, syn. *A. divaricatus*, Zones 3–8, 9–1), which thrives in the deep, moist humus and dappled shade at woodland's edge. Northeasterners will recognize this as the familiar native wildflower that festoons roadsides in September and October. It's a sprawling plant with numerous small, white flowers with yellow centers that age purple. It makes a great, if rambunctious, edger for woodland gardens.

A more compact option is aromatic aster (*Symphyotrichum oblongifolium*), native to much of the United States. 'Raydon's Favorite' is a bushy selection that grows two to three feet tall and wide and bears large blue-purple flowers. 'October Skies' is even shorter, growing only to about 18 inches tall.

Sources

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High Country Gardens, Santa Fe, NM. (800) 925-9387. www.highcountrygardens.com.

Plant Delights Nursery, Inc., Raleigh, NC. (919) 772-4794. www.plantdelights.com.

Prairie Nursery, Inc., Westfield, WI. (800) 476-9453. www.prairienursery.com.

Resources

American Horticultural Society Encyclopedia of Perennials, Graham Rice, editor-in-chief. DK Publishing, New York, New York, 2006.

Armitage's Garden Perennials (2nd ed.) by Allan M. Armitage. Timber Press, Portland, Oregon, 2011.

Anemones are also useful August and September bloomers. If you have room in dappled shade, acquire at least two and let them naturalize. The Japanese anemone (*Anemone hupehensis*, Zones 4–8, 8–1) will begin sending up pink flowers in late August and continue through September. A good selection is 'Hadspen Abundance'.

The tried-and-true 19th-century hybrid anemone *A. x hybrida* 'Honorine Jobert', which has a pure white flower with scalloped petals, is completely reliable, floriferous, and great for cutting. It grows about four feet tall in bloom, but is practically invisible the rest of the year.

Many other stellar hybrid anemones are available. A recent six-year trial conducted at the Chicago Botanic Garden evaluated 26 fall-blooming anemones on health, habit quality, duration of bloom, and winter hardiness. At the top were 'Andrea Atkinson', 'Max Vogel', and 'Serenade'. All three bloom from mid- to late August through late October to early November.

TILL HARD FROST DO WE PART

After September, the pickin's get slimmer. There are rebloomers such as green and gold (*Chrysogonum virginianum*, Zones 5–8, 8–5), a six-inch-tall, rhizomatous groundcover that will produce the odd yellow flower in October and even in

November. The cultivar 'Pierre' blooms through the summer in cool regions.

And there's the stonecrops or sedums (which you may see listed under *Hylotelephium* or *Sedum*) The old faithful 'Autumn Joy' (Zones 4–9, 12–1) is an 18-inch-tall succulent with innocuous pink August flowers that become more ornamental as they age. They develop a deep rusty-red in October before slowly fading to rust-brown. 'Autumn Fire' is an improved version with longer-lasting flowers and sturdier stems. A compact selection called 'Chocolate Drop' grows to about eight inches high and has striking burgundy-brown leaves and pink flowers.

There are also some *bona fide* October-blooming perennials. The Japanese onion (*Allium thunbergii* 'Ozawa', Zones 5–9, 9–5) blooms about as late as it gets—usually October and November, and there are reports of December flowers. The deep cherry-pink flowers open above an upright, one-foot tall, chivelike clump. When flowering is done, the foliage turns a beautiful pumpkin orange.

Japanese onion grows best in full sun, but will adapt to part shade. It isn't fussy about soil and, once established, it tolerates drought. Like all onions, the clump thickens quickly. But you still need at least three plants to make a statement.

Another outstanding plant with Asian roots is the toad lily (*Tricyrtis* spp., Zones 5–9, 9–5). In a 10-year study at the Chicago Botanic Garden, top performers were *T. formosana* and *T. hirta* 'Miyazaki'. Of the others, *T. latifolia* and hybrid selections 'Sonome' and 'Tojen' also received high ratings for hardiness and good looks throughout the season.

Toad lilies are shade-loving plants that grow into handsome, shrubby, two- to three-foot clumps that don't begin flowering until September. Then, for at least two months, they provide a steady supply of wonderfully mysterious blooms resembling spotted orchids. Carried on arching sprays, they make long-lasting cut flowers.

Grown in moist, humusy soil, toad lily clumps are moderately rhizomatous. (Plant them in deep shade south of the Mason–Dixon line to offset the effects of high heat.) Toad lilies' single drawback is that deer love them, often munching the tender flower buds before they open.



Tough *Allium thunbergii* 'Ozawa' has been known to bloom into December.

Like toad lilies, October-blooming bottle gentian (*Gentiana andrewsii*, Zones 3–7, 8–1) thrives in shade. When their needs are met, these 18-inch-tall plants will spread into attractive clumps that are also, alas, attractive to deer. Native to the eastern half of North America, bottle gentians have cobalt blue, closed flowers resembling balloons with a pointed end.



The exotic-looking speckled flowers of toad lilies are hard to miss in a shade garden.

Two *Eupatorium* species—hardy ageratum or mist flower (*Eupatorium coelestinum*, Zones 3–8, 8–1) and white snake-root (*E. rugosum*, Zones 4–8, 8–4)—will also stick around until frost. Both these natives of eastern North America grow three to five feet tall. 'Wayside' is a dwarf hardy ageratum that grows to about 15 inches tall.

Hardy ageratum produces eight weeks of blue, ageratumlike flowers that can be cut for bouquets. Its rhizomes can, however, spread aggressively in moist, fertile soil. If this happens, the only recourse is to pull it out regularly or whenever it threatens other plants. The cultivar 'Cory' has red stems. Grow hardy ageratum in full sun or very light shade.

Not as aggressive—but a free spreader nonetheless in moist, rich soil—white snakeroot grows about three feet tall and thrives in full sun or at woodland's edge. The cultivar 'Chocolate' has striking dark red-brown, serrated leaves topped in October with pinky-red buds that open to dazzling white flowers. Bees and butterflies flock to the flowers, but be aware that the leaves of this plant are poisonous.

COMPANION PLANTS

Late bloomers are even more attractive when nicely accompanied. Perennials that flowered earlier in the season, grass-

MORE NOTEWORTHY FALL-BLOOMING PERENNIALS

Botanical name (Common name)	Height/Width (feet)	Flower color	Culture	Origin	USDA Hardiness/ AHS Heat Zones
<i>Aster tataricus</i> (Tatarian aster)	3–6/2–3	blue	full sun, average soil	Siberia	3–9/9–1
<i>Boltonia asteroides</i> (false aster)	3–6/2–4	white	full sun, moist to dry soil	eastern U.S.	4–8/9–2
<i>Chrysopsis mariana</i> (Maryland golden aster)	2–3/2–3	yellow	full to part sun, average soil	eastern U.S.	5–9/9–4
<i>Cimicifuga americana</i> (American bugbane)	3–4/2–3	white	part sun or shade, moist soil	eastern and midwestern U.S.	3–8/8–1
<i>Dendranthema</i> ‘Apricot Single’ (Korean mum)	1–2/4	peach	full sun, moist soil	hybrid	4–9/9–1
<i>Salvia azurea</i> (pitcher sage)	3.5–4/1.5	blue	full sun, average to dry soil	southeastern U.S.	5–9/9–2
<i>S. greggii</i> (Texas sage)	2–3/1–2	red/orange	full sun, average to dry soil	Texas	7–9/9–7
<i>S. leucantha</i> (Mexican bush sage)	4/4	purple /white	full sun, average to dry soil		9–11/11–4
<i>Solidago rugosa</i> ‘Fireworks’ (rough-stemmed goldenrod)	3–4/2–3	yellow	full sun, average to dry soil	North America	3–9/9–1
<i>S. speciosa</i> (showy goldenrod)	2–4/2	yellow	full sun, moist to dry soil	eastern and central U.S.	3–9/9–3
<i>S. sphacelata</i> ‘Golden Fleece’ (goldenrod)	1–2/1–2	yellow	full sun, average to dry soil	North America	3–9/9–1



Aster tataricus



Salvia leucantha

es, or annuals will do the job with grace.

For very upright moisture lovers such as turtlehead and obedient plant, palm sedge (*Carex muskingumensis*), with bright green, horizontally whorled leaves on lax stems, is a soft-textured complement. ‘Little Midge’ grows only eight inches tall, and there’s a two-foot-tall variegated form, ‘Oehme’ (Zones 5–8, 8–4).

Wild indigo (*Baptisia australis*, Zones 3–9, 9–1), which grows two to four feet tall, looks great with tall sun-loving ironweed and perennial sunflowers. So does the fine texture of switch grass (*Panicum*

virgatum, Zones 5–9, 9–1). Asters are spectacular growing around the dense, fierce-looking foliage of yuccas (*Yucca* spp.). Annuals such as lime-green sweet potato vine (*Ipomoea batatas* ‘Marguerite’), dark red coleus, and castor bean plant (*Ricinus communis*) can contrast with or augment this color scheme.

In the shade, ferns such as tassel fern (*Polystichum polyblepharum*, Zones 6–8, 8–5) and hellebores (*Helleborus x hybridus*, Zones 6–9, 9–6) form low, lacy frames around autumn bloomers like bottle gentians and toad lilies.

If you garden where summers are hot and muggy, consider carefully the abundant temptations that bloom when things cool off. Indulge yourself with as many late-season bloomers as you can pack into your beds and borders. Then garden wickedly in bug-free, breeze-cooled comfort while surrounded by flowers.

Carole Ottesen is a contributing writer for *The American Gardener*. This is an updated version of an article that was published originally in the September/October 2004 issue of this magazine.



Acer japonicum

FULLMOON MAPLE (*Acer japonicum*, Zones 5–7, 7–1)

Featuring brightly colored leaves in autumn, this understory tree from Japan grows 20 to 30 feet tall with a slightly wider spread. ‘Aconitifolium’ grows about half the size of the species with deeply divided leaves that turn crimson in fall. ‘Ed Wood’ features finely dissected leaves up to 10 inches across with yellow, orange, and red fall color.

Magnificent Maples

Just before dropping their leaves in the fall, maples put on a short but dazzling display.


BY CAROLINE BENTLEY AND VIVEKA NEVELN

WHAT WOULD autumn in northern temperate regions be like without maple trees? Not as flamboyant, surely. While maples offer year-round interest to landscapes and gardens, most shine brightest in the fall, thanks to the fiery pigments in their leaves.

The word “maple” may conjure visions of pancakes and waffles doused with syrup, but this sweet treat comes from just one of the 120 or so species in the genus *Acer*. Granted, the North American native sugar maple (*Acer saccharum*) is one of the most popular maples—it’s the state tree of four states—for good reason: in addition to syrup, its large leaves turn brilliant yellow, orange, and red in fall. However, this diverse genus has many more members that are equally deserving of admiration—and are a more appropriate size for smaller gardens.

Most maple species are native to North America, Europe, and Asia, so are widely adaptable throughout temperate regions. Ranging from towering shade trees to compact, multi-stemmed, shrublike plants, maples lend themselves to just about any landscape. Many make good specimen trees, boasting fine-textured leaves, ornamental bark, or eye-catching fruits. Others make stately street trees with rounded crowns and architecturally interesting branch structures. But most put on their best show in autumn.

As days shorten in the fall, deciduous trees prepare to drop their leaves before winter. During this process, they stop making chlorophyll, the pigment responsible for making leaves appear green and enabling plants to capture sunlight for photosynthesizing energy. The lack of chlorophyll allows other pigments called carotenoids (orange) and xanthophylls (yellow) to show through. Reds and purples appear when sugars remaining in the leaves are converted to pigments called anthocyanins. Temperature, soil moisture, and light affect these pigments, which is why dry, cool but not freezing autumn nights and dry, sunny days result in the most intense show.

Here is a sampling of maple species that can add a splash of vibrant color to your fall garden. 

Caroline Bentley is a freelance writer based in Alexandria, Virginia, and Viveka Neveln is associate editor of The American Gardener.



Acer circinatum

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RareFind Nursery, Jackson, NJ. (732) 833-0613. www.rarefindnursery.com.
Sooner Plant Farm, Park Hill, OK. (918) 453-0771. www.soonerplantfarm.com.

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Timber Press Pocket Guide to Japanese Maples by J. D. Vertrees with Peter Gregory. Timber Press, Portland, Oregon, 2008.
The Maple Society. www.maplesociety.org.

OREGON VINE MAPLE

(*Acer circinatum*, Zones 6–9, 9–4)

This Pacific Northwestern native is a multi-stemmed small tree that grows to 20 feet tall and nearly as wide. Its fall color varies from yellow-orange to red. Notable cultivars include 'Monroe', with deeply cut leaves, growing half the size of the species; Pacific Purple® ('JFS-Purple'), with leaves that emerge bronze in spring, deepen to purple in summer, and hold the color into fall; and diminutive 'Sunglow', which grows around three feet tall and wide with small, seven-lobed leaves that change from peach to light orange in spring, to medium green in summer, to red and purple in fall.



Acer cissifolium

IVY-LEAVED MAPLE OR VINE-LEAF MAPLE (*Acer cissifolium*, Zones 4–8, 8–1)
 This rare species is a small, broadly spreading tree with smooth, gray bark. Native to Japan, it reaches 20 to 30 feet tall and wide. The medium green trifoliate, or three-leaflet, leaves, which feature reddish-purple petioles, turn yellow and red in fall.



Acer griseum

PAPERBARK MAPLE (*Acer griseum*, Zones 4–8, 8–1)
 From central China, this 30-foot-tall tree sports exfoliating reddish-brown bark year round. In spring, its trifoliate leaves emerge red-brown with a whitish downy covering, then become bluish-green with silvery undersides in summer. They turn bronze and red in autumn.

MORE MAPLES WITH MAGNIFICENT FALL COLOR

Botanical name (Common name)	Height/Spread (feet)	Fall color/other features	Origin	USDA Hardiness/ AHS Heat Zones
<i>Acer buergerianum</i> (trident maple)	20–30/20–30	yellow, orange, red/new leaves emerge bronze to purple; drought resistant	China, Korea	5–9/9–5
<i>A. davidii</i> (David maple)	20–50/20–50	yellow, purple/new leaves emerge with a red down	China	5–7/7–5
<i>A. leucoderme</i> (whitebark maple)	25–30/25–30	yellow, orange, red/multi-stemmed habit; tolerates dry soils	southeast U.S.	5–9/8–3
<i>A. maximowiczianum</i> (Nikko maple)	30/20	yellow, red, purple/young leaves emerge bronze	Japan, China	6–9/9–6
<i>A. pensylvanicum</i> (striped maple, moosewood maple)	20/20	yellow/young leaves emerge with pink tinge; young stems are green with white stripes; shade tolerant	eastern U.S.	3–7/7–1
<i>A. pseudosieboldianum</i> (purplebloom maple, Korean maple)	15–25/15–25	orange, red/stems are red to purple	Asia	5–7/7–1
<i>A. shirasawanum</i> 'Aureum' (Shirasawa's maple)	15–20/15	orange, yellow/leaves emerge bright yellow-green in spring and change to yellow by summer	Japan	5–7/7–5
<i>A. tegmentosum</i> (Manchu striped maple)	20–30/15–20	yellow/pale green leaves and greenish-purple stems with white stripes	Asia	4–7/7–1
<i>A. truncatum</i> (purpleblow maple, Shantung maple)	20–25/20–25	yellow, orange, red/new leaves emerge reddish purple; resistant to leaf scorch; heat and drought tolerant	Asia	4–8/8–1



Acer palmatum var. *dissectum*

JAPANESE MAPLE (*Acer palmatum*, Zones 6–8, 8–2)

Highly variable in form, size, and color, Japanese maples are either single-stemmed small trees or multi-stemmed shrubs. The deeply divided leaves emerge red-orange in spring, mature to green by summer, and change to yellow, orange, purple, or red in fall. Threadleaf Japanese maples (*A. palmatum* var. *dissectum*) boast finely dissected leaves and a domed, cascading habit.



AMUR MAPLE (*Acer tataricum* ssp. *ginnala*, syn. *A. ginnala*, Zones 3–7, 7–1)
This Asian native's elongated, glossy, dark green, three-lobed leaves change to yellow, orange, and red in autumn. At maturity, it stands about 15 to 20 feet in height with a similar spread. Fragrant, yellowish-white flowers in spring are followed by showy, one-inch-long, winged red fruits in summer. (In parts of the Northeast and Midwest, Amur maple can be invasive due to prolific self-seeding.)



THREE-FLOWER MAPLE
(*Acer triflorum*, Zones 5–7, 7–5)
An Asian native, this species grows 20 to 30 feet tall and wide. Dark green trifoliate leaves turn yellow, orange, and red in autumn. The bark exfoliates in long strips of cream, tan, and gray.

VISIT THE Rutgers University experimental farm in mid-May, and you're likely to be drawn toward a dogwood tree that's a towering, cascading mountain of white flower bracts spreading in thick waves up and over the green landscape.

Remarkable in its own right, the 35-foot-tall dogwood is also a living artifact of one of the most significant woody plant breeding advances in American horticultural history. It's the prototype of Constellation, one of the original six cultivars in the Stellar hybrid dogwood series developed by legendary plant breeder Elwin R. Orton, Jr.

The Stellar dogwoods—created from crosses between the Asian Kousa dogwood (*Cornus kousa*) and the native flowering dogwood (*C. florida*)—arrived just as the ubiquitous and beloved flowering dogwood was under assault by a perfect storm of pests and diseases, including borers, powdery mildew, and anthracnose. A better tree—one that could survive all of the above—was needed. Into the breach came the Stellar series, the result of about 25 years of research, cross-breeding, constant evaluation, and tough love at Orton's hands.

"Dr. Orton has made enormous contributions to the woody plant industry; notably the work he did with dogwoods," says Phil Normandy, woody plant curator at Brookside Gardens in Wheaton, Maryland. "This is somebody who managed to create the plant equivalent of a mule by bridging the genetic issues in these two plants [flowering dogwood and Kousa dogwood] that are not all that closely related, even though they are in the same genus."

BREEDING SUCCESS

Before his retirement in 2008, Orton, 82, spent his entire career—nearly a half century—at Rutgers University in New Brunswick, New Jersey. His work developing hollies, dogwoods, pyracanthas, and sumacs earned him a reputation as one of America's leading woody plant breeders, not to mention almost 20 national and regional awards from horticultural societies, nursery and landscaping organizations, and garden clubs.

Among the honors have been two awards from the American Horticultural

Developing disease-resistant dogwoods is only one of Elwin Orton's major contributions to woody plant breeding.

a breeder apart BY BOB HILL Elwin Orton



Elwin Orton admires the original planting of his hybrid dogwood selection Constellation, one of six original disease-resistant dogwoods in what became the Stellar series.

Society (the Scientific Award in 1992 and the Luther Burbank Award for extraordinary achievement in plant breeding in 2007), the Distinguished Service Medal from the Garden Club of America in 1989, and induction into the New Jersey Nursery & Landscape Association Hall of Fame in 2010. Recognition has also come to his plants in the form of Gold Medals from the Pennsylvania Horticultural Society for *Ilex* 'Harvest Red' (1991), *Cornus* Aurora and *Cornus* Ruth Ellen (1993), and *Cornus* Venus (2007).

Orton's career as a plant breeder was the product of an entire life spent in agriculture and horticulture. He grew up in an extended family of farmers near the little town of North East, Pennsylvania, a prime cherry, grape, and dairy farm area in what's actually extreme northwestern Pennsylvania. His determination, high expectations, work ethic, and occasional outspokenness—along with a wry, self-effacing sense of humor—were all homegrown.

The summer after high school he found work at a local farmer's co-operative stacking boxes of grapes and pumpkins. He moved on from there to stapling fruit boxes. "When we got real busy," he says, "I was working 16 hours a day at 85 cents an hour and I was able to put myself through college."

Orton attended Penn State University in State College, where he earned a bachelor's degree in horticulture with a specialty in pomology—the development, cultivation, and physiological traits of fruit trees. But as he approached graduation he realized the degree would offer him limited opportunities, especially since his parents had lost the family farm investing in real estate just as the Great Depression hit.

"In pomology they just taught you what you already knew if you came from a farm," he says. "I didn't have the capital to go out and start a fruit farm, and I didn't want to just be a hired hand."

The one Penn State class that really interested him taught basic plant breeding and genetics. "It was exciting to see what you could cross and what you could get, how things could work out," he says. One of his Penn State professors convinced him to go to Ohio State University in Columbus, where noted corn

geneticist D.F. Jones needed a graduate student for work on hybrid corn.

Orton received a master's degree in vegetable breeding at Ohio State and was six credits short of a doctorate when he transferred to the University of Wisconsin, Madison. He made the change because he felt he needed more basic training in genetics, so he opted to work with Royal Alexander Brink, another geneticist renowned for his work in hybridizing corn. Orton earned his doctorate in plant genetics with a minor in plant pathology, but the fit still wasn't right.

"I realized then," he says, "that people who work in basic genetics are too intelligent for me. I decided I'm going to stick with what I know and look for work in plant breeding."

Orton applied for a job as an ornamental plant breeder with the New Jersey Agricultural Experiment Station at Rutgers, and was hired. "I hadn't had one course in ornamentals," says Orton, "but I just thought I'd like to do it. There was a wealth of woody ornamentals out there and it was not a big field at the time."



Among the introductions resulting from Orton's work with hollies are 'Jersey Princess', left, an American holly selection, and 'Harvest Red', above, which is a hybrid winterberry holly.

When Orton arrived at Rutgers on February 1, 1960, the university's ornamental horticulture program was flourishing under the guidance of William E. Snyder, whose announced mission was to create the best horticulture department and plant research program on the East Coast. Orton ultimately stayed for 48 years. "I didn't realize at the time I was signing onto a job for life," he says.

WORKING WITH HOLLIES

Orton's first assignment at Rutgers was to breed improved American hollies (*Ilex opaca*) using the university's extensive

ORTON'S STELLAR SERIES

These dogwoods are listed roughly in order of when they start blooming, with the earliest at the top. The earliest ones begin flowering at around the end of the usual bloom period for flowering dogwoods, which is late April to early May in most temperate regions.

Selection (Cultivar name)	Height/Width (feet)	Key characteristics	Year introduced
Ruth Ellen ('Rutlan')	15–20/20–30	spreading habit with white floral bracts that create a profuse display	1990
Stardust ('Rutfan')	10–20/20–25	wide-spreading, low-branching form with white floral bracts	1990
Constellation ('Rutcan')	25–35/15–25	upright form with large white floral bracts that don't overlap	1990
Celestial ('Rutdan')	20–25/15–20	upright habit with abundant white floral bracts with greenish tinge	1990
Aurora ('Rutban')	20–25/15–20	upright form with creamy white floral bracts that overlap slightly, dark red fall foliage	1990
Stellar Pink ('Rutgan')	15–25/15–25	upright to rounded form with pale pink, overlapping floral bracts	1990

holly collection, which included more than 200 species and cultivars, as a resource. His initial mission was to cross the relatively hardy American holly—a native of the eastern and southern United States—with the less hardy English holly (*I. aquifolium*), with the goal of developing plants that would have the hardiness of the former and the beautiful foliage and fruits of the latter. The bottom line was to create a new line of plants that would boost holiday sales for the New Jersey cut holly industry.

It takes decades to hybridize, test, and properly evaluate new shrub or tree cultivars, so any breeding project requires patience and passion. Furthermore, success is not guaranteed, especially when crossing different plant species that don't bloom at the same time, as was the case with American holly and English holly. In one early attempt, Orton resorted to enclosing an American holly in a makeshift greenhouse to warm it up and stimulate flowering early to coincide with that of the English holly. He had to enclose the greenhouse in cheesecloth to prevent any chance of insects introducing foreign pollen to the flowers before they could be hand-pollinated. After all this work, 26 interspecific hybrid seedlings were obtained from Orton's holly crosses, each one sterile, and "with no desirable horticultural characteristics."

Although the initial interspecific breeding efforts were not a success, Orton's on-the-job training in holly breeding eventually helped him develop desirable, market-ready selections of American hollies, including the red-fruited, winter-hardy 'Jersey Prin-

cess', 'Dan Fenton', 'Jersey Delight', and 'Portia Orton' (named for his wife of 48 years).

Orton also worked with deciduous hollies, crossing the Japanese winterberry holly (*Ilex serrata*) with winterberry holly (*I. verticillata*), an American native, in an attempt to produce moderate-sized shrubs with larger and more attractive fruits and better fall foliage color. His success with introductions 'Harvest Red' and 'Autumn Glow', and then 'Raritan Chief', a pollinator for the two "female" selections, may have helped influence the subsequent wave of breeding work with winterberries.

Another of Orton's holly projects was an effort to develop a compact selection of Japanese holly (*I. crenata*)—a popular foundation plant—that was resistant to spider mites and exhibited less winter damage to its evergreen foliage than the ones being sold at the time.

The process by which Orton developed his selection 'Beehive'—a cross between cultivars 'Convexa' and 'Stokes'—is a good illustration of the kind of perseverance and determination that woody plant breeders must have to be successful. The trial began with 21,000 seedlings grown in three-inch peat pots. A year later, the seedlings were moved to beds and planted eight to 10 inches apart. After a few more years they were scooped up by a front end loader and dumped unceremoniously on the ground to be evaluated for compact shape, size, roots, and foliage. The best of them were planted out for further evaluation in a two-acre field. From there only 40 were selected for trials,

which required another five or six years. Those suffering spider mite injury were tossed out in the fall; those with winter injury tossed out in the spring.

After about 10 more years of evaluation, in 1984 'Beehive' was the only selection introduced from the 21,000 seedlings. A compact, mounded form with light green leaves, it's still being propagated and sold.

Orton introduced four other Japanese hollies, including 'Midas Touch', which has leaves with yellow variegation, and 'Jersey Pinnacle', a hardy, upright selection with dark green foliage.

TACKLING DOGWOODS

In the early 1970s, Orton began working with dogwoods (*Cornus* spp.). His first challenge was to develop suitable replacements for the native flowering dogwood, which was beginning to reveal its susceptibility to an array of insects and diseases. As one of the most popular small specimen trees in much of the United States, this was really bad news not only for gardeners, but for the nursery industry.

Orton had been told it was impossible to cross the Kousa dogwood with the flowering dogwood, but with typical determination he says, "I decided I was going to try it anyway."

In the late 1960s he collected flowering dogwood pollen and froze it. A month later, when the Kousa dogwood came into bloom, he hand-pollinated the flowers using a flat toothpick with a rounded end. "Luck was with me, and it worked," says Orton. "There was some sterility in some of the hybrids but a large percentage of them were fertile."

The hybrid seeds took a year to germinate. Once the young plants were large enough, Orton planted them in an outdoor plot, then waited eight to nine years until most of them flowered. “I almost gave up hope,” he recalls.

To ensure the plants were truly disease resistant, Orton gave them tough love. “We never used fungicides, insecticides, or anything,” says Orton of the dogwood trials, his voice rising into its characteristic, exclamation-point-pitch at the end of a sentence. “Never!”

After more testing, re-testing, and evaluation, it wasn’t until the early 1990s—almost 25 years after his initial pollination—that the first Stellar series selections began reaching the market.

Listed as *C. xrutgersensis* or the Rutgers hybrids, the six original Stellar series selections were Stellar Pink (‘Rutgan’), Aurora (‘Rutban’), Celestial (‘Rutdan’), Stardust (‘Rutfan’), Ruth Ellen (‘Rut-

Sources

Fairweather Gardens, Greenwich, NJ. (856) 451-6261.

www.fairweathergardens.com.

Forestfarm, Williams, OR. (541)

846-7269. www.forestfarm.com.

Klehm’s Song Sparrow Farm & Nursery, Avalon, WI. (800) 553-3715.

www.songsparrow.com.

Woodlanders, Inc., Aiken, SC. (803)

648-7522. www.woodlanders.net.

Resources

Dogwoods by Paul Cappiello and Don Shadow. Timber Press, Portland, Oregon, 2005.

Manual of Woody Landscape Plants (6th ed.) by Michael A. Dirr. Stipes Publishing, Champaign, Illinois, 2009.

lan’), and Constellation (‘Rutcan’). (For descriptions of all these selections, see chart, page 38.) The series as a whole has a reputation of being good, hardy, heavy-blooming, disease-resistant plants, but they do take longer to put forth their first blooms than either of their parents, and they produce only occasional fruits with sterile seeds. All thrive in USDA Hardiness Zones 5 to 8 and AHS Heat Zones 8 to 3.

“Orton came up with a group of plants that really filled a niche,” says Normandy. “They bloom in between the parent species, have intermediate foliage, and hybrid vigor, which means they grow rapidly. They are also easy to propagate, so they are a commercial success.”

Orton acquired trademarks and patents for each plant, with the royalties accruing to Rutgers. “Orton’s other genius is that he insisted on the dogwoods being patented and trademarked, because that



Orton with the prototype for his Saturn dogwood, which was developed at the same time as the Stellar series, but not introduced until 2007.

way the money goes to Rutgers [to continue to fund the research program],” says Normandy. “That’s not the way most state-university-run plant breeding programs work, and it was considered radical at the time, but in hindsight it turned out to be good thing.”

In 2007, a seventh seedling derived from Orton’s original hybridization was introduced as Saturn (‘KF1-1’), and last year Rutgers introduced Hyperion (‘KF111-1’), which is a second-generation hybrid that was backcrossed with the Kousa dogwood; it is also the only one of the Rutgers hybrid dogwoods that is not sterile and thus bears the dimpled, globular fruits typical of Kousa dogwoods.

BIRTH OF VENUS

Producing the Stellar series was a remarkable achievement, but Orton was simultaneously working on another major dogwood breeding project. In 2005, to considerable fanfare, he introduced Venus (‘KN30-8’)—a big-bracted hybrid cross between the Kousa dogwood and Pacific dogwood (*C. nuttallii*) that produces spectacular, six-to-eight-inch-wide, creamy-white floral bracts that dwarf any other dogwood tree’s flowers.

Venus is a testament to Orton’s horticultural vision. He had long been taken with the size and vigor of the Pacific dogwood even though its natural range was the shaded, wet mountains of the Pacific Northwest (USDA Zones 6–7). He already knew of the adaptability and hardiness of the Kousa dogwood. Thus, he reasoned, why not combine the attributes of those two?

So two plants from opposite sides of the Pacific Ocean were hybridized in northern New Jersey. It took nine years before the seedlings from his original crosses came into flower. He then backcrossed that dogwood with another Kousa—and watched it another 20 years before releasing it. “I had 29 years in that one,” Orton says. “I knew enough about it I could have introduced it earlier, but I was always slow in doing that.”

Venus was actually preceded by another Kousa/Pacific dogwood selection called Starlight (‘KN4-43’), which Orton introduced in 2003. Starlight has the glossy, dark-green foliage of *C. kousa* as well as the vigorous growth habit and



A hybrid between Pacific dogwood and Kousa dogwood, Venus draws attention with its unusually large, eye-catching white floral bracts.

large, white floral bracts of *C. nuttallii*. But Starlight hasn’t received the same fanfare as Venus because it isn’t fully winter-hardy in central New Jersey. Orton says it has fared better in warmer regions, including Tennessee, Oregon, and southern Germany.

PASSING THE TORCH

Although Orton officially retired from Rutgers in 2008, he continues to work on some breeding projects as professor emeritus. “In addition to Elwin Orton’s successful cultivar releases, he built a legacy of *Ilex* and *Cornus* genetic resources that are at our disposal to develop the next generation of Rutgers hybrids,” says Thomas Molnar, assistant professor in

Rutgers’ department of plant biology and pathology.

“Elwin’s gift to the world of gardens has been, and will continue to be for many years, his wonderful dogwood hybrids,” says Paul Capiello, executive director of Yew Dell Gardens in Crestwood, Kentucky, and one of Orton’s former students. “His releases changed the face of the garden—offering plants with improved pest resistance, exceptional vigor, and all-around great garden-worthiness.”

A former columnist for the Louisville Courier-Journal, Bob Hill now runs Hidden Hill Nursery & Sculpture Garden in Jeffersonville, Indiana.

Hollin Meadows

BY HOLLY BOWERS

a school gardening success story

From improving the health and nutrition of students to raising test scores, the dynamic integration of gardening into the curriculum at a Virginia elementary school is an inspiring example for schools nationwide.



TUCKED INTO a quiet neighborhood in Alexandria, Virginia, only a few minutes from the American Horticultural Society's River Farm headquarters, is Hollin Meadows Science and Math Focus School. On July 20, its outdoor classrooms hosted students slightly bigger than usual when the Fairfax County elementary school welcomed the participants of this year's National Children & Youth Garden Symposium (NCYGS) for a day of tours and presentations.

School gardens have gained a great deal of support in the 20 years since the American Horticultural Society (AHS) began holding the symposium, and Hollin Meadows is an outstanding example of a school that has successfully integrated gardens into its curriculum. In the seven years since the first plants went into the ground, the gardens have grown to 14,000 square feet and have become an important part of the classroom experience.

The visit by the 250 symposium attendees was not the first national attention the school has received. The U.S. Department of Agriculture named Hollin Meadows a Silver School for its programs promoting a healthy lifestyle, and in 2009 First

Lady Michelle Obama and Secretary of Agriculture Tom Vilsack dropped by for a surprise visit that garnered international media coverage.

IDEAS AND INSPIRATION

Jenny Brown, the school garden coordinator for GreenKids in Montgomery

County, Maryland, was impressed by her visit during the 2012 symposium. "Seeing Hollin Meadows's gardens gave me a vision of what our schools could look like in a few years," she says. "It seems they have all the infrastructure they need to really make gardening an important instructional tool."

For Robin Rick of Marion, Ohio, another symposium participant, the garden in front of the school spoke volumes about Hollin Meadows's mission. "I liked the idea that a garden walk was located in front of the school for everyone to see and enjoy," she explains. "For me it showed the commitment the school has made to nature and plants, and it was a statement about who they are and what is important in the educational process."

The front garden that Rick admires is the Native Virginia Wildlife Habitat, the first garden space created at the school. In the fall of 2004, Shawn Akard, an enthusiastic parent, approached the school's principal, Jon Gates, about creating this garden and many others at the school. Gates was impressed with her vision:

"She wanted to transform the school grounds so that plants and learning were everywhere," he says.



Beans are just one of the vegetables Hollin Meadows students grow in the school's Outdoor Education Program.



The form and texture garden along Hollin Meadows's back wall, above left, enables students to touch a wide variety of plants, while the Native Virginia Wildlife Habitat, left, offers a calming environment at the front of the school. Above: Hollin Meadows students and volunteers introduce 2012 symposium participants to their gardens.

Gates attributes the success of making this original vision happen to connecting what he calls the Three Ps: passion, planning, and people. Peggy Bowers, then the horticulturist at the AHS's River Farm headquarters, was instrumental in helping create a site plan to turn Akard's dream into a reality. Hollin Meadows's PTA secured donations of plants and hardscaping from local garden centers, and the wildlife habitat was planted in the spring of 2005. Akard then became the first Outdoor Education Coordinator, in charge of incorporating the garden into the curriculum. In 2009, she received the AHS's Jane L. Taylor Award for her outstanding contributions to children's gardening.

In addition to Akard's involvement, the gardens were, and continue to be, a

collaborative effort. Gates credits not only parents, but also other residents of the surrounding neighborhood, who became excited when they saw what was going on and volunteered their own resources and expertise. "We're lucky to be in an area that's full of outdoorsy folks," he says. "The school is really an extension of the neighborhood."

BRINGING IT OUTSIDE

Hollin Meadows's outdoor program has grown monumentally from that first garden. The area behind the school has been transformed from a blank courtyard into a widely used learning space. The form and texture garden along its walls offers some children their first opportunity to observe a variety of flowers in bloom or touch many different leaves. In the corner, the Literary Garden embraces the Dewey Decimal System in an outdoor reading space.

Symposium attendee Chris Asbell, a teacher in New Hampshire who has started his own school garden program, was inspired by how much the gardens

are a part of the curriculum at Hollin Meadows. "It felt like the garden was part of the system rather than a building and grounds project," Asbell explains. "The staff understands the power of experiential education."

While every garden space at the school complements various core academic subjects, the potential for the gardens to leverage learning across other disciplines is demonstrated especially well in a school-wide planting project. In the fall, students plant lettuce seeds and care for their own plants. They get a science lesson watching their lettuce grow, they keep garden journals to work on their verbal skills, and they take measurements of their plants and make graphs as a math exercise. The lettuce is harvested in time to make salad for the school's annual Thanksgiving luncheon. After putting in the work to grow their own food, the students are actually excited to eat the salad, explains Diane Moery.

Moery is the chair of the Hollin Meadows Partnership for Science and Math Education, a nonprofit group dedicated

to raising money to support the continuance of the school's Outdoor Education Program. She explains this approach to garden-based learning as simply "taking the existing Fairfax County curriculum and bringing it outside." Students plant gardens as part of social studies units and examine the parts of a plant under a microscope in the Science Lab instead of studying a diagram. The Science Lab, headed by science resource teacher Jason Pittman, really takes advantage of the gardens to provide all students with hands-on instruction and give them an early foundation in science.

and 40 percent qualify for reduced-price meals, but there have been real results in closing the achievement gap. In 2010, this gap between cultural groups in science and math dropped to just four percent, down from 21 percent in 2008. In addition, more Hollin Meadows students passed the state standards test in reading than any of the other Title I (low-income) schools in the Fairfax County Public School District during the 2009 to 2010 school year.

While the school is employing a variety of means to improve academic performance, Gates believes that garden-based

GARDEN POTENTIAL

After the 2010 to 2011 school year, the Fairfax County Public School System eliminated funding for Hollin Meadows's math and science focus in the face of shrinking property tax revenues. Other sources of funding, such as stimulus support and Title I funding, have also been reduced or cut. This means that the entire Outdoor Education Program, including the gardens and the Science Lab, is at risk. Moery hopes that the Hollin Meadows Partnership will be able to fundraise enough to not only save the program, but inspire other schools as well. "We believe



Hollin Meadows students harvest the lettuce they planted, left, to make salads for their annual Thanksgiving lunch, right.

For the 2012 NCYGS participants, the Science Lab and Outdoor Education Program certainly left a strong impression. Kirk Brown, a keynote presenter for this year's symposium, calls the program at Hollin Meadows "a true coming together of cause and effect." He says, "They are putting feet on the ground, literally, in programming their education around the concept of nature and horticulture and empowering students to grow their own food."


HEALTHY BODIES, HEALTHY MINDS

Hollin Meadows has made huge strides in academic achievement as well as health benefits. The 600 students represent 35 countries and 18 language backgrounds,

learning does play a significant role. "Kids are naturally curious and motivated to learn about the things that they're interested in," he explains. "In the garden there are so many things to be curious about that it becomes a place where kids really want to learn." Harnessing that interest in the garden and using it to make connections to other subjects has contributed greatly to the school's academic success.

Though the gardens weren't created as a way to improve scores, they have certainly been a benefit. The recent test results "prove that having hands-on experiences and interpreting the curriculum a little bit differently does make a positive difference," Moery says.

in this program and think it should be in more schools," she says.

Already they've noticed seeds sprouting at other Fairfax County schools. A nearby middle school is considering installing a school garden as part of the renovations it is undergoing. And two elementary schools in the area have gardens now, which Moery believes is partly due to Hollin Meadows showing that it could be done. "A school doesn't have to have 14,000 square feet of garden space to get kids outside," she stresses. "We've used what we have and figured out how to turn it into a hands-on lesson." 

Holly Bowers in an editorial intern with The American Gardener.

Tasty and Ornamental Jostaberries

by Kris Wetherbee

I PLANTED MY first jostaberry bush over 20 years ago and was won over in that very first year. The long-lived bush is thornless, with a vigorous growth habit that tops out at four to six feet in height. The glossy, gooseberrylike leaves are very ornamental well into the fall. The real treasure, however, is the shimmering purple-black fruit.

The German-bred jostaberry (*Ribes ×nidigrolaria*) is a complex hybrid between three different *Ribes* species: black currant (*R. nigrum*), North American coast gooseberry (*R. divaricatum*), and European gooseberry (*R. uva-crispa*). Jostaberries have the disease-resistance and sweetness of gooseberries along with the thornless nature and richer flavor of black currants. The fruit is intermediate in size between gooseberries and black currants, with a flavor best described as a delightful mingling of grape, blueberry, and kiwi.

GROWING GUIDELINES

Jostaberries can be grown in USDA Hardiness Zones 3 through 8 and have survived temperatures down to -40 degrees Fahrenheit. It has good heat tolerance and needs only 1,000 hours of winter chilling (temperatures above freezing but under 45 degrees F) to set fruit, so it can be grown in warmer regions and more temperate areas of the South, although plants yield best where summers are mild.

For maximum production, grow jostaberries in full sun and moist, loamy, well-drained soil with a pH of 6 to 7. Plants benefit from afternoon shade in regions where summers are hot. An area protected from harsh winter winds and late frost is ideal.

Jostaberry grows easily in most soils with little to no need for fertilizer. However, adding three to five inches of compost to the planting hole will give new plants a great start. My annual routine



Jostaberries are ready to harvest when they have turned deep reddish purple, left. Flowers, above, are bicolor.

consists of applying compost or aged manure in late winter, followed by a two- to four-inch layer of organic mulch in early summer to help keep roots cool and soil moisture even.

While the plants are reasonably drought tolerant, an inch of water per week will encourage high-quality fruit and larger yields. After harvest, my plants receive only monthly watering and do just fine.

Fruit is produced on one-year-old wood and fruiting spurs of older wood. The result is a productive shrub—yielding about 12 pounds per plant—that bears for many years. Only light annual pruning is needed. You can start pruning in the second winter or early spring after planting. Cut out broken or drooping branches, then cut the oldest one or two canes to the ground to encourage larger berries and new replacement shoots.

Planting Basics

GETTING STARTED Jostaberries are generally sold as one- or two-year-old bareroot plants or as potted plants. They are also easily propagated from hardwood stem cuttings. Cut the stem just above a node, and stick them in the ground, keeping the soil moderately moist until cuttings take root. It's that simple.

PLANTING Set out bareroot plants in late winter or early spring. Potted plants can be planted anytime during the growing season. Before planting, mix compost or aged manure into the planting hole. Set plants so that the top of the root ball is one to two inches below the soil line to encourage maximum stem formation.

SPACING Space plants about six feet apart in well-drained, slightly acidic soil.

DAYS TO HARVEST Depending on your growing climate and weather, berries are ready to harvest from early June to mid-July, starting with a light harvest the second year after planting and larger harvests beginning the third and fourth year.

JOSTABERRIES AND RUST

Concern over the spread of white pine blister rust, a devastating disease of white pine that requires both pine and a susceptible *Ribes* host to complete its life cycle, led to legal restrictions on the sale and cultivation of *Ribes* species in the early 20th century. Although jostaberries are resistant to the disease, restrictions remain in several states. The following states (or counties within states) still have some restrictions on the importation and/or cultivation of jostaberries: Maine, Massachusetts, West Virginia, New Jersey, Rhode Island, New Hampshire, Virginia, Michigan, North Carolina, Ohio, Delaware, and Connecticut. If you garden in one of these states, check with your state department of agriculture or your local Extension agent before planting jostaberries. (For more about restrictions on growing *Ribes*, view the web special linked to this article on the AHS website).

—Rita Pelczar, Contributing Editor

PEST AND DISEASE PREVENTION

Jostaberries are relatively pest- and disease-free. They are especially resistant to powdery mildew, blackcurrant leaf spot, gall mites, and white pine blister rust (see sidebar above for more about jostaberries and rust).

Sawflies and aphids may be the only pests you will encounter, though I have never had issues with either. Aphids are easily controlled with an insecticidal

soap spray or by blasting them with water. Sawflies can be controlled by cultivating around shrubs in early spring and again in fall to help reduce the overwintering population.

ENJOYING THE HARVEST

The berries, which hang in clusters of three to five, start off green. Harvest begins from early June to mid-July, when they have turned deep reddish-purple to

Sources

Miller Nurseries, Canadaigua, NY.
(800) 836-9630.

www.millernurseries.com.

One Green World, Molalla, OR.
(877) 353-4028.

www.onegreenworld.com.

Raintree Nursery, Morton, WA.
(360) 496-6400.

www.raintreenursery.com.

nearly black. That's also when the berries are most loaded with vitamin C. No rush, though, on harvesting as the berries have a long shelf life, but if you wait too long, the birds may beat you to them.

The berries are great for fresh eating and excellent in preserves, sauces, pies, juice, or jelly. Any excess freezes well and makes an especially tasty winter treat in muffins and other baked goods. ♪

A regular contributor to The American Gardener, Kris Wetherbee gardens in Oakland, Oregon.



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Planting Trees Properly

by Scott Aker



IF YOU'RE thinking about planting a tree, fall is the best time to do this for most species, apart from broad-leaf evergreens, which should be planted in spring in temperate regions. Tree planting might seem pretty easy—you dig a hole, place the tree in it, and fill in around the roots with soil, right? But a tree is a long-term investment, so attention to detail in the planting process will help your new tree establish more quickly and prevent problems long into the future.

BACKGROUND CHECK

Before going to a nursery, do due diligence with a good tree reference to make sure you are choosing a species that is appropriate for the site you have in mind. Make sure you know a tree's ultimate height and spread; a beautiful tree plant-

ed where it lacks enough room to develop a well balanced canopy in old age is sure to result in problems down the line. Plant trees a minimum of 10 feet away from homes and structures so the roots don't cause foundations or walls to heave. With the exception of a few species that like "wet feet," avoid planting trees in low spots where water tends to collect.

For many of the more common tree species, several different sizes may be available at your local nursery. Larger trees cost more, and generally establish themselves more slowly, so it may be best to choose one of the smaller sizes. If you live in a part of the country that is prone to drought or you have poor soil, it is advantageous to plant a smaller tree since it will have a much shorter establishment period. While you might be tempted to plant a larger tree

to give you instant shade and structure for your landscape, research has shown that smaller trees often quickly surpass large specimens planted at the same time. On the other hand, it's a good idea to choose a size that is large enough to withstand damage caused by animals or extreme weather conditions. Generally a tree with a trunk half-an-inch to three inches in diameter—professionals refer to trunk diameter as the "caliper"—is a good place to start for most tree species.

Finally, be sure you are selecting a healthy specimen. Check the root ball and avoid trees that are badly pot bound. Pass on trees that have a lot of small, upright shoots coming off the trunk or lower branches—this indicates stress. And make sure the bark on the trunk is free of wounds, sunken areas, or other damage.

INITIAL CARE

When you get your tree home, don't delay planting. Start by taking the tree out of its pot or removing all the twine, burlap, and wire that might be surrounding the root ball. Now find the place where the roots meet the trunk. Potted trees usually have this point buried below several inches of soil, and field grown trees often have soil thrown up against the trunk by cultivators. Carefully excavate the top layer of the soil until the main roots that arc away from the trunk are clearly visible.

If your tree was in a pot, slice through the bottom of the root mass with an old pruning saw or sharpened shovel to cut any roots that have grown in an arc or circle around the inside of the pot. Don't be timid—if you don't disrupt these roots now, they might girdle (encircle) the trunk, and after many years of growth kill your tree just as it is reaching maturity. Professionals often "butterfly" the root mass of potted trees by cutting the bottom half of the root ball into two flaps

When planting a tree, ensure the base of the trunk is barely above the top of the planting hole.

Gardening Q&A with Scott Aker

CONTROLLING NUTSEGE

I have a small vegetable garden that has been pretty productive, but now I have a weed problem that I can't seem to get under control. It's some kind of grass that is yellow-green in color. I pull it, but it returns days later. What can I do to get it under control?

You are probably dealing with yellow nutsedge (*Cyperus esculentus*), shown below in flower. It is difficult to control because it sends out rhizomes (underground stems) deep below the soil surface. Small corms that form at the end of each rhizome sprout into new plants. I have successfully eliminated it by carefully digging up the plants as soon as they emerge, but this requires close monitoring for at least one or two years to completely get rid of it. Repeated treatment with herbicidal soap may be successful if you are prompt in treating any sprouts that appear, but in general the herbicides available to homeowners aren't terribly effective in controlling yellow nutsedge. You might also be able to quell it by covering the entire bed with black plastic sheeting for a year to starve the plants of light.



IRIS BORERS

I planted some bearded irises along the side of my home last fall. They get a half day of sun, and only a few of them bloomed this spring. Now the foliage is collapsing and the rhizomes are turning into mush. Can I save them?

It sounds like you have an infestation of iris borers, which appear just after the flowers fade and burrow downward into each fan of iris leaves. When they reach the rhizome, they feed on it, causing it to get mushy. Dig up your irises now and divide them. Cut the foliage back to within two to three inches of the rhizome and destroy any divisions that have soft rhizomes or mushy, soft tissue at the point where you cut the leaves. Plant the healthy divisions in well-drained soil in a site that gets full sun, and mulch them lightly so the rhizomes remain near the soil surface. New foliage should start emerging this fall. Thoroughly clean up all old leaves in early spring each year to eliminate any borer eggs that might have been laid on them in the previous year. —S.A.

E-mail your gardening questions to Scott Aker at saker@ahs.org.

that can be bent away from each other when the tree is planted.

Now that the root ball of your tree is prepared for planting, dig a hole that is an inch or two less than the height of the root ball but several inches wider than the widest dimension of the root ball. Loosen the soil on the edges and bottom of the hole. Place your tree in the hole and view the trunk from all sides to ensure that it is not leaning to one side. Fill in around the root ball with soil that you

removed when you dug the hole, sloping the fill away from the trunk. Use the pointed end of a shovel to tamp down the soil and fill in any air spaces around the roots. You can also trickle water into the planting hole to help settle the soil. Before going any further, confirm that the main roots you exposed are barely below the surface of the fill soil.

I don't recommend adding fertilizer or soil amendments to the planting hole. Basically, if the tree can't survive in the soil

you are planting it in, then it's not a good choice for the site.

Mulch the tree with two to four inches of mulch, but don't place any mulch within six inches of the tree trunk. Wood chips are one of the best mulches for newly planted trees because they don't bind together into a water-repellent blanket as more finely shredded mulches sometimes can. Disregard what you may have heard about wood chips robbing the soil of nitrogen; the surface to mass ratio is such that wood chips tie up only a small amount of nutrients at the very surface of the soil.

Unless you are planting in an extremely windy site, I don't advise staking because some play in the trunk helps roots to establish faster. Even if you are placing the tree in a windy area, make sure the stake supports allow for a little movement of the trunk. Pruning at this time should be limited to removing any damaged or dead branches.

HYDRATE, HYDRATE, HYDRATE

Water your newly planted trees regularly throughout the fall and into winter until



Water trees regularly for the first year or two until they are well established.

the ground freezes. If you live in an area that has a mild climate, water your new trees any time the soil is dry an inch below the surface. But if your soil drains slowly, make sure you don't let the soil around the tree get waterlogged. Once a tree is well established—after a year or two—you should only need to water it during extended droughts. ☺

Scott Aker is a Washington, D.C.-based horticulturist.

Horticultural News and Research Important to American Gardeners

BLUEBERRY BROUHAHA

There's plenty of blushing going around after the much touted release of the 'Pink Champagne' blueberry, a pink-fruited selection originally developed by the U.S. Department of Agriculture (USDA), this past spring. It turns out the USDA plot where the pink blueberries were growing was contaminated by a standard blue type, and it was the interloper that was accidentally distributed to growers for propagation.



The true 'Pink Champagne' blueberries

"The plant that we have *is* a blueberry," explains Heather Wilkins of Briggs Plant Propagators in Elma, Washington, the wholesaler for the plant. "It's just unknown what type of blueberry it is."

The correct genotype has now been identified, and the USDA hopes to make it available to propagators by the end of the year. The word is that some retailers are offering refunds on 'Pink Champagne', so if you purchased any of the plants earlier this year, the USDA advises contacting your vendor.

So far 'Pink Lemonade', another pink-berried blueberry selection developed by the USDA that was introduced in 2011, appears to be the real deal.

MORE FROST-TOLERANT JAPANESE SNOWBELL CULTIVAR DEVELOPED

The USDA has had better luck introducing a new cultivar of Japanese snowbell



'Spring Showers' Japanese snowbell

(*Styrax japonicus*), 'Spring Showers'. The 2011 introduction, developed at the U.S. National Arboretum, combines the ornamental features of Japanese snowbell with improved frost-tolerance.

Native to Japan, China, Korea, Taiwan, and the Philippines, Japanese snowbell struggles with late-spring freezes in the United States. Late freezing damages early foliage and can even kill the tree. 'Spring Showers' has a later bud break time than the species, making it less susceptible to frost damage in USDA Hardiness Zones 5 to 8.

Japanese snowbells are perfect for small residential landscapes, mixed borders, or under utility lines because of their tight conical habits up to 20 feet tall. In the spring, their bell-shaped, white flowers give off a strong fragrance. For more information about 'Spring Showers', visit www.usna.usda.gov.

NEW PROGRAM HELPS PUBLIC GARDENS BOOST CLIMATE CHANGE AWARENESS

Because botanical gardens often focus on conservation and plant science, they are uniquely positioned to educate visitors about the effects of climate



change. That's just what YOUtopia, a program jointly created by the American Public Gardens Association (APGA) and ecoAmerica, an organization dedicated to increasing support for climate solutions, aims to do. It calls for participating public gardens to make a commitment to reduce their own climate impact by enhancing their sustainability programs. The program also focuses on raising the climate change awareness of the 70 million people who visit APGA-affiliated gardens each year.

"Public gardens are the place to learn about *and* experience climate change," says Casey Sclar, executive director of the APGA. "You can see the plant species involved, observe examples of best management practices in adapting to our changing climate, and also learn how you can contribute positively in limiting our overall impacts on its severity."

YOUtopia, which is set to launch next spring, will also engage people nationally through social media and a forthcoming website. According to Sclar, more than 20 public gardens have already reached out to YOUtopia, and he projects that at least 250 will become involved once the program begins. Visit www.ecoamerica.org for more information.

STRESSED GRASSHOPPERS MAY SLOW PLANT GROWTH

Grasshoppers eat comfort food, too, report scientists at the Hebrew University of Jerusalem and Yale University, but rather than affecting their waistline, this can affect their entire ecosystem. A study published in the June 2012 issue of the journal *Science* reveals that stress in grasshoppers caused by predators such as spiders actually affects soil productivity.

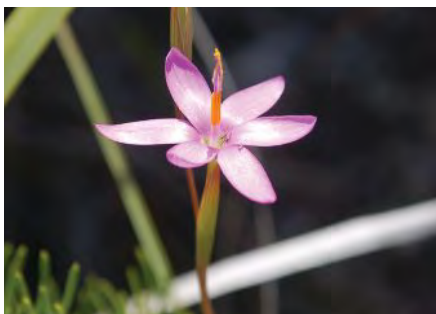
The study showed that when a grasshopper is frightened, it eats more carbohydrate-rich plants, leading to chemical changes in the grasshopper and its excrement. Its body contains less nitrogen than usual because of the changes to its

diet, so when it dies and decomposes, less nitrogen is available to microbes in the soil. This in turn slows the rate at which these microbes break down other dead plants and animals into the simpler compounds that plants use to grow.

“This has tremendous consequences for our understanding of the living world,” says Dror Halwena of the Hebrew University of Jerusalem. “We are gaining a greater understanding of the necessity of conserving all the component parts of the ecosystem.” He hopes that the findings will lead to more investigation into the effects that human-induced changes in the environment will have on ecosystems. To learn more, visit www.sciencedaily.com.

NAMING AUCTION FOR NEWLY DISCOVERED IRIS SPECIES NOW OPEN

In November 2011, scientists from the Overberg Lowlands Conservation Trust (OLCT) in South Africa discovered an astonishing four species of plants that were previously unknown to science. The naming rights to one of those, a purplish-pink iris relative belonging to the African genus *Hesperantha*, are being sold in an online auction sponsored by the



This newly discovered iris relative from South Africa needs a name.

OLCT and Fauna & Flora International (FFI). All proceeds from the auction will support the conservation of the critically endangered *renosterveld*, the lowland ecosystem where the plant was discovered.

FFI Chief Executive Mark Rose explains, “This auction presents a great opportunity to raise the profile of the plight of the *renosterveld* and raise much-needed money to support this under-funded, rather neglected field of conservation.”

The *renosterveld* is home to the highest diversity of bulbous plants in the

world, as well as hundreds of species that are found nowhere else. Today less than six percent of the original *renosterveld* coverage remains in the Overberg district on the southern tip of South Africa.

The highest bidder will receive naming rights to the iris—an honor usually reserved for the discovering scientists—as well as a bronze casting and a painting of the delicate flower. The auction closes October 31, 2012. For more information, visit www.irisauktion.com.

FIRST EVIDENCE OF CO-EVOLUTION AMONG NATIVE AND INVASIVE PLANT SPECIES

Many native plants often don't stand a chance against aggressive introduced species because of various evolutionary advantages the invaders may have. However, research at the University of Georgia (UGA) published recently in the *Proceedings of the National Academy of Sciences* raises a glimmer of hope: Some native plant species appear to be evolving to compete with invasives. In particular, native clearweed (*Pilea pumila*) appears to have developed better tolerance of invasive garlic mustard (*Aliaria petiolata*).

Introduced to the United States from Europe about 150 years ago, garlic mustard has spread rampantly through the eastern half of the country. It has a competitive advantage because it produces sinigrin, a chemical that is relatively new to the United States, so most native plants have not been able to withstand its effects. Clearweed, however, showed greater resistance to sinigrin in areas where the two plants have cohabitated for long periods of time.

These results are encouraging because they show that equilibrium between native and invasive species may be possible. “When people talk about evolution, it's usually in the past tense,” says Richard Lankau, UGA assistant professor of biology and leader of the project. “But one of the important messages from this study is that it's an ongoing process that can happen relatively fast.” This research also could lead to more effective ecosystem management. For example, rather than simply replacing invasive species with natives, which has not worked well in the past, a better method might be to replace the invasive species with natives from an

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area where the two have had time to co-exist. For more information on Lankau's study, visit www.pnas.org.

FLOWERS COAXED FROM ICE AGE PLANTS

It's not quite *Jurassic Park*, but plant parts that were preserved in the Siberian permafrost since the Pleistocene Epoch have been brought back to life. Scientists at the Institute of Cell Biophysics of the Russian Academy of Sciences reported

in February 2012 that they were able to regenerate viable plants from preserved *Silene stenophylla* fruit tissue, estimated to be around 31,800 years old. A year later, these plants flowered and produced viable seeds that grew in the lab.

Narrow-leafed campion, the modern counterpart of *Silene stenophylla*, still grows in the area where the seeds were discovered. When comparing these with the Ice Age plants, scientists found that

the latter actually produced twice the number of buds but were slower to root than the modern campion.

The Ice Age plants were discovered 125 feet below the tundra, preserved in a squirrel burrow. The discovery and subsequent regeneration of these plants raises the possibility that the permafrost, which covers 20 percent of the earth's surface, may be a source for new gene pools. More preserved squirrel burrows have been discovered in North America, and as the permafrost melts, there is no telling what may yet be unearthed.

PEOPLE and PLACES in the NEWS

National Daylily Program Celebrates 25 Years

All-American Daylilies is celebrating a quarter-century of spotlighting the best daylilies (*Hemerocallis* spp.) available. The program launched in 1987 to meet the demand for some kind of testing system for the thousands of varieties available. "We realized that something had to be done to help the consumer," explains marketing and public relations manager Jo Roberson. After years of evaluation across a network of test sites in various zones, All-American Daylilies announced its first winner, 'Black-Eyed Stella', in 1994. Since then, 18 additional varieties have been given the seal of approval, with the most recent being 'Lady Elizabeth', which produces a "hearty display of beautiful, diamond-dusted white blooms throughout the growing season." For more information on All-American Daylily winners, visit www.AllAmericanDaylilies.com.

The Avant Gardener Goes Digital

When Tom Powell, founder of *The Avant Gardener* newsletter, decided to retire this year after nearly 50 years of publishing, the future of his widely read monthly digest of horticultural news and research was in limbo. That is, until Pennsylvania-based garden writer Derek Fell became its new publisher and editor-in-chief. Fell's tenure began with the August 2012 issue, for which he converted the two-color paper format into a digital-only version, complete with color images. These changes aside, Fell plans to continue the newsletter's traditional focus on horticultural news, evaluations of new products and techniques, and garden profiles. Fell will also begin featuring interviews with garden experts, and will be starting a new campaign for online subscriptions. For more information and to view the online August 2012 issue, visit <http://avantgardener.info>.



Derek Fell

Ferry-Morse Seed Company Changes Hands and Closes Facilities

The Ferry-Morse Seed Company is slated to close its factories and lay off all of its workers by the end of this year. Ferry-Morse, which began as a mail-order seed company in 1856, had been owned by Jiffy Products since 2005, but was sold to Seed Holdings in May, after years of decline. Layoffs began immediately at various facilities around the country, including at the company's sites in Fremont, Indiana, and White City, Oregon. The distribution center in Fremont, which only opened in 2010, has already been completely closed and its 50 employees laid off. The White City location, opened in 2009 as the company's first West Coast distribution center and warehouse, will close completely by December 31. Seed Holdings will continue to sell seeds under the Ferry-Morse name, but is moving the company to Norton, Massachusetts.

NEW PARTNERSHIP FOCUSES ON NATIVE ORCHID CONSERVATION

The Smithsonian Institution is joining forces with the U.S. Botanic Garden and other public and private organizations to form the North American Orchid Conservation Center (NAOCC), dedicated to the conservation, cultivation, and restoration of orchids native to North America. There are about 250 native orchid species in North America, and they can be found in every state. Over half of those species are threatened by habitat loss, which is where NAOCC comes in.

"This is a group of plants that we can get our efforts around and do something about," says Dennis Whigham, senior research plant ecologist at the Smithsonian Environmental Research Center. According to Whigham, orchids are the "canaries in the coal mine of the plant world," because of their relationship with fungi. Fungi are indicators of ecosystem health and because orchids are so dependent on them, they are especially susceptible to changing environments.

The first phase of this new conservation partnership entails establishing and managing a seed collection of all native orchids, maintaining a collection of the fungi associated with those orchids, and developing protocols for conserving and eventually restoring orchids in each part of the country.

NAOCC will be launching an educational website later this year, and it is contracting with the New England Wild Flower Society to create an online guide to native orchid species. Visit www.srec.si.edu for more information.

Written by Editorial Intern Holly Bowers.

GREEN GARAGE® by Rita Pelczar

Contributing editor Rita Pelczar reports on products she has found useful or innovative in her garden, with an emphasis on earth-friendly products and supplies. Here she focuses on products for maintaining and enjoying the outdoor garden.

WATERING SMART

With much of the country receiving below normal rainfall this year, efficient water use is more important than ever. **Rainforest Ecological Sprinklers** from Contech Enterprises, Inc., are good options for watering new lawns, recently established beds, and fall vegetable gardens. These sprinklers are designed to distribute gentle, rainlike moisture in an even manner to prevent runoff and puddling that can occur with some other types of sprinklers. Coverage can be adjusted from 20 to 1,900 square feet to suit your garden size.



Rainforest sprinklers operate efficiently even with water pressure as low as 20 psi—

which may be important if your water, like mine, comes from a well—and they don't seem to be bothered by hard water clogging their nozzle. I like the adjustable aluminum Tripod Sprinkler that allows me to raise the height above taller plants in my vegetable garden so they don't block moisture from shorter plants. The tripods are available in three- and six-foot (fully extended) heights. The Wheelbase Sprinkler sits directly on the ground, and is good for watering lawns or beds with low-growing shrubs and groundcovers; its wheels make repositioning easy, without having to turn off the water. www.rainforestsprinklers.com.

SOLAR BIRDBATH

While you're watering the plants in your garden, be sure to provide water for birds as well. The **Solar Fountain Birdbath** from Plow & Hearth is a good choice because it attracts birds with the sound of its gentle bubbling flow. It is available in single- or double-tiered styles. The pump, which cycles the water from a reservoir through a nozzle, uses solar energy, eliminating the need for wires. Position the fountain where it gets di-



rect sunlight and keep it filled with water and you have an instant water feature. You will need to periodically clean the solar panel, which sits in the reservoir, with a non-abrasive cloth or sponge to keep it working efficiently, and the fountain doesn't operate on cloudy days or at night (although the birds will still stop by for a drink). I've enjoyed watching a wide variety of birds perch on the edge and take a sip, or splash in the fountain—sometimes two and three at a time, seeming to have great fun. My mourning doves are particularly frequent visitors. www.plowandhearth.com.

HANGING AROUND

Speaking of birds, fall is a good time to put up bird feeders in anticipation of the leaner winter months ahead. Finding



the right location for your feeders can be a challenge, but the **Post Mount Garden Pole and Quick Connect Hangers** from Lee Valley Tools, Ltd., offer a practical option. The sturdy, powder-coated steel pole has a weight capacity of 30 pounds. It can be attached to any wooden fencepost or railing using two mounting brackets that provide a 2¼-inch offset from the mounting surface. An attractive finial tip fits into the top of the pole and a

20-inch extension pole is available to add extra height. The Quick Connect Hangers come in eight- and 16-inch sizes that easily slip over the pole and can be positioned at the height you desire, and adjusting them is easy. The weight of the bird feeder prevents the hanger from slipping. Place two or three of the hangers on the post at different heights to maximize your feeding stations; there is a 10-pound maximum weight for the eight-inch hanger, seven pounds for the 16-inch hanger. In addition to bird feeders, these hangers can be used to support lanterns for outdoor lighting or plants in hanging baskets. www.leevalley.com.

A contributing editor for The American Gardener, Rita Pelczar lives in North Carolina.

Recommendations for Your Gardening Library

How Carrots Won the Trojan War: Curious (but True) Stories of Common Vegetables

Rebecca Rupp. Storey Publishing, North Adams, Massachusetts, 2011. 376 pages. Publisher's price, softcover: \$14.95.

THIS DELIGHTFUL compilation of historical facts tells the story of how 20 common garden vegetables—from asparagus to turnips—entered cultivation, the routes they took to get to the West, the things people felt and believed about them along the way, and the impact they have made upon human history. Far from a dry read, the book presents all this information with a healthy serving of wry wit. And like the title of the book, chapter headings can't help but pique a reader's interest; for example, "Asparagus Seduces the King of France," "Corn Creates Vampires," and "Peas Almost Poison General Washington."

To a garden nerd like myself, Rebecca Rupp's book provides numerous delectable vegetable facts that you can casually drop into conversation with unsuspecting acquaintances. You might have known, for example, that some people are terribly allergic to fava beans (the Greek philosopher and mathematician Pythagoras, who volubly shunned them, may have been one). But who knew that, according to ancient tradition, falling asleep in a flowering bean field can render you "irrevocably insane?" Or that, according to Norse myth, peas were sent to earth by the thunder god Thor as a punishment for mankind? Or that Catherine de' Medici, who came from Florence, Italy, was so fond of spinach that "to this day the phrase 'Florentine' attached to anything edible means 'with spinach'?"

According to Rupp, there are approximately 43 million home vegetable gardens in North America, altogether generating annually around 21 billion dollars worth of food. *How Carrots Won the Trojan War* is not just a clever volume of well-researched horti-nerdery, it drives home the importance of vegetable gardening to people around the world. Even if you don't grow your own, at the very least you'll never look at the vegetables on your plate or in the grocery store the same again.

As for how carrots won the Trojan War, you'll just have to read the book to find out, won't you?

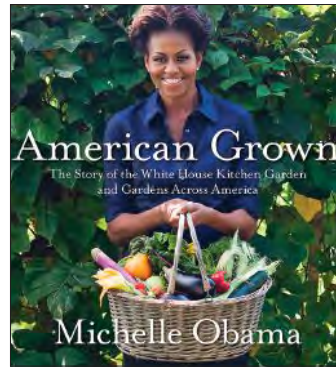
—Rand B. Lee

Garden writer Rand B. Lee often indulges in his favorite vegetable, 'Cosmonaut Volkov' tomatoes, in Aurora, Colorado.

American Grown

Michelle Obama. Crown Publishers, New York, New York, 2012. 272 pages. Publisher's price, hardcover: \$30.

FOR THE PAST 40 years, I've been educating the American public about the joy and benefits of growing edibles; at times it has felt like a cry in the wilderness, so imagine my delight when Michelle Obama began championing food gardening. As First Lady, she has already had an enormous influence on how Americans garden simply by getting her own hands dirty. Her passion for improving our children's diet and health drove her to create both the kitchen garden



at the White House and this book.

American Grown is the story of that high-profile garden and what she as a novice gardener and the White House garden staff learned about growing edibles along the way. Woven into the chapters are stories about community and school gardens and local food production across the country. The book even includes no-fuss healthy recipes, some of which feature stealthily added nutrition (I can't wait to try the Cauliflower Mac and Cheese with my grandson).

Though not a traditional "how-to" gardening book, it still provides all the critical information you need to grow your own vegetables, small fruits, and herbs, including tips for creating good soil, composting, harvesting, winter gardening, and garden plans for all four seasons. The First Lady is upfront about what went wrong, even with help from her professional staff. I think you'll find it reassuring information if you're just getting started.

From the school children who helped the First Lady break ground for the White House kitchen garden to the wonder-filled young faces pictured throughout the book, involving children in gardening is a key theme of *American Grown*. My own experience has been that children easily fall in love with gardens and quickly become knowledgeable. My 12-year-old grandson enjoys showing adults how to harvest carrots while my seven-year-old neighbor can proudly demonstrate how to tell when a blackberry is ripe. If, as many of us believe, we need to help the next generation become more connected to the garden, their food, and the planet, this book is a big step in the right direction.

The color photographs highlight the delights of the garden and the recipes and stories are inspiring. It's a book you can

curl up with in a chair with a cup of your own homegrown mint tea and wile away an afternoon. It's also a book that will get you up and out into the garden—hopefully with the kids or grandkids—once you've finished sipping.

—*Rosalind Creasy*

Rosalind Creasy is a garden and food writer, photographer, and landscape designer with a passion for beautiful vegetables and ecologically sensitive gardening.

Cacti & Succulents for Cold Climates

Leo J. Chance. Timber Press, Portland, Oregon, 2012. 328 pages. Publisher's price, hardcover: \$39.95.

PLANTSMEN LIKE Leo J. Chance have been integral to bringing a waterwise style of gardening from the fringes of horticulture to the mainstream. However, as a retailer of ornamental plants for Western gardens, the greatest challenge I face is breaking old habits or perceptions people have about gardening in this region. Our nursery tries to encourage and model a sustainable garden aesthetic that is both beautiful and appropriate for arid regions.

In *Cacti & Succulents for Cold Climates: 274 Outstanding Species*



for *Challenging Conditions*, Chance goes a step further by pointing out that “you don’t have to live in the American West to be able to grow hardy cacti and succulents. Gardeners who live in parts of the world that experience wet winters with unreliable snowfall can grow many of these plants.” This comprehensive book takes the mystery out of cultivating these magnificent plants native to the dry regions of North and South America.

Leading off the book, Chance shares his personal experience and offers practical advice in chapters such as “How and Where to Plant,” “The Right Way to Water,” and “Growing Plants from Cuttings and Seeds.” Then he discusses a broad array of dryland plants—organized into chapters for cacti, succulents, and companion plants—that he has grown and experimented with for decades in his Colorado gardens. Almost every plant entry includes an informative color photograph, most taken by Chance, that illustrates its characteristics. (In the interest of full disclosure, I was among a handful of photographers who contributed images to the book.)

This book is an invaluable tool for reinforcing the message that it is indeed possible to create eye-catching, low-water gardens. So, if heat waves and droughts have you rethinking your own garden, I recommend that you get your hands on this essential guide to the techniques and plants that can take these tough conditions in stride without sacrificing appeal.

—*Kelly Grummons*

Kelly Grummons is a co-owner of Timberline Gardens, Inc. in Arvada, Colorado, and of www.coldhardycactus.com.

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Photo © Laura M. Osteen

JC Raulston Arboretum

by Jo Ellen Meyers Sharp

AN UNLIKELY gem set in a highly developed area of Raleigh, North Carolina, the 10-acre JC Raulston Arboretum celebrates the region's rich horticultural heritage.

Named for its late founder, a noted horticulture professor at North Carolina State University, the arboretum is a labor of love on the part of faculty, staff, students, and volunteers. Raulston, who died in a traffic accident in 1996, started the arboretum as a way to research, develop, and expand selections of garden-worthy plants for the nursery and landscape trade.

Known as a showplace for native plants of the Piedmont and other regions of the Southeast, the arboretum has several significant collections, including maple (*Acer* spp.), buckeye (*Aesculus* spp.), magnolia, and spicebush (*Lindera* spp.). But there's plenty more to see than trees and shrubs.

The **Geophyte Border** highlights 200 specialized plants that store nutrients in an underground organ.

The **Lath House**, which won an architecture award from the North Carolina Chapter of the American Institute of Architects in 2011, is designed to pro-



The Perennial Border at the JC Raulston Arboretum puts on a lush, colorful show in summer.

vide the appropriate microclimate for an eclectic collection of over 700 types of marginally hardy plants, including arisaema, ferns, hostas, and hydrangeas.

For "try this at home" ideas, visit the **Model Gardens** with their tempting examples of water gardens and plantings specially designed for smaller urban and suburban yards.

The **Klein-Pringle White Garden**, modeled on the famous one at England's Sissinghurst Castle, features white, silver, and gray plants framed by evergreens and stone walls.

The **Paradise Garden**, done in a Persian style, is a feast for the senses. Plants with fragrance, fruit, texture, and color welcome visitors, while the sound of a fountain entertains yet another sense.

A wooden zigzag path, designed to confuse evil spirits, leads visitors to the **Japanese Garden**, where the traditional placement of plants, rocks, and pebbles evokes mountains and streams.

One of the most inspiring gardens is the **Mixed Border**, where a pathway guides visitors past vignettes of plant combinations that fuel the imagination with garden possibilities. Gertrude Jekyll's color theory informs the 300-foot-long, 18-foot-wide **Perennial Border**, where cool colors flow into warm colors and back again.

Even when the snow flies, the JC Raulston Arboretum is worth a trip. Flowering apricot (*Prunus mume*), winter iris (*Iris unguicularis*), daphne, and camellia enliven the **Winter Garden** with flowers and fragrance amid hollies and other evergreens.

Part laboratory, part display garden, and part memorial, the beautiful JC Raulston Arboretum is truly inspirational and a must-visit destination for anyone who loves plants.

Garden writer Jo Ellen Meyers Sharp lives in Indianapolis, Indiana.

Additional Information

JC Raulston Arboretum, 4415 Beryl Road, Raleigh, NC 27606. (919) 515-3132. www.ncsu.edu/jcraulstonarboretum.

■ Open daily, 8 a.m. to 8 p.m. April through October, 8 a.m. to 5 p.m. November through March.

■ Admission and parking are free.

Other sites worth visiting near Raleigh:

Montrose, Hillsborough, NC.

www.gardenconservancy.org.

Sarah P. Duke Gardens, Durham, NC.

www.hr.duke.edu/dukegardens.



REGIONAL HAPPENINGS

Horticultural Events from Around the Country

NORTHEAST

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

SEPT. 26. **Grasses.** Workshop. UVM Horticultural Research Center. Burlington, Vermont. (802) 864-3073. www.friendsofthehortfarm.org.

RAP SEPT. 27. **Autumn Can Be Another "Wow" Season in Your Garden.** Workshop. Massachusetts Historical Society. Wellesley, Massachusetts. (617) 933-4900. www.masshort.org.

RAP OCT. 13. **Landscaping with Indigenous Plants.** Workshop. Heritage Museums & Gardens. Sandwich, Massachusetts. (508) 888-3300. www.heritagemuseumsandgardens.org.

RAP OCT. 13 & 14. **Orchid Show.** The Niagara Frontier Orchid Society. Buffalo and Erie County Botanical Gardens. Buffalo, New York. (716) 827-1584. www.buffalogardens.com.

RAP OCT. 20. **Practical Pruning Workshop.** Brooklyn Botanic Garden. Brooklyn, New York. (718) 623-7200. www.bbg.org.

OCT. 25. **2012 Invasive Plant Symposium.** Connecticut Invasive Plant Working Group. Storrs, Connecticut. (860) 928-4074. www.hort.uconn.edu.

OCT. 26. **Picturing the New American Garden.** Lecture. The Garden Conservancy. New York, New York. (845) 265-2029. www.gardenconservancy.org.

Looking ahead

RAP NOV. 3–18. **Fall Chrysanthemum Show.** The Botanic Garden of Smith College. Northampton, Massachusetts. (413) 585-2740. www.smith.edu/garden.

NOV. 16 & 17. **"The Garden Home in All Seasons."** Symposium. Connecticut Horticultural Society. Hartford, Connecticut. (860) 280-3130. www.cthort.org.

MID-ATLANTIC

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

SEPT. 30. **Mid-Atlantic Regional Gesneriad Show, Sale, and Symposium.** The Gesneriad Society. University of Delaware Botanic Gardens. Newark, Delaware. (302) 653-6449. www.gesneriadsociety.org.

Botanical gardens and arboreta that participate in AHS's Reciprocal Admissions Program are identified with the RAP symbol. AHS members showing a valid membership card are eligible for free admission to the garden or other benefits. Special events may not be included; contact the host site for details or visit www.ahs.org/rap.

RAP SEPT. 30. **The Tent Symposium: Sources of Inspiration.** Plant sale and presentations. Adkins Arboretum. Rigely, Maryland. (410) 634-2847 ext. 0. www.adkinsarboretum.org.

OCT. 6. **Explore Hardy Native Orchids Field Trip.** Tour. Mt. Cuba Center. Hockessin, Delaware. (302) 239-4244. www.mtcubacenter.org.

OCT. 7. **Garden Day.** Tour and tips. The Scott Arboretum of Swarthmore College. Swarthmore, Pennsylvania. (610) 328-8025. www.scottarboretum.org.

OCT. 8. **Special Tour and Herb Gardening Workshop.** Tudor Place Historic House and Garden. Washington, D.C. (202) 965-0400. www.tudorplace.org.

RAP OCT. 13 & 14. **ArborFest.** Plant sale and activities. State Arboretum of Virginia. Boyce, Virginia. (540) 837-1758. www.blandy.virginia.edu.

OCT. 19. **Perennial Plant Conference.** Pennsylvania Horticultural Society and Longwood Gardens. Swarthmore College. Swarthmore, Pennsylvania. (610) 388-5238. www.perennialplantconference.org.

RAP OCT. 20. **Garden Design Symposium: Nature's Inspiration.** Green Spring Gardens. Alexandria, Virginia. (703) 642-5173. www.greenspring.org.

Looking ahead

RAP NOV. 3. **Inspiration for the Winter Garden.** Talk and tour. U.S. National Arboretum. Washington, D.C. (202) 245-4523. www.usna.usda.gov.

NOV. 15. **Trees Matter Symposium.** Brookside Gardens. Silver Spring, Maryland. (301) 962-1400. www.montgomeryparks.org.

SOUTHEAST

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

SEPT. 27–29. **The Landscape Show.** Trade show. Florida Nursery, Growers, and Landscape Association. Orlando, Florida. (800) 375-3642. www.fngla.org.

RAP OCT. 6. **Native Plant Sale.** The State Botanical Garden of Georgia. Athens, Georgia. (706) 542-1244. www.botgarden.uga.edu.

OCT. 9. **From the Garden to the Kitchen: Incorporating Edible Plants in the Landscape.** Presentation. Brookgreen Gardens. Murrells Inlet, South Carolina. (843) 235-6000. www.brookgreen.org.

RAP OCT. 16. **Plants from Around the World in our Everyday Lives.** Symposium. The State Botanical Garden of Georgia. Athens, Georgia. (706) 542-6156. www.botgarden.uga.edu.

OCT. 19–21. **American Chestnut Summit.** The American Chestnut Foundation. Crowne Plaza Resort. Asheville, North Carolina. (828) 281-0047. www.acf.org.

RAP OCT. 20 & 21. **Chrysanthemum Show.** North Carolina Chrysanthemum Society. North Carolina Arboretum. Asheville, North Carolina. (828) 665-2492. www.ncarboretum.org.

Looking ahead

RAP NOV. 3. **Mature Tree Care.** Class. Birmingham Botanical Gardens. Birmingham, Alabama. (205) 414-3950. www.bbgardens.org.

NORTH CENTRAL

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

RAP THROUGH OCT. 28. **Integrated Pest Management.** Exhibit. Olbrich Botanical Gardens. Madison, Wisconsin. (608) 246-4550. www.olbrich.org.

RAP THROUGH NOV. 11. **Expressions of Natural Beauty.** Art exhibit. Chicago Botanic Garden. Glencoe, Illinois. (847) 835-5440. www.chicagobotanic.org.

RAP SEPT. 29 & 30. **The Art of Bonsai.** Workshop. Morton Arboretum. Lisle, Illinois. (630) 719-2468. www.mortonarb.org.

Into the Clouds at Dumbarton Oaks

THE FORECAST for the gardens at Dumbarton Oaks in Washington, D.C., this fall is cloudy with a good chance of wow. “Cloud Terrace,” an art installation by landscape artists Andy Cao and Xavier Perrot, features a hand-sculpted wire mesh



The “Cloud Terrace” installation at Dumbarton Oaks

cloud suspended over the Arbor Terrace, raining droplets of 10,000 Swarovski crystals. An oval pool surrounded by bluestone pebbles mirrors the crystals overhead. The result is a space that is continuously changing as light hits the crystals at different times of day.

Cao and Perrot specialize in creating moving, dreamlike art experiences. Their work has been featured around the world from Parisian courtyards to Guangming Central Park in Shenzhen, China. “Cloud Terrace” is the latest in a series of art installations at Dumbarton, following a 2009 sculpture installation by Charles Simonds that played with the idea of the natural and the constructed, and Patrick Dougherty’s immense twig and branch sculptures in 2010.

“Cloud Terrace” will be on view through December 1. For more information, visit www.doaks.org.

Celebrating America’s First Natural Historian

IN 1712, Mark Catesby arrived in Virginia from England, embarking on the first of two expeditions dedicated to cataloging and collecting flora and fauna of the New



Catesby’s illustration of a blue grosbeak and magnolia

World. Because of this work, Catesby is credited with being America’s first natural historian and illustrator. To celebrate his legacy, the Catesby Memorial Trust has organized the Catesby Tercentennial Program, taking place from November 4 through 9.

Spanning Richmond, Virginia; Washington, D.C.; and Kiawah Island and Charleston in South Carolina, this multifaceted program will take participants to locations rarely visited by tourists, such as the Smithsonian Institution Libraries in Washington, D.C. Here they will be able to see a first-edition copy of Catesby’s monumental book *The Natural History of Carolina, Florida and the Bahama Islands*, the first color-illustrated record of American flora and fauna.

The program also features an eclectic line-up of speakers on such topics as Catesby’s historical context, his artwork, and his impact on natural science. Because Catesby touched on so many subjects in his work, the organizers wanted to “inspire a dynamic conversation about artistic appreciation, scientific passion, and historical context,” says the trust’s Colleen Troy.

For more information, contact the Catesby Memorial Trust at (888) 925-9922 or visit <http://catesbytrust.org>.
—Holly Bowers, Editorial Intern

OCT. 6. **Divide and Conquer: Making More Plants.** Workshop. Taltree Arboretum and Gardens. Valparaiso, Indiana. (219) 462-0025. www.taltree.org.

OCT. 20. **Ohio Valley Garden Conference.** Southwestern Indiana Master Gardener Association. Evansville, Indiana. (812) 490-2199. www.swimga.org.

RAP OCT. 20. **The Forever Garden: Seed Processing.** Workshop. Minnesota Landscape Arboretum. Chaska, Minnesota. (952) 443-1400. www.arboretum.umn.edu.

Looking ahead

NOV. 3. **Annual Conference.** Indiana Native Plant and Wildflower Society. Indianapolis, Indiana. E-mail: conference@inpaws.org. www.inpaws.org.

NOV. 17. **Holiday Greenery Workshop.** Northern Plains Botanic Garden. Fargo, North Dakota. (701) 281-2568. www.npbotanicgarden.com.

SOUTH CENTRAL

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

RAP SEPT. 28 & 29. **Fall Native Plant Sale.** The Crosby Arboretum. Picayune, Mississippi. (601) 799-2311. www.crosbyarboretum.msstate.edu.

OCT. 4–7. **The Texas Hill Country—A Changing Landscape.** Symposium. Native Plant Society of Texas. Kerrville, Texas. (830) 997-9272. www.npsot.org.

RAP OCT. 6. **Growing Herbs in South Texas.** Workshop. South Texas Botanical Gardens & Nature Center. Corpus Christi, Texas. (361) 852-2100. www.stxbot.org.

OCT. 6 & 7. **Plant Sale.** Hilltop Arboretum. Louisiana State University. Baton Rouge, Louisiana. (225) 767-6916. www.lsu.edu/hilltop.

RAP OCT. 12–14. **Fall Plant Sale and Gardening Festival.** Lady Bird Johnson Wildflower Center. Austin, Texas. (512) 232-0100. www.wildflower.org.

RAP OCT. 26 & 27. **Orchid Show & Sale.** Shreveport Orchid Society. Barnwell Memorial Garden & Art Center. Shreveport, Louisiana. (318) 673-7703. www.barnwellcenter.com.

SOUTHWEST

AZ, NM, CO, UT

SEPT. 17–OCT. 17. **Fall Fiesta of Flowers.** Floral display. ABQ BioPark Botanic Garden. Albuquerque, New Mexico. (505) 768-2000. www.cabq.gov/biopark/garden.

RAP SEPT. 27. **Bark: An Intimate Look at**

the World's Trees. Lecture and tour. Denver Botanic Gardens. Denver, Colorado. (720) 865-3500. www.botanicgardens.org.

SEPT. 29. **Rocky Mountain African Violet Council Annual Sale.** Plant sale. Tagawa Gardens. Centennial, Colorado. (303) 690-4722. www.tagawagardens.com.

SEPT. 29 & 30. **Dahlia Show.** Utah Dahlia Society. Salt Lake City, Utah. (801) 486-3074. www.dahliaShows.com.

RAP OCT. 2. **Put Your Roses to Bed.** Workshop. The Hudson Gardens & Event Center. Littleton, Colorado. (303) 797-8565 ext. 306. www.hudsongardens.org.

OCT. 6. **Connecting Plants and People.** Garden tour. Tohono Chul Park. Tucson, Arizona. (520) 742-6455. www.tohonochulpark.org.

OCT. 12–16. **Garden Writers Association Annual Symposium.** Westin La Paloma. Tucson, Arizona. (806) 832-1870. www.gardenwriters.org.

RAP OCT. 20. **Pumpkin Walk.** Guided tour and activities. The Arboretum at Flagstaff. Flagstaff, Arizona. (928) 774-1442 ext. 110. www.thearb.org.

OCT. 20 & 21. **Annual Orchid Show & Sale.** Orchid Society of Arizona. Phoenix, Arizona. (602) 843-0223. www.orchidsocietyaz.org.

OCT. 30. **Drugstore of the Desert.** Presentation. Tucson Botanical Gardens. Tucson, Arizona. (520) 326-9686. www.tucsonbotanical.org.

NORTHWEST

AK, ID, MT, OR, WA, WY

RAP OCT. 6 & 7. **Harvest Festival.** Idaho Botanical Garden. Boise, Idaho. (208) 343-8649. www.idahobotanicalgarden.org.

RAP OCT. 10. **Sustainable Gardens.** Workshop. Leach Botanical Garden. Portland, Oregon. (503) 823-1671. www.leachgarden.org.

RAP OCT. 19–21. **Fall Tree and Shrub Sale.** Kruckeberg Botanic Garden. Shoreline, Washington. (206) 546-1281. www.kruckeberg.org.

OCT. 25. **Gardens and the Community.** Lecture. Portland Japanese Garden. Portland, Oregon. (503) 223-1321. www.japanesegarden.com.

RAP NOV. 3. **Rethinking Idaho Landscapes Symposium.** Idaho Botanical Garden and University of Idaho. Boise, Idaho. (208) 343-8649. www.idahobotanicalgarden.org.

The Desert Botanical Garden Turns Heads

AS THE SAYING GOES, two heads are better than one, but for the Desert Botanical Garden (DBG) in Phoenix, Arizona, four are even better as it hosts the American premiere of Philip Haas's exhibit "The Four Seasons." Each season is represented by a 15-foot-tall sculpture of a human head composed entirely of fiberglass vegetation, inspired by the work of Giuseppe Arcimboldo, a 16th-century Italian Renaissance painter famous for arranging fruits and vegetables in such a way that the final composition resembled a portrait head.



Philip Haas's large fiberglass sculptures represent the four seasons.

to celebrate the premiere, the DBG will reopen its newly renovated Center for Desert Living Trail in November, featuring an edible garden. A new restaurant at the garden also emphasizes the garden-to-table (or artwork) theme.

"The Four Seasons" will go on display at the DBG's Stardust Foundation Plaza beginning on October 26. For more information, visit www.dbg.org.

—Holly Bowers, Editorial Intern

WEST COAST

CA, NV, HI

RAP SEPT. 29. **Fall Organic Vegetable Gardening.** Workshop. Descanso Gardens. La Cañada Flintridge, California. (818) 949-4200. www.descansogardens.org.

OCT. 4 & 5. **The Growing Classroom: An Introduction to Garden-Based Learning.** Workshop. Life Lab. Santa Cruz, California. (831) 459-3833. www.lifelab.org.

RAP OCT. 5 & 6. **Fall Plant Sale.** South Coast Botanic Garden. Palos Verdes Peninsula, California. (310) 544-1948. www.southcoastbotanicgarden.org.

RAP OCT. 13. **Fall Plant Sale.** University of California Santa Cruz Arboretum and California Native Plant Society, Santa Cruz Chapter. Santa Cruz, California. (831) 427-2998. <http://arboretum.ucsc.edu>.

OCT. 13. **Historic Rose Garden Symposium.** Historic Rose Garden at Sacramento Historic City Cemetery. Sacramento, California. (916) 448-0811. www.cemeteryrose.org.

OCT. 20. **Digging Deeper: Revitalizing the Urban Garden.** Seminar. Alameda County Master Gardeners. The Garden Center at Lake Merritt. Oakland, California. (510) 639-1275. <http://acmg.ucdavis.edu>.

RAP NOV. 3. **Native Plant Sale.** Fullerton Arboretum. Fullerton, California. (657) 278-3407. www.fullertonarboretum.org.

NOV. 3 & 4. **Grow Like a Pro Indoor Gardening Expo.** Long Beach Convention Center. Long Beach, California. (250) 729-2677. www.indoorgardenexpo.com.

CANADA

SEPT. 29. **Compost & Spring Bulb Sale.** VanDusen Botanical Garden. Vancouver, British Columbia. (604) 257-8335. www.vandusengarden.org.

RAP SEPT. 30. **Troubleshooting Townhall for the 2012 Garden.** Discussion. The Horticulture Centre of the Pacific. Victoria, British Columbia. (250) 479-6162. www.hcp.ca.

OCT. 10–13. **Communities in Bloom National Awards and Symposium on Parks and Grounds.** Edmonton, Alberta. (514) 694-8944. www.communitiesinbloom.ca.

OCT. 19 & 20. **Horticulture lectures and workshops.** David Douglas Botanical Garden Society. Prince George, British Columbia. (250) 564-6578. www.dbotgarden.bc.ca.

RAP OCT. 26 & 27. **Orchid Society Annual Show.** American Orchid Society. Royal Botanical Gardens. Hamilton, Ontario. (905) 527-1158. www.rbg.ca.



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. USDA Zones listed are still aligned with the 1990 version of the USDA's map.

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 zones 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.

- Acer circinatum*** AY-ser sir-sih-NAY-tum (USDA Hardiness Zones 6–9, AHS Heat Zones 9–4)
- A. cissifolium*** A. sis-ih-FO-lee-um (4–8, 8–1)
- A. griseum*** A. GRIS-ee-um (4–8, 8–1)
- A. japonicum*** A. jah-PON-ih-kum (5–7, 7–1)
- A. palmatum*** A. pal-MAY-tum (6–8, 8–2)
- A. palmatum* var. *dissectum*** A. pal-MAY-tum var. dis-SEK-tum (5–8, 8–2)
- A. saccharum*** A. sak-AH-rum (4–8, 8–1)
- A. tataricum* ssp. *ginnala*** A. tuh-TAR-ih-kum ssp. jih-NAY-luh (3–7, 7–1)
- A. triflorum*** A. try-FLOR-um (5–7, 7–5)
- Allium thunbergii*** AL-ee-um thun-BER-jee-eye (5–9, 9–5)
- Anemone hupehensis*** uh-NEM-o-nee hoo-pee-EN-sis (4–8, 8–1)
- A. ×hybrida*** A. HY-brih-duh (4–8, 8–1)
- Baptisia australis*** bap-TIZ-yuh aw-STRAY-liss (3–9, 9–1)
- Brassica juncea*** BRASS-ih-kuh JOON-see-uh (0–0, 8–1)
- Calendula maritima*** kuh-len-DJEW-lah muh-WRIT-ih-muh (0–0, 8–1)
- Carex muskingumensis*** KAIR-eks mus-king-yew-MEN-sis (3–8, 8–1)
- Chelone glabra*** chee-LO-nee GLAB-ruh (3–8, 9–1)
- C. lyonii*** C. ly-O-nee-eye (3–9, 9–3)
- C. obliqua*** C. o-BLEEK-wuh (3–9, 9–3)
- Chrysogonum virginianum*** krih-SOG-on-um vur-jin-ee-AN-um (5–8, 8–5)
- Consolida ajacis*** kon-SOL-ih-duh uh-JAY-sis (0–0, 9–1)
- Cornus florida*** KOR-nus FLOR-ih-duh (5–8, 8–4)
- C. kousa*** C. KOO-suh (5–8, 8–5)
- C. nuttallii*** C. nuh-TAL-lee-eye (6–7, 7–1)
- C. ×rutgersensis*** C. rut-gur-SEN-sis (5–8, 8–3)
- Dianthus barbatus*** dy-AN-thus bar-BAY-tus (3–8, 9–1)
- D. chinensis*** D. chy-NEN-sis (9–11, 12–1)
- Eupatorium coelestinum*** yew-puh-TOR-ee-um suh-LESS-tin-um (3–8, 8–1)
- E. rugosum*** E. roo-GO-sum (4–8, 8–4)
- Eurybia divaricata*** yew-REE-bee-uh dih-vair-ih-KAY-tuh (3–9, 9–1)
- E. macrophylla*** E. mak-ro-FIL-luh (3–9, 9–1)
- Gentiana andrewsii*** jen-she-AN-uh an-DREW-zee-eye (3–7, 8–1)
- Helianthus maximiliani*** hee-lee-AN-thus maks-ih-mil-ee-AN-eye (4–9, 9–4)
- H. occidentalis*** H. ahk-sih-den-TAL-iss (4–9, 9–4)
- H. salicifolius*** H. sal-iss-ih-FO-lee-us (5–9, 9–4)
- Helleborus ×hybridus*** hel-eh-BOR-us HY-bri-dus (6–9, 9–6)
- Ilex aquifolium*** EYE-leks ah-kwi-FO-lee-um (7–9, 9–7)
- I. crenata*** I. kreh-NAY-tuh (5–7, 7–5)
- I. opaca*** I. o-PAH-kuh (5–9, 9–5)
- I. serrata*** I. sair-RAY-tuh (5–7, 7–5)
- I. verticillata*** I. vur-tih-sih-LAY-tuh (5–8, 8–5)
- Ipomoea batatas*** ih-po-ME-uh buh-TAH-tus (11–11, 12–1)
- Iris unguicularis*** EYE-ris un-gwik-yew-LAIR-iss (7–9, 9–7)
- Panicum virgatum*** PAN-ih-kum veer-GAY-tum (5–9, 9–1)
- Physostegia virginiana*** fy-so-STEE-juh vir-jin-ee-AN-uh (4–9, 8–3)
- Polystichum polyblepharum*** pah-LIS-tih-kum pah-lih-BLEF-ah-rum (6–8, 8–5)
- Prunus mume*** PREW-nus MOO-may (6–8, 8–6)
- Ribes uva-crispa*** RY-beez yoo-vuh-KRIS-puh (5–9, 9–2)
- Ricinus communis*** rih-SY-nuss com-YEW-niss (0–0, 12–1)
- Sorbus alnifolia*** SOR-bus al-nih-FO-lee-uh (4–7, 7–4)
- S. americana*** S. uh-mair-ih-KAN-uh (3–5, 6–1)
- Sorghastrum nutans*** sor-GASS-trum NOO-tanz (4–9, 9–1)
- Symphytotrichum ericoides*** sim-fy-o-TRY-kum eh-rih-KOY-deez (5–8, 8–5)
- S. laeve*** S. LEEV (4–9, 9–2)
- S. novae-angliae*** S. NO-vee-ANG-lee-ay (3–9, 9–1)
- S. oblongifolium*** S. ob-lon-jih-FO-lee-um (4–9, 9–4)
- Tricyrtis formosana*** try-SUR-tiss for-MO-san-uh (6–9, 9–4)
- T. hiirta*** T. HUR-tuh (4–9, 9–1)
- T. latifolia*** T. lat-ih-FO-lee-uh (3–8, 8–1)
- Vernonia baldwinii*** vur-NO-nee-uh bald-WIN-ee-eye (5–9, 9–5)
- V. fasciculata*** V. fuh-sik-yoo-LAY-tuh (4–9, 9–4)
- V. gigantea*** V. jy-GAN-tee-uh (5–9, 9–5)
- V. lettermannii*** V. let-ur-MAN-ee-eye (4–9, 9–3)
- V. missurica*** V. mih-ZUR-ih-kuh (3–8, 8–1)
- V. noveboracensis*** V. no-vay-bor-uh-CHEN-sis (4–8, 8–3)

GARDEN MARKET

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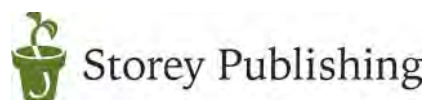
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Korean Mountain Ash Delivers Four-Season Interest

by Nancy McDonald

IN 1998, a dear old apple tree died in my yard in Grand Marais, Michigan. My husband, Ira, and I cast about for an attractive replacement: a shade tree no more than 40 to 50 feet tall and 20 to 30 feet across at maturity, rejoicing in full sun, well-drained soil, and moderate water.

I considered American mountain ash (*Sorbus americana*), which is native and abundant in Michigan, but I eventually chose Korean mountain ash (*S. alnifolia*, USDA Hardiness Zones 4–7, AHS Heat Zones 7–4), native to cool areas of central China, Korea, and Japan; the tree has been a delight ever since.

The common name for the genus *Sorbus* is mountain ash, which stems from a superficial resemblance of the pinnately compound leaves of most species to those of true ash (*Fraxinus* spp.). But unlike most of its brethren, the Korean species bears simple leaves that resemble elm leaves in size and outline.

FOUR-SEASON CHARM

Plant this mid-size shade tree where you can see it from the house, because it's attractive in all seasons. The simple, oval, alternate leaves appeal from early spring when they unfold light green, through dark green in summer, to rich, deep gold in autumn.

Two- to three-inch clusters of fuzzy white flowers bloom in late spring, which is late May here in northern Michigan, followed by loose clusters of berries that are bright orange-red by late summer and persist through fall. Flowering and fruiting in mountain ashes may be heavier every other year, but even in off years, there are some clusters. The berry clusters on Korean mountain ash are smaller and looser, and to my eye more graceful, than those of their American cousins.

Winter unveils a subtler beauty. The smooth, silvery gray-brown bark and the



Korean mountain ash, above, is especially appealing in fall with its tandem display of colorful foliage and fruits, left.

tree's pleasing branching form is most obvious during this season. Depending on the local bird population, the scarlet berries may persist well into winter.

Our relatively young tree is still in its columnar phase, with branches starting nearly at the ground. As the tree ages, it will spread out to a pyramidal shape and maintain low branches unless we prune them up. Eventually the canopy will form a dense oval. The growth rate is medium to fast, depending on climate, resulting in a fine specimen shade tree.

KEEPING IT HAPPY

Korean mountain ash thrives in cool regions; in warmer climates, it's more

prone to diseases and insect pests. In the right climate, it adapts to a broad range of soil types and pH as long as it is in full sun and has good drainage. If you live in a city, I wouldn't recommend it, however, because it doesn't tolerate pollution well.

If deer are a problem, protect the trunk of a young tree for the first few winters with a well-staked enclosure of wire mesh. The only pruning needed is removal of dead wood. If you must remove live wood, do so when the tree is dormant in late winter to help prevent fireblight, a fungal disease that it is susceptible to if it is stressed. Luckily, Korean mountain ash is the most disease-resistant of its genus. As long as it's planted in the right spot, it will thrive. 🍂

Source

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

Formerly editor of *American Cottage Gardener*, Nancy McDonald is an emergency medical technician in Grand Marais, Michigan.



AMERICAN HORTICULTURAL SOCIETY

2013 SEED EXCHANGE

Try something new! Share your favorite varieties!

BE A PART of the members-only AHS Seed Exchange Program by sharing seeds from your garden with other members of the Society. Those who donate seeds get first pick from the list of seeds, which will be available on the AHS's website (www.ahs.org) in mid-January. If you prefer, you may request that the list be mailed to you. For more details, see the reverse of this page.

You must be an AHS member to participate. If you aren't already a member, or need to renew your membership, visit www.ahs.org/join or call the membership department at (800) 777-7931 ext. 119.

TIPS FOR COLLECTING SEEDS TO SHARE

Depending on the seed type, there are several methods you can use to separate the seeds from the plant. Most garden seeds fall into one of the three following categories:

- Many seeds, such as those that form in pods, remain on the plant for a long time after maturity. Harvest them after they have dried on the plant, or cut off stalks or stems and bring them in to dry before removing the seeds.
- Seeds of many ornamental annuals, herbaceous perennials, and herbs scatter easily when ripe. They should be watched closely for maturity and picked on a dry day. Separate the seeds from the plant by running them through a screen or shaking them in a paper bag. Another method is to tie a ventilated paper bag around the flower heads to catch seeds as they scatter.
- Seeds encased in a fleshy fruit, like tomatoes, need to be separated from the pulp. In the case of fruit containing a single seed, the pulp can often simply be pulled off. In the case of a fruit with many seeds, you may need to scrape out the fruit's seedy section, add some water, and let the mix sit for a day or two. Then put the mixture in a strainer and run water through it until the seeds are clean. Spread the seeds out on a glass or glazed ceramic plate and let them dry. Large seeds need about a week to dry; smaller seeds are usually dry after four days. Store the seeds in a well-ventilated, cool, dry place.

AMERICAN HORTICULTURAL SOCIETY

2013 SEED EXCHANGE

Look for the AHS 2013 Seed Exchange List on www.ahs.org in mid-January!

The list of available seeds will be posted on the AHS website (www.ahs.org) in mid-January. To be notified when the list is available and stay up to date on other AHS activities, we suggest visiting the AHS website to subscribe to the free AHS e-newsletter.

If you would like to receive a paper copy of the seed exchange catalog, please send a self-addressed, stamped, business-size envelope to 2013 AHS Seed Exchange Catalog Request, 7931 East Boulevard Drive, Alexandria, VA 22308.

Please note: Due to Federal regulations, the AHS can only accept seed donations from, and send seeds to, members living in the United States.

If you have seeds you would like to donate to the 2013 Seed Exchange Program, here's what you need to do:

- Seeds must be cleaned and dried as thoroughly as possible before packaging. (See "Tips for Collecting Seeds" on the other side of this page.)
- Collect enough seeds of each variety to fill 75 orders. For very small seeds, one order would be enough to fill the tip of a teaspoon; for large seeds such as beans, it would be five to 10 seeds.
- Complete a Donor Information Sheet (below) for each type of seed donated. Photocopy as many sheets as needed.
- To help us with cross-referencing, also label each package of seeds with the common and botanical names of the plant.
- Mail seeds in a box or padded envelope marked HAND CANCEL to: 2013 AHS Seed Exchange Program, 7931 East Boulevard Drive, Alexandria, VA 22308.
- Seed donations must be postmarked by November 1, 2012. **Note:** AHS members who have donated seeds according to these guidelines will receive first preference in getting their orders filled.

Due to insufficient supply or other reasons, not all donated seeds may appear in the catalog; these seeds are donated to nonprofit organizations and schools, upon request. If you would like to obtain seeds for your local school or organization, please contact us for availability.

2013 AHS Seed Exchange Program Donor Information Sheet

Please complete a sheet for each type of seed donated. Photocopy this sheet as needed.

Seed is: Annual Herb Tree/Shrub Vine Perennial Vegetable/Fruit

Common name: _____

Botanical name: _____

Mature height: _____ Flower color(s): _____

Growth habit: _____

Comments on germination, maintenance, appearance, and/or use:

Submitted by: _____

Street address: _____

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E-mail: _____

I appreciate the AHS's efforts to reduce paper usage by making the seed catalog available online, but I prefer to have a copy mailed to my home. I've enclosed a self-addressed, stamped business-size envelope.

Seed donations must be postmarked by November 1, 2012.

Please write the common and botanical names of the plant and your name, city, and state on each package of seeds.

Mail clean, dry seeds in a box or padded envelope marked HAND CANCEL to:

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