Celebrating the AHS Centennial: 1922–2022

# The American GARDENER®

The Magazine of the American Horticultural Society

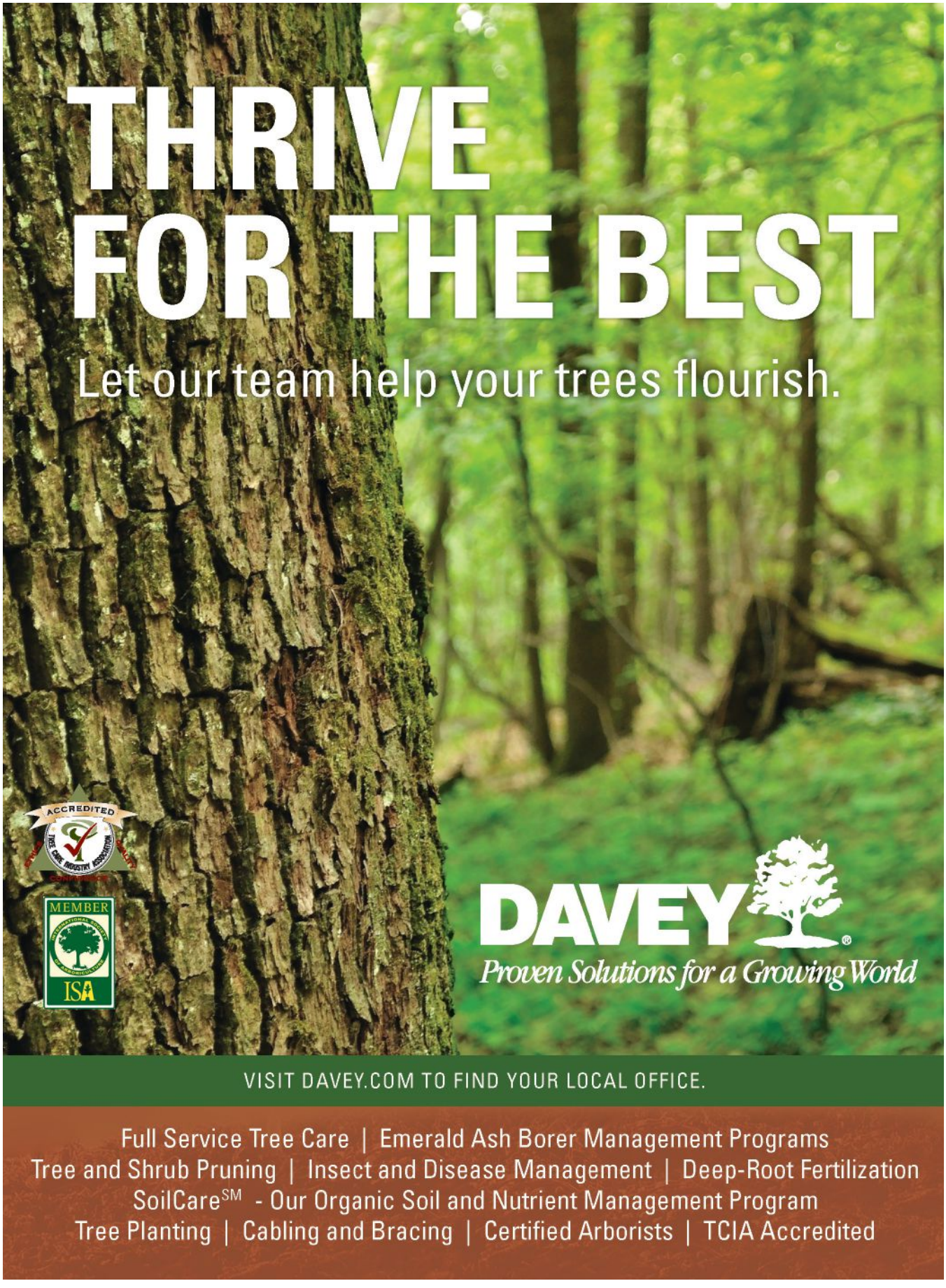
September / October 2022

## Intriguing Native Annuals

Perennials with Fabulous Fall Foliage

What's New with Mulch

Outwitting Weed Laws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*Volume 101, Number 5 · September / October 2022*

## *FEATURES*




ON THE COVER: A cool-weather annual native to western North America, satin flower or farewell to spring *(Clarkia amoena)* grows one-and-a-half to three feet tall and produces bright pink flowers in late spring to early summer. Photograph by Janet Loughrey

TOP: NANCY LAWSON. FAR RIGHT: COURTESY OF ALL-AMERICA SELECTIONS

## *DEPARTMENTS*

American Horticultural Society 100 YEARS 1922–2022

# AMERICAN HORTICULTURAL SOCIETY

*To share with all Americans the critical role of plants, gardens, and green spaces in creating healthy, livable communities and a sustainable planet*

# NOTES FROM RIVER FARM

I SAW MY first musical at age 14, which hooked me on theatre. I began working at the theatre the next summer as an usher, then moved up to the refreshment stand and then the box office. Eventually I was also working the children's season on weekends during the school year. This wonderful theatre became my home away from home.

I learned during my sophomore year in high school that the theatre was in financial trouble and might have to close. Wanting to help, two friends and I organized a run to raise funds for the theatre. The local newspaper published a story about our effort, and we managed to raise $1,000, which at the time was a lot of money to us. More importantly, we had taken action to save a community gem. Ultimately, generous donors came through with the funds that preserved our beloved theatre.

Closer to home, you've probably heard that last year the AHS faced a similar situation when a few Board members decided to sell our historic headquarters' property, River Farm. AHS would have ceased to exist as the organization it has been for 100 years. Other AHS Board members—along with many AHS members, donors, and River Farm neighbors—stepped up to save the organization. They fought successfully to protect the place where they spend time enjoying nature and creating lifelong memories.

I'm pleased to tell you that we have just celebrated the 100th anniversary of AHS with a beautiful gala at River Farm that brought together many of our supporters. Thank you to all the members who joined us for this wonderful evening, and to those who couldn't join us but sent contributions in honor of this significant milestone. Coming out of the pandemic, the AHS is still needed as a horticultural mainstay and continues to fulfill a critical role nationally.

One way we impact American horticulture is by supporting children and youth educators. In July, I attended AHS's 30th annual National Children & Youth Garden Symposium, which was hosted by the Lewis Ginter Botanical Garden in Richmond, Virginia. The event inspired me and the nearly 150 educators who attended. In addition to offering more than 24 topics to choose among for six break-out sessions, the AHS brought three important keynote speakers to address the history of garden clubs, the healing benefits of gardening, and biomimicry. Attendees also visited two other public gardens—Norfolk Botanical Garden and Maymont—and chose a tour focused on either school gardens, healing gardens, or urban greenspaces. At the end of the week, many expressed their gratitude for the week of learning and inspiration, especially those who attended on scholarships thanks to the generosity of the Ball Horticultural Company. (For more on the symposium, see page 11.)

The symposium is just one example of the AHS's impact on the field of horticulture. Over the next year, we'll be rolling out new national programs, as well as local programs at River Farm. In saving the AHS, those who love it most have given a gift to the entire country. The American Horticultural Society, after 100 years, greatly looks forward to the next 100 years. Stay tuned for much more to come.

Happy Fall!

Suzanne Laporte
President and CEO

P.S. As always, you can share your thoughts with me about the AHS or *The American Gardener* at suzanne@ahsgardening.org.

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# MEMBERS' FORUM

## EDIBLE VINES

I was delighted to see Charlie Nardozzi's article "Unusual Edible Vines" (May/June 2022) because these are all plants that I have grown, mostly successfully. Some years ago, we had to convert our garden plots to lawn and I was delighted to discover that cucamelons came up in the lawn the next year. We transplanted them to a trellis, where they are still producing after four years. We are continuing to grow both hardy and tender kiwis, maypops, and akebia, all of which are very vigorous and happy in USDA Zone 6b. Nardozzi's article has inspired me to try tromboncino squash again.

*Roger Even Bove*
*West Chester, PA*

In reading the article on unusual edible vines in the May/June issue, I noted that the author repeatedly mentions using a deer fence to support those vines. It made me wonder if all the vines mentioned in the article are deer proof?

*Dr. Ellimoottil Kuriakose*
*Arcadia, FL*

**Charlie Nardozzi's response** While I haven't seen deer eat any of these vines in my garden, I'd be most concerned with the yard long beans because I know deer like other legumes.

## BERGENIAS AND DEER

After reading Robert Herman's article on bergenias in the May/June "Plant in the Spotlight" column, I regret to say that in my Lansing, Michigan, garden they are anything *but* deer resistant. Every winter, my bergenia gets eaten down to the nub. The leaves regrow, but the plants never produce flowers. There are many things in my garden they don't eat until after the bergenia is gone, so I would say it is misleading to say the plant is not attractive to deer.

*Emily Tabuteau*
*Lansing, MI*

## MORE ON REVITALIZING GARDEN CLUBS

I read with great interest Marianne Willburn's article, "In Defense of Revitalizing our Garden Clubs" (May/June). As a professional horticulturist, I have spent my career and much of my time as a retiree involved in national organizations, thinking I can make a contribution and a difference. I am proud of what I have done.

Four years ago, I decided to focus locally and joined the Bloom and Grow Garden Society (BGGS) of Winter Garden in Florida. I was impressed with the many brilliant women leaders within the club and their commitment to enhancing the community through horticulture. This is an active, growing, vital organization within a vibrant, forward-thinking community. Only 25 years old, this local garden club created and maintains the only public garden in Winter Garden, hosts a major two-day plant festival each year that attracts over 60,000 attendees, planted "1000 trees for 1000 years" in one day, maintains an inventory of heritage trees, and donated a public art piece in the form of a copper monarch butterfly to the city.

Within the past four years, however, the BGGS has transformed itself to become an even greater force for good. We currently have 140 members and we are growing. To honor our 25th anniversary year, we decided to schedule 25 events each targeting a different audience within our club: private garden tours, public garden tours, nursery tours, plant sales, educational programs, community planting events with an environmental impact, holiday decoration programs, meetings, and social events. We are eager to tap the passions of each of our members and keep them involved.

One example of this occurred during the fundraising campaign to place the monarch butterfly sculpture in a new park in downtown Winter Garden. A large banner for the Monarch Project was placed on the construction fence at the park, along with the club's website address. This attracted quite a few new members. Offering Monarch Waystation plant packages to the community tapped into a passion for activism. Many saw growing these plants in their gardens as a way they could help mitigate habitat loss, climate change, and pesticide abuse.

We now have two bold new projects that have brought in additional partners, sponsors, and members. "Pollinator Power" has a goal of creating and documenting 2,500 acres of pollinator habitat in our community in five years, and "Plant It Pink" expects to cover Winter Garden in a cloud of pink flowers in early spring through the widespread planting of over 300 pink trumpet trees.

Here's what I see as the keys to our success:

- Creating bold, relevant, well-designed, well-organized, fun community events promoted and celebrated through social media
- Developing programs that focus on environmental concerns
- Offering a variety of both social and horticultural events that keep our entire membership engaged and active.
- Providing opportunities for leadership

Over the past two years—during the pandemic, no less—the BGGS has grown to be recognized as a major force for good in our community. In Marianne Wilburn's words, we're "reinventing this wooden wheel and getting it rolling again!"

*Katy Moss Warner*
*Winter Garden, FL*

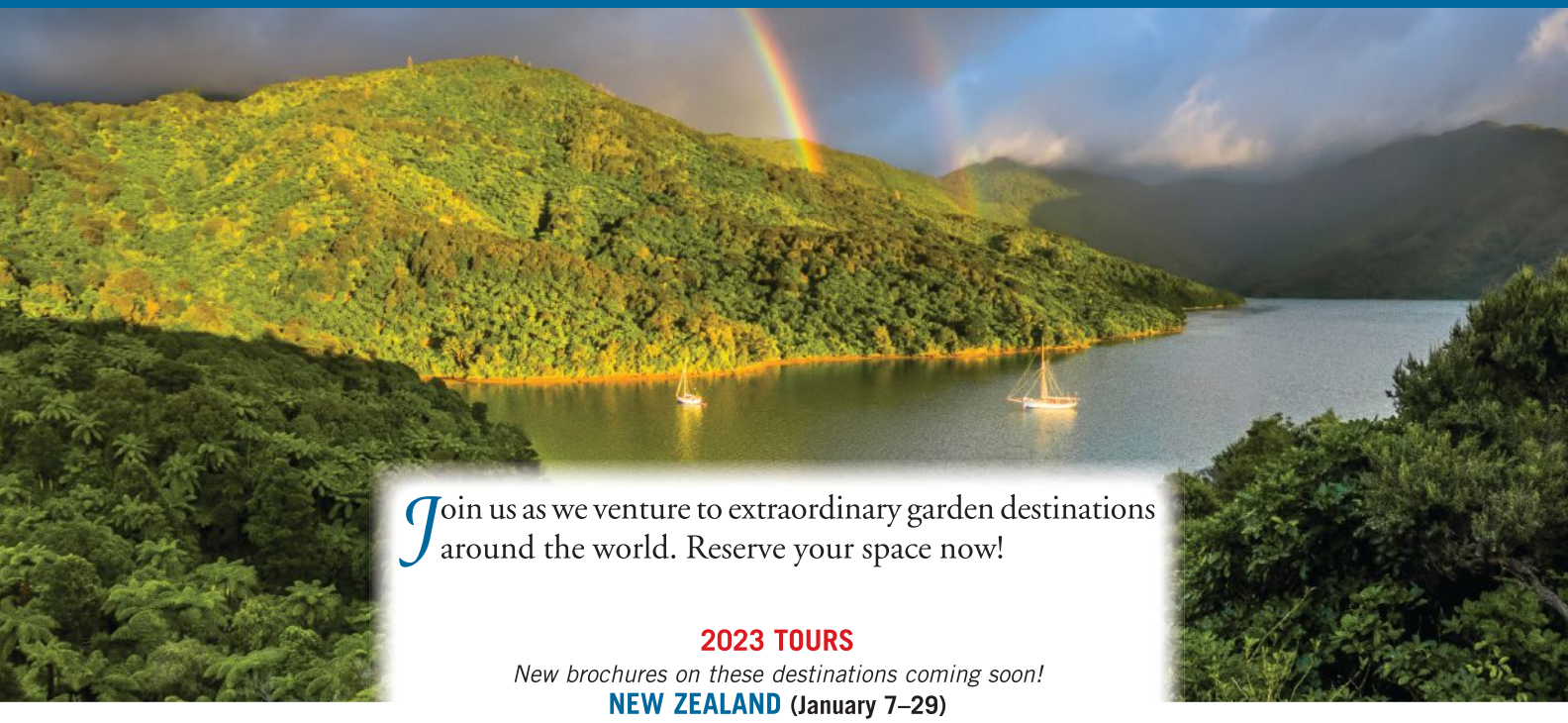
**Editor's note** Katy Moss Warner is a former American Horticultural Society President and Board member.

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

AMERICAN HORTICULTURAL SOCIETY

100 YEARS 1922–2022

# AMERICAN HORTICULTURAL SOCIETY TRAVEL STUDY PROGRAM UPCOMING TOURS



Join us as we venture to extraordinary garden destinations around the world. Reserve your space now!

## 2023 TOURS

*New brochures on these destinations coming soon!*

**NEW ZEALAND (January 7–29)**
with Richard Lyon and Rachel Muir

**MOROCCO (March 8–17)**
with Antonia Lloyd Owen and Keith Tomlinson

**BHUTAN (April 15–26)**
with Susie Orso and Tim and Christine Conlon

*More information on these destinations coming soon:*

**GREECE (May 16–25)**
**ENGLAND (late June/early July)**
*to coincide with RHS Hampton Court Flower Festival*
**BAVARIA (September 5–13)**
**SOUTH AFRICA (November)**

**For more information about the AHS Travel Study Program**
visit www.ahsgardening.org/travel, e-mail development@ahsgardening.org, or contact Susan Klejst at (703) 768-5700 ext. 127.

Participation in the Travel Study Program supports the American Horticultural Society

AMERICAN HORTICULTURAL SOCIETY

100 YEARS 1922–2022

**CONTACTS FOR AHS PROGRAMS, MEMBERSHIP BENEFITS & DEPARTMENTS**

For general information about your membership, call (703) 768-5700. 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@ahsgardening.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@ahsgardening.org.

**DEVELOPMENT** To make a gift to the American Horticultural Society, or for information about a donation you have already made, call (703) 768-5700 ext. 127, or send an e-mail to development@ahsgardening.org.

**E-MAIL LISTS** To subscribe to specific e-mail lists for updates on programs and events, visit *http://connect.ahsgardening.org/email*.

**NATIONAL CHILDREN & YOUTH GARDEN SYMPOSIUM** For information about the Society's annual National Children & Youth Garden Symposium, e-mail education@ahsgardening.org, or visit *www.ahsgardening.org/ncygs*.

**RECIPROCAL ADMISSIONS PROGRAM** The AHS Reciprocal Admissions Program offers members free admission and other discounts to over 345 botanical gardens and other horticultural destinations throughout North America. A list of participating gardens can be found on *www.ahsgardening.org/rap*.

**RIVER FARM** The AHS's River Farm headquarters in Alexandria is open to visitors Monday through Friday from 10 a.m. to 4 p.m. For information about facility rentals, call (703) 768-5700, ext. 114 or e-mail rentals@ahsgardening.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. 127, e-mail development@ahsgardening.org, or visit *www.ahsgardening.org/travel*.

**WEBSITE: www.ahsgardening.org** The AHS website is a valuable source of information about the Society's programs and activities. Users must set up a username and password to access the members-only sections.

# News from the AHS

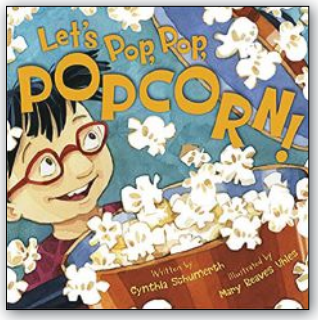
## September / October 2022

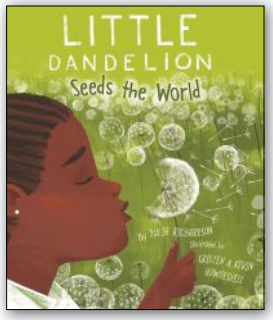
PROGRAMS • EVENTS • ANNOUNCEMENTS

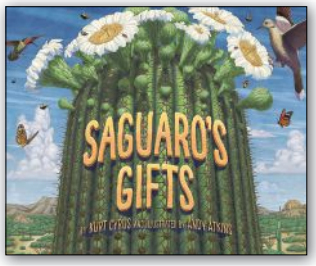
## GROWING GOOD KIDS BOOK AWARDS ANNOUNCED

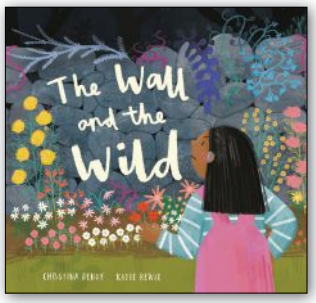
THE AMERICAN HORTICULTURAL SOCIETY (AHS) and the **Junior Master Gardener** (JMG) program have announced four winners of the 2022 Growing Good Kids–Excellence in Children's Literature Awards program. This year's awards were announced during the AHS's National Children & Youth Garden Symposium, held in July in Richmond, Virginia.

The winning books are: **Let's Pop, Pop, Popcorn!** by Cynthia Schumerth (Sleeping Bear Press); **Little Dandelion Seeds the World** by Julia Richardson (Sleeping Bear Press); **Saguaro's Gifts** by Kurt Cyrus (Sleeping Bear Press); and **The Wall and the Wild** by Christina Dendy (Lantana).




All the books selected this year have engaging and inspiring themes related to plants, gardens, and ecology, according to **Randy Seagraves**, Texas A&M AgriLife Extension Service program specialist and JMG program curriculum director. "The year's winners are must-haves for any school or home library as they will engage kids with powerful messages," says Seagraves. "Their content ranges from the ubiquitous dandelion to America's favorite snack food to the folly of trying to have a 'perfect' garden to a centennial birthday celebration for a grand Saguaro cactus. These books are beautiful, novel and great fun. We're sure their content and compelling illustration will inspire young readers."

Jointly developed by AHS and the Junior Master Gardener group, the Growing Good Kids–Excellence in Children's Literature Awards is an annual program recognizing picture book titles published within the previous year. Since 2005, winners have been selected as representing the best in children's garden- and ecology-related books.

## NEW WEBINAR SERIES ANNOUNCED

THE AHS is co-hosting a new series of gardening webinars in partnership with Garden **Communicators International (GardenComm)**. Titled "Plants and Gardens Happy Hour: Tips and Secrets," the webinar series debuted September 9 and will continue on October 7 and November 4. Each hour-long webinar is built around a live-streamed tour of a public garden, followed by presentations from noted garden experts facilitated by a moderator.

For the October 7 webinar, the **Ladybird Johnson Wildflower Center** in Texas will be the featured garden, and presenters include garden designer **Claire Jones** on "Pollinator Pathways," organic gardening expert **Jacob Mogler** on

OMRI and the Organic Gardener," and book author/moderator **Kathy Jentz** on "What's Making Us Smile: Tips, Plant Picks, and Inspirations."

The featured garden destination for the November 4 webinar is **St. George Village Botanical Garden** in St. Croix, U.S. Virgin Islands. Presenters include cut-flower garden expert **Lisa Ziegler** on "Secrets of Cutting Gardens," book author **Teri Speight** on "New Plant Introductions for 2023," and garden television host and author/moderator **Joe Lamp'l** on "What's Making Us Smile: Tips, Plant Picks, and Inspirations."

"This series of three webinars is designed to be fast-paced and fun," says Jentz. "Newbie plant parents and veteran gardeners alike will find something of value plus be entertained and inspired by the rotating selection of great presenters. They offer tips and tricks from insiders on gardening practices, new plant picks, and much more."

The webinars, which begin at 7 p.m. Eastern time, are priced at $15 each and participants will receive a recipe for a signature garden-based beverage from mixologist **Ellen Zachos**, author of *The Wildcrafted Cocktail*. For more information, visit the AHS website at *www.ahsgardening.org*.

## 2023 GREAT AMERICAN GARDENERS AWARD NOMINATIONS

THE DEADLINE for nominating candidates for the 2023 Great American Gardeners Awards has been extended to October 14. This is your chance to recognize individuals and organizations for exceptional contributions to the field of horticulture. To view the list of awards for which nominations are being accepted, visit *https://ahsgardening.org/gardening-programs/national-awards/great-american-gardeners*.

## The Award Goes to…

**MAHROU AKHUNDZADEH** receives the American Horticultural Society's Meritorious Service Award from President and CEO Suzanne Laporte, left, at the Society's headquarters at River Farm in July. This award is given to an individual in recognition of outstanding service and support of the AHS. Mahrou has been a dedicated volunteer in the membership office at River Farm for over two decades.



NORA MACDONALD

## *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 June 29 and August 23, 2022.*

### *$1,000+ Gifts*

Appreciation of Earth & Animal Foundation Inc.
Dr. Sherran Blair
Dr. Todd Beasley
Mr. and Mrs. Ben Norwood
Mr. and Mrs. Don W. Godsey
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White House Farm Foundation and Plein Family Charitable Trust

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*In Honor of Katy Moss Warner*
Dr. Sherran Blair

*In Honor of Jeffrey Yankellow*
King Arthur Baking Company

*If you would like to support the AHS, please call Susan Klejst, Vice President of Development, at (703) 768-5700 ext. 127.*

## MEMBER DISCOUNTS ON BOOKS, GARDEN SHOWS, SEEDS, AND BULBS

AS WE MOVE into fall, remember that your AHS membership includes some special savings from a number of quality garden product vendors. These include discounts on books from **Princeton University Press** and **Timber Press**, and discounts on seeds from **Renee's Garden**. Information on all these discounts can be found by logging into your member account on the AHS website.

Another important vendor to remember at this time of year is **Brent & Becky's Bulbs**, which through its Bloomin' Bucks program allows customers to designate a nonprofit of their choice as the beneficiary of a percentage of the sales from their purchase. So if you are shopping for bulbs or plants from Brent & Becky, you can help support the AHS at the same time. For more information, visit *https://brentandbeckysbulbs.com.*

You can also support the AHS by participating in Amazon's Smile program *(https://smile.amazon.com).* If you select AHS as the recipient of Amazon Smile, we will receive a commission on your order at no cost to you.

*Written by AHS Staff.*

## AHS EVENTS CALENDAR

AMERICAN HORTICULTURAL SOCIETY

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

SEPT. 29–OCT. 1. **America in Bloom Symposium and Awards Ceremony**. St. Louis, MO. (AHS partner event)

**2023**

JAN. 7–29. **Gardens, Wine, and Wilderness—A Tour of New Zealand.** (AHS Travel Study Program)
FEB. 15–19. **Northwest Flower & Garden Festival.** Seattle, WA. (AHS Environmental Award presented)
MAR. 4–12. **Philadelphia Flower Show.** Philadelphia, PA. (AHS Environmental Award presented)
MAR. 8–17. **The Enchanting Gardens and Allure of Morocco.** (AHS Travel Study Program)

APR. TBD. **San Fran Bay–Nor Cal Flower & Garden Show.** Pleasanton, CA. (AHS Environmental Award presented)
APR. 14 & 15. **Spring Garden Market at River Farm.** Alexandria, VA.
APR. 15–22. **Garden Club of Virginia Historic Garden Week.** (AHS partner event)
APR. 15–26. **Discovering the Beauty of Bhutan: Land of the Thunder Dragon.** (AHS Travel Study Program)
APR. 22. **Earth Day.** (National and local volunteering opportunities)
APR. 27–30. **Colonial Williamsburg Garden Symposium.** Williamsburg, VA. (AHS partner event)

**AHS NEWS SPECIAL:** 30th National Children & Youth Garden Symposium

# Nature Shows the Way in Richmond, Virginia

FOLLOWING A two-year run as a virtual event during the pandemic, the AHS's National Children & Youth Garden Symposium (NCYGS) returned as an in-person conference July 13 to 15 in Richmond, Virginia. This annual gathering—which celebrated a landmark 30 years this summer—brings together educators and youth group leaders from around the country working to engage children with gardens and the natural world that surrounds them.

This year's symposium, hosted by **Lewis Ginter Botanical Garden**, explored the timely topic of nature as healer, teacher, and mentor through keynote addresses, peer-led educational sessions, and field trips to public gardens and school gardens in and around Richmond.

First-time symposium attendee Natalie M. Green, a Community Agriculturalist with Henrico County Public Schools in Virginia, participated in a hands-on session with other attendees.

Many symposium participants attended with the assistance of scholarships funded by event sponsor **Ball Horticultural Company**. Among them was **Natalie M. Green**, a Community Agriculturalist with the Henrico County Public Schools in Virginia. "I was fortunate to attend the NCYGS through one of their scholarships and I'm so glad I was able to take advantage of the opportunity," says Green. "Although I am a resident of the Richmond area, I had not had a chance to really explore some of the sites we visited until the symposium. As a new outdoor educator, being able to spend time with my peers from other regions was invaluable for me. I made great connections that I have already followed up with regarding implementing programming this school year. The symposium solidified for me that allowing young people to immerse themselves in nature-based education is not just important, but should be commonplace in all learning environments."


In the symposium's opening keynote, Lily Urmann, Visiting Lecturer of Biomimicry at the Pratt Institute in New York, discussed the intricacies of biomimetic design and what educators can do to open students' eyes to the wisdom of nature.

The NCYGS is funded in part by generous donations from event sponsors Ball Horticultural Company, **Boulevard Flower Gardens**, **VisitRichmondVA.com**, **National Garden Clubs, Inc.** and the **Espoma Company**.

Symposium participants explored the colorful landscape at Lewis Ginter Botanical Garden, the event's host site in Richmond.

LEFT: NORA MACDONALD. RIGHT: COURTESY OF LEWIS GINTER BOTANICAL GARDEN (2)

# Perennials with Fabulous Fall Foliage

In temperate regions of North America, deciduous trees and shrubs tend to get all the attention when it comes to fall foliage, but they're not the only options for color in the autumn garden. Herbaceous plants, too, can produce beautiful hues that rival those of their woody-stemmed cousins, adding an extra level of interest to late-season beds, borders, and even container plantings.

As with trees and shrubs, the fall colors of perennials can be hard to predict, because they depend on so many different factors. The pigments that produce leaf colors can vary from site to site depending on the light intensity and soil conditions, and from year to year, depending on the weather conditions. Sunny, dry, and cool days tend to bring out the most dazzling colors; in mild and cloudy or rainy weather, the colors are often much more muted, and early, sudden frosts can stop the show before it even begins.

Still, there are some perennials that you can count on to produce a good fall foliage change—from their usual green to brilliant red, intense orange, golden yellow, or even all three—before they turn brown and dry as the plants go dormant for winter. Cool fall temperatures can also bring out different colors on perennials with ever-present foliage, such as heucheras, turning greenish purples to a saturated near-black or bringing out a red or orange cast on those with summer-gold foliage.

Along with the typical border perennials that offer terrific fall color, ornamental grasses and even some ferns are invaluable for supplementing the late show with their changing leaves. There's also another group of plants that you might not think of for autumn interest: succulents. As tempera-

Many herbaceous perennials and grasses give deciduous trees a run for their money when it comes to colorful fall foliage.

BY NANCY J. ONDRA

NANCY J. ONDRA

**Above: *Geranium* 'Brookside' is a hybrid cranesbill that produces small, dark blue flowers in summer; in autumn its deeply-cut leaves turn red-orange. Opposite: The bright yellow foliage of feathery Arkansas bluestar *(Amsonia hubrichtii)* lights up this perennial border.**

NANCY J. ONDRA

tures start to dip into the 40s, many succulents can develop foliage colors as glorious as those in any New England woodland, so even gardeners in the arid West and Southwest—where autumn foliage is not generally a phenomenon—can enjoy the splendors of the fall season, with the added advantage of the colors lasting for months instead of days or weeks.

## SHOWY HUES FOR SUNNY GARDENS

Sun-drenched sites tend to show the most vibrant fall foliage hues. Some perennials are best known for turning specific colors, but almost all of them may show multiple colors depending on the specific site and weather conditions in any given year. Bluestars *(Amsonia* spp.), for example, are renowned for their bright yellow fall foliage, but they can also be blushed with orange, red, or even purple. This unpredictability is one of the things that makes fall gardens such a delight. You don't know exactly what you're going to get, but you know it's going to be good!

Still, being aware of what colors certain plants are likely to turn helps you to make the most of fall-color features in beds and borders. If you find that your autumn plantings are too heavy on the yellows, for instance, you can replace some of them with reds and oranges for variety.

Among the typical border perennials you can count on for yellows and golds (and sometimes orange hues too) are burnets *(Sanguisorba* spp.), daylilies *(Hemerocallis* spp.), monkshoods *(Aconitum* spp.), Siberian iris *(Iris sibirica)*, and true lilies *(Lilium* spp.). For the red to purple range, look to cushion spurge and Griffith's spurge *(Euphorbia epithymoides* and *E. griffithii)*, dwarf fleeceflower *(Persicaria affinis)*, hardy geraniums *(Geranium* spp.), and hardy plumbago *(Ceratostigma plumbaginoides)*. Many peonies *(Paeonia* spp.) can grace your garden in a range of fall foliage colors.

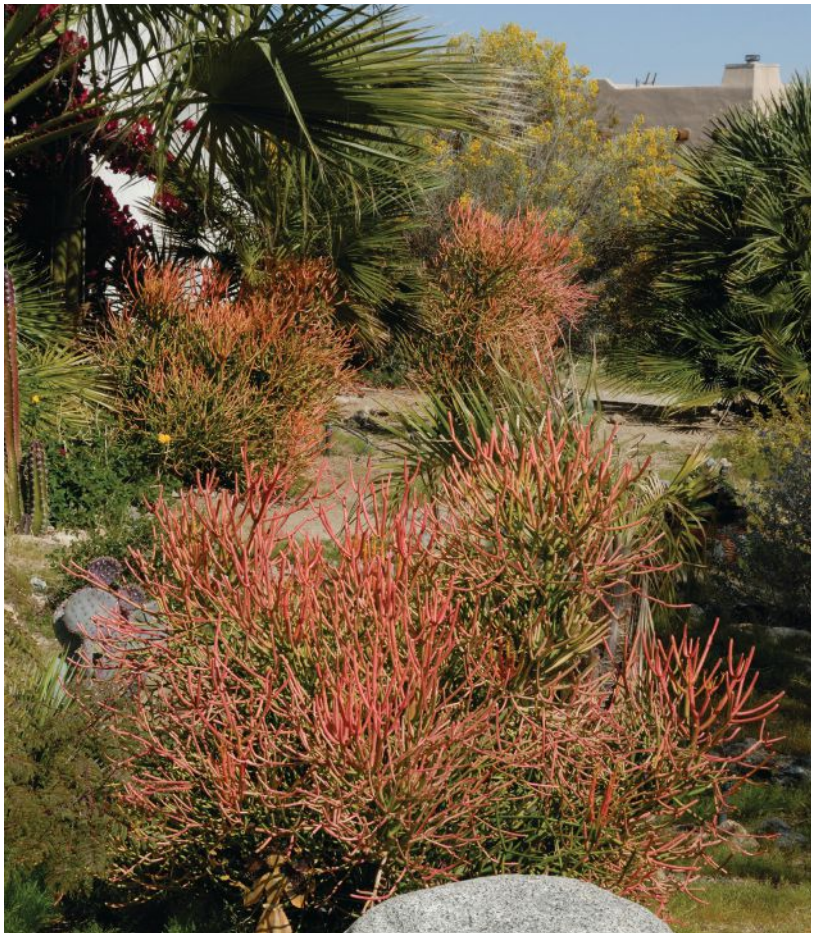
For yellow to gold in native-focused plantings of sun-loving perennials, consider Culver's root *(Veronicastrum virginicum)*, Joe-Pye weeds *(Eutrochium* spp.), milkweeds *(Asclepias* spp.), and purple coneflower *(Echinacea purpurea)*. Some options that typically turn red to purple include gayfeathers *(Liatris* spp.), prairie smoke *(Geum triflorum)*, and tall coreopsis *(Coreopsis tripteris)*.

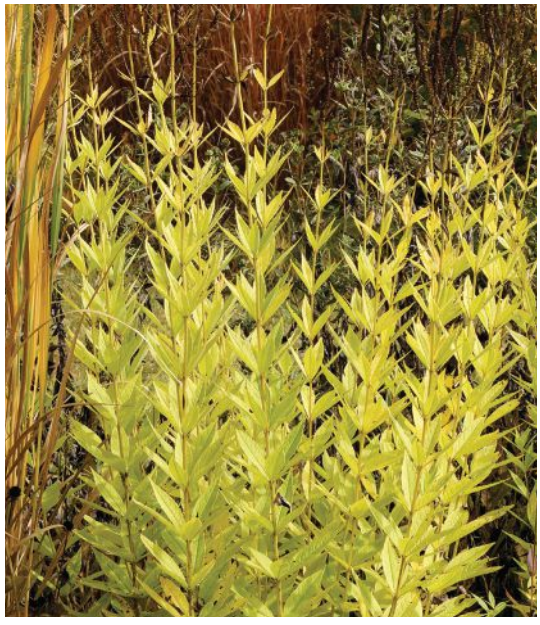
**Growing eight to 12 inches tall, 'Dimity' dwarf fleeceflower *(Persicaria affinis)* makes an attractive groundcover. Here it is paired with lamb's ears *(Stachys byzantina)*.**

Many of the ornamental grasses that thrive in full sun will bring dramatic fall foliage changes to gardens in many regions of the country, including the West and Southwest. Indian grass *(Sorghastrum nutans)*, New Zealand wind grass *(Anemanthele lessoniana)*, northern sea oats *(Chasmanthium latifolium)*, prairie dropseed *(Sporobolus heterolepis)*, and purple moor grass *(Molinia caerulea)* are generally in the yellow to orange range, while flame grass *(Miscanthus* 'Purpurascens') tends to turn a rich orange-red, big bluestem *(Andropogon gerardii)* is deep red to purple, and frost grass *(Spodiopogon sibiricus)* can be anything from gold to orange to red to purple—sometimes all at once. Seed-grown plants of switch grass *(Panicum virgatum)* and little bluestem *(Schizachyrium scoparium)* have the potential to produce a range of fall foliage hues, while vegetatively propagated cultivars more reliably have specific colors, such as rich yellow on 'Heavy Metal' and 'Northwind' switch grass and red to burgundy on Blue Heaven ('MinnBlueA') little bluestem.

Brilliant sunshine also brings out the best show in succulents as temperatures drop in fall—particularly in the species well adapted to dry, mild climates. 'Sticks on Fire', a selection of pencil cactus *(Euphorbia tirucalli)* is famous for its striking cool-season change from green to scarlet-red, which

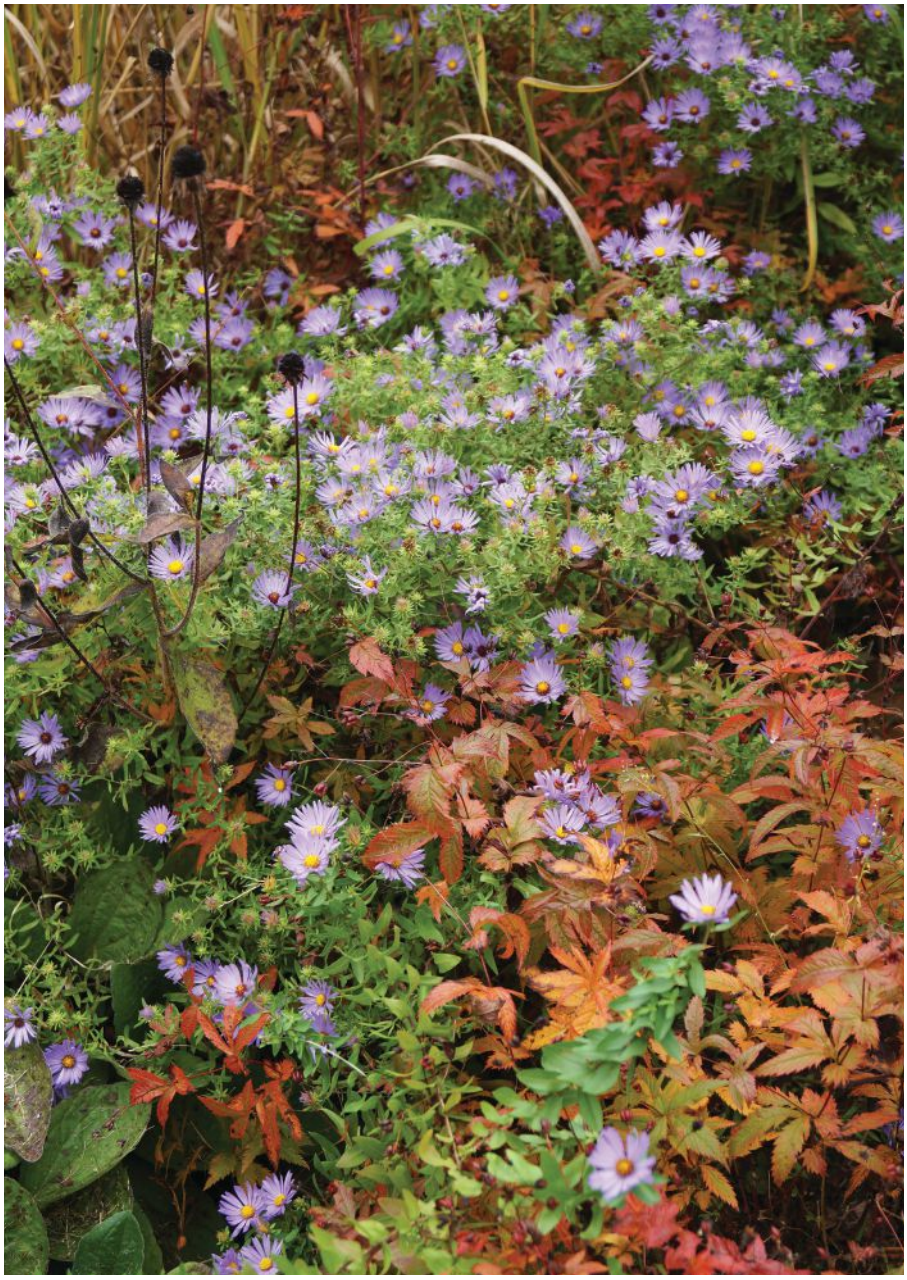
NANCY J. ONDRA





**Top: Switch grass *(Panicum virgatum)* provides a warm glow in this garden in Santa Fe, New Mexico. Above: Native to eastern North America, Culver's root *(Veronicastrum virginicum)* looks like yellow flames in the author's Pennsylvania garden. Left: *Euphorbia tirucalli* 'Sticks on Fire' is a tender succulent that takes on a brilliant hue with the onset of cooling days. In warm regions like Southern California, shown here, the color can last through winter.**

TOP: SAXON HOLT. BOTTOM LEFT: CATRIONA T. ERLER. BOTTOM RIGHT: NANCY J. ONDRA



**The red-orange foliage of American ipecac *(Gillenia stipulata)* and the soft purple flowers of aromatic aster *(Symphyotrichum oblongifolium)* in fall bloom create a charming late-season vignette with the tall seedheads of Deam's orange coneflower *(Rudbeckia fulgida* var. *deamii)*.**

is sometimes called Firesticks or fire sticks. Campfire crassula *(Crassula capitella)* offers a similarly eye-catching spectacle on a lower, more-spreading plant, while rosette-forming echeverias *(Echeveria* spp.) can turn a more-intense blue or can blush with pink to purple.

Cold-climate gardeners can enjoy colorful succulents too, either by growing those tender species in pots (for overwintering indoors) or by choosing hardy species with terrific autumn foliage, such as the red-tipped golden yellow of 'Gold Nugget' hens-and-chicks *(Sempervivum* hybrid), the orange-tipped yellow of 'Angelina' sedum *(Sedum rupestre)*, or the bronze to red shading on two-row sedum *(Phedimus spurius*, formerly *Sedum spurium)*.

## AUTUMN COLORS FOR SHADY BORDERS

Even if sun isn't abundant in your yard, your garden can still end the growing season with a bang. Some hostas *(Hosta* spp. and hybrids), for instance, can produce broad, bold spots of gold as long as frost holds off. 'Frances Williams', 'Halcyon', 'Krossa Regal', and 'Patriot' are a few personal favorites for particularly good color. Other options for elegant yellows in some shade include goat's beard *(Aruncus dioicus)*, Solomon's seals *(Polygonatum* spp.), and northern sea oats. Cinnamon fern *(Osmunda cinnamomea)* and royal fern *(O. regalis)* are excellent for rich gold to orange, while 'Brilliance' autumn fern *(Dryopteris erythrosora)* can bring touches of copper.

Reds and purples may not be abundant in summer shade, but as temperatures drop, perennial foliage can contribute some of the showiest hues of the growing season. Some plants to look to in this color range include American ipecac *(Gillenia stipulata)*, Bowman's root *(G. trifoliata)*, bergenias *(Bergenia* spp.), foamy bells *(×Heucherella)*, foamflowers *(Tiarella* spp.), Hakone grass *(Hakonechloa macra)*, mukdenia *(Mukdenia rossii)*, and rodgersias *(Rodgersia* spp.).

Other must-haves for shade can contribute a variety of colors. Barrenworts *(Epimedium* spp.), for example, might turn gold, orange, red, or burgundy—sometimes with several colors on the same plant. More perennials with potential for multiple colors include dwarf goat's beard *(Aruncus aethusifolius)* and shade-tolerant hardy geraniums such as big-root geranium (*Geranium macrorrhizum)* and wild geranium *(G. maculatum)*.

## FANTASTIC FALL COMBINATIONS

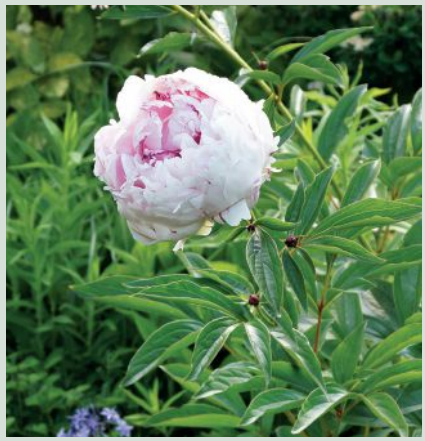
Great fall foliage color on hardy perennials is more than an incidental bonus feature. It can be an integral part of your seasonal plant partnerships, to complement or contrast with other fall-garden features. Here are some ideas for dynamic autumn pairings:

- Use fall-yellow foliage, like that of Arkansas bluestar *(Amsonia hubrichtii)*, to echo the yellow centers of late-blooming daisy-form flowers such as giant daisy *(Leucanthemella serotina)* or 'Sheffield' chrysanthemum *(Chrysanthemum* spp.), for example.
- Plant tall grasses with bright yellow fall foliage, such as 'Cloud Nine' switch grass *(Panicum virgatum)* as a background for pink, purple, or blue flowers, like those of asters *(Symphyotrichum* spp.) or azure monkshood *(Aconitum carmichaelii)*.
- Repeat the rich colors of autumn fruits and berries—such as those of rugosa rose *(Rosa*

NANCY J. ONDRA

## HOW TO DESIGN FOR FALL FOLIAGE COLOR USING HERBACEOUS PERENNIALS

Few of us can dedicate an entire border to just one time of year. Fortunately, nearly all perennials that have fabulous fall foliage also have attractive features for other seasons, such as beautiful blooms or distinctive leaf textures, for spring and summer interest. So, if fall color seems like one too many factors to consider when you're designing a new perennial bed or border, look first to the main features you want to focus on. Then, as you live with your garden and get to know how your existing plants perform in each season, you can think about replacing some of the single-season perennials with those that have showy fall foliage to complement the late-season leaves, flowers, seedheads, bark, and berries of the others. In the meantime, visit local natural areas, botanical gardens, and nurseries with display gardens to observe the sorts of autumn colors you can expect from perennials in your area, and to get ideas about which would look good in your own yard.



**Many perennials with colorful fall foliage, such as 'Sarah Bernhardt' peony, also have wonderful attributes in other seasons—in this case, large, pink, double flowers in spring.**

Perennials with great fall color are welcome wherever you can work them in: throughout beds and borders, as ground covers under deciduous trees and shrubs, or in mass plantings. Containers, too—either diverse large planters or collections of smaller, individual pots—offer yet another way to display the best that fall-colored perennials can offer.

As autumn progresses, foliage colors develop at different rates on different plants. To keep things looking fresh, you may want to cut back perennials as they pass their prime. I usually remove plants that are insect damaged or tattered or toppled by fall storms. Consider leaving as much as possible in place, though, as the brown and black "skeletons" of past-prime perennials can make those that remain look all the brighter, and they may offer shelter to overwintering insects and nesting materials for birds. —N.J.O.

*rugosa)*, winterberry holly *(Ilex verticillata),* or viburnum *(Viburnum* spp.)—with an underplanting of bergenias *(Bergenia* spp.), hardy geraniums, or heucheras with leaves in the same color range.

■ Put an unexpected twist on the season by pairing a low-growing, fall-colored perennial with a late-flowering bulb: colchicums *(Colchicum* spp.) rising through the showy autumn foliage of hardy plumbago *(Ceratostigma plumbaginoides)*, for example, or prairie onion *(Allium stellatum)* popping up between clumps of prairie smoke *(Geum triflorum)* or red-leaved sea thrift *(Armeria maritima* 'Rubrifolia').

■ Dress up a slope or other dry site with an eye-catching tapestry of succulents that offer outstanding cool-season colors, such as hens-and-chicks and many sedums. Interplant with drought-tolerant, silver or blue-leaved partners, like aloes *(Aloe* spp.) and yuccas *(Yucca* spp.), or bronzy New Zealand sedges, such as *Carex flagellifera*, for extra color and texture.

■ Don't forget about fall color in your containers! In a shade garden, the yellow-striped leaf blades of golden Hakone grass *(Hakonechloa macra* 'Aureola') look marvelous spilling over the edge of a planter all summer, then take on a pink to reddish blush in autumn. It's perfect for underplanting a fall-colored dwarf shrub such as 'Munchkin' oakleaf hydrangea *(Hydrangea quercifolia)*. In a sunny location, pair a compact, upright or arching, warm-season grass—'Shenandoah' switch grass *(Panicum virgatum)*, with wine-red fall foliage, is one of my favorites—with a yellow or orange mum *(Chrysanthemum ×morifolium)* for eye-catching color.

One of the unique things about fall gardens is that anything goes as far as color is concerned. You might not combine pink with red or bright orange with baby blue in summer, but in autumn, the natural color changes just seem to work together. Remember that green, too, is still valuable in fall combinations. Plants with deep purple to burgundy foliage, like that of black mondo grass *(Ophiopogon planiscapus* 'Nigrescens') or 'Platt's Black' New Zealand flax *(Phormium* hybrid), also make excellent partners for bright fall-colored partners.

With a little creativity in your combinations, your late-season garden can be just as glorious in autumn as it is in the first flush of spring bloom or the height of its summer splendor.

*Nancy J. Ondra is a freelance writer who gardens in Bucks County, Pennsylvania.*

NANCY J. ONDRA (2)

# a fresh look at MULCH

BY CHARLIE NARDOZZI

Of all types of material available for mulch, new research suggests that wood offers the most benefits, but it's important to choose the right kind and apply it correctly.

CATRIONA T. ERLER

MULCH IS OFTEN viewed as the finishing touch to a garden redesign or seasonal refresh—that final element that covers up bald patches and enhances landscape plantings, but it's so much more than that. Gardeners use organic and inorganic mulches not only for their aesthetic appeal, but also to reduce weeds and conserve water.

Inorganic mulches such as stone (from pea gravel to river rocks), landscape fabric, rubber mulch, or plastic sheeting have the advantage of being long-lasting, but some can inhibit the passage of water and oxygen to the soil underneath and the plastic and rubber add to pollution and waste streams.

Organic mulches include a wide array of options, such as wood, straw, hay, grass clippings, shredded leaves, compost, cocoa and rice hulls, as well as living mulches and groundcovers. Whatever the material, organic mulches go above and beyond the benefits of inorganic mulches to also feed soil microbes and create healthier soil when used properly.

With all those benefits, it seems like a good sign that use of mulch is on the rise. As gardening activities increased during the pandemic, sales of mulch also rose 25 to 30 percent, boosting wood mulch, the most commonly used organic mulch, to becoming a $1 billion industry, according to Robert LaGasse, executive director of

**Above: Shredded wood mulch spread between perennials helps suppress weeds and conserve water in this California garden. Opposite page: Arborist wood chips, often delivered free by tree-trimming companies, decompose quickly and improve soil.**

the Mulch & Soil Council, a trade association based in Texas.

With the use of mulch increasing, it's worth taking a fresh look at the most commonly used organic mulch material—wood—and how to use it most effectively.

## THE WORLD OF WOOD MULCH

Use of wood mulch in all its various forms continues to grow, but along with industry growth has come a lot of change. In the past, you could find a variety of wood mulches available at garden centers in bulk and bags. Shredded mulch, mini chips, and nuggets all seemed to have a place in the landscape. Now, large bark nuggets are becoming less common while shredded, dyed mulches make up 50 to 70 percent of the wood mulch available.

It turns out one type of mulch that's readily available nearly everywhere may also be the most effective and affordable: arborist wood chips. According to Linda Chalker-Scott, a horticulture professor at Washington State University and contributor to the Garden Professors website (see "Resources," page 22) who has been researching wood mulches for more than 20 years, arborist wood chips have many advantages and few of the disadvantages of other wood mulches.

"It's free (or close to free), helps feed soil microbial life as it decomposes, allows water and air to pass through it easily, and, if used properly, inhibits weed growth," she says. "If a mulch is too finely textured, like some shredded mulches and sawdust, it can form a mat that inhibits water and air flow, harming your plants. Plus, finely textured mulches create the perfect environment for weed seeds that blow in to grow."

Bark mulch has several disadvantages, according to Chalker-Scott. "It has natural waxes and chemicals that repel water and cause the soil beneath to dry out," she says. "It is flammable and it can float and wash away easily after a downpour."

Arborist wood chips include a mix of chip sizes that avoid all those problems. However, you should be aware of what you're getting. Arborist wood chips will contain pieces of branches, leaves, wood and bark of various sizes and tree species depending on what they were cutting. "It makes a great mulch, but the color often fades quickly," says Chalker-Scott. Some gardeners may not like the non-uniform appearance.

Concerns about disease and other issues with arborist wood chips have long circu-

SAXON HOLT

A variety of wood chips are widely available, including, left to right: Wood nuggets, arborist's wood chips, and dyed wood chips.

lated among gardeners, but Chalker-Scott has done and reviewed the research to put them to rest. "Wood mulch from diseased trees has not been shown to infect living trees. Also, trees with growth-inhibiting properties when alive, such as cedar, once chipped will not inhibit plant growth," she says.

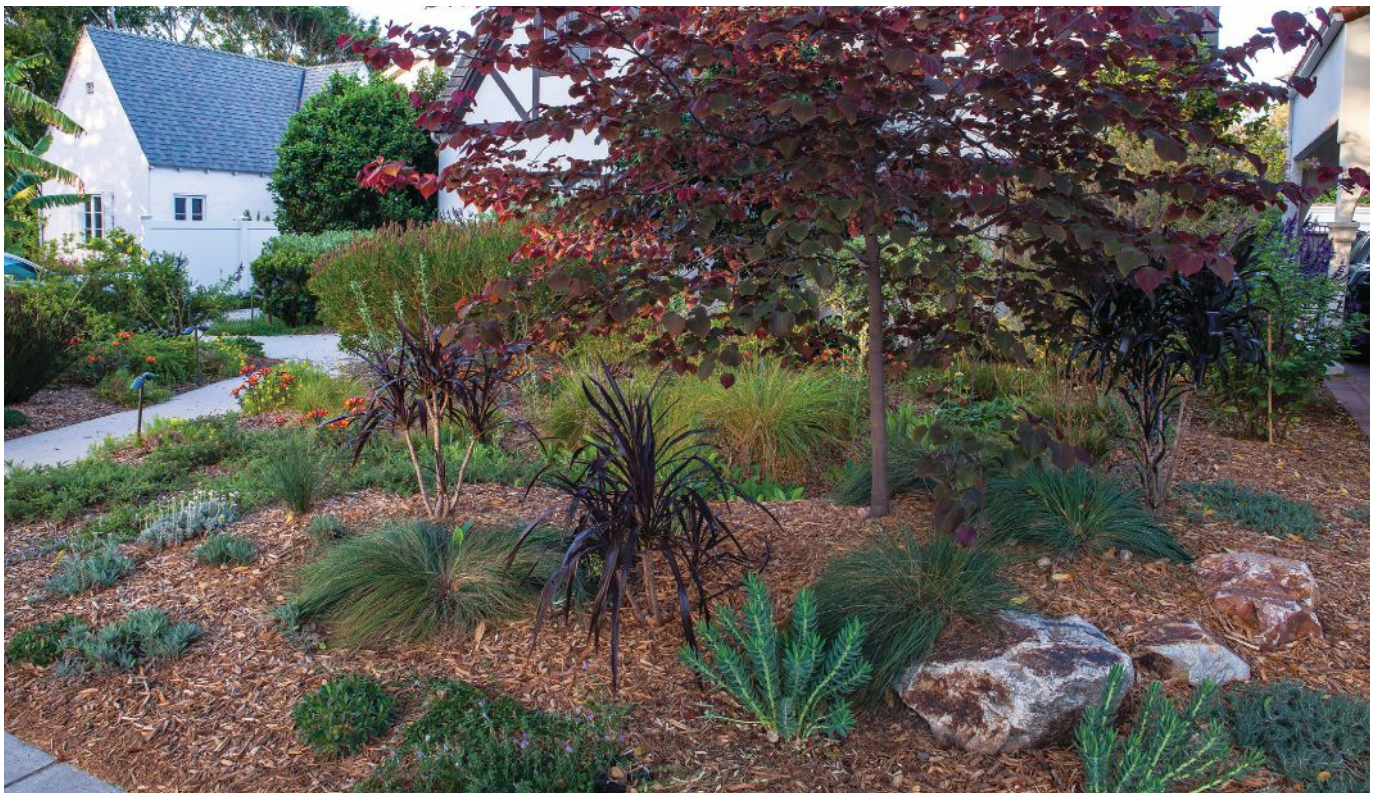
Tree crews are often looking for nearby places to dump a load of wood chips from a tree removal. If you can build a relationship with a few arborists in your area, you're in line to be offered a regular supply of free or low-cost chips.

If you don't know a local arborist, you can sign up to get free chips delivered to your home through the Chip Drop website (see "Resources," page 22). Chip Drop takes your name, address, and other information and passes it along to participating arborists in your area. When the arborists are working nearby, you can get a load of chips. However, they may not contact you about when the load is coming, how much you'll get, or what kind of wood it is. "In the online form you can request special requirements such as not to receive invasive species or other woods that you don't want in your yard," says Chalker-Scott.

## WEED PREVENTION

Beyond the aesthetic appeal of wood mulch, weed prevention is probably the second most important reason homeowners use mulch, but again the type and application method matter.

"Landscape fabrics and plastic mulches should be avoided," Chalker-Scott says definitively. "They severely reduce the



Organic wood chip mulch aids water retention and improves drainage in this Santa Monica, California, front yard rain garden.

TOP: ISTOCKPHOTO (3). BOTTOM: SAXON HOLT

amount of water and oxygen plant roots get and, if mulched with an organic material on top, become a weeding nightmare as weed seeds germinate on top of the fabric," she says. Cardboard and newspaper are not as bad as plastics and fabrics, but still inhibit oxygen and water exchange for a time.

The same is true for finely shredded organic materials. Sawdust and finely shredded wood can create the perfect setting for weeds to grow. The best wood mulch should be chunky enough so weed seeds fall through the spaces, yet water and air can flow through it. That makes wood chips the best weed-preventing mulch, but they need to be applied correctly to be effective.

"The minimum depth of mulch for preventing annual weeds from germinating is four inches thick. To control perennial weeds, such as dandelions, you may need to add eight to 12 inches of wood chips to exhaust the resources stored in the weed's root system," says Chalker-Scott.

"While this may seem like a lot of mulch, most shrubs, trees, and established perennials will have no problem growing through the mulch, especially if you apply the wood mulch in fall. By spring it has settled into a six-inch-thick layer," she says. If your perennial flowers are recently planted, apply a three- to four-inch-thick layer. If you want the plant to self-sow, you might avoid mulching that area completely but be aware that weed seeds will also grow in bare soil.

## SOIL BUILDING AND PLANT HEALTH

As many regions struggle with drought conditions, water-wise gardeners use mulch to minimize evaporation and maximize soil health. For these purposes, too, finely shredded mulches are poor performers. They form a mat, which inhibits water and air flow. A four-inch layer of wood chips, on the other hand, creates open spaces that allow water to permeate and air to flow through.

An added bonus of using organic mulches is that they can build the soil's health. It's important to know the type of mulch to use for different types of plants. Vegetable and annual flower gardens need nutrients quickly, so the best mulches for them are fast decomposers such as straw, grass clippings from untreated lawns, compost, and chopped leaves. These mulches are favored by bacteria that breaks them down quickly for fast nutrient uptake. For perennial plants, shrubs, and trees, wood chips are the best choice because they encourage fungal growth that slowly breaks down, releasing nutrients over time and feeding the plants as they grow.

## DISPELLING MULCH MYTHS

Numerous myths have persisted about wood mulch, including how it affects the health and nutrition of soils and how it should best be used. Let's take a look.

"Most organic mulches have little effect on the pH of soils, or if they do, it's only in the very top layer where the soil and mulch are in contact," says Bill Fonteno, professor emeritus of horticultural science at North Carolina State University and former technical advisor to the Mulch & Soil Council.

As for the myth of wood chips robbing nitrogen from the soil, Chalker-Scott says that has been disproven by research.

## LIVING MULCHES

Living mulches—low-growing plants that fill in the gaps between trees, shrubs, and perennials—are gaining popularity as an alternative to wood mulches in many home landscapes.

"A living green mulch mimics nature and allows the plants to fill in and self-organize, providing the same benefits as [wood] mulch—reducing weed seed germination, increasing soil moisture, and improving soil," says Benjamin Vogt, author of *A New Garden Ethic* (New Society Publishers, 2017).

Start by selecting the right plants for your climate and garden. Installing the wrong plant as a living mulch can create competition with your other plants for water and nutrients. For example, Vogt likes sedges *(Carex* spp.) and short bunch grasses for his Midwest setting. In my Vermont garden, I've experimented with growing strawberries in our hedge row of shrubs and mint in the tree rings in our lawn. So far the strawberries are growing well, producing fruit and not inhibiting the shrub growth, while the mint is staying mostly in the tree rings. Even if the mint escapes into the lawn, I like the smell when mowing.

Planting close together is also important. "Plants like to touch and mingle and collide. It fills the ground plane faster, which may reduce your weeding sooner," says Vogt. Check local garden centers to find what living mulches are best for your area. —C.N.

**Red-leaved lettuce is used as an edible living mulch between *Caryopteris* 'Worcester Gold' and *Geranium* Rozanne ('Gerwat') in a perennial border.**

NANCY J. ONDRA

## MASTERING MULCHING

Follow these tips for mulching your home garden:

■ For trees, shrubs, and perennial gardens, if possible, use wood chips from an arborist or mulch seller. Apply wood chip mulch to at least a four-inch depth to control weeds and aid water and air flow. To control perennial weeds, apply eight to 12 inches of mulch in fall, depending on the weed and infestation.

■ Avoid bark mulches, finely shredded mulches, sawdust, and dyed mulches without knowing the origin of the wood. When purchasing bagged mulch, look for the Mulch & Soil Council's certificate on the bag.

■ Don't be concerned about chunky wood mulch getting piled against a tree trunk or the stem of a woody perennial. But do keep finely shredded mulch or compost away from trunks or stems to avoid rot.

■ Don't fertilize gardens before adding wood mulch unless a soil test shows the soil is low in nutrients.

■ Mulch vegetable gardens and annual flower gardens with compost, pesticide-free grass clippings, shredded leaves, or straw. —C.N.

A four-inch layer of straw mulch spread in a vegetable garden helps suppress weeds and retain moisture.

Again, only the top fraction of an inch of soil may be temporarily affected by wood chips taking up nitrogen, while most plant roots are much further below ground.

The idea of adding fertilizer or compost to soils before adding a carbon-heavy, wood mulch is also misleading. "You should only add compost or fertilizer to soil that needs it based on a soil test," says Chalker-Scott.

Another myth involves volcano mulching, the practice of piling mulch up against a tree trunk in deep layers forming a volcano shape. "The belief is the mulching is to blame for a tree's death, but it's more likely due to poor planting practices," explains Chalker-Scott. As long as the wood chips are chunky, air and water can flow and the trunk is fine. It's when more finely ground mulch or compost mats against the crown of the tree that rot can happen.

"Wood chips, applied at the proper depth (four inches) and placed against the trunk of a tree or on the crown of a plant, will not cause it to rot and die," Chalker-Scott states, citing her own research and a similar study reported last year ("Mulch Ado About Nothing," *Western Arborist,* Winter 2021). "Look at nature. Many times trees in the forest have layers of organic materials against their trunk and they grow fine," she says. However, if soil or finely shredded mulch is piled against the tree trunk or if you use tree watering bags, then the air flow is inhibited, anaerobic organisms proliferate, and rot can start.

The same applies to covering the root flare of the tree with mulch. "In a forest tree root flares are often covered in organic materials, but as long as the material is chunky, there's not a problem. As soon as fine mulch mats or the tree is planted too deep in the soil, then it struggles," explains Chalker-Scott. "I've mulched trees with six to 12 inches of wood chips and they grew fine," she says.

### Resources

**Chip Drop**, *https://getchipdrop.com.*
**Garden Professors**, *https://gardenprofessors.com.*
**Mulch & Soil Council,** *mulchandsoilcouncil.org.*

Dyed mulches have also been the subject of some concern, but it turns out the dyes are perfectly safe. This hasn't always been the case with the wood used in dyed mulches. "Dyes are used to color dried woods that aren't uniform," says Fonteno. "Thirty years ago scrap wood, including old decks, construction woods and pallets, was ground up into mulch, dyed, and then sold," he explains. Some of this mulch contained contaminants such as CCA-treated wood (also known as pressure-treated wood).

Fortunately, that practice has stopped and the Mulch & Soil Council has a certification program that checks the mulch products of its members. The certification only applies to bagged mulch, however, not bulk mulch. To be sure you're getting a safe and quality product, it's always best to ask the seller what wood sources were used to make the mulch.

*Charlie Nardozzi is a garden speaker, author, and radio and television personality. His most recent book is* The Complete Guide to No-Dig Gardening *(Cool Springs Press, 2020). He lives in North Ferrisburgh, Vermont.*

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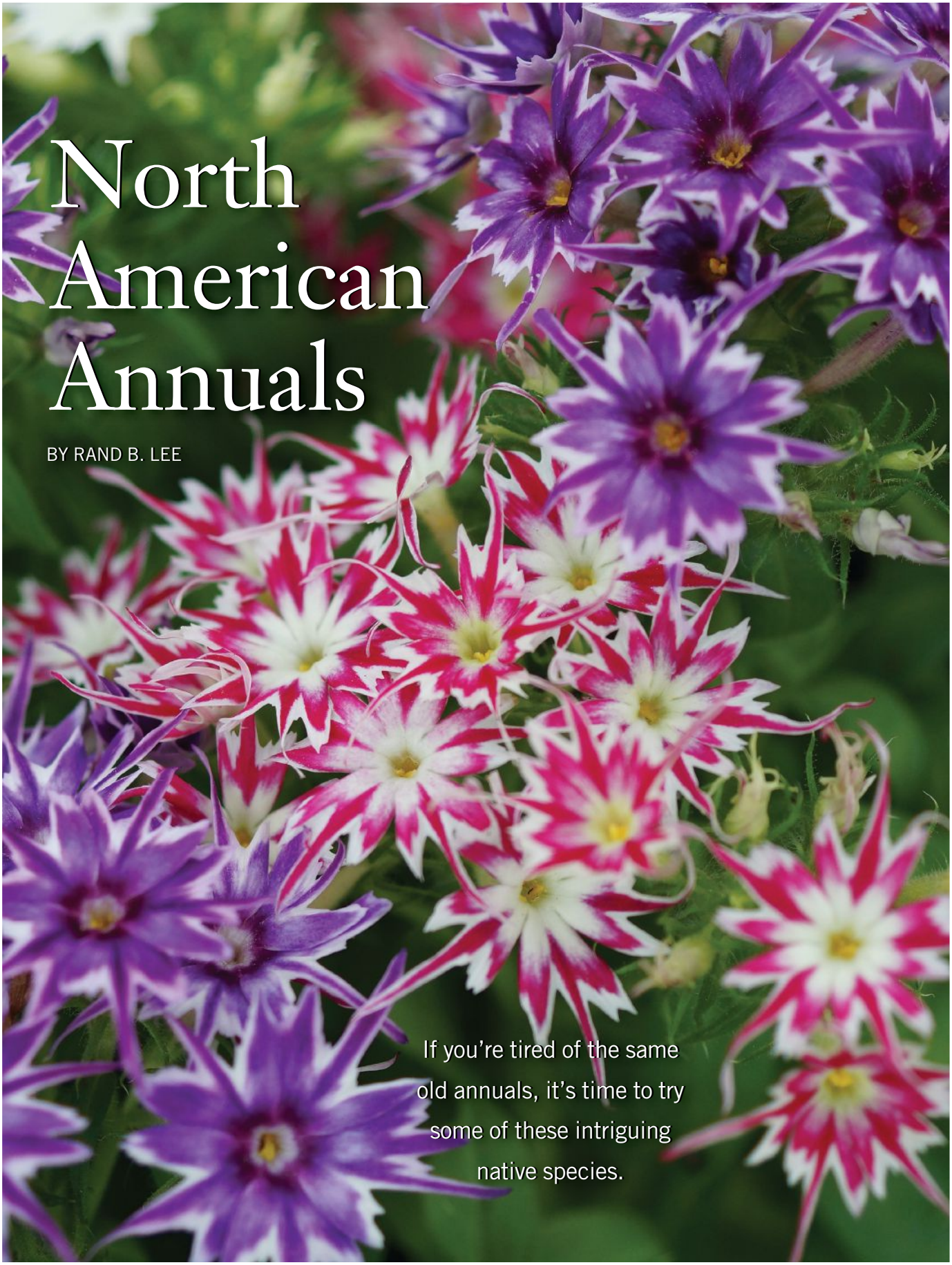
# North American Annuals

BY RAND B. LEE



If you're tired of the same old annuals, it's time to try some of these intriguing native species.

NANCY J. ONDRA

CONSIDER THE case of *Clarkia amoena* ssp. *whitneyi,* the giant godetia or Whitney's farewell to spring. A red-spotted, lavender-flowered California beauty adapted to shade, it bears three- to five-inch bloom clusters for many weeks in spring. While breeders have used it extensively in hybridization, it is nearly extinct in the wild. It has few advocates outside of California. It is, after all, "only" an annual.

There are a number of reasons why American annual wildflowers have been given short shrift by the horticultural community. One is plain old snobbery. The term "annual"—which merely means any plant that completes its entire life cycle within one year—has come to connote over-hybridized plants of boring uniformity, garish color, irritating ubiquity, and extreme ease of culture. Where's the challenge in raising the same old petunias, marigolds, and screaming scarlet salvias found expiring at garden centers each spring?

But perhaps the main reason American gardeners don't grow more native annuals is that—with the exceptions of California poppy *(Eschscholzia californica*), sunflowers *(Helianthus* spp.), and blanket flower *(Gaillardia pulchella)*—garden books and magazines seldom shine the spotlight on them. After all, there is no Annual Plant Association to lobby for their wider use.

Even knowledgeable gardeners may be hard pressed to name three true annuals native to their region. Yet there are hundreds as beautiful as anything you may now be growing. I heartily recommend your searching for and adding a few to your garden in the next growing season. Don't assume that a species not native to your region cannot be grown in your garden. Our native annuals have long histories, and you can never be sure what ancient memories of milder or harsher primeval climes may be locked in their green cells. Just try some and see which ones succeed for you.

Most of the plants featured in this article are true annuals, but a few may act as short-lived perennials, given the right growing conditions.

*Rand B. Lee is a freelance writer living in Santa Fe, New Mexico. This is an adapted and updated version of an article originally published in the May/June 2000 issue of this magazine.*

SAXON HOLT

**The genus *Clarkia*, which includes plants formerly in the genus *Godetia*, consists of annuals native mostly to open slopes along the west coasts of North and South America. *Clarkia unguiculata* (formerly *C. elegans)*, above, is an erect plant that grows one to three feet tall with summer flowers that range from lavender to burgundy in color. Other gardenworthy species include *C. amoena* and *C. pulchella*. Clarkias despise heat and humidity and do best in sandy, well-drained soils of moderate fertility. They are suited to containers but are also ideal in the front of a sunny border or in a cutting garden; afternoon shade is a must in warmer climates. Because clarkias resent root disturbance, sow them where they are to grow after danger of frost has passed.**

**Opposite: A selection of Drummond phlox *(Phlox drummondii)* Popstars™ Mix bears unusual, starry flowers in a wide range of colors in early summer. A selection of a species native to the southern United States that usually bears red flowers, it grows 10 to 12 inches tall and works well in containers. Start seeds indoors four weeks before last frost or sow outdoors in a sunny location in early spring.**

Sun-loving Texas bluebonnet *(Lupinus texensis)* is one of North America's most iconic annuals. Growing to a foot tall, this species is native to Texas and parts of Mexico and is a bit of a challenge to grow but worth trying. Where it is successful, it produces a beautiful spring and summer display. The purple-and-white flowers also attract pollinators. Other native lupines include sky lupine *(L. nanus)*, which grows eight to 12 inches tall and is native to California. Most lupines germinate more readily if you nick the seeds with a knife and soak them overnight in hot water before planting. A dusting of legume inoculant can help them get off to a good start. Plant lupines in sandy, well-drained soil in full sun; California species will do best with afternoon shade in warmer regions.

American basket flower *(Centaurea americana)* is a Southeastern native that grows three to five feet tall. One of our most spectacular native annuals, it bears huge four- to five-inch-wide, rosy-lilac flowerheads from July onwards that close at dusk even in the vase. The fragrant flowers attract bumblebees and butterflies, and the big black seeds are said to be a favorite food of quail. In the fall, or as early in spring as the ground can be worked, plant the seeds about an inch deep outdoors where the plants are to grow. You can also start the seeds indoors about eight weeks before last frost, providing at least a month of cold-conditioning beforehand. Plant them at the back of a sunny border or in a cutting garden.

TOP: SAXON HOLT. BOTTOM: NANCY J. ONDRA

Native to California and the Southwest, tidy tips *(Layia platyglossa)* produces charming two-inch, yellow flowers with white, serrated edges on succulent stems. The flowers attract a variety of pollinators, including checkerspot butterflies. Plants grow 12 to 18 inches tall. Sow seeds outdoors in full sun after all danger of frost has passed. Although tidy tips is drought-tolerant, it may benefit from a bit of extra watering during extremely dry periods.

## Sources

**Annie's Annuals and Perennials**, Richmond, CA. *www.anniesannuals.com.*
**High Country Gardens**, Santa Fe, NM. *www.highcountrygardens.com.*
**Larner Seeds**, Bolinas, CA. *https://larnerseeds.com/collections/annual-wildflowers.* (California native annuals)
**Pinetree Garden Seeds**, New Gloucester, ME. *www.superseeds.com.*
**Select Seeds**, Union, CT. *www.selectseeds.com.*
**Victory Seeds**, Irving, TX. *www.victoryseeds.com.*

Texas yellowstar *(Lindheimera texana)* blooms in spring and early summer. A good reseeder, it is suited for growing in a loamy soil in a sunny border, where it reaches six to 30 inches tall. Because it grows naturally in prairies, it is ideal for xeric gardens. The star-shaped flowers are about an inch wide and borne on hairy, branching stems. Sow seeds in fall; cold-conditioning may aid in germination.

LEFT: SAXON HOLT. RIGHT: BILL JOHNSON

If you have dry, sandy soil, try California desert bluebell *(Phacelia campanularia)*, shown left at Tucson Botanical Gardens. Plants grow six to 24 inches tall, bearing fragrant, downy, oval, slightly wrinkled leaves that alternate up their stems. Stems and leaf edges are often tinged red. The bell-shaped blossoms, deep blue with white speckles, are very striking planted en masses.

Another species, *P. tanacetifolia*, goes by a variety of common names, including lacy phacelia, bee food, wild heliotrope, fiddleneck, and tansy scorpionflower. It grows one to two-and-a-half feet tall when it is not lolling about, with finely cut, fragrant, pubescent, gray-green leaves. Its lilac-blue or mauve flower clusters unfurl from tight coils, hence the association with fiddleneck ferns and scorpion tails.

Phacelias dislike transplanting, so for best germination, soak seeds overnight in hot water before sowing them outdoors in late spring. Deadhead frequently to encourage a summer-long show. If you live in a very hot climate, flowering may slow down in midsummer but likely resume as cooler weather arrives in fall.

DOREEN WYNJA

## MORE NATIVE ANNUALS TO TRY

***Cleome serrulata*** (Rocky Mountain bee plant): native to central North America; grows three to five feet all; pale pink to purple flowers; grow in full sun.
***Corydalis aurea*** (golden smoke): native to West Coast and parts of New England; grows six to 24 inches tall; yellow flowers; grow in part shade.
***Diplacus bigelovii* var. *bigelovii,*** syn. *Mimulus bigelovii* var. *bigelovii* (Bigelow's monkey flower): native to California and Southwest; grows one to nine inches tall; pink flowers; grow in rock garden.
***Gilia tricolor*** (bird's eye): native to California; grows 12 to 18 inches tall; pale to dark blue flowers with golden centers; grow in full sun.
***Kallstroemia grandiflora*** (Arizona poppy): native to Southwest; grows six inches tall; orange flowers; grow in rock garden.
***Machaeranthera tanacetifolia*** (Tahoka daisy): native to North Central to Southwest North America; grows six to 24 inches tall; lilac or white flowers; grow in full sun.
***Sabatia campestris*** (meadow pinks, prairie rose gentian): native to central and southern U.S.; grows nine to 15 inches tall; pink to lilac flowers; grow in rock garden.

Members of a genus composed entirely of annuals native to western North America, nemophilas *(Nemophila* spp.) all make great edging plants and can handle anything from full sun to part shade. Five spot nemophila *(N. maculata)*, left, usually spreads along the ground but can grow up to a foot tall. Its solitary, one- to two-inch-wide, five-petaled white blossoms bear a dark violet spot at or near the tip of each petal.

Baby blue-eyes *(N. menziesii)* makes four- to 10-inch-tall mats of fuzzy, many-lobed leaves. Its flowers, which bloom in summer on lax stems, are usually pale blue or white, flushed either white or pale yellow at their centers.

These free-blooming plants are beautiful in containers, where their delicate flowers can be admired up close. Sow them about a quarter-inch deep either outdoors where they are to grow or indoors six weeks before last frost.

Though native to the Southwest, Dahlberg daisy or golden fleece *(Thymophylla tenuiloba)* readily adapts to other regions of the country. Each plant stands about a foot tall, although sometimes it has a somewhat recumbent habit. This makes it ideal for the front of sunny borders, in rock gardens, edging around steppingstones, and in hanging baskets and windowboxes.

The small, daisylike flowers are borne profusely atop feathery, bright green foliage that has the scent of thyme with chamomile. Plants are drought-tolerant, unbothered by either cool nights or hot days, and easy to grow from seed. Start seeds in six-packs over bottom heat, firmly pressing the seeds into the surface of the soil.

TOP: NANCY J. ONDRA. BOTTOM: MARK TURNER

# Outwitting Weed Laws

Creators of wildlife-friendly gardens often face challenges from HOA restrictions or weed ordinances. But some gardeners are successfully opposing these restrictions.

BY NANCY LAWSON

TO HIS WILD neighbors, Mani Kurian's garden was a lifeline, bursting with milkweeds, larkspurs, and sunflowers. But some of Kurian's human neighbors—specifically those on the architectural committee of his homeowners association (HOA) in Ellicott City, Maryland—saw his oasis as an affront to the status quo.

In 2017, a flower patch surrounded by stakes and netting triggered the first confrontation. "Right away, a lady came and said, 'You know, there are rules in this neighborhood,'" recalls Kurian, a community college biology professor. "I said, 'You know, I can't live without flowers.'"

As Kurian recounts his tangle with the turfgrass tyranny of American suburbia—one of many fights waged nationwide against outdated HOA requirements and municipal weed ordinances—hummingbirds buzz about the coral honeysuckle *(Lonicera sempervirens)* behind him. They're such frequent visitors that Kurian's children have come to expect them. "They're like family," he says.

Kurian's love of nature is deep-rooted, cultivated by a mother who, even at the age of 76, spends hours a day gardening in the 110-degree summers of India. But it was his father who passed along the courage to defend it, he says. "You could bring a boulder against him—he will stand there."

When the HOA became increasingly aggressive, Kurian ran for the board, won, and challenged a longtime president. That's when the trouble really began, culminating last year with a court summons. "My heart was pounding," Kurian says. "I've never had an experience with the court system."

With visions of spending thousands of dollars on legal fees, he chose to represent himself, waking up at 4 a.m. every day to study the law. Fortunately for him, the HOA never really had a case. Architectural guidelines typically require applications for exterior alterations such as fences and sheds, but the written rules of Kurian's HOA explicitly exempt gardens from that process.

**Janet and Peter Crouch spent thousands of dollars defending their wildlife garden, shown above, in Columbia, Maryland, against a homeowner's association (HOA). Their battle led to passage of a state law requiring HOAs to permit environmentally-friendly landscaping, a ruling that benefited Mani Kurian, right, who faced a similar challenge to his wildlife-friendly garden in Ellicott City, Maryland.**

NANCY LAWSON (2)

## WARRIORS FOR NATURE

Kurian is among many dedicated wildlife gardeners who have unexpectedly found themselves in the role of warriors for nature. Five years ago, my sister, Janet Crouch, became one of them too. Her campaign to save her garden—which led to a state law requiring HOAs to allow environmentally friendly landscaping—inspired Kurian and others to stand their ground amid threats of fines and court judgments.

Janet's case started when the Beech Creek HOA in Columbia, Maryland, sent a written request that she and her husband, Jeff, weed their 15-year-old garden. Surprised by the letter's tone, Janet turned to me for help. Through my habitat consulting and advocacy, I knew the standard procedures for responding to weed complaints. We pulled a few sprouts of Japanese stiltgrass, trimmed the edges, and erected Audubon "Plants for Birds" and Humane Society "Humane Backyard" signs. We crafted a response describing the garden's purpose and citing public programs that encourage native plantings.

Two months later, missives from the HOA's law firm began arriving, proclaiming that a garden "without the use of pesticides in which they have maintained 'native plants' to provide food for birds, bees, and other insects and animals" is "completely contrary to the overall design scheme for the Association." The HOA attorney wrote disparagingly of the Crouches' "environmentally sensitive agenda." Even though the community borders a wooded county park—and the park's web page advised residents to protect snakes, deer, and other wildlife—the letters blamed Janet and Jeff for the presence of squirrels. Revealing a startling ignorance of fundamental garden practices, the letter criticized them for encouraging "plantings which grow back every year."

Facing a lawsuit, Janet tapped into her reserves and her nerves of steel. "I'm a shy person," she told me later. "I don't usually put myself out there." But the idea of losing her family's oasis was too much to bear. She studied the architectural guidelines, none of which prohibited gardens. She catalogued other neighborhood plantings, demonstrating selective enforcement. She wrote newsletters, joined the board, attended environmental events, and found a lawyer willing to take on a case dismissed by almost everyone else as a losing battle.

With the legal battle behind them, Janet and Peter Crouch can now enjoy the pollinators and other wildlife drawn to their Maryland garden.

With the help of attorney Jeff Kahntroff of Skipper Law—the only firm in Maryland specializing in defending homeowners against HOAs—Janet sued and saved her garden, even retaining the right to tell her story, which Kahntroff calls an "incredibly rare" outcome. But the victory came only after years of harassment that included bogus hearings and random drive-bys of HOA agents photographing her property. The entire case hinged on complaints of a single neighbor who illegally killed a snake, regularly hired pesticide sprayers, and left out containers of standing water while accusing neighbors of attracting mosquitoes with flowers—highlighting just how much trouble even one unreasonable resident can cause.

"It takes a really principled and strong person to fight back," says Kahntroff. "We fought—and Janet spent a bunch of money—to get what, it's our position, she should have been entitled to in the first

Beebalm *(Monarda* spp.) and other native plants draw pollinators such as this bumblebee to Janet and Peter Crouch's wildlife garden.

NANCY LAWSON (2)

place without spending anything." My sister also incurred a significant emotional toll, often describing herself as a prisoner in her own home.

## HOAS FACING BACKLASH

Though HOAs purport to protect property values, home buyers are beginning to find their restrictions onerous, Kahntroff says. The cultural backlash is reflected in a recent insurance commercial mocking "HOA Cynthia," who admonishes neighbors for shrubs that aren't "board-approved" and hacks off hanging pots while shouting "Violation!" "That's consistent with the kind of shift we've seen," says Kahntroff. "You have no idea how many people come and say, 'I'm never buying into another HOA or condo association.'"

Given the ubiquity of HOAs, avoiding them may be easier said than done, however. According to industry reports, nearly 75 percent of homes sold in 2019 were part of HOA communities, and almost 75 million Americans live in HOAs, condominiums or cooperatives. Not all are ruled by overly officious Cynthias, but the system is stacked against homeowners. Many HOAs can recover attorney fees if they win a case but deny homeowners the same right. Few consequences exist for boards that don't follow their own bylaws. Rules are often selectively enforced, or they're ignored for years until a new board or management company is installed.

## NATIONWIDE ISSUE

But by networking with others in similar predicaments, savvy gardeners are learning how to fight back. In Galveston County, Texas, Kristy Key used a citation from her HOA as an opportunity to educate. A high school teacher, Key likes giving neighbors "the full gospel" about why she plants goldenrods and milkweeds in a yard that was once prairie. Her efforts have garnered attention from gardening and advocacy groups. "It just kind of grew and grew," says Key. "And then the HOA came knocking."

The violation notices arrived last winter, when her blanketflowers *(Gaillardia* sp.) had gone dormant. Though sad to remove the pithy stalks she'd left for twig-nesting bees, she drafted a four-page "manifesto" to save the rest, describing the steps she'd followed to make her garden a Monarch Waystation. "I kept using these words: native Texas pollinators, native Texas wildlife," says Key, an Oklahoma transplant. "If you know anything about people from Texas, they are very proud of anything from Texas."


Kristy Key, left, successfully defended her wildlife garden, above, in Galveston County, Texas, following a citation she received from an HOA.

Within 24 hours, the board president replied. "She said, 'Kristy, the letter's fantastic. Thank you for explaining everything in detail; we just need to know that everything you're doing is planned,'" Key says. During the process, Key learned that the complaint had come not from a neighbor but from an independent company hired to look for violations.

Even people living outside of HOAs are often subject to outdated municipal codes. Though the two entities differ in key ways—HOAs enforce rules through contracts and municipalities enforce them through ordinances—fear-based sentiments against wildlife gardening are the same. Both are usually complaint-driven, with few mechanisms in place to prevent abuse by vindictive neighbors.

"The system here is so stupid, and maybe it's stupid everywhere," says Benjamin Vogt, a garden designer and author in Lincoln, Nebraska, who was cited by the city in 2018 for "worthless vegetation." "A neighbor reports you anonymously online, and they send out an inspector automatically, and you get an orange sign staked in your lawn automatically, and you get a letter in the mail automatically."

Wildlife gardeners are already conspicuous in neighborhoods flattened by weekly mow-and-blow regimes, but scarlet-letter violation notices make them feel even more isolated. Sometimes community support comes after cases make headlines, as when an 80-year-old veteran in Kansas City cited last year took to Twitter and attracted the positive attention of the mayor. But if the complaining neighbor or board or city council is seen as retaliatory, few people are willing to fall into their crosshairs. Even

COURTESY OF KRISTY KEY (2)

## AVOIDING FALLING AFOUL OF WEED LAWS

If you want to create a wildflower or native plant garden, you can reduce the likelihood of attracting negative attention from HOAs or community weed law enforcers. Start by registering with an organization such as the National Wildlife Federation, which supports the Certified Wildlife Habitat program and offers a sign to help educate passersby about the value of your plantings. Make unfamiliar landscaping styles more discernible by trimming edges, adding low borders of recognizable flowers, installing pretty birdbaths or birdhouses, and creating pathways. Offer to share plants with neighbors, and keep a list of the plants in your garden with both common and botanical names.

If you are notified of a violation, do some research before responding or acceding to any demands. Review the HOA or city ordinances so you understand what you are up against. "Look at the law. Does it exist, or is somebody pulling your leg?" says Rosanne Plante, who provides legal counsel for Wild Ones, a natural landscaping advocacy group headquartered in Wisconsin (see "Resources," page 35). "You need to know what the law is, and you need to know if it's a good law, and you need to know what exactly it means."

In the event you need to take further action to defend your garden, enlist the support of local environmental organizations, garden clubs, community groups, real estate agents, and local elected officials. Some of the organizations mentioned above offer advice to homeowners defending themselves against weed ordinances. —N.L.

**Benjamin Vogt's backyard is not like those of his neighnors. Vogt's prairie garden in Lincoln, Nebraska, is filled with native plants and echoes of the region's natural landscape.**

sympathetic neighbors are often afraid to speak up, Kahntroff says, meaning the handful who complain have an outsize voice in the process.

Homeowners themselves often cede to unchallenged demands. That's a mistake, says Rosanne Plante, who has been on both sides of the issue, as a homeowner and a former assistant city attorney helping to enforce weed laws in Sioux City, Iowa. When the county road department threatened to remove her brick mailbox, Plante found nothing in the ordinances to justify such action. But it took many calls and emails to stop the harassment. "How many people would have just said, 'I can't handle this. Just take it out'?" Plante asks rhetorically. "Ninety-nine percent of people."

Armed with horticultural knowledge and a doctorate in English, Vogt wasn't about to succumb to vague language and antiquated conceits. He sent a plant list to the weed control superintendent, who visited along with his inspector. The initially tense atmosphere dissipated as they walked around the garden and Vogt rattled off Latin names: *Geranium maculatum, Zizia aurea, Ratibida columnifera*.

In the end, Vogt earned the city employees' respect. Wildlife gardens are "a shock to the system," he says, and resistance should be expected. "It's an unfortunate reality that when you disrupt the status quo, you have to be willing to not just take the first step. You have to be willing to take the second, third, fourth, or fifth step, and that means that you have to stand up for the defense of the space."

Last year, retired physics professor Ed

BENJAMIN VOGT

When Benjamin Vogt's garden was cited for "worthless vegetation," he walked around with city officials identifying all the plants by their Latin names.

BENJAMIN VOGT

Borchardt sued the city of North Mankato, Minnesota, for declaring his parklike property a "public nuisance," a term they defined as something that "unreasonably annoys a considerable number of members of the public" and has an "infestation of the premises by plants, animals and birds." An appeals court reversed the resolution, citing lack of evidence for public health concerns and noting that only two people had complained. "The city knows no caselaw, and we are aware of none," wrote the judges, "providing that a person's property may constitute a nuisance simply because neighbors find it unsightly."

## BITTERSWEET ENDING

Less than an hour after Mani Kurian arrived in court, a judge dismissed the case for lack of merit and with prejudice, meaning the HOA can't bring any more claims against his garden. Kurian's arguments were aided by Maryland's 2021 "low-impact landscaping" law, which was introduced by state delegates inspired by my sister's story. The law prohibits HOAs from mandating turfgrass and requires them to allow gardens that benefit wildlife and the environment. Only a handful of other states, including Florida and California, have at least some measures in place to protect sustainable gardens in HOAs.

Janet's garden remains a symbol of perseverance and a reminder of lost time and money. The Beech Creek HOA wasted $100,000 in community funds attempting to destroy a refuge for wildflowers, monarchs, woodpeckers, and yes, squirrels and snakes. But they discovered that today's wildlife gardeners, backed by a growing community of native plant enthusiasts, are as resilient as the sumac sprouting along the border between my sister and her neighbor; the more you try to cut them down, the more rooted in their resolve they become.

## Resources

**Humane Society**, *www.humanesociety.org/humane-backyard.*
**Monarch Watch**, *www.monarchwatch.org/waystations.*
**National Audubon Society**, *www.audubon.org/bird-friendly-communities.*
**National Wildlife Federation**, *www.nwf.org.*
**Wild Ones**, *https://wildones.org.*
**Xerces Society**, *www.xerces.org/protecting-pollinators.*

*A writer and naturalist based in Maryland, Nancy Lawson is author of* The Humane Gardener *(Princeton Architectural Press, 2017). She blogs at the Humane Gardener (humanegardener.com).*

# *in defense of* PATIENCE

I want it now. It's a philosophy that characterizes much of modern life and, by extension, modern landscapes. While instant impact is intoxicating, it is also curiously dissatisfying. What do gardeners give up when we trade process for result? Marianne Willburn makes a case for just how sweet it is to stop and smell the roses when you've watched them root from precious cuttings.

**A sunny area of Marianne Willburn's garden today, above right, and its beginnings in 2016, above. The idea of transforming a blank canvas into garden can feel overwhelming, but patience with the process offers joy along the way.**

IN COMPARISON with the most memorable private gardens I have visited over the years, my own garden is quite young. It's nine years old—or nine-and-three-quarters, as I used to proclaim when I shared that tender decade.

Even that meager total is misleading. Those nine years include a full year of idleness made virtue by keen observation of exposure, soil, wildlife, and existing vegetation; and cannot convey the time lost after an epic flood last year, or wasted after a devastating windstorm forced all hands to the wheel of home repair.

Nor can they accurately represent beds only five years old. Or several that have started their lives as repositories for cuttings, and which now emerge from toddlerhood with hair wild, but with faces revealing the adult within. An ephemeral woodland garden remains a woodland walk, filled with little else but vision and the trickle of a few dozen Virginia bluebells *(Mertensia virginica)* and snowdrops *(Galanthus* spp.) planted each year. Elsewhere, a once-wildflower bed runs rampant with *Artemisia* and waits for a strong perennial design and a budget. Is this mess three years old, or will we reset the clock when I have time and funds to access my inner Piet Oudolf and claim it?

The fact is, "nine years" is completely inadequate to describe anything other than the age of my husband's and my signatures on a county deed. It is hardly any time at all. But because I am fortunate enough to visit many private gardens and talk with their creators in the course of my work as a writer, I know that I have only just begun the process of garden-building in this place.

MARIANNE WILLBURN (2)

I am directed and motivated by the theme that runs through all of these conversations: Connection, experience, and a deeper awareness of the ecosystem that surrounds you—all created when we give ourselves over as gardeners to the educating, life-enriching power of process.

## CHASING THE DREAM

These garden creators find me a willing disciple, happy to accept a way of looking at my garden early in its development; but generally, patience is a tough philosophy to sell. In modern American eyes, I should be finishing up this garden and thinking about my next one.

According to recent national home sales, (which include the slight skew of institutional investors at seven percent of sales), the amount of time sellers owned their home before coming to that settlement table averaged 6.3 years in 2021. That's not much time to grow a garden. More importantly, that's not much time to observe and learn from a garden. As Paige Dickey wryly observes in her excellent book, *Uprooted*, "It is so American to turn our back on a home and move on."

We are habitual movers, and movers-on-uppers—a cultural and socio-economic phenomenon that has its roots in opportunity, ambition, and the American Dream; but which has a profound effect on the roots we grow in our communities and in more literal terms, our gardens. It affects how we view our landscapes and the landscapes of others, how we attach (or detach) from them, and the level of maturity and visual impact we expect from them very early on.

Aye, there's that rub. For, although we are quick to create, and quick to move on, something within many of us still yearns for the trappings of age to season our outside spaces. A sense of gravitas and grounding. Even in a contemporary garden we desire the weather-beaten elements, the lichen-covered stone, the mature trees, the winding paths with hidden, intimate, destinations, and the impression of solidity that such a landscape imparts to the home that occupies it.

This affects what we plant and how we plant it. How we are marketed to and what we are tempted by. We are suckers for simulacra, and the online preponderance of the key words "Rustic" and "Vintage" in relation to both home and garden products betrays that inner longing.

Connection. We crave it. But how to cultivate it?

## A TIMELINE THAT TAKES TIME

A few months ago, I stood in a cottage in the United Kingdom studying an assortment of old photos on a window-lit table. Each documented the building of a garden over time, and were primarily composed of tiny plants surrounded by grass and chaos.

Here and there, a smiling gardener beamed out from the collection, caught in a moment of grubbiness and pride. The photos were fascinating, for they in no way resembled the garden I had just toured. What they did capture, however, was the patience and perseverance of two people.

For four decades on the other side of that window, Charlotte and Donald Molesworth had built a glorious topiary and perennial garden from scratch—a scratch more scratch than others might have the stomach for.

Rescued yew seedlings and box cuttings from relatives' gardens were all the couple could once afford. Today the garden features in magazines and on garden tours. Their joy of it and deep bond with it is palpable. And when Charlotte Molesworth learns we are a group made up of 10 Americans, she reveals to us the garden-building philosophy that got them there, concerned we might not share it.

"You MUST have patience," she states emphatically. "The first seven years both you and the plants are just getting your toes in."

I feel myself agreeing instinctively, almost gratefully. That's precisely how I would describe my relationship with my current garden. I'm still playing.

"In Year 14 you have an idea of where the garden is going—the plants are established and the garden is virtually formed," she continues. "Shaping topiary can begin in real earnest. But it's only by Year 21 that the garden is fully mature." She pauses and laughs, "And by Year 28

MARIANNE WILLBURN

**Patience in garden-building has created a synthesis of abundance and formality in the garden of Charlotte and Donald Molesworth in Southeast England.**

you need to be harsh with it, lots of cutting back to keep it in scale!" She tells me later that the advantage of using young plants is the opportunity to shape and train them to one's needs early in the process.

Almost as if to uphold American stereotypes, an attendee behind her expresses his frustration. "But I don't have time!" he exclaims. Back home, he has just bought a new house sitting on a large, empty canvas. He is beginning again, and it is weighing heavily.

"How old are you?" Molesworth asks, bluntly. When he replies "62," she lifts up her hands above her head and claps them together with a huge smile across her face. "Oh golly, you've got LOTS of time!" says this garden-builder and inspirational septuagenarian. After decades of taking great joy in the smallest of steps, and aware that the concept of time is a relative one, she is excited by the connection and experience that yet awaits him.

I am reminded of how relative the passage of time seems each time I visit author and garden writer Pamela Harper in her home and garden of over 50 years in Seaford, Virginia. Harper came there as a young mother, and now, at 92 with failing sight, still cares for her two-acre garden with the enthusiasm of a woman half her age.

When we are offered divisions at a friends' garden, I watch with interest as she turns them down due to their ultimate size. In the split second I am reaching naively for a pot, she's already grown it in her mind; loved it; and been forced to take it out. Still in the Padawan stage of patience, I am anxious for rampant growth. But to Harper, 10 years might as well be one.

Time moves more quickly the longer one lives upon this earth; but it compensates such loss with the unexpected gift of patience. You cannot watch a child go from babe-in-arms to bristly and beer-drinking without cultivating some perspective as to the ultimate size of a viburnum cutting.

## PATIENCE IN THE YOUNG, BROKE GARDEN

For Harper, and for the Molesworths, economic necessity informed many of the decisions of garden building—a situation that is shared by the vast majority of gardeners worldwide who are endeavoring to create something extraordinary with little in the way of resources. Sometimes it's years before they realize they're building something else at the same time: experience.

We learn skills from necessity: how to propagate, how to build raised beds and trellises, how to skillfully but ruthlessly divide our plants, how to carefully match precious plants to our soils, and how to enrich those soils without depleting our bank accounts.

We absorb the ordinary, the extraordinary, and the individual eccentricities of our outdoor spaces on a micro level that others with greater resources cannot. We invest all of ourselves in them. Then, one day we wake up and realize that in the midst of all the obstacles and struggles, we actually built a garden while we weren't looking.

Across the United States from Seaford, another remarkable gardener, Joanne White, has benefited from the same calm attitude towards the passage of time and the gradual building of knowledge. Her garden at Novelty Creek in Redmond, Washington, is also fodder for magazines, books, and tours, but started life as a blank slate planted with the ubiquitous Pacific Northwest trinity of rhododendrons, azaleas, and bark.

"We didn't have a dime left when we moved in," she says. "If I'd hired a landscaper there would have been a divorce." But a gradual interest in garden tours after 10 years at the property made her realize she could do something else. And she did—building experience through a patience she didn't even realize at the time was patience.

"I took great joy in watching things happen—I liked the gardening commu-

MARIANNE WILLBURN

**Pamela Harper stands at the entrance of her two-acre Virginia garden. "To enjoy the full spectrum of a gardening life, patience is essential," she says. "It can be learned."**

**Joanne White's garden at Novelty Creek in Redmond, Washington, today, above, and in earlier days, left. "We didn't have a dime left when we moved in," says White. Today the garden stands in testament to the power of patience and perseverance.**

nity and the assistance I got from people who were eager to talk plants. Looking back," she tells me, "it's all about starting with the knowns and the unknowns." As experience builds, so does your garden.

"Do what you know you can do first," she says. When her husband was diagnosed with Alzheimer's when she was just 55, the steady pace of that mantra kept her sane. Today her garden is a showpiece with three ponds filled by an Artesian well and linked with stone bridges. She could never have imagined what it would become, and tells me that almost every morning she comes outside and is floored by what Mother Nature has created with her help.

## PATIENCE ISN'T JUST FOR HOME GARDENERS

Our public spaces could also benefit from a little patience. How often do we see poorly (verging on ridiculously) chosen trees, shrubs, or perennials in parks, along highways, parking lots, and even in public gardens—all planted in the name of Wow, Right Now? Doing better means having the will to wait, and the wherewithal to employ experienced horticulturists to make crucial decisions.

"You can read all you want—and you should," says Gregg Tepper, senior horticulturist at the Arboretum at Laurel Hill in Philadelphia, Pennsylvania, and author of *Deer-Resistant Native Plants for the Northeast*, "but when you have experienced something growing for yourself and learned from your successes and failures over time, it seats in your brain differently. It resonates forever."

In his professional life, Tepper is surrounded by a landscape that exemplifies serenity, strength, and the passing of time. Laurel Hill is a historic cemetery and arboretum founded in 1836 that is filled with an exceptional collection of trees that probably never shaded those who planted them.

Tepper is conscious of the responsibilities we have when planting a landscape—public or private—and is not into what he calls "disposal landscaping"—which is the ultimate result of a reactionary, make-it-look-good-right-now philosophy. "Looking at it in the moment is a mistake when we're planting," he says. "We're a part of the process for the future." In that future, Tepper has no intention of cutting down trees that were planted too closely for an immediate effect.

Even as Tepper works to expand and care for the living collections at Laurel Hill, he is involved in designing numerous shrub and perennial installations in various areas of the garden aimed at increasing pollinator populations and enhancing visitor enjoyment. Though the timelines are different, he treats these designs with just as much respect and patience as the trees that surround him, constantly thinking about communities of plants, rather than the individual plants themselves. His past experience drives future design.

## PATIENCE NEEDN'T MEAN FOREVER

Autumn eventually comes for all of us, and there is no shame in leaving a garden you worked on for a lifetime, or chasing new exciting opportunities in garden-building. Nor could I possibly take issue with great design delivered for those who can afford it. Someday I may well hand over my shady stream valley for a Mediterranean terrace, a view of the sea, and an entirely new palette of plants.

But we are quietly called as gardeners—whether prince or pauper—to gain as much as we can from the process in front of us in order to add as much as we dare to the continuing conversation. Cultivating patience allows us to sit with that process, feel connected to it, and thus to the horticultural community as a whole.

Next time you have visitors, tell them you have a young garden. On a planet that counts its birthdays in billions, we all do.

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*Marianne Willburn is a Virginia-based author, speaker, and writer at MarianneWillburn.com and GardenRant.*

TOP: MARIANNE WILLBURN. BOTTOM: COURTESY OF JOANNE WHITE

# Cheyenne Botanic Gardens

*by Mary Yee*

IN WYOMING, where nature reigns supreme, magnificent National Parks can be found at every turn, yet there's only one established public botanical garden—Cheyenne Botanic Gardens. Its singular status can be attributed to the High Plains state's sparse population and the region's harsh environment, which can make gardening a real challenge. Yet even where hail and heavy winds are norms in the weather forecast, growing a garden is a worthwhile pursuit in so many ways.

## PEOPLE FIRST

"Sustainability" and "giving back to the community" are buzz words in many of today's conversations, but they have been in practice at Cheyenne Botanic Gardens since its beginning in 1977. According to Shane Smith, the garden's founder and director emeritus, Cheyenne Botanic Gardens is unlike most public gardens because it "began as a social service project providing food, therapy, and meaningful activity mainly for senior citizen volunteers." At that time, the garden was in a different location than it is today. The project soon expanded to serve at-risk youth and the physically disabled. At its core was a solar greenhouse—"the first large-size, 100 percent passively solar-heated greenhouse in the nation," Smith proudly notes.

### Cheyenne Botanic Gardens

710 S. Lions Park Drive
Cheyenne, WY 82001
(307) 637-6458 *www.botanic.org*

■ Hours: Conservatory and Paul Smith Children's Village Sept.–May, Tues.–Sat. 10 a.m.–5 p.m. June–Aug., Tues.–Sat.– 10 a.m.–5 p.m., Sun. 12–5 p.m. Grounds open year-round dawn to dusk.
■ Admission: Free.

Located outside of the Shane Smith Grand Conservatory, this new crevice garden designed by Kenton Seth blooms from March to November and is resistant to hail and drought.

Smith, a Colorado native who spent over 40 years at the garden before retiring as its longtime director in 2018, says he quickly realized that "Cheyenne likely has the worst garden climate in the Lower 48." He recalls, "There were many times I almost threw in the towel, but I stayed positive that we could make a difference even with the extreme climate." He owes the garden's success in large part to "a great staff who brought much passion to our mission."

For his trailblazing efforts, Smith has been honored by having the garden's Grand Conservatory—which he helped build—named for him in 2019. He is also the recipient of the American Horticultural Society's 2012 Great American Gardeners Professional Award.

## TELLING MANY STORIES

Today, Cheyenne Botanic Gardens is a nine-acre showpiece for the city of Cheyenne, which manages it as part of its City Parks and Recreation Department. Themed areas include a perennial walk, rose garden, cottage garden, herb garden, a labyrinth, a lily pond, and a lake. There are also two community gardens with plots for rent.

Cheyenne Botanic Gardens still has a vital volunteer program billed as "horticultural therapy in action." As an example of sustainability, a significant percentage of the garden's electricity is supplied by a photovoltaic solar energy system.

Fittingly, the Shane Smith Grand Conservatory is one of the most popular attractions for visitors. The three-story building, which houses collections of plants from all over the world, provide a reprieve from inclement weather, especially in winter. Cacti, orchids, bananas, ferns, bromeliads, and even a gigantic palm tree grow happi-

COURTESY OF CHEYENNE BOTANIC GARDENS

The Paul Smith Children's Village was the world's first Platinum LEED-certified children's garden.

ly protected from the elements. There's an indoor stream and waterfall to provide the ambiance of a tropical forest as well as an orangerie and a bonsai collection.

The Paul Smith Children's Village—no relation to Shane Smith—is the world's first Platinum LEED-certified children's garden for sustainability. The windmill located here is not a quaint piece of decor—it actually pumps water from a well to service the garden's water features. A wind turbine supplies the garden with much of its electricity. A wetlands area, a sheepherder's wagon, secret garden, peek-a-boo path, and other points of interest keep kids engaged.

Even here, there are lessons to learn. "Last year we grew produce from May through mid-October, including inside the Children's Village, to donate to the needy," says Director Tina Worthman. "It was truly a year of growing tomatoes and peppers thanks to the hot summer and long fall."

## BEAUTIFUL AND TOUGH

While tender species lead pampered lives in the conservatory, plants outdoors have to stand on their own.

During the short growing season, tulips and daffodils brighten late spring, followed in summer by bedding plants such as zinnias, cosmos, and lots of petunias. Petunias, Smith says, "are among the most resilient annuals," being able to withstand damage from wind and hail. Perennials such as yarrows, columbines, coneflowers, lupines, and penstemons also provide summer color. "We're listed as USDA Zone 5b," says Horticulturist Jessica Friis, "but since we often have late and early frosts, we advise people to stick to plants hardy to Zone 4 or lower."

The Bedont Rose Garden highlights non-grafted, hardy varieties suited for Wyoming's climate. "The toughest rose we know of is 'Harrison's Yellow'," says Friis. "It came west with the pioneers and has survived on its own on abandoned homesteads—but it only blooms once in June." For those looking for a more sustained floral display and willing to provide extra irrigation and care, she recommends 'Nearly Wild', 'Thérèse Bugnet', 'Champlain', 'Bonica', and 'Belle Poitevine'.

Tropical plants around a waterfall provide year-round color in the conservatory.

## THE IMPORTANCE OF COMMUNITY

At Cheyenne Botanic Gardens, it always comes back to people. Worthman is hoping to continue connecting with more gardeners in the community. Plans are underway to renovate the South Community Garden "to extend our growing capacity next year with more raised beds," she says. A greenhouse will be added this winter. The space will also become an urban agriculture demonstration center to educate the public.

Rooted in bringing people from diverse backgrounds and needs together through horticulture, Cheyenne Botanic Gardens is, says Shane Smith, a "social experiment that has been amazingly successful."

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

### ABOUT THE RECIPROCAL ADMISSIONS PROGRAM (RAP)

This American Horticultural Society program is designed to encourage people to visit gardens, arboreta, and conservatories while traveling. As a current member, you receive free admission and/or other special discounts at more than 345 sites throughout North America! To make the most of this member benefit, view the current list of participating locations and the RAP benefits they offer at *www.ahsgardening.org/rapgardens*.

JANELLE ROSE PHOTOGRAPHY, COURTESY OF CHEYENNE BOTANIC GARDENS (2)

# Ground Cherries: Big Flavor in Small Packages

*by Michael Brown*

IF YOU ARE looking for a new plant to add interest to your garden and a spritely, tropical flavor to your cuisine, consider the tasty and easy-to-grow ground cherry. Ground cherries belong to the genus ***Physalis***, which includes some 80 or so species that grow in warm temperate and subtropical regions of the world, primarily in the Americas. Some, such as the Chinese lantern flower, are grown as ornamentals, while others produce edible fruit. Perhaps the most notable feature of the genus is a thin, paperlike husk that encloses the fruit.

The edible ground cherry *(Physalis grisea,* syn. *P. pruinosa*, or *P. pubescens* var. *grisea)* goes by several other common names including husk tomato, strawberry tomato, and downy ground cherry. It is a close relative of the tomatillo; however, ground cherries are smaller plants that produce smaller, sweeter fruit that does not protrude from the husk.

## GROWING INFORMATION

Chances are you won't find ground cherry seedlings at your local garden center, so your best bet is to grow them from seed (see "Sources," opposite page). Start seeds indoors six to eight weeks before your last expected frost, about the same time as you sow tomatoes. Lightly cover seeds with soil or other planting medium. A heat mat that keeps the soil temperature at about 75 degrees Fahrenheit (F) will aid germination, which can take one to three weeks. Keep seedlings moist and provide bright light once they germinate. After true leaves appear, thin seedlings to two inches apart or transplant them into individual pots.

Gradually harden seedlings after danger of frost has passed. Transplant them into the garden when the soil has warmed—ground cherries are sensitive to frost. Plant them in full sun and well-

'New Hanover' is an heirloom selection of ground cherry from Pennsylvania.

NANCY J. ONDRA

drained soil, spacing seedlings about two feet apart in all directions. Water plants at least once a week, soaking the soil deeply; aim for about an inch of water per week. Depending on the variety, fruit will begin to mature in 60 to 75 days from transplanting.

The ground cherry has a sprawling growth habit and ripe fruits tend to fall to the ground, hence the common name. This means that harvesting usually entails getting down on your knees and reaching under the plant to find all the dropped fruits. I've had success growing plants in large pots so drooping stems are kept off the ground. Staking is also possible but is challenging because of their tendency for horizontal growth. Mulching around the plants preserves moisture, reduces weeds, and keeps the fallen fruit clean.

## PESTS

Ground cherries aren't usually troubled by diseases. The most serious pests of ground cherries are lema beetles. Flea beetles and whiteflies can also bother the plants. If these pests are prevalent in your garden use a floating row cover to protect plants.

## GROUND CHERRY SELECTIONS

I've grown a number of ground cherry selections, but to be honest, I can't tell much difference between them. Here are a few of the better-known selections:

**'Cossack'** (or 'Cossack Pineapple') is an early variety whose yellowish fruits are often blushed with orange. Plants are compact, about 12 to 18 inches tall and up to 24 inches wide. Fruits begin to ripen about 60 to 70 days from transplants. They average 3/8 to 5/8 inch in diameter.

**'Aunt Molly's'** ripens 65 to 70 days from transplants and may grow nearly three feet tall and wide. Fruit averages ½ to ¾ inch in diameter.

**'Goldie'** begins to mature about 75 days from transplant on plants that are 30 to 36 inches tall and wide. Fruit averages ½ to ¾ inch in diameter.

**'New Hanover'**, an heirloom variety from Pennsylvania, grows about 18 to 24 inches tall and nearly three feet across. Fruit is similar to 'Cossack'.

BILL JOHNSON

Harvest fruits of selections such as 'Goldie' when they turn golden yellow and the husks dry out.

## HARVEST

Ground cherry fruit is ready to harvest when it turns a golden color and the husk enveloping it is dry, brownish-yellow, and stiff. Because the fruit is not usually visible, the condition of the husk is the best ripeness indicator. Remove the fruit from the husk before eating.

### Sources

**Baker Creek Heirloom Seeds**, Mansfield, MO. *www.rareseeds.com.*
**Johnny's Selected Seeds**, Winslow, ME. *www.johnnyseeds.com.*
**Seed Savers Exchange**, Decorah, IA. *www.seedsavers.org.*
**Southern Exposure Seed Exchange**, Mineral, VA. *www.southernexposure.com.*
**Territorial Seed Co.**, Cottage Grove, OR. *www.territorialseed.com.*

Fruit that has fallen from the plant is normally ripe. The fruit will continue to ripen after harvest as long as it has already started to color, though the taste will not compare with fruit that ripened on the plant. Harvest when conditions are dry because moist fruit tends to mold. Fruit left in the husk will keep at room temperature for several weeks. Good air circulation helps prevent mold.

The sweet-tart fruit of ground cherries can be eaten raw, added to salads, baked into pies, processed into jams and preserves, or dried like raisins.

Each fruit can contain over 100 seeds, so even if you harvest scrupulously, you are likely to have plenty of volunteers the following year.

*Michael Brown lives in West Orange, New Jersey, where he is rehabilitating his half acre of forested land and developing a small nursery for perennial berry plants.*

# Stopping the Spread of Spotted Lanternfly

*by Danae Wolfe*

IT WAS AN overcast Friday morning in late May when I made my way to Cleveland with entomologist and Ohio State University Extension Educator Ashley Kulhanek to photograph an infestation of spotted lanternfly *(Lycorma delicatula)*. In the back-alley parking lot of a manufacturing facility stood a tree-of-heaven with grapevines tangled throughout its branches.

At first glance, nothing seemed out of the ordinary—just an invasive tree-of-heaven capitalizing on disturbance to grow where other plants couldn't. But upon closer inspection, we saw them. First a few, then dozens of small black-and-white-spotted insects crawling on the branches and leaves of the tree and entangled vine, two of the preferred host plants for spotted lanternflies. The invasive insect was first spotted at the Cleveland site in 2021 by a tree care company that was clearing branches from power lines. Despite treatment, eggs hatched the following spring, prompting staff from the Ohio State University Extension to keep an extra close eye on the infestation.

Some may say it was only a matter of time before spotted lanternflies invaded Ohio, but Kulhanek says that's exactly the kind of thinking that gives us permission to let down our guard. "We can't give up just because it's hard to contain," she says. "Every early detection buys us time to learn how to manage invasives better."

Spotted lanternfly was first discovered in North America in 2014 in Pennsylvania but is believed to have arrived a few years prior on a cargo ship from China. Since that time, spotted lanternfly has spread to 11 Eastern and Midwestern states, including Connecticut, Delaware, Indiana, Maryland, Massachusetts, New Jersey, New York, Ohio, Pennsylvania, Virginia, and West Virginia. This pest is a concern because of its potential to threaten the agricultural industry.

**Top: An adult spotted lanternfly is easily distinguished by its coloration. Above: Black first-instar nymphs—shown here on a grapevine—display white spots.**

TOP: COURTESY OF UNIVERSITY OF MARYLAND. BOTTOM: DANAE WOLFE.

## WHAT IS SPOTTED LANTERNFLY?

Indigenous to China, India, and Vietnam, spotted lanternflies are planthoppers that feed by piercing and sucking sap from host plants, like all true bugs. The preferred host for the invasive insect is the tree-of-heaven *(Ailanthus altissima)*—also native to Asia—though the pest is known to associate with more than 170 different fruit, ornamental, and woody trees and plants, including grapes.

Spotted lanternflies lay gray egg clusters on a variety of surfaces, both natural and non-natural, in the fall before the first freeze. After overwintering as eggs, nymphs emerge from late April through early June and go through four instars, or juvenile life stages. First-instar nymphs are black with white spots, eventually donning bright red colors. By late July into November, adults have emerged and will begin mating and laying eggs to restart the life cycle.

The forewings of adult spotted lanternflies are a dull gray to light brown with black spots, but when they take flight, their more colorful red, white, and black hindwings can be seen. The abdomen is bright yellow with thick black bands.

During our visit to Cleveland, Kulhanek and I found first-instar nymphs. As I climbed around pallets of raw material photographing the small bugs, Kulhanek spoke with employees of the factory about the infestation. She pulled a stack of identification cards from her pocket and handed them to the employees we saw walking through the parking area. She even provided a brief impromptu lesson on the importance of training all on-site staff about what to look for and how to ensure they aren't inadvertently transporting the nymphs on their vehicles or bodies.

After a few phone calls to colleagues and assurance that the Ohio Department of Agriculture was aware of the infestation and had a plan of action for its management, Kulhanek collected a few nymphs in a vial to help aid homeowners, gardeners, and farmers on how to identify the pests during educational programming she conducts throughout the state.

## WHAT MAKES THEM DESTRUCTIVE?

Spotted lanternfly stresses and weakens plants by feeding on the phloem, the part of the vascular system that transports nutrients. As it feeds, the pest also excretes a sugary substance called honeydew, which facilitates the growth of sooty leaf mold. With its fondness for grapevines, entomologists worry about the westward movement of spotted lanternfly. Research published earlier this summer in *Nature* suggests that, without preventive management, the pest has a high probability of reaching California by 2033, which could devastate the state's economically important wine industry. Other tree crops susceptible to damage from the pest include almond, apple, cherry, peach, plum, walnut, apricot, maple, black walnut, birch, and willow.

Ohio Entomologist and Extension Educator Ashley Kulhanek shows a Cleveland factory employee a vial with a spotted lanternfly nymph as part of an effort to educate and help citizens identify the pests and help control their spread. The nymph was collected from the tree-of-heaven in the background, a favorite host for the insect.

## HOW TO HELP

If you live in the Eastern and Midwestern regions, keep a sharp eye out for spotted lanternfly adults and newly laid egg masses when you head outside for garden cleanup this fall.

Spotted lanternfly egg masses are gray and can be found on trees as well as non-plant surfaces.

If found, eggs masses—which resemble gray plaster—should be scraped from surfaces into a container and covered with rubbing alcohol or hand sanitizer. Adults (and nymphs throughout spring and summer) should be swiftly squashed. In areas with known infestations, be sure to inspect vehicles before exiting parking lots or work areas. Also inspect clothing, outdoor gear, and even pets!

If you spot the bug, be sure to check with your local Extension office, Department of Natural Resources, or Department of Agriculture on what steps to take to report and destroy the pest. Each state has its own protocol for handling new infestations of the invasive insect and guidelines when transporting materials to and from quarantined areas.

Like many invasive insects before it, spotted lanternfly poses a real horticultural threat. But knowing how to identify and report the pest can help appropriate agencies swiftly manage infestations and prevent its westward spread.

*Danae Wolfe is a photographer and conservation educator based in Wooster, Ohio. She manages Chasing Bugs* (www.chasingbugs.com)*, a platform that promotes insect and spider stewardship and conservation.*

TOP: DANAE WOLFE. BOTTOM: COURTESY OF PENNSYLVANIA DEPARTMENT OF AGRICULTURE, BUGWOOD.ORG

# Horticultural News and Research Important to American Gardeners


*Echinacea* 'Artisan Yellow Ombre'

## AAS NAMES FIVE NEW WINNERS FOR 2023

All-America Selections (AAS) has designated five plants as AAS Winners for next year's gardens. After being trialed throughout North America, three perennials and two edibles demonstrated the superior performance needed to capture the trade association's ultimate honor for the year.

The perennial winners include *Echinacea* 'Artisan Yellow Ombre' (USDA Zones 4a–10b), a golden-petaled hybrid coneflower developed by PanAmerican Seed; *Leucanthemum* 'Carpet Angel Daisy' (Zones 4a–10b), a pure white Shasta daisy that is being billed as a groundcover by Green Fuse Botanicals; and *Salvia* 'Blue by You' (Zones 4b–9a), an early-blooming sage introduced by Darwin Perennials.

The edibles winners include 'Wildcat', an extra-large cayenne pepper that has a mild pungency of 500–1500 Scoville units from Bayer/Seminis Seeds, and 'Rubyfirm', a personal-sized watermelon yielding two to three fruits per vine from Partner Seeds Co., Ltd.


'Wildcat' cayenne pepper

For more information, visit the All-America Selections website at *https://all-americaselections.org*.

## MONARCHS RECEIVE ENDANGERED STATUS

Citing habitat loss, pesticide use, and climate change as significant threats, the International Union for Conservation of Nature (IUCN) in July added migratory monarch butterflies *(Danaus plexippus plexippus)* to its "red list" of endangered species, just two steps away from extinction.

The population of the iconic orange-and-black butterfly has declined between

22 and 72 percent in just the past decade. Severe weather alone has killed millions of the butterflies. Known for making their yearly flight from Mexico to southern Canada, the longest migration of any insect species, monarchs are also affected by drought, wildfires, logging, and deforestation.

"So many people and organizations have come together to try and protect this butterfly and its habitats. From planting native milkweed and reducing pesticide use to supporting the protection of overwintering sites and contributing to community science, we all have a role to play in making sure this iconic insect makes a full recovery," says Anna Walker, a member of the IUCN SSC Butterfly and Moth Specialist Group and Species Survival Officer at the New Mexico BioPark Society, who led the monarch butterfly assessment.

To learn more, visit the IUCN website at *https://iucn.org*.

## HORTICULTURE INDUSTRY RAISES FUNDS TO AID UKRAINE

While the war in Ukraine rages on, some horticultural organizations, seed companies, and individual gardeners are showing their support for the country in crisis by growing sunflowers and raising funds for public gardens.

As a show of support, some gardeners have been growing sunflowers, the national flower of Ukraine. In response, some seed companies have pledged to raise funds from sunflower sales. Botanical Interests, based in Broomfield, Colorado, donated proceeds to Sunflower of Peace, an organization dedicated to providing resources to those affected by the crisis in Ukraine and Eastern Europe. Baker Creek Heirloom Seeds in Mansfield, Missouri, raised funds for humanitarian aid for Ukrainians displaced by the war through World Help.

"My great-grandfather, Jacob Hetterle, was just a boy when the family left Ukraine, eventually settling in the U.S., but his memories of the fertile farmland they tended there remained vivid through his life," says Jere Gettle, head of Baker Creek Seeds. "We are deeply concerned about the ability of Ukrainian farmers and seed savers to continue their work preserving the traditional varieties and crops of Ukraine."

Botanic Gardens Conservation International, a network of botanic gardens and plant conservation experts throughout the world, has collaborated with Partnerships for Nature to raise funds to support 10 botanical gardens in Ukraine. Having reached its initial fundraising target of £50,000, BGCI has now extended their goal to £100,000 in order to support staff, sustain collections, and help the country's botanic gardens stay open. To donate to the effort, go to BGCI's website at *www.bgci.org*.

LEFT, TOP AND BOTTOM: COURTESY OF ALL-AMERICA SELECTIONS. CENTER: DANIEL HERMS, THE OHIO STATE UNIVERSITY; BUGWOOD.ORG

## GROWING FOOD CROPS WITHOUT SUNLIGHT?

Researchers at the University of California, Riverside, and the University of Delaware have found a way to grow crops using artificial photosynthesis, bypassing the need for sunshine and biological photosynthesis altogether.

The process uses a hybrid organic–inorganic system to convert carbon dioxide, electricity, and water into acetate, the primary component of vinegar. Food-producing organisms then consume the acetate in the dark to grow. Scientists found that a wide range of economically important crops could consume the acetate to grow successfully, including cowpeas, green peas, tomatoes, tobacco, rice, and canola.

"We were able to grow food-producing organisms without any contributions from biological photosynthesis," says Elizabeth Hann, a doctoral candidate in the Jinkerson Lab and co-lead author of the study. "Typically, these organisms are cultivated on sugars derived from plants or inputs derived from petroleum—which is a product of biological photosynthesis that took place millions of years ago. This technology is a more efficient method of turning solar energy into food, as compared to food production that relies on biological photosynthesis."

Researchers have found that canola *(Brassica napus* var. *napus)*, a crop cultivated mainly for its oil, demonstrated an ability to grow using artificial photosynthesis.

Artificial photosynthesis opens up countless possibilities for agriculture to respond to the forces of climate change with increased efficiency using less land and fewer resources.

To read more about the study, visit *www.nature.com/articles/s43016-022-00530-x*.

REBEKAH D. WALLACE, UNIVERSITY OF GEORGIA, BUGWOOD.ORG

## RESEARCHERS FIND A WAY TO BOLSTER PLANTS' IMMUNITY IN HEAT WAVES

Gardeners who have witnessed heat-stressed plants fall victim to pests and diseases will be relieved to hear that researchers have identified the specific protein in plant cells that controls their immunity in response to higher temperatures. Using that knowledge, they've reverse-engineered a process to bolster plants' defenses against pathogens and insect pests in times of heat stress, a strategy that may become vital in our warming climate.

Scientists have long known that higher temperatures tend to suppress a plant's production of a defense hormone called salicylic acid. When a pathogen attacks, the levels of salicylic acid increase, boosting the plant's resistance to infection. But an increase in temperature, even for just a couple days, can leave the plant without enough salicylic acid to fight back.

Working with *Arabidopsis* plants, scientists identified a gene called CBP60g that acts like a master switch affecting other genes. When heat stress turned off CBP60g, it also turned off other genes, causing the production of salicylic acid to shut down. Using mutant *Arabidopsis* plants that had the CBP60g gene continually switched on, the defense hormone levels stayed high and plants were able to resist infection, even during heat waves.

"We were able to make the whole plant immune system more robust at warm temperatures," says Duke University biologist and corresponding author Sheng-Yang He. "If this is true for crop plants as well, that's a really big deal because then we have a very powerful weapon" against the effects of global warming on food production.

The research was a joint effort between He's team and colleagues at Yale University, the University of California, Berkeley, and Tao Chen Huazhong Agricultural University in China.

Read more about it at *www.nature.com/articles/s41586-022-04902-y*.

## NEW SLOW FLOWERS PUBLICATION DEBUTS

The debut issue of the *Slow Flowers Journal Quarterly* has just been released by BLOOM Imprint and the Slow Flowers Society. The digital magazine's Summer 2022 issue features a couture collection of wearable floral ensembles designed with American-grown botanicals, as well as a special section of industry insights.

*SFJ Quarterly*'s mission is to provide news, features, profiles, columns, essays, and photography related to the Slow Flowers community. Targeted at flower farmers, floral designers, and gardening consumers, the new publication is edited jointly by Debra Prinzing, BLOOM Imprint's editorial director and founder of the Slow Flowers Society, and Robin Avni, creative director. Future themed issues will highlight "Celebrating the Season" in fall, "Insights 2023" in Winter, and "Weddings + Joyful Gatherings" next spring.


The ezine is free to members of the Slow Flowers Society. To sign up, go to *https://bit.ly/3zX2beH*.

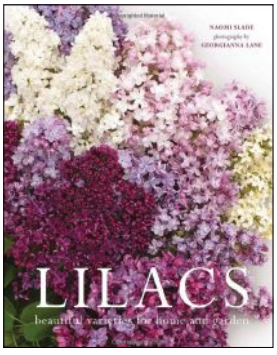
*Claire Splan, Associate Editor*

# Recommendations for Your Gardening Library

## Lilacs: Beautiful Varieties for Home and Garden

Naomi Slade, photography by Georgianna Lane. Gibbs Smith Publishing, Layton, UT, 2022. 240 pages. Publisher's price, hardcover: $22.99

WHAT OTHER plant captivates your senses and conjures fond memories of springtime more than lilacs *(Syringa* spp.)? The intense fragrance, the large, beautifully colored blooms, and the ease of growing and care make lilacs treasured around the world. Since the 18th century, lilacs have become a popular landscape plant and a favorite for amateur to professional plant breeders.




In *Lilacs: Beautiful Varieties for Home and Garden*, Naomi Slade provides moving commentary on the history, botany, and care of this coveted plant. This book features 63 cultivars and 9 species, mainly the French lilacs from the Lemoine family, bred from the late 19th and early 20th centuries. The short cultivar descriptions include fragrance intensity and are accompanied by Georgianna Lane's superb photos of each flower. In addition to each cultivar's vital statistics and horticultural history, Slade provides notes on disease tolerance and tips on the best ways to use it in the landscape. Although not all of the cultivars covered are commercially available in the U.S., they might still be found through the lilac societies and organizations listed in the book.

I particularly liked the chapters on the history of lilacs, from discovering the various species in the wild to cultivation in gardens in Europe and later North America. Main plant hybridizers are featured from the early days of the Lemoine family in France to modern day Russian breeders. The book also discusses how to design with lilacs in the garden and offers tips to get the most blooms and longer lasting cut flowers to use in stunning bouquets. The last chapter on growing and caring for lilacs briefly covers how to plant, propagate, and prune lilacs. The information is generally useful and correct, although some suggestions, such as the advice to use garden soil for container growing rather than a potting mix, are outdated.

While this book seems geared toward the serious lilac aficionado and collector, it would also make an excellent coffee table book, providing stunning photos in the middle of winter when our yards are dull and bleak.

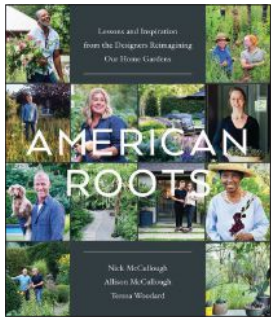
*—Laura G. Jull*

*Laura G. Jull, PhD, is the Associate Professor and Extension Specialist for Woody Ornamentals at the University of Wisconsin–Madison.*

## American Roots: Lessons and Inspiration from the Designers Reimagining Our Home Gardens

Nick McCullough, Allison McCullough, and Teresa Woodard. Timber Press, Portland, OR, 2022. 320 pages. Publisher's price, hardcover: $40

WHAT DEFINES the American garden? In *American Roots*, authors Nick McCullough, Allison McCullough, and Teresa Woodard set out to answer this question and, not surprisingly, found that the stereotype of suburban lawns and white picket fences bears little resemblance to the collection of dynamic and inspiring gardens they visited across the country.




Like many of us, Nick McCullough found solace during the pandemic by re-focusing on his garden, which in turn created a thirst to see what others were doing with theirs. The book chronicles the team's subsequent travels to gardens across the U.S. Eschewing both public and bespoke gardens, the focus is on the personal spaces of garden industry professionals. In addition to providing actionable lessons about each landscape, the authors give readers insight into the creators' personal and professional journeys, whether that is a commitment to the environment, a collaboration between two partners, or the culmination of a lifelong passion for gardens.

The range of experiences and philosophies that led the professionals featured to embrace the world of horticulture and design is expansive. For Peter Bevacqua, a trip to Great Dixter while recovering from an injury led him to pivot from a career in advertising to landscape design. Activist Benjamin Vogt uses his suburban "prairie" garden to advocate for outdoor spaces that benefit both humans and animals equally. As a West Coast gardener designer, I particularly enjoyed the chapters on Elizabeth Burns and Caitlin Atkinson, whose gardens reflect the casual vibe and low-water plantings that uniquely define California gardens.

Beautifully illustrated, with photography that is notable even for a garden design book, each chapter includes specific design tips and a list of the creator's favorite plants. *American Roots* is for those looking for design inspiration, gardeners interested in regionally appropriate landscapes, and anyone who believes the importance of a garden extends well beyond the plants it contains.

*—Susan Morrison*

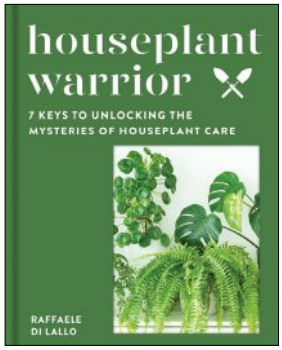
*Susan Morrison is a landscape designer in California's Bay Area and the author of* The Less Is More Garden: Big Ideas for Designing Your Small Yard.

# GARDENER'S BOOKS: Houseplants

THE RECENT PANDEMIC years have led to a renewed surge of interest in indoor gardening, with people of all ages dipping their toes into the world of houseplants for the first time. Here are three books to aid and inspire new and experienced growers of houseplants.

**Houseplant Warriors: 7 Keys to Unlocking the Mysteries of Houseplant Care** (The Countryman Press, 2022, $25)

Author Raffaele Di Lallo breaks down the essential aspects of houseplant care to a few key issues: light, humidity, purchasing, water and fertilization, containers and potting mixes, troubleshooting problems, and propagation. Di Lallo describes his approach as a holistic view of plant care, one that considers all seven of the key issues he identifies and then adds one more: consistency of care. He emphasizes close observation of plants, understanding their basic needs, then keeping a watchful eye to make sure those needs are being met. The final chapter covers specific care instructions for 40 of the most popular houseplants. This is a good book for anyone wanting an introductory but well-rounded guide to growing healthy plants indoors.

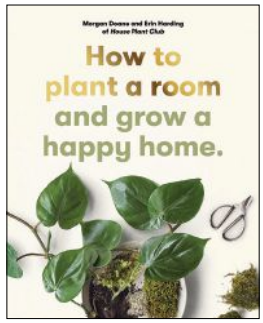



**Bloom: The Secrets of Growing Flowering Houseplants Year-Round** (Cool Springs Press, 2022, $25)

If you've tried growing flowering houseplants, you may have found it challenging to maintain those treasured blooms—or even more so to coax plants into reblooming. Lisa Eldred Steinkopf, aka the Houseplant Guru, offers this helpful guide to the world of indoor blooming plants. She discusses basic houseplant needs and problems as well as issues specific to flowering plants, such as bloom cycles, photoperiodism (a plant's response to changes in day length), and dormancy. She then profiles 45 bloomers ranging from the common (African violets and amaryllis) to the more exotic (starfish flower and bleeding heart vine), covering lighting, watering, flowering, propagation, and—especially helpful—toxicity issues for pets. Even experienced indoor gardeners will find useful information here to bring their homes into bloom.


**How to Plant a Room and Grow a Happy Home** (Laurence King, 2022, $16.99)

Are you ready to take your indoor garden to the next level? This book offers stylish ways to display your houseplant collection. With projects ranging from simple bulb forcing to framed wall gardens, Instagrammer Morgan Doane and blogger Erin Harding present dozens of ideas for planting, hanging, propagating, even submerging plants to stunning effect in your home. Many of the projects, such as beaded plant hangers and terrariums, are relatively simple and use basic materials. More complex projects, such as a framed wall garden or indoor greenhouse, call for more expensive materials and may require specialized tools and skills. Project steps are clear and extensively illustrated with photos. Care instructions for the houseplants themselves are limited, so this book is best used as a supplement to other houseplant guides.




*—Claire Splan, Associate Editor*

## More New and Notable Books

**The Home-Scale Forest Garden: How to Plan, Plant and Tend a Resilient Edible Landscape** *by Dani Baker. (Chelsea Green Publishing, 2022, $34.95).* A guide to creating an edible forest garden using permaculture and other practices to maximize productivity on any scale.

**Orchid Muse: A History of Obsession in Fifteen Flowers** *by Erica Hannickel. (W.W. Norton & Co., 2022, $35).* Tales of the orchid-obsessed throughout history, along with tips on growing the featured flowers.

**The Seed Detective: Uncovering the Secret Histories of Remarkable Vegetables** *by Adam Alexander. (Chelsea Green Publishing, 2022, $22).* A horticulturist's tales of hunting the seeds of rare and endangered heritage and heirloom vegetables.

**Succulent Style: A Gardener's Guide to Growing and Crafting with Succulents** *by Julia Hillier. (Mango Publishing, 2022, $28.99).* An illustrated guide to growing cacti and other succulents and incorporating them into your garden and home designs.

# Horticultural Events from Around the Country

**Please note: The events here were scheduled at the time this magazine went to press, but be sure to check event websites for the latest information on openings, postponements, and cancellations.**

## NORTHEAST

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

**RAP** SEPT 10– OCT. 30. **Enchanted Forest: Nature-Inspired Fairy Houses by Sally J. Smith.** New England Botanic Garden at Tower Hill. Boylston, MA. *https://nebg.org.*

**RAP** OCT. 4. **Preparing the Perennial Garden for Winter.** Talk. Merryspring Nature Center. Camden, ME. *www.merryspring.org.*

**RAP** OCT. 8. **Cutting Gardens Revisited.** Class. Hollister House Garden. Washington, CT. *https://hollisterhousegarden.org.*

**RAP** OCT. 8 & 9. **Harvest Festival.** Berkshire Botanical Garden. Stockbridge, MA. *www.berkshirebotanical.org.*

**RAP** OCT. 11. **Native Plant Tour.** Coastal Maine Botanical Gardens. Boothbay, ME. *www.mainegardens.org.*

**RAP** OCT. 18. **Dividing Perennials Workshop.** Landcraft Garden Foundation. Mattituck, NY. *www.landcraftgardenfoundation.org.*

**RAP** OCT. 22. **Autumn Open House.** Family activities. Bridge Gardens. Bridgehampton, NY. *https://peconiclandtrust.org.*

**RAP** OCT. 22 & 23. **Pumpkin Parade Weekend.** New York Botanical Garden. Bronx, NY. *www.nybg.org.*

**RAP** OCT. 29. **Annual Halloween Owl Prowl.** Nature class. Landis Arboretum. Esperance, NY. *www.landisarboretum.org.*

**RAP** OCT. 30. **Haunted Stroll.** Evening garden walk. Sonnenberg Gardens & Mansion State Historic Park. Canandaigua, NY. *www.sonnenberg.org.*

Looking ahead

NOV. 4–6. **Fall Forum & Fall Board Meeting.** Includes fall-blooming daffodil exhibit; open to anyone interested in daffodils. American Daffodil Society. Gurney's Newport Resort & Marina. Newport, RI. *https://daffodilusa.org.*

**RAP** NOV. 19. **Multiplying Plants: Propagation 101.** Workshop. Brooklyn Botanic Garden. Brooklyn, NY. *www.bbg.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 or other benefits. Special events may not be included; contact the host site for details or visit *www.ahsgardening.org/rap.*

## MID-ATLANTIC

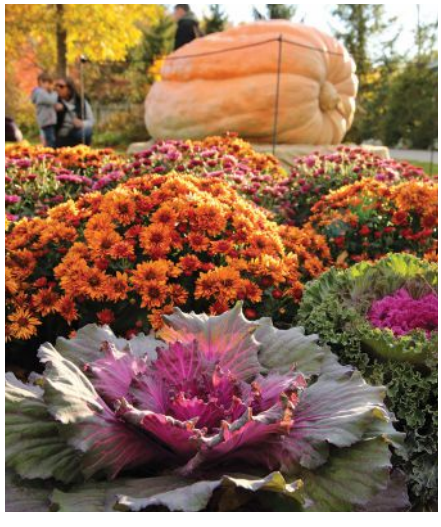
PA, NJ, VA, MD, DE, WV, DC

**RAP** SEPT. 29. **Mesmerizing Monarchs and Migration.** Class. Norfolk Botanical Garden. Norfolk, VA. *https://norfolkbotanicalgarden.org.*

**RAP** OCT. 13. **Fall Plants for Sun, Shade, Wet, Dry.** Workshop/Tour. Adkins Arboretum. Ridgely, MD. *www.adkinsarboretum.org.*

**RAP** OCT. 14. **Tree Canopy Conference: Loss and Restoration.** Symposium. Haverford College. Haverford, PA (Coordinated by the Morris Arboretum of the University of Pennsylvania). *www.morrisarboretum.org.*

**RAP** OCT. 19. **Garden to Vase Floral Design Workshop.** Winterthur Museum, Garden & Library. Winterthur, DE. *www.winterthur.org.*



JOHNNY QUIRIN, COURTESY OF FREDERIK MEIJER GARDENS & SCULPTURE PARK

**"Chrysanthemums and More!" at Frederik Meijer Gardens & Sculpture Park in Grand Rapids, Michigan, through October 30.**

## SOUTHEAST

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

**RAP** SEPT. 24 & 25. **International Aroid Society Annual Show and Sale.** Fairchild Tropical Botanical Garden. Miami, FL. *https://fairchildgarden.org.*

**RAP** OCT. 6. **Water Feature Care.** Class. Birmingham Botanical Gardens. Birmingham, AL. *https://bbgardens.org.*

**RAP** OCT. 8. **Cool Season Veggie Gardening.** In-person and online class. JCRaulston Arboretum at NC State University. Raleigh, NC. *https://jcra.ncsu.edu.*

**RAP** OCT. 14. **Fall Plant Sale.** Bernheim Arboretum and Research Forest. Clermont, KY. *https://bernheim.org.*

**RAP** OCT. 17. **The Southeast's Paradoxical Palm: Sabal Palmetto.** Lecture. Atlanta Botanical Garden. Atlanta, GA. *https://atlantabg.org.*

**RAP** OCT. 22. **Air Plant Terrarium Workshop.** Bok Tower Gardens. Lake Wales, FL. *https://boktowergardens.org.*

## NORTH CENTRAL

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

**RAP** SEPT. 16–OCT. 30. **Chrysanthemums and More!** Autumn display and activities. Frederik Meijer Gardens & Sculpture Park. Grand Rapids, MI. *www.meijergardens.org.*

**RAP** SEPT. 25. **Tree Pruning with North Branch Nursery.** Class. The Schedel Arboretum & Gardens. Elmore, OH. *www.schedel-gardens.org.*

**RAP** OCT. 1–31. **Pumpkin Display.** Indoor and Outdoor Exhibit. Minnesota Landscape Arboretum. Chaska, MN. *https://arb.umn.edu.*

**RAP** OCT. 4–30. **Pumpkin Path Display.** Interactive Walk/Exhibit. Foellinger Freimann Botanical Conservatory. Fort Wayne, IN. *www.botanicalconservatory.org.*

**RAP** OCT. 4. **Bonsai Walk and Sip.** Franklin Park Conservatory and Botanical Gardens. Columbus, OH. *www.fpconservatory.org.*

**RAP** OCT. 15. **Annual Symposium: Wild Landscapes.** Greater Des Moines Botanical Garden. Des Moines, IA. *www.dmbotanicalgarden.com.*

**RAP** OCT. 22. **Cider and Ale Festival.** The Morton Arboretum. Lisle, IL. *https://mortonarb.org.*

## SOUTH CENTRAL

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

**RAP** SEPT. 24. **Native Plant Propagation for Beginners Workshop.** Longue Vue House and Gardens. New Orleans, LA. *https://longuevue.com.*

**RAP** SEPT. 30–OCT. 30. **Fall Native Plant Sale.** Lady Bird Johnson Wildflower Center. Austin, TX. *www.wildflower.org.*

**RAP** OCT. 8. **Vegfest OKC.** Festival. Myriad Botanical Garden. Oklahoma City, OK. *https://myriadgardens.org.*

## SOUTHWEST

AZ, NM, CO, UT

**RAP** OCT. 1 & 2. **Fall Bonsai Show.** Exhibit. Red Butte Garden. Red Butte, UT. *https://redbuttegarden.org.*

**RAP** OCT. 1 & 2. **Guelaguetza.** Cultural Festival. Desert Botanical Garden. Tucson, AZ. *https://dbg.org.*

**RAP** OCT. 15 & 16. **Denver Orchid Society Show & Sale.** Denver Botanic Gardens. Denver, CO. *www.botanicgardens.org.*

**RAP** OCT. 19, 22 & 23. **Fall Plant Sale.** (Oct. 19 is members' preview day.) Tohono Chul. Tucson, AZ. *https://tohonochul.org.*

## NORTHWEST

AK, ID, MT, OR, WA, WY

**RAP** SEPT. 28. **Forest Bathing.** Class/Activity. Hoyt Arboretum. Portland, OR. *www.hoytarboretum.org.*

**RAP** OCT. 1. **Firewise Landscaping Workshop.** Class. Orton Botanical Garden. Twin Falls, ID. *www.ortonbotanicalgarden.com.*

**RAP** OCT. 1–31. **Scarecrow Stroll.** Exhibit and Contest. Idaho Botanical Garden. Boise, ID. *https://idahobotanicalgarden.org.*

**RAP** OCT 30. **Mushroom Festival.** Exhibit, guided nature walks, vendors, and live music. Mount Pisgah Arboretum. Eugene, OR. *www.mountpisgaharboretum.org.*

**RAP** NOV. 4. **Forest Bathing**. Class/Activity. Bellevue Botanical Garden. Seattle, WA. *www.bellevuebotanical.org.*

## WEST COAST

CA, NV, HI

**RAP** OCT. 8–16. **Fall Plant Sale.** Mendocino Coast Botanical Garden. Ft. Bragg, CA. *www.gardenbythesea.org.*

**RAP** OCT. 15. **Fall Plant Sale.** San Luis Obispo Botanical Garden. San Luis Obispo, CA. *www.slobg.org.*

OCT. 20–22. **Rooting Together: Restoring Connections to Plants, Place & People.** Conference. California Native Plant Society. San Jose, CA. *https://conference.cnps.org.*

**RAP** OCT. 22 & 23, 29 & 30. **Haunted Harvest.** Holiday-themed family festival. Springs Preserve. Las Vegas, NV. *www.springspreserve.org.*

**RAP** OCT. 28. **The Art of Designing Botanical Jewelry.** Class. Lyon Arboretum. Honolulu, HI. *https://manoa.hawaii.edu/lyon.*

Looking ahead

**RAP** NOV. 5, 2022–MAR. 5, 2023. **East to Zest.** Botanical exhibition about the global journey of citrus. Sonoma Botanical Garden. Glen Ellen, CA. *https://sonomabg.org.*



# PRONUNCIATIONS AND HARDINESS ZONES

Most of the cultivated plants described in this issue are listed here with their pronunciations and USDA Plant Hardiness Zones. The hardiness zones are listed in the form of an approximate range in which year-round temperatures are appropriate for growing each plant. 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.

While the zones are a good place to start in determining plant adaptability in your region, factors such as soil type, light exposure, seasonal rainfall patterns, 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–G

***Andropogon gerardii*** an-dro-PO-gon jeh-RAR-dee-eye (3–9)
***Anemanthele lessoniana*** an-uh-man-THEE-lee less-o-nee-AN-uh (8–11)
***Aruncus aethusifolius*** uh-RUN-kus ee-thoo-sih-FO-lee-us (0–0)
***Aruncus dioicus*** uh-RUN-kus die-o-EE-kus (3–7))
***Cleome serrulata*** klee-O-me sair-yew-LAY-tuh (0–0)
***Carex flagellifera*** KAIR-eks fla-jel-EE-fer-uh (7–9)
***Centaurea americana*** sen-TAW-ree-uh uh-mair-ih-KAN-uh (0–0)
***Ceratostigma plumbaginoides*** sur-at-o-STIG-muh plum-baj-ih-NOY-deez (5–9)
***Chasmanthium latifolium*** chas-MAN-thee-um lat-ih-FO-lee-um (4–9)
***Chrysanthemum ×morifolium*** krih-SAN-theh-mum mor-ih-FO-lee-um (5–9)
***Clarkia amoena*** KLARK-ee-uh a-MEE-nuh (0–0)
***Clarkia pulchella*** KLARK-ee-uh pul-KEL-uh (0–0)
***Clarkia unguiculata*** KLARK-ee-uh un-gwik-yew-LAY-tuh (0–0)
***Corydalis aurea*** kuh-RID-uh-liss AW-ree-uh (0–0)
***Coreopsis tripteris*** kor-ee-OP-sis trip-TAIR-iss (3–8)
***Crassula capitella*** CRASS-yew-luh kap-ih-TEL-uh (9–10)
***Diplacus bigelovii* var. *bigelovii*** dip-LAK-us bih-guh-LO-vee-eye var. bih-guh-LO-vee-eye (3–9)
***Dryopteris erythrosora*** dry-OP-ter-iss air-ih-THRO-sor-uh (5–9)
***Echinacea purpurea*** ek-ih-NAY-see-uh pur-PUR-ee-uh (3–9)
***Eschscholzia californica*** es-SHOLZ-zee-uh kal-ih-FORN-ih-kuh (8–10)
***Euphorbia epithymoides*** yew-FOR-bee-uh eh-pih-thee-MOY-deez (4–8)
***Euphorbia griffithii*** yew-FOR-bee-ah grif-FITH-ee-eye (4–9)
***Euphorbia tirucalli*** yew-FOR-bee-uh tih-rew-KAL-ee (10–11)
***Gaillardia pulchella*** gay-LARD-ee-uh pul-KEL-uh (10–11)
***Geranium macrorrhizum*** juh-RAY-nee-um mak-ro-RHY-zum (4–8)
***Geranium maculatum*** juh-RAY-nee-um mak-yew-LAY-tum (3–8)
***Geum triflorum*** JEE-um try-FLOR-um (3–7)
***Gilia tricolor*** GIL-ee-uh try-kul-ur (0–0)
***Gillenia stipulata*** jih-LEE-nee-uh stih-pyew-LAY-tuh (4–8)
***Gillenia trifoliata*** jih-LEE-nee-uh try-fo-lee-AY-tuh (4–9)

## H–O

***Hakonechloa macra*** ha-kon-ee-KLOH-uh MAK-ruh (5–9)
***Hydrangea quercifolia*** hy-DRAN-juh kwer-sih-FO-lee-uh (5–9)
***Ilex verticillata*** EYE-leks vur-tih-sih-LAY-tuh (3–9)
***Iris sibirica*** EYE-riss sy-BEER-ih-kuh (3–8)
***Kallstroemia grandiflora*** kal-STRO-me-uh gran-dih-FLOR-uh (7–8)
***Layia platyglossa*** LAY-ee-uh plat-ee-GLOSS-uh (10–12)
***Lindheimera texana*** lind-HY-mur-eye tek-SAN-uh (0–0)
***Lonicera sempervirens*** lah-NISS-er-uh sem-pur-VY-renz (4–9)
***Lupinus nanus*** loo-PYE-nus NAN-us (0–0)
***Lupinus texensis*** loo-PYE-nus teks-EN-sis (0–0)
***Machaeranthera tanacetifolia*** mak-ee-RAN-thur-uh tan-uh-see-tih-FO-lee-uh (0–0)
***Mertensia virginica*** mur-TEN-see-uh vir-JIN-ih-kuh (3–8)
***Molinia caerulea*** mo-LEEN-ee-uh see-ROO-lee-uh (5–9)
***Mukdenia rossii*** mook-DEEN-yuh ROSS-ee-eye (4–9)
***Nemophila maculata*** nem-OFF-ih-luh mak-YEW-lay-tuh (0–0)
***Nemophila menziesii*** nee-MOF-ih-luh men-ZEES-ee-eye (0–0)
***Ophiopogon planiscapus*** o-fee-o-PO-gon plan-iss-KAY-pus (6–11)
***Osmunda cinnamomea*** ahz-MUN-duh sin-uh-MO-mee-uh (3–10)
***Osmunda regalis*** ahz-MUN-duh ree-GAL-iss (2–10)

## P–Z

***Panicum virgatum*** PAN-ih-kum veer-GAY-tum (4–9)
***Phacelia campanularia*** fuh-SEEL-yuh kam-PAN-yew-LAIR-ee-uh (0–0)
***Phacelia tanacetifolia*** fuh-SEEL-yuh tan-uh-see-tih-FO-lee-uh (0–0)
***Phedimus spurius*** FED-ih-mus SPUR-ee-us (3–10)
***Phlox drummondii*** FLOKS drum-MON-dee-eye (0–0)
***Physalis grisea*** FY-sal-iss GRIS-ee-ih (0–0)
***Ptelea trifoliata*** TEE-lee-uh tri-fo-lee-AY-tuh (4–9)
***Ratibida columnifera*** rah-TIH-bih-duh kol-um-NIF-ur-uh (4–9)
***Rosa rugosa*** RO-zuh roo-GO-suh (2–9)
***Sabatia campestris*** suh-BAY-shuh kam-PES-tris (0–0)
***Schizachyrium scoparium*** shiz-ah-KEER-ee-um sko-PAR-ee-um (3–8)
***Sedum rupestre*** SEE-dum roo-PES-tree (6–9)
***Sorghastrum nutans*** sor-GASS-trum NOO-tanz (4–9)
***Spodiopogon sibiricus*** spo-dee-o-PO-gon sy-BEER-ih-kus (4–9)
***Sporobolus heterolepis*** spor-OB-o-lus het-ur-o-LEP-iss (3–8)
***Thymophylla tenuiloba*** thy-mo-FIL-luh ten-yew-ih-LO-buh (0–0)
***Veronicastrum virginicum*** ver-on-ih-KASS-trum vir-JIN-ih-kum (4–8)
***Zizia aurea*** ZIZ-ee-uh AW-ree-uh (3–8)

# Wafer Ash *(Ptelea trifoliata)*

*by Laurie Casey*

JUST LIKE clothing fashions, individual plants fall in and out of style. A good example is wafer ash *(Ptelea trifoliata*, USDA Hardiness Zones 4–9), which had its heyday in the 1700s and 1800s as a popular European garden plant. Today, as American gardeners rediscover the beauty and utility of native plants, wafer ash is staging a comeback.

One of the northernmost species in the citrus family (Rutaceae), wafer ash is native to the eastern and central United States, but its range extends north into Canada and south into Mexico. It is also known as stinking ash or hop tree. Scratch the bark or sniff a flower, and you may detect notes of "carrion" or "citrus"—I've seen it described both ways. I planted wafer ash in my Chicago-area garden two years ago, and to my nose it smells lemony and grassy, reminding me of matcha tea.

Wafer ash grows up to 20 feet tall with a rounded habit, and can be pruned as a shrub or single-stemmed tree. Its glossy compound leaves, comprised of three spade-shaped leaflets, turn greenish yellow in fall. In early summer, tiny, fragrant yellow-green flowers bloom in loose terminal clusters. The interesting winged fruits, which form in late summer, resemble the samaras of elm trees *(Ulmus* spp.)—in fact the botanist Carolus Linnaeus named wafer ash *Ptelea* because it is Greek for "elm tree." A number of cultivars have been introduced, including the gold-leaved selection 'Aurea', which gained the Royal Horticultural Society's Award of Garden Merit.

Attractive clusters of winged fruit form on wafer ash in late summer.

## EARLY HISTORY

Early American colonists and explorers sent wafer ash seeds to the Old World, and by the 1700s, Europeans planted it widely. While living in France, Thomas Jefferson shared seeds with his Parisian friends. Back in the U.S., German immigrants substituted wafer ash's samaras for hops in beer brewing, which gave rise to its other common name, hop tree.

Native Americans valued its diverse attributes as well. Near the Grand Canyon, the Havasupai used the leaves in their poison arrow recipe. In what is now New Mexico, the San Felipe children ate the fruits as treats.

## HOW TO GROW

Wafer ash is adaptable to a wide range of exposure from full sun to heavy shade as well as to moist, mesic, or dry sites. It does fine in rocky or sandy soil and is known to be tolerant of drought, alkaline soil, clay soil, and road salt. Some references indicate it may spread by suckers, but I have not yet seen evidence of that with my tree.

Overall, it's an easy, disease-free plant. Due to the aroma, white-tailed deer don't tend to eat wafer ash. On the other hand, it's a major food source for the caterpillars of the gorgeous giant swallowtail *(Papilio cresphontes)* and Eastern tiger swallowtail *(Papilio glaucus)*. Leaf spot or minor break-outs of rust may appear. Because wafer ash is not a true ash *(Fraxinus* spp.), it is unaffected by the Emerald ash borer.

Wafer ash is an attractive and adaptable native plant with a storied history worth rediscovering. If you want to support swallowtail butterflies or plant for our future climate, it's a terrific choice.

### Sources

**Mail-order Natives**, Lee, FL. *www.mailordernatives.com.*
**Nature Hills**, Omaha, NE. *www.naturehills.com.*
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*Laurie Casey has been gardening with native plants since 2011. She runs Laurie Tells Stories, a sustainability communications company based in Oak Park, Illinois.*

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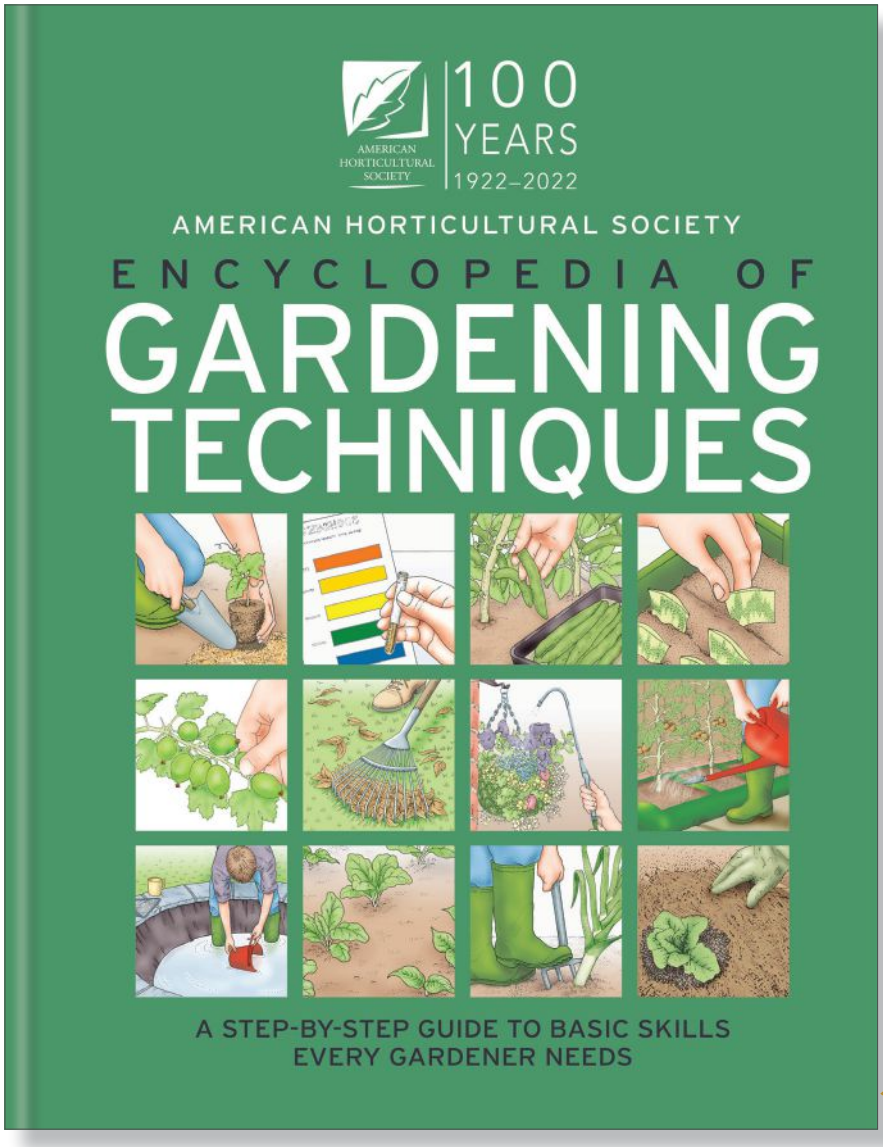


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