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image of **Peacock Mix Cream Greigii tulip**
and **yellow archangel dead-nettle**
(see “**Bulb Masters**,” page 36).

photograph by **JACK COYIER**



What will you plant this spring? We've packed this issue of *Horticulture* with ideas and information to help you answer that question, whether you're just starting to "think spring" or you've been planning for months.

Could your landscape use a new tree? The "Plants We Love" column highlights weepers (page 66); "Public Gardens" includes rugged recommendations from the staff at the Utah State University Botanical Center (page 24); and in our new "Expert Advice" column, the Davey Institute's Chelsi Abbott lists four of her favorite species for gardens North and South (page 12). The professionals at the Morton Arboretum, our other featured public garden, offer pointers on planting a new tree (page 28).

Moving to the shrub layer, I checked in with representatives from a couple of the country's leading growers for exciting compact options. "Space-saving Shrubs" presents the varieties that will fit right into a front-yard planting without eventually blocking windows or other sight lines (page 44). Personally, I'm hoping to plant Little Joker ninebark and Tater Tot arborvitae.

Looking to add more herbaceous plants this year? We've got you covered. "Bulb Masters" can help you determine what perennials and annuals will work well with any existing spring-flowering bulbs in your garden—or what new bulbs you might add among your perennials come fall (page 36). Speaking of fall, Vermont gardener Martha Leb Molnar suggests what you might plant this spring for colorful flowers and foliage next autumn in her *Horticulture* debut, "The Long Game" (page 30).

Finally, we can't forget the veggies! Our edible-gardening columnist Niki Jabbour has some quick-to-harvest recommendations to get you right into the game (page 6), while two features cover fun and funky crops: "Homegrown Pumpkins" (page 60) and "Radical Roots" (page 54).

Enjoy this issue, and let's get planting!

EDITOR

Meghan Shinn

Let us know what you think about this issue.
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Where to Begin

How to jumpstart spring with quick, easy veggies, plus other tips and tasks for the season

WHEN SPRING ARRIVES, like most gardeners I'm anxious to start digging in the soil. While I love my long-season tomato and pepper plants, I also appreciate the many vegetables that thrive in the cooler temperatures of spring and become ready to harvest in mere weeks. Here are my top crops to sow a month before the last frost.

Above: 'Hinona Kabu' is a favorite salad turnip of the author; it goes from seed to harvest in just over a month.

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Above: Wheat stands tall in the garden of *Gardening with Grains* author Brie Arthur, who touts it as the perfect beginner's grain to grow.

No spring vegetable garden is complete without a patch of lettuce. It's quick and easy to grow, and it can be planted in garden beds or containers. Direct sow seeds about four weeks before the last expected spring frost or even earlier in a cold frame or greenhouse. Can't-miss varieties include Salanova Home Garden Mix, 'Sandy', 'Black Seeded Simpson' and 'Red Salad Bowl'.

Salad turnips like 'Hakurei' have been a spring standard in my garden for over a decade. They go from seed to harvest in just 40 days and provide crisp, sweet roots and edible tops. Direct sow the seeds three to four weeks before the average last frost date. My favorites include 'Hakurei' and 'Hinona Kabu'.

Packed with nutrients and quick to mature, spinach can be direct seeded as soon as the soil is workable. For spring planting, look for a slow-bolting variety like 'Seaside' to extend the harvest into the warm

days of early summer. Other good choices are 'Space' and 'Lakeside'.

Early carrots are a spring treat, with many varieties, such as 'Adelaide', ready to pull only 50 days from seeding. Direct sow the seed two to three weeks before the expected last spring frost. To encourage good carrot-seed germination, keep soil consistency moist until the plants are growing well. Aside from 'Adelaide', try 'Bolero' and 'Yaya', too.

KEY TASK: GROW YOUR OWN GRAINS

In her new book, *Gardening with Grains*, best-selling author Brie Arthur encourages home gardeners to include grains in their edible gardens and landscapes.

"Grains may seem like an unlikely candidate for home gardeners, but the reality is they are easy, inexpensive and provide a lot of seasonal beauty," she says. "They have deep, fibrous root systems, which help

improve soil, their biomass at the end of the season is an ideal compost material and the seeds are edible!" Arthur also notes that even if you grow grains only as ornamentals, the local bird population will appreciate the seeds.

There are many grains that add drama and beauty to a garden or landscape. Arthur suggests novice grain growers start with wheat.

"It's a great plant to grow because it's so low maintenance and beautiful when it begins to bloom and dry," she says, adding that amber waves of grain are seriously mesmerizing. However, she also points out that all of the grains are easy to grow, including rice, which thrives in summer climates around the world.

"The common misconception is that rice has to be grown in water, a growing technique to reduce weeds, but it is not a cultural requirement," she says. "You can grow rice in containers with no holes to achieve a



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dense planting that stays wet, or you can grow it in your landscape alongside colorful annuals, such as coleus and begonias, or perennials, such as butterfly weed and salvia.”

Grains require growing conditions similar to a typical vegetable garden: full sun and well-drained soil. Arthur recommends topdressing the soil with compost before planting or seeding. When it's time to harvest, grains need to be threshed to extract the seed from the chaff. Arthur includes several easy and effective DIY ideas for threshing in *Gardening with Grains*. ❧

.....
NIKI JABBOUR gardens all year in Nova Scotia and writes at <http://www.savvygardening.com>.

SPRING CHECKLIST

Sow. March and April are the busiest months for indoor seed starting. To produce healthy, compact seedlings, provide at least 16 hours of light each day. I use four-foot fluorescent grow lights hung on chains. This allows me to adjust the height of the lights as the plants grow, so they stay just a few inches above the tops of the seedlings. The result is strong, well-branched seedlings ready to be plugged into my garden.

Plan. Don't get overwhelmed by spring cleanup and garden prep. Instead, stay organized and keep on track by making a list of garden tasks, plans and projects. Prioritize those that can't wait, like seed starting, and tackle the less pressing ones when you have time.

Buy smart. Whether you need garden soil to fill a new raised bed, mulch to reduce weeds or a load of compost or manure to amend soil, order it early and buy it in bulk, if possible. Buying a bulk load, rather than bagged goods, reduces plastic waste and generally means your soil, mulch or compost comes from local sources.

Build. Speed up the planting season by pre-warming the soil or erecting a mini hoop tunnel over the top your vegetable beds. Once the soil has thawed, you can sow seeds for cool-weather crops like spinach, kale, radishes, beets and lettuce.—NJ

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Tree Love

Chelsi Abbott of the Davey Institute shares tree-care tasks for early spring



CREDENTIALS

Chelsi Abbott, a Technical Advisor at the Davey Institute, holds degrees in plant pathology and biological sciences. **The Davey Institute** is the scientific headquarters of the Davey Tree Expert Company, whose field crews tend residential and commercial properties across North America. Scientists like Chelsi support Davey’s vast network of tree workers through research, technical support and educational offerings. Learn more about Davey at <http://www.davey.com>.

GIVEN HER MASTER’S DEGREE in plant pathology, you may think Chelsi Abbott, a Technical Advisor at the Davey Institute, is mostly concerned with how trees die. In speaking with her, it quickly becomes clear that she’s happy talking about steps we can take to help trees live—and thrive. This can begin at the earliest start of spring, when it’s time to greet our awakening garden and landscape trees.

“Spring cleaning really applies outdoors as much as indoors,” Chelsi says. That means stepping outside “with a keen eye” to assess our woody plants and address routine maintenance, she explains. She recommends looking not just for the obvious—that is, winter-damaged branches—but also searching closely to determine trees’ and shrubs’ health. A good clue comes with leafing out. Chelsi says, “If something’s not leafing out, or (leafing out) is spotty, that could be stress, and it’s best to get ahead of it.”

If a visual inspection suggests a tree is stressed, a few simple spring chores can nip further problems in the bud, so to speak. Chelsi says there’s a deep relationship between trees and the soil in which they grow, so if we want our trees to thrive we must make sure the soil is thriving first.

“As trees are coming out of dormancy, soil microbes are coming out of dormancy too,” she says, “and it is time to feed the microbiome.” This

can be accomplished very easily by applying a fresh layer of compost and/or organic mulch. As for feeding the trees themselves, she highlights the importance of using a slow-release fertilizer, so that nutrients remain available throughout the growing season. And she makes a special note for evergreen conifers in early spring: “Conifers from the dry lands—the spruces—especially need water as they wake up.” These will show their stress through browning needles.

Once existing garden trees have been assessed and assisted in early spring, what’s left to do? Plant more!

“Spring and fall are both good times to plant trees,” Chelsi says. As a tree lover in a big country, it’s hard for her to narrow down a must-plant list (though she did oblige; see the “Plant these!” sidebar opposite). Easier is providing universal guidelines for choosing your own trees.

“Natives are always good,” she says, “because they’ll be hardy to your conditions.” However, the best advice she can give is to pick something that fits both the climate and the space.

“That means no sycamore that’s going to grow into those power lines, or no Japanese maple where it will be exposed to drying winds,” she says. “It really is true: right plant, right place.”

MEGHAN SHINN is Horticulture’s editor.

PLANT THESE!

It's never easy for a plant lover to play favorites, but when asked to recommend just a few trees for home landscapes, Chelsi Abbott obliged with the following. She pointed out that the first three would be appropriate for northern gardens, while the last (baldcypress) is a good choice for the South:

<< American hornbeam

(*Carpinus caroliniana*; USDA Zones 3-9)

Native to woods, streambanks and flood plains throughout eastern North America, American hornbeam should appeal to gardeners with its adaptability, shade tolerance and small size. An understory tree from the birch family, it tops out between 20 and 35 feet, and while it prefers the shade it can take sun with consistent moisture. Its ornamental appeal comes from its smooth gray bark, fiery fall foliage and the fluting that develops on trunks and branches of mature specimens (inspiring another name, musclewood). Chelsi notes this tree "is not planted too much, and I like the less common."

Kentucky coffeetree >>

(*Gymnocladus dioica*; Zones 3-8)

Despite being a native of the Great Lakes, Great Plains, Upper South and western Mid-Atlantic, this unique tree carries a tropical feel thanks to its giant twice-compound leaves. Chelsi cites those leaves as well as its hardiness and scaly, dark brown bark when recommending this tree, but notes it's a slow grower. It can reach 75 to 100 feet tall and its lacy leaves provide filtered sun. (This adaptable and distinctive tree was also cited as a favorite by staff at the Utah State University Botanical Center; see page 26.)

<< Eastern redbud

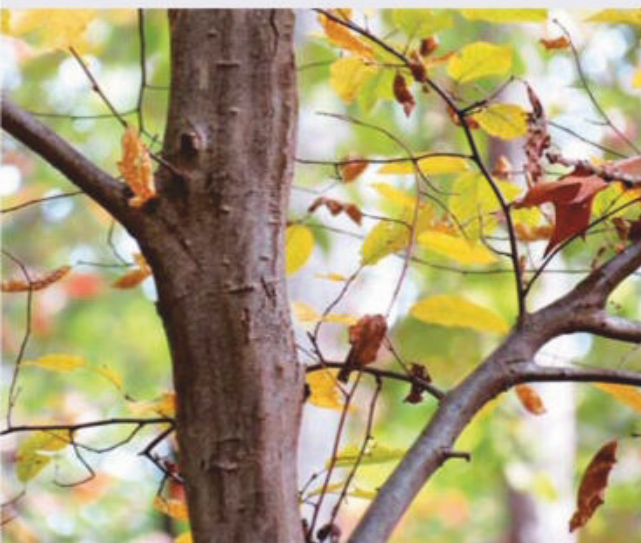
(*Cercis canadensis*; Zones 4-8)

A bit more familiar in gardens—owing to its small stature and vivid spring flowers—redbud makes Chelsi's list because of its burst of seasonal color. The bright pink blossoms occur prior to the tree leafing out. When spring rains darken the tree's bark, the flower color *really* pops, Chelsi points out. A native of woods and streambanks from southern New England to Florida and west into the Plains, eastern redbud takes sun or shade and remains smaller than 30 feet. A couple of western counterparts share its best features.

Baldcypress >>

(*Taxodium distichum*; Zones 4-10)

Bright orange fall foliage brings baldcypress high on Chelsi's list of beloved trees. She mentions it seems like it shouldn't lose its leaves for the winter, since they're needles and this is a conifer, but indeed it's a deciduous conifer. Hailing from the Southeast's swamplands, baldcypress takes wet soil and poor drainage in stride, though it can also adapt to dry conditions. Because its roots are accustomed to a lack of air, it is a good candidate for parking-lot plantings. Reaching 50 to 75 feet tall, this king of the swamp likes full sun.—MS



Opposite: Courtesy of the Davey Tree Expert Company. This page, top to bottom: Katja Schulz/CC BY 2.0 via Flickr.com; klp.nyc//CC BY 2.0 via Flickr; F.D. Richards/CC BY-SA 2.0 via Flickr.com; Leonora Enking/CC BY-SA 2.0 via Flickr.com.



Above: *Franklinia alatamaha*, the only member of its genus, is a camellia relative that offers its fragrant blossoms from midsummer into autumn.

A Piece of History

American botanical heritage blooms in
a garden that hosts a Franklin tree

YOUR CHANCES OF FINDING a Franklin tree (*Franklinia alatamaha*) growing in the wild is somewhere between nil and zilch.

The last time one was spotted growing in its native southern Georgia habitat was in 1803 when John Lyon, a nurseryman and plant hunter, found a stand growing near the mouth of the Altamaha River near Darien, south of Savannah. There the river empties into a bay, across which lies Wolf Island National Wildlife Refuge, and the Atlantic Ocean beyond.

Lyon's discovery was the last sighting, but it wasn't the first by an English colonist living in North America. Nearly 40 years earlier, in 1765, Philadelphia botanist John Bartram was traveling in that area with his son William when he came across a small grove of beautiful trees not far from the site of Fort Barrington, where the colonists sheltered during Indian raids. They noted the trees in the diary of their tour of the region, then moved into Florida before returning to their farm in Philadelphia.

By 1773, William Bartram had also become a botanist, and he returned to Georgia to continue his botanical work before exploring the Cherokee lands farther west. And he once again discovered the small grove of beautiful trees. He was there in the fall, when the trees had just produced a crop of small, round, woody seed capsules. He gathered a pouchful to bring back to Philadelphia, where he planted the seeds. It's lucky for us that he did, because every Franklin tree in the world today, as far as we know,

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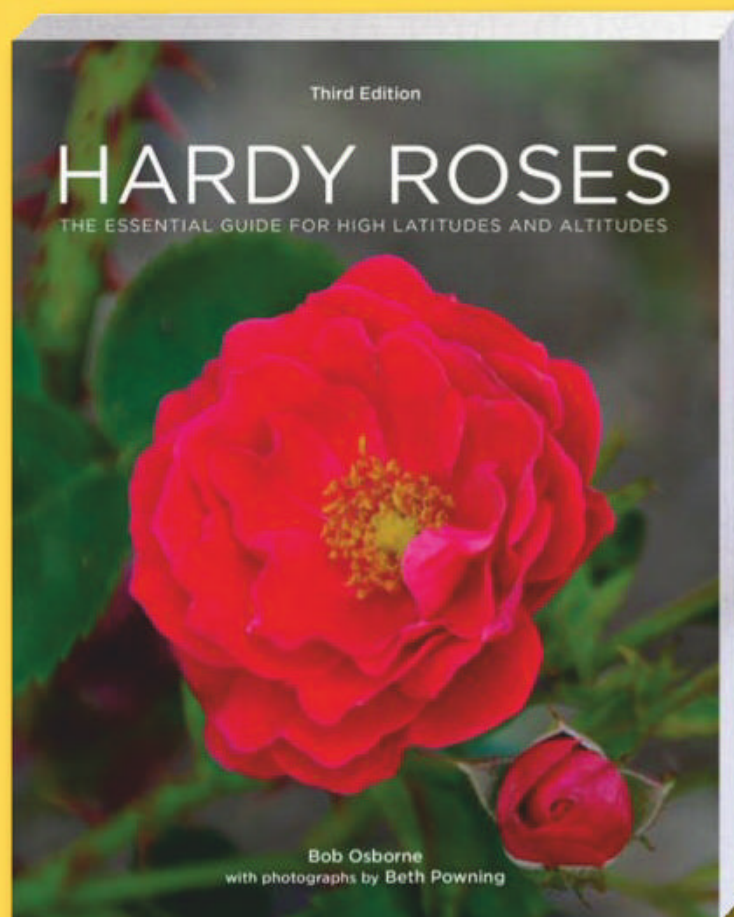
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Right: The tree's large leaves will turn fiery shades in the fall, providing a bright backdrop for any late flowers.



has been propagated from Bartram's Philadelphia trees. It was William who named the genus for Ben Franklin, his father's good friend. The species name is for the river, although William added an intercalary "a," making it "alatomaha."

IN THE GARDEN

Franklinia, a member of the tea family (Theaceae) and a distant relative of the camellia, is the only species in its genus. It's a wonder: open and airy in habit, clustering its leaves toward the ends of its branches. It grows from 10 to 20 feet tall (or to 30 feet in its Deep South place of origin), and from 6 to 15 feet wide. It can be grown as a single-trunked tree or a multi-trunked shrub. It needs full sun for its best flower and fall color. And it's in the autumn that it really shines.

Bloom starts in late July and continues into August, with fewer blossoms into September. The five-petal flowers form frilled, fragrant white cups about three inches across, each holding a large clutch of yellow-orange stamens. In late summer and early fall, its glossy five- to six-inch leaves turn orange, red or purple. When September's flowers are seen against a backdrop of the tree's leaves in full fall color, the effect is stunning.

Michael Dirr, a professor of horticulture at the University of Georgia and an expert on woody plants, calls the tree "persnickety," meaning it's picky about its spot and not always easy to grow. I can attest to that. When I moved to Sonoma County,

Calif., I bought a Franklin tree for my yard. It lasted exactly one season before it said, "This ain't Georgia" and gave up the ghost. However, back East and in the Pacific Northwest, if it's given a well-drained, peaty soil kept moist but not soggy, it should do well. Fusarium wilt can be a problem, but an occasional spraying with a tablespoon of baking soda dissolved in a gallon of water will help keep the wilt at bay. If you're in the East where the Japanese beetles are thick and voracious, be prompt about picking them off your tree, as they really love eating the flowers. The tree thrives in USDA Zones 5 to 8, although it may not size up as well in Zone 5, simply because the growing season is shorter than in warmer zones.

Franklinia's roots are fibrous, so once established, it doesn't like to be moved. It can be propagated by soft-wood cuttings given gentle bottom heat in late summer, by hardwood cuttings in spring, by layering or by growing out the seed harvested as soon as the seed capsules are ripe. The sown seed must be kept moist and at a temperature between 50 and 65 degrees (F).

You can easily purchase trees and seeds online. Just Google "*Franklinia alatomaha* trees for sale" and several pages of suppliers, including some in areas best suited for its cultivation, will come up. ❧

.....
JEFF COX writes from his home in Sonoma County, Calif.

VISIT A FRANKLIN TREE

If you're up for an excursion, Bartram's Garden is still there in Philly—at 54th Street and Lindbergh Avenue. The garden is a 45-acre National Historic Landmark operated by the John Bartram Association in cooperation with Philadelphia Parks and Recreation. You can see a Franklin tree growing there and at these places:

Alabama: Birmingham Botanical Gardens

Delaware: Winterthur Museum, Garden & Library

Georgia: State Botanical Garden of Georgia (Athens)

Illinois: Chicago Botanic Garden (Glencoe)

Massachusetts: Arnold Arboretum (Boston)

Missouri: Missouri Botanical Garden (St. Louis)

New York: Brooklyn Botanic Garden; Old Westbury Gardens; Planting Fields Arboretum (Oyster Bay)

Ohio: Dawes Arboretum (Newark); Holden Arboretum (Kirtland); Spring Grove Cemetery and Arboretum (Cincinnati)

Pennsylvania: Longwood Gardens (Kennett Square)

Virginia: River Farm (Alexandria)

Washington: Washington Park Arboretum (Seattle)

Washington, D.C.: United States National Arboretum—JC



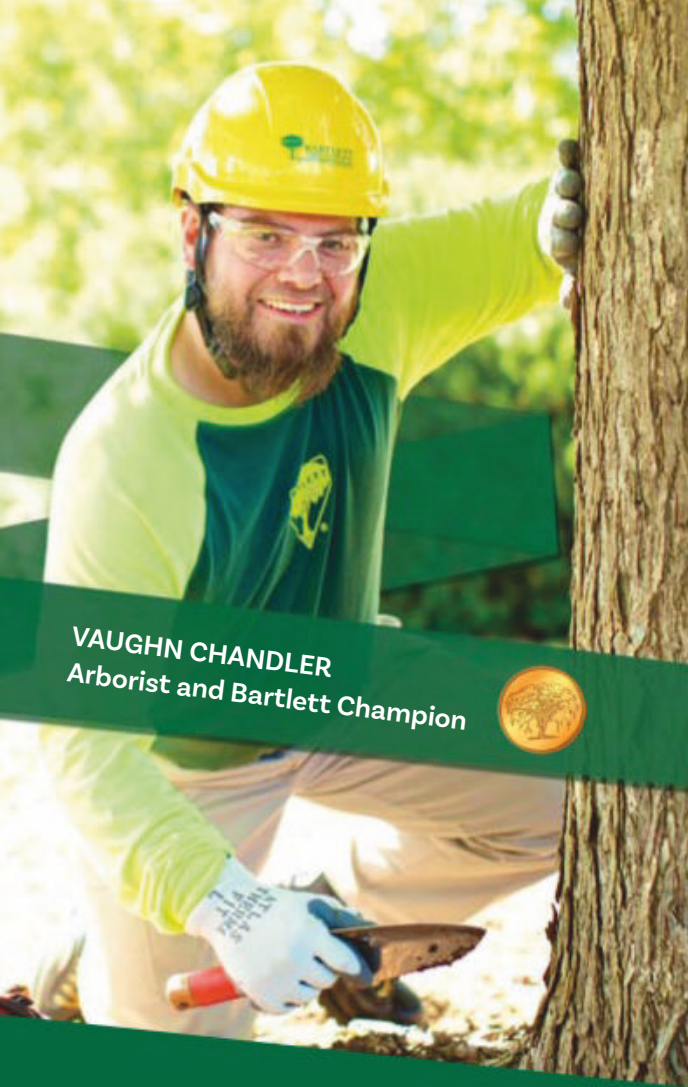


Above: The Persian silk, or mimosa, tree is safe for the author's Northeast garden, but it is invasive in the Southeast and parts of the West.

Invaders or Successors?

Taking a Darwinian view
of problematic plants

I WRITE THIS FROM my hammock where I am shaded by a fully blooming Persian silk tree (*Albizia julibrissin*), sometimes referred to as a mimosa tree. My wife and her beloved humminbirds love this specimen. Behind it is a mature Norway maple (*Acer platanoides*), which is attempting to bump off its designated replacement, the lovely *Ginkgo biloba*, by shading it to death.



notes from the garden



I'm safety first,
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EVERY TREE NEEDS A CHAMPION.

In my foreground an unidentified hybrid Japanese maple is a favorite nesting tree for robins. Japanese umbrella pines (*Sciadopitys verticillata*) grow near the property line, skirted by many assorted evergreen azaleas. Also in view are more hostas than I can shake a stick at. I have an attractive screen of glossy green English holly (*Ilex aquifolium*) and several persimmon cultivars that hail from the Korean peninsula. I can go on and on about my garden plants that are not native, and so could most of you.

Some are invasive, if not here in Rhode Island, certainly elsewhere in North America. English holly and my yellow-flowered scotch broom (*Cytisus scoparius*) have been labeled Weeds of Concern in states like Washington. I may be stirring up controversy with this story, but I think that the resulting discussions can be worthwhile.

NATURE'S PART

I understand all the concerns about invasives. I really do. I believe that friends shouldn't give friends non-sterile varieties of rose of Sharon or English ivy. I would never release an exotic snake, period. (Many people do, because they can't take care of them anymore, can't find a zoo that will accept them and don't want to euthanize them.) I know that there are a million bad stories out there about introduced plant species that many of us have grown. And I know that the problem is and always has been that sooner or later those plants that we drool over in the nursery catalogs or websites will find their way to a locale where they can out-hustle the plant species already there.

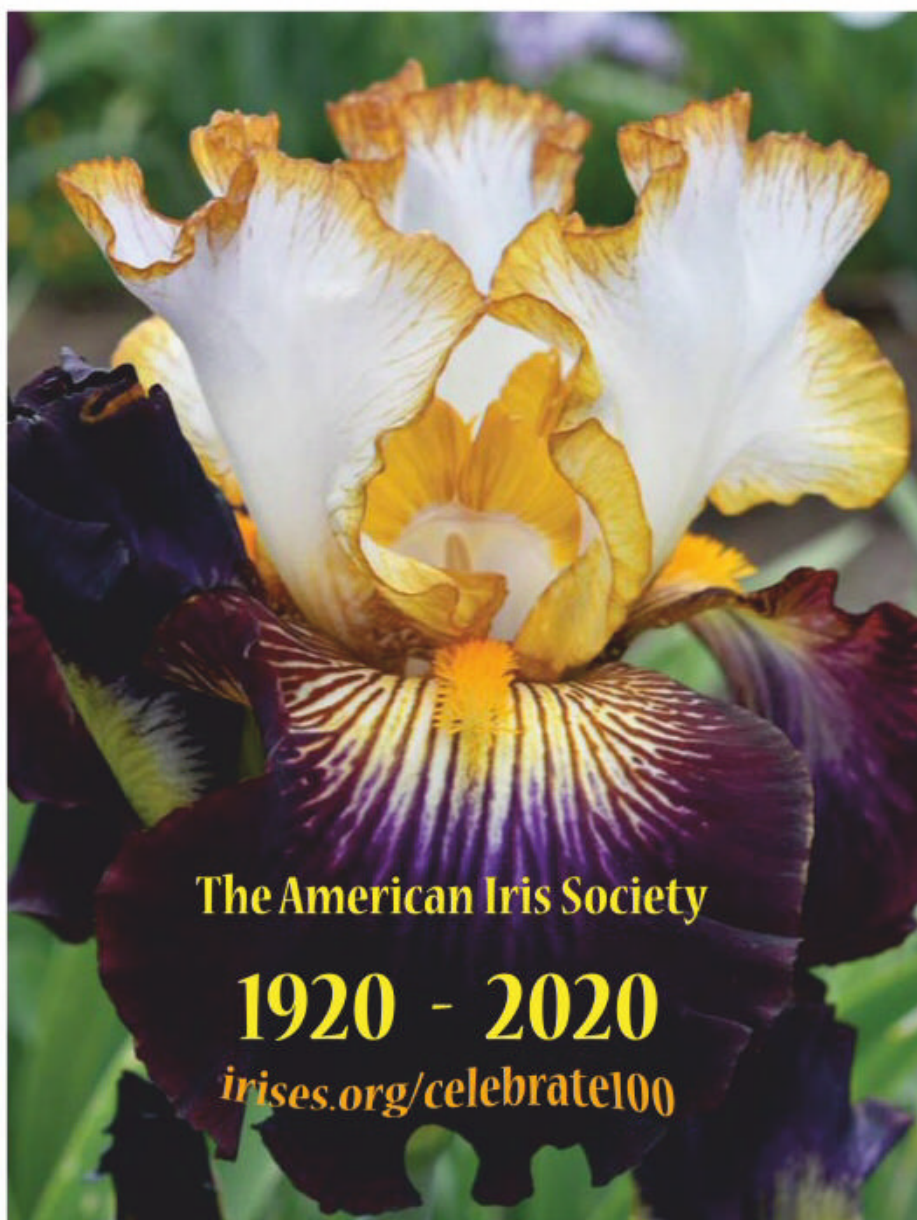
The invasive-plant problem has been accelerated by humans who are always seeking materials for food, medicine, construction, textiles or ornament. But throughout history



Above: Japanese umbrella pine is far from native to the author's region, but he admires the shelter his specimens offer to American robins in his garden.

plants have been natural travelers and colonizers. They or their seeds or spores ride the wind and waves, or latch onto the fur or feathers of migratory mammals or birds. Those seeds may be air dropped or ground deposited in a high-nutrient excretory package ready to initiate accelerated growth. A volcanic island can pop up in an ocean thousands of miles from any other land mass and under the right conditions, without any human intervention at all, it will soon be green with plants and inhabited by birds and small creatures.

In the last century we created the possibility of the following scenario occurring: By random chance a seed from a plant producing hallucinogens blows into the open cargo hold



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JUST ACCEPT SUCCESSION AS THE
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of a C-130 transport plane sitting on a dirt runway in a remote area of southcentral Asia. The plane lands in California 48 hours later; while material is being unloaded the seeds get blown out of the plane by prop wash, along with a few insects and their eggs. The unintended hitchhikers find California to be fertile ground, literally and figuratively. You can devise alternative scenarios using assorted oil tankers, container ships, car carriers and so on. You can attempt to block these scenarios from occurring, but you will never totally eliminate them. Never.

Mother Nature must have overheard and taken seriously God's admonition to Adam and Eve to "be fruitful and multiply." It seems to be a haphazard process for plants, but it is a process that works. As



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modern humans we may not always like the results, but we have to understand that all plants will take advantage of any opportunity to dominate some other plants. Sort of like human behavior, I guess.

I actually prefer to call what many refer to as invasive plants “successor plants,” because they succeed other plants that are unable to defend themselves and their turf. That’s nature for you. That’s competition. That’s how Darwin described it. The process of succession is going to unfold that way and there is little we can do to stop it, though we may slow it down in limited areas for limited periods of time.

OUR ROLE

We can expend a lot of time, energy and money trying to interfere with

the succession process. But I suggest we stop weeping so many tears and gnashing so many teeth when we fail. In many cases we should just accept succession as the natural progression that it is. Nature will handle it the way she always does. The world is not a monoculture of bamboo. Starlings are not the only birds winging their way through the skies. Lionfish will not dominate all the oceans. Something will be gunning for any plant or animal aiming to take over the world, although we may not like the slow speed of the readjustment, based on our human expectations.

And frankly, some people really like successor plants. Tell the people on Block Island or Cape Cod to dig up or use an herbicide against their beloved sea roses (*Rosa rugosa*) from Asia. Try to make it illegal to cultivate

bittersweet (*Solanum dulcamara*) or make a wreath with its attractive vines and berries in the autumn. And don’t count on everyone to applaud your efforts to dig up purple loosestrife, chop down stunning spring-flowering *Paulonia* or hack away at Australian pines that provide refreshing shade.

Meanwhile many species have come so far that even experienced gardeners do not know that they are non-native. I suspect that many of what readers think of as true native plants are not. They just got established here before comprehensive flora compendiums were kept.

Removing newer plant arrivals can be problematic, too. The fact that a possible control is “natural” does not always make it a good idea. Some propose using purple loosestrife

Continued on page 69

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The Color of Soil

Soils around the globe show amazing variances in color. Here's why



Above: Red soil is common in tropical environments (here, Sri Lanka's Wilpattu National Park), thanks to processes spurred by heat and precipitation.

WHAT IS THE FIRST COLOR that comes to mind when you envision soil? Is it brown, black, yellow or red? How about white, gray, green or blue? Any of these answers are correct—it depends on where you come from.

Several forces, which soil scientists call the factors of soil formation, influence soil color. These include climate, parent material (the sediment or rock in which the soil forms), biology, landscape position, time that a soil body has been forming and human activity. Scientists document color when studying soils, as it clues them in to how soils may have formed. Color is also a good tool for determining the physical characteristics of soil.

What is responsible for soils' overall color? The amount of organic matter—decomposed plant litter,

for example—and soil moisture affect soil color. So does the presence or absence of minerals, like carbonates, salts and rusts. There's so much that influences soil color, but we could argue that climate is one of the most important.

Why is climate so important when talking about this? Climate greatly dictates where and how quickly various organisms can grow. This, in turn, influences the rate at which soil's organic matter develops. Climate also controls the amount of precipitation that moves through the soil system, as well as the amount of water that evaporates from the soil surface. Finally, climate influences the weathering rates of soil minerals, as well as their presence and location within the soil profile.

COLOR ACROSS CLIMATES

Areas that are cool and wet, like the tundra of northern Canada and Siberia, generally have black-, dark brown- and gray-colored soils. Organic matter slowly builds in these regions of the world because there is adequate moisture to support plant life. When soil organisms die in these areas, the relatively cold temperatures limit the speed at which microbes decompose organic material. This buildup of organic matter is responsible for the dark brown and black soil colors.

Cold temperatures also limit the amount of water that evaporates from the soil. Because of this, soils in these regions are often very wet and tend to have very little available oxygen in them. Most microbes need oxygen to

thrive. Starved of atmospheric oxygen, the microbes use other oxygen sources in the soils, such as iron and manganese oxides (rusts). When the microbes use oxygen from these sources, they turn the iron and manganese oxides from red, yellow and purple colors to gray, blue and/or green.

Soil microbes use oxygen from iron and manganese oxides in wet soils throughout the globe, not just in cool climates. It is probably a good bet that if you are digging in and around a wetland, you will be able to find gray, blue or even green soils.

The color of soils within deserts and other arid regions of the world can range from red, yellow or tan to white. Color in dry areas is mostly influenced by parent material, as the lack of soil moisture limits plant growth and, in turn, the buildup of organic matter. In many cases, any precipitation that falls to the soil surface quickly evaporates back into the atmosphere. When evaporation exceeds precipitation, dissolved salt and carbonate minerals are pulled toward the soil surface, which gives arid soils a white or pale value.

Soils in tropical environments are known for their bright red, orange and brown colors. Plants grow very rapidly in these areas because of warm temperatures and plenty of rain. Overall though, tropical soils do not have very much organic matter (unless they are wet), because warm temperatures allow microbes to eat and decompose plant and animal material very quickly. The rusty colors associated with tropical soils are directly related to the presence of aluminum and iron oxides, which are a product of excessive chemical weathering via heat and precipitation.

You do not need to be a professional soil scientist to appreciate climate and its influence on soil color. If anything, noticing the color of soil

Right: An arctic tundra soil profile shows the active top layer in which plants can grow and a deeper gray layer that roots cannot penetrate. The gray of arctic soils relates to the region's cold temperatures that limit evaporation and keep the ground wet.



as you visit different places can give you a greater connection to new and different environments. Next time you travel, I dare you to look for different and interesting soil colors. It will definitely make a long car or airplane ride much more fun. ☘

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MARY TIEDEMAN is a Research Assistant at Florida International University. This article is presented by the Soil Science Society of America. Learn more at <http://soilsmatter.wordpress.com>.



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Above: Irises bloom at the Utah State University Botanical Center, where visitors young and old learn about gardening and natural resources.

Utah State University Botanical Center

IN 1995, freeway construction necessitated the close of Utah State University's botanical garden in Farmington, Utah. With 100 acres secured in nearby Kaysville, the Utah State University Botanical Center (USUBC) was established. We were able to move 50 specimen trees to the new site, plus a few perennial collections. The site was a fresh start that allowed for a new master plan and conservation direction.

The USUBC features a much-loved eight-acre urban fishery and wetlands that support birds and other wildlife, plus walking and biking trails. It's home to the seven-acre Varga Arboretum, an ornamental grass and iris garden, two acres of demonstration orchard and an edible garden. We sponsor a seasonal farmers market and a full schedule of classes, workshops, field trips and other events for children and adults.

Buildings on site include the Utah House, an energy-efficient model home; the Wetland Discovery Point, where schoolchildren learn about wetlands and other natural resources; and a teaching greenhouse. The Davis County Extension Offices also make their home here.

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JERRY GOODSPEED is USUBC & Ogden Botanical Gardens Director. Learn more at <http://www.usubotanicalcenter.org>.

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REALLY TOUGH TREES

At USUBC, we evaluate trees for our high-desert location. These five favorites require minimal water and can withstand our summer heat and winter cold:

1. BUR OAK >>

Quercus macrocarpa. This is a stately, tall tree with few, if any, problems—got to love that! We use it as our signature species at the USUBC. Highly adaptable but slow growing, it can eventually reach 80 feet tall, with a crown as wide. Zones 3–8.



<< 2. 'SENSATION' BOXELDER MAPLE

Acer negundo 'Sensation'. This is a male clone, so it has no troublesome seeds. Its foliage appears coppery red as it emerges in spring and it puts on a fabulous followup show of color in the fall. In a garden it typically grows to 30 feet tall with a rounded crown 25 feet wide. Zones 4–8.

TAKE-HOME ADVICE MULTISTEMMED SHRUBS

Every spring we're asked, "When and how do I prune my lilacs?" Lilacs are a multistemmed shrub, meaning there are many stems, or canes. Each year, the plant should produce at least one new stem from below the soil level. This category also includes red-twig and tatarian dogwoods (*Cornus sericea* and *C. alba*), ninebarks (*Physocarpus*), forsythia and viburnums.

As a general rule for when to prune, we use an old adage: "If it blooms before Memorial Day, prune it after Memorial Day. If it blooms after Memorial Day, prune it before Memorial Day." In reality, all can be pruned in the late winter to early spring, but by following this adage, you'll enjoy the blooms each year. You won't cut them off before they bloom.

The best method is to simply cut the larger, taller and older canes to the ground. Once the shrub reaches the desired height, most years you'll need to remove just three to five canes. This approach opens up the canopy, allowing more light through, which keeps the plant healthy and stimulates new cane growth. It also keeps the shrub at the height you want and looking natural.—JG

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3. ESPRESSO KENTUCKY COFFEETREE

Gymnocladus dioica 'Espresso-JFS'. This is a large shade tree with huge, frond-like compound leaves. A male selection, it produces no seeds. We like it for its unique form that shines in winter and its yellow fall foliage. It can reach 50 feet tall with a crown width of 35 feet. Zones 3–8.



4. 'PRAIRIFIRE' CRABAPPLE

Malus 'Prairifire'. Crabapples are the epitome of an all-season tree. We have many favorites, but 'Prairifire' is readily available and one of the best. With pink flowers, reddish summer foliage, good fall color and persistent dark red winter fruit, it's just "wow"! It reaches about 20 feet tall with a 15-foot spread. Zones 3–8.



5. BIGTOOTH MAPLE

Acer grandidentatum. Native to the Intermountain West, this tree has brilliant fall color and excellent drought tolerance. We like its versatility as a small to medium tree that can be used in a group or as a specimen. Its size and shape can vary, but in cultivation it typically grows 20 to 30 feet tall and wide. Zones 5–8.

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THE MORTON ARBORETUM is a world-renowned outdoor tree museum and tree-research center located in Lisle, Illinois. As the champion of trees, the Arboretum is committed to encouraging the planting and conservation of trees and other plants for a greener, healthier and more beautiful world.

Established in 1922 by Joy Morton—founder of the Morton Salt Company and son of J. Sterling Morton, the originator of Arbor Day—the Arboretum has grown to include 1,700

acres of plant collections and gardens amid beautiful natural landscapes of woodlands, prairie, lakes and streams. Each year, 1.3 million visitors enjoy its gardens, educational exhibits and programs, 16 miles of hiking trails, the Sterling Morton Library and the Visitor Center, with its shop and café. The Thornhill Education Center offers classes and other offerings for adults and youth, with 646 schools partaking in field trips and outreach programs each year.

In June 2020, a new outdoor art exhibition, *Human+Nature*, created exclusively for the Arboretum by South African artist Daniel Poppe, will bring attention to the deep connection between people and the wild, with 20- to 25-foot sculptures gracing the Arboretum’s grounds.

.....
KARA SILVA is Public Relations Specialist at the Morton Arboretum. For more information see <http://www.mortonarb.org>.



Above: Visitors to the Morton Arboretum in Illinois enjoy diverse landscapes and plant collections amid the varied trees that remain a focus.

HARBINGERS OF SPRING

Plant-clinic manager Julie Janoski offers her five favorite plants that bloom early in the spring at the Morton Arboretum:



1. CORNELIAN-CHERRY DOGWOOD

Cornus mas. This large shrub is a tough multiseason plant that blooms early in the spring with a profusion of small yellow flowers. Before blossoming, the unopened buds look like popcorn kernels. In summer, it develops red fruit that is enjoyed by birds. USDA Zones 4–8.



2. REDBUD

Cercis canadensis. One of the most arresting trees at the edge of the woods while in bloom, redbud produces a flush of small, lilac-colored flowers up and down its stems before the leaves bud out. The summer leaves are heart shape, and in the fall they turn a translucent yellow. Zones 4–8.



3. SNOWDROP

Galanthus nivalis. One of the earliest harbingers of spring, snowdrops poke small, white bell-shape flowers up through the melting snow. These bulbs will spread naturally over time. Zones 3–7.



4. WHITE TRILLIUM

Trillium grandiflorum. White trillium is native to North American woodlands. The plant blooms in spring with large, white three-petal flowers that can be up to a foot tall, creating a dramatic sight in spring woodlands. Zones 4–8.



5. 'JANE' MAGNOLIA

Magnolia 'Jane'. A member of the Little Girl series of magnolias, 'Jane' is more compact and upright than many of its sisters. Because it blooms later than *M. stellata* and *M. ×soulangeana*, it is less susceptible to frost damaging the floral display. Zones 4–8. ❄️

TREE PLANTING TIPS

Spring is one of the best seasons to plant a new tree. Make sure your tree gets a good start:

- Match the needs of your tree with the conditions of your site.
- Place the tree in a location where it can achieve its mature size.
- Call your local utility locator before planting to ensure that the area is free of cables and the roots will have the space they need.
- Remove as much of the packaging as possible, including twine, wire and burlap.
- Make sure the roots aren't circling the root ball before planting. If they are, square off the root ball to encourage the roots to grow outward.
- Don't plant too deeply. The area where the trunk widens to the roots should show above ground.
- Apply a flat circle of mulch, two to three inches deep. Keep the mulch away from the trunk.
- Most young trees do not need to be staked or fertilized at planting.
- Don't be afraid to prune a young tree to enhance its structure or remove damaged material.
- Water consistently as its root system gets established.—KS



THE LONG GAME





Martha Leb Molnar

Fall's lengthening provides an opportunity to make more of the garden, so choose additions wisely in spring

by **Martha Leb Molnar**

Fall is lasting longer. The average length of the growing season in the Lower 48 has increased by nearly 2 weeks since the beginning of the 20th Century, according to the Environmental Protection Agency, with a particularly large and steady increase over the past 30 years.

For gardeners in temperate zones, this offers new opportunities. With careful planning, we can now enjoy a long-lasting fall garden as glorious as a spring or summer one.

The longer fall has been especially dramatic in my Vermont garden. Some years I can decorate the Thanksgiving table with Russian sage, roses and anemones, if I protect the plants from what is usually just a one-night frost. In the past, frost came repeatedly well before Thanksgiving.

"Absolutely, fall is longer, stretching into early December," confirms Gordon Hayward, a nationally recognized garden writer and lecturer who also wrote for this magazine for 25 years. In the 1.5-acre garden that he and his wife, Mary, have created, fall gets equal billing with the earlier seasons.

"When you're attuned to daily weather, it's hard to see the climate trends," admits Todd Forrest, Arthur Ross VP for Horticulture and Living Collections at the New York Botanical Garden. But he says the Garden is experimenting in "cautious ways," such as successfully mixing southern

magnolias into the Ladies Border. The focus remains on succession planting, which provides beauty well into fall.

Elaine Yellen, a garden designer in Westchester, N.Y., says her designs have, over time, naturally skewed toward peaking later, in late July and August, because there's now more time to enjoy gardens late in the season.

A longer fall goes well beyond the joy of cut flowers. With winter deferred, I have been slowly transforming mine into a late summer and fall haven.

This takes conscious effort, and not just in physical labor. Spring's green punch after a barren winter is powerful, and it dominates our attention when we're planning the garden. Also, we're naturally drawn to whatever is in flower when we shop for plants, which is mostly in spring. But spring is short, especially in the Northeast, where it has also become wetter. Fall, on the other hand, is predictably dry, warm and long, and the soil retains its heat even when the air temperature doesn't.

The time to plan for "hotumn" is now. By keeping fall in mind in the spring, we can go well beyond potted mums and ornamental kale from the hardware store. Think grasses that show their colors in fall. Think flowers that wait until fall to display their blooms. Think shrubs that provide beauty well beyond a spring flash.

Left, top and bottom: In her Vermont garden, pictured here in fall, the author has noticed that the season is lasting longer, with just one fleeting frost before Thanksgiving in recent years.



GRASSES

Let's start with grasses, because these not only come into their glory in fall but hold their beauty through winter. They could contribute an entire garden of blades and feathery heads of endless colors, from towering to tiny, creating an undulating effect. They can also be woven into existing gardens. Each time I remove a disappointing plant, I replace it with a grass that needs no care beyond an annual haircut with a hedge trimmer in early spring.

With such a wealth of grasses available, I like to vary size, color and growth habit. Here are my favorites.

Switchgrass (*Panicum virgatum*) is an upright grass with feathery, delicate seedheads. The cultivar 'Shenandoah' remains a diminutive two to three feet, while 'Dallas Blues' reaches six feet, and there are many varieties between these two.

Blue fescue (*Festuca glauca*) provides eye-catching color, and because it grows only 8 to 12 inches tall, I use it as a groundcover to create a specific shape. Blue oat grass (*Helictotrichon sempervirens*) is another blue option, with a mounded habit that reaches to four feet.

The upright little bluestem (*Schizachyrium scoparium*), meanwhile, is not blue. It does have blue tinges among its myriad colors, which include green and purple before they turn to red, copper and orange hues in fall.

For an exclamation point, try feather reed grass (*Calamagrostis ×acutiflora* 'Karl Foerster'). As its name implies, this grass is admired for its feathery stalks that emerge reddish brown in spring and turn golden in fall.

Molinia caerulea arundinacea 'Skyracer' is defined by delicate see-

through blades and fall color that mirrors the flaming trees. It grows in clumps in the Haywards' garden.

Zebra grass (*Miscanthus sinensis* 'Zebrinus') is impressive and exotic looking, growing four to seven feet tall. Emerald-green foliage develops golden stripes midsummer, and silvery white plumes appear in autumn. Note: It behaves well in my Vermont garden, but it can be invasive in warmer zones.

LONG-BLOOMING PERENNIALS

Allen Lacy was a renowned garden writer who died in 2015. In his New Jersey garden, he counted more kinds of perennials blooming in October than in April—75 versus 39, respectively.

The recognized standouts among late bloomers are asters, sedum and mums, which are surely keepers, especially given

Opposite page: 'Shenandoah' switchgrass and low blue fescue provide color and texture. Below: 'Powis Castle' artemisia's silver leaves shine in summer's strong light and the gentler autumn sun. Right: Black-eyed Susan can bloom deep into fall.



the expanded array of cultivars available. But there are many lesser-known late or long bloomers that provide stunning color.

Here are some favorite perennials that flower through summer and into fall.

Artemisias are grown for their silvery leaves, which look as attractive in July's harsh light as in autumn's benevolent sun. Look for those that are less likely to spread, such as 'Powis Castle' (*Artemisia arborescens absinthium*) and 'Valerie Finnis' (*A. ludoviciana* 'Valerie Finnis').

Tickseed (*Coreopsis*) adds a bright yellow note to the subtle colors that often define fall gardens. To encourage reblooming in my *C. verticillata* 'Zagreb', I shear back the entire plant after its first flowering.

By any name, black-eyed Susan (*Rudbeckia hirta*), or the closely related gloriosa daisy, is a fail-proof



native plant that quickly forms sweeps of gold from midsummer into late autumn.

Late-flowering salvias come in superb blues, and their tall spires make a strong statement in front of tawny grasses.

The common yarrow (*Achillea millefolium*) begins flowering in cooler climates from mid-July and

looks fresh with its yellow, red, pink or white flat flower heads through September. It can spread wildly, so it needs watching.

LATE-BLOOMING PERENNIALS

And here are those perennials that hold back their blooms until fall, teasing us by emerging early, growing stalks and leaves and

finally buds that burst into flamboyant flowers.

Such are Joe Pye weeds (*Eupatorium* or *Eutrochium*). While many think of them as nothing more than roadside weeds, several species and their cultivars provide impressive architectural interest. Growing to seven feet, the pale clouds of pink flowers of *E. purpureum* give way to attractive seed heads. There are short cultivars such as *Eutrochium maculatum* ‘Gateway’, which is favored by the Haywards, and the even shorter *E. dubium* ‘Little Joe’.

Japanese anemone (*Anemone*) is the inverse of Joe Pye weed. Delicate and relatively short, it begins producing pearly white or pink daisy-like flowers in late summer and blooms its head off for weeks. My 10 square feet of anemones started with a single pot 3 years ago.

Turtlehead (*Chelone*) flowers are said to look like a turtle’s beak, but since I can’t recall how that looks, they remind me more of snapdragons. They also bloom for weeks, which makes the wait for their white, red, purple or pink flowers worthwhile.

The bugbane I favor, *Actaea simplex* ‘Black Negligee’, has purplish-black leaves and blooms in cylindrical cream spikes. Elegant, for sure.

As its botanical name implies, sneezeweed (*Helenium autumnale*) is a late bloomer. An imposing plant with pinwheel flowers ranging from red to orange to yellow, it delivers a long-lasting display.

If planted in masses, the tall, airy Russian sage (*Perovskia atriplicifolia*) creates a lavender-blue cloud and makes a superb companion for grasses.

Giant dill escaped from my vegetable garden. After pulling a few, I left the rest to grow as I attacked peskier pests. And when

I realized how pretty the heads looked, like enormous Queen Anne’s lace but yellow, I stopped pulling them (except for food). Giant dill is now one of my fall-flowering staples, allowed to seed itself year after year.

I know people who are passionate about dahlias and grow them in long rows, and others who’d never have them in their gardens. They need to be staked and fed and, worse, dug up and stored for winter. Still, it’s hard to resist the allure of a dinner-plate dahlia in the fall garden.

SHRUBS

Blazing autumn trees in our temperate zone clearly take center stage, but they’re not the only show in town. Some of the showiest shrubs that fit into a flower garden celebrate fall with profuse blooms or intense leaf colors.

Hydrangea is the clear winner. Its species represent all sizes and bloom in full sun and deep shade, and their panicles run the gamut of subtle colors that change as the season progresses. The multi-hued leaves also reflect the autumn palette above. And the explosion of new cultivars far surpasses the familiarmopheads. I can’t get enough of *Hydrangea macrophylla* ‘Lacecap’ and *H. paniculata* ‘Limelight’, which decorate my living room in a dry vase all winter long.

Starting with just one *Potentilla* species, I’ve expanded to six. While their small flowers are not heart stoppers, their cheerful willingness to bloom from midsummer to frost make them endearing.

Roses, the repeat-flowering kind, bloom hugely in June, with a second flush in fall and more in between—clearly a winner if you’re willing to bend to their significant demands.

The first time I saw smokebush (*Cotinus coggyria*) it was across a



lake. I bushwacked rapidly through brambly woods to see this mysterious plant up close. It’s at its most alluring in the fall, when summer’s blooms become the misty “smoke” that inspires the name. When those clouds are gone, the brilliant red, purple or yellow leaves continue to steal the spotlight.

Even with all of the above contributing to the garden, there will come a string of frosty days, and the show is over. You can still enjoy the movement of grasses, and a few well-hidden blooms may surprise with a blink of color. But it’s over. It’s time to let go, to let be, to accept. Until next spring, and next fall too. ❧

MARTHA LEB MOLNAR is a writer and radio commentator in Vermont. She is the author of *Taproot: Coming Home to Prairie Hill*.



Clockwise from left: An early-September photograph of Nancy Ondra's cottage garden shows black-eyed Susans, Joe Pye weeds and ironweeds in high bloom. Panicle hydrangea and shrub rose linger into fall. Smokebush offers fall color in seed and leaf. 'September Charm' Japanese anemone blooms true to its name.



BULB MASTERS

Three designers share their
experience pairing bulbs and perennials
for long-term beauty and plant health

What do garden designers consider when creating combinations of spring-blooming flower bulbs, perennials and flowering trees and shrubs? Beyond the basics, what criteria do they weigh to take a combo to a higher plane of beauty? How do they balance short-term delight with long-term efficiency? How do designers script their plant partnerships so that they'll unfold sequentially, week after week, as winter morphs into spring and spring into summer? How do they accommodate bulb foliage's die-back where naturalizing is a goal? How do they deal with foraging animals?

The bulb experts at Colorblends thought it would be interesting to explore how some accomplished garden design professionals approach these questions.

"We reached out to three designers whose work we admire and asked if they'd be willing to share the thinking behind some of their successful spring bulb and perennial combinations. All three generously agreed," says Tim Schipper of Colorblends, a national flower-bulb wholesaler. The company compiled what the designers shared into a website they named Bulb Design Notes (<http://www.bulbdesignnotes.com>).

Each designer chose five or more photos of spring bulb and perennial combinations they designed and provided design notes on each. Their photos and observations are assembled into personal galleries. Combined, the galleries present images of 20 garden scenarios. All scenes are annotated with plant IDs, location, hardiness zone and design notes. Several from each designer are further shared on the following pages; for more combinations and expanded notes, see Bulb Design Notes online.

Opposite: Garden designer MJ McCabe pairs *Allium* 'Purple Sensation' with snowball viburnum (*Viburnum opulus* 'Roseum') for their repetition of flower shape.





JACQUELINE VAN DER KLOET

Jacqueline van der Kloet is an internationally-acclaimed garden designer based in Weesp, the Netherlands. Her designs, which can be seen at the New York Botanical Garden and Chicago's Lurie Garden, among other sites worldwide, are prized for bold use of color, combinations that subtly echo what we see in nature and a playfulness that defies formality. Her 10th book, *A Year in My Garden*, will reach United States booksellers in spring 2020. The combinations showcased here are from her own garden, where the climate compares to that of Seattle, Wash. (USDA Zone 8a).



↑ Naturalized Woodland Planting with Daffodils

Heirloom narcissi in softer shades of white and yellow (all shorter than 12 inches) combine with *Scilla siberica* 'Spring Beauty' and the perennials *Helleborus orientalis*, *Corydalis solida*, *Primula elatior*, *Pulmonaria saccharata* 'Mrs. Moon', *Arum*, *Anemone japonica*, *Rodgersia* and *Geranium macrorrhizum*.

This exciting but subdued combination brightens the dappled shade of a woodland area. My focus is on the various colors, textures and heights, as well as the shapes of the flowers and foliage. A relaxed, elfin mood prevails. The colors are soft. Cream, yellow and blue dominate within a sea of greens. The greenish seed heads of winter-flowering hellebores add a nice, dignified touch.

The daffodils will naturalize to provide extended bloom, year after year. The scilla, too, is naturalizing and, over time, will create carpets of brilliant blue that will bloom in sync with the daffodils in spring. The pulmonaria and geranium also gain size. In the same area but where it's a bit more shaded and moist, I've placed arum, Japanese anemone and rogersia. The *Primula elatior* is self-seeding here. Where it becomes overly enthusiastic, it's easy to pull out.

The scene changes constantly in spring, over the course of six to eight weeks. As the bulb flowers fade, their foliage dies back naturally. By then, the perennials have taken center stage.

Spring Sequence in Yellow and Orange ➡

The series kicks off with yellow crocus, followed by early-blooming *Narcissus* 'Tête-à-Tête'. Then come the tulips, including types that flower early, mid-season and late. Among them are *Tulipa praestans* 'Shogun', *T.* 'Yellow Purissima', *T.* Orange Emperor', *T.* 'Jewel of Spring', *T.* 'Flashback' and *T.* Ballerina'. Companion plants include *Primula elatior*, *Milium effusum* 'Aureum', *Erysimum*, *Euphorbia characias wulfenii* and various *Geranium*.

The perennial base of this border in spring has yellow, orange and deep red flowers and foliage and so do the spring-flowering bulbs. The bulbs bloom sequentially, with changing heights, structures and textures. After bloom, the declining bulb foliage will disappear between the perennials.

For a planting of this sort, I might add bulbs in these quantities per square yard: 8 long-stemmed tulip and/or 8 tall narcissus bulbs; 12 botanical tulips and/or 12 small narcissi; 20 scilla; 20 crocus; 15 *Anemone blanda*.

Pink Lily-flowered Tulips ➡

Two pink tulips, *Tulipa* 'Jacqueline' and *T.* 'Mariette' take the leading role around the edge of this part of my garden in late spring. They are almost identical but differ in height. That gentle difference softens the overall effect.

Beneath the tulips, you see an understory of yet-to-bloom *Geranium marorrhizum* 'Spessart', white-flowering *Geranium sylvaticum* 'Album', pink and blue forget-me-nots (*Myosotis*), not yet blooming columbines (*Aquilegia vulgaris*) and Mexican feather grass (*Stipa tenuissima*).

When we started the garden it had heavy clay. So I added sand and compost to improve the soil drainage. Each spring, I add organic, slow-release compost to the soil surface as soon as the bulb foliage noses through. This provides steady nutrition till late spring, when energy is needed to make a new flowering bulb for next year. After bloom, I deadhead spent flowers, with a quick snip or a snap right under the flower head. I leave everything else as is—stems and leaves are left to wither fully, untouched. In summer, unless adjacent perennials are fainting, I do not water. Most dormant bulbs want to be dry.



Opposite, top: Diminutive daffodils in white and pale yellow dominate the woodland planting before giving way to perennials in blues, whites and pinks. This page, top to bottom: Hot colors mark spring and early summer in this area of Jacqueline's Netherlands garden. The pink tulips here are identical except for in height; that difference adds whimsy.



MJ McCABE

M.J. McCabe, based in Northford, Conn., is an award-winning residential garden designer known for elegant and enduring landscapes. Her plant and garden designs, set primarily along the Connecticut shoreline, reflect her studies in England, Ireland and Japan. She works closely with a collaborative team of landscape contractors, masons and carpenters to realize her residential designs.



White-on-White Color Scheme

White-flowering plants fill a framework supplied by a boxwood hedge (*Buxus* 'Tide Hill') and white-flowering dwarf crabapples in this Milford, Conn., garden (Zone 7a). *Narcissus* 'Thalia' followed by white tulips, including 'Maureen', 'Mount Tacoma', 'Swan Wings' and 'White Triumphator', start the show in spring. In summer: *Allium* 'Mount Everest', followed by *Scaevola* and *Euphorbia* 'White Frost'. In fall: *Anemone japonica* 'Honorine Jobert'.

I coordinated with David Duncan of Needham Duncan Architecture of Old Lyme, Conn., to create a new garden adjacent to the garage addition he designed for the 1909-built home. The resulting structure and garden meld beautifully with the relaxed elegance of the original property.

In this setting, a white-on-white color scheme is appealing spring through fall. Right after they bloom, we pull the tulips. By then, *Allium* 'Mount Everest' is taking over. Over summer the white-on-white scheme continues with a groundcover planting of *scaevola* and *euphorbia*. In fall, the naturalized Japanese anemone comes up. Each fall, we plant fresh tulip bulbs and additional alliums.

Hillside Mix of Spring Bulbs and Perennials ➡

Red-orange species tulips, white *Narcissus* ‘W.P. Milner’ and yellow *N.* ‘Baby Boomer’ and *Allium* ‘Purple Sensation’ mix with perennials—yellow leopard’s bane (*Doronicum orientale*), white candytuft (*Iberis* ‘Kingwood Compact’), Serbian bellflower (*Campanula poscharskyana*) and hakone grass (*Hakonechloa macra*).

I like to add small surprises for my clients. For this sunny site in Middletown, Conn. (Zone 6b), the surprise was species tulips. These have now naturalized here. No animal problems to date.

For me, pest-resistance is always a factor. Most of my clients in coastal Connecticut have trouble with deer, voles, moles and rabbits. For spring color, pest-proof daffodils are always a top choice. Alliums are very reliable too.

Tulips are tricky, but I find there’s usually a way to work them in—you just need to outfox the foragers. The bulbs are not expensive, so it’s worth experimenting with surprise clusters here and there. At certain sites, I treat tulip bulbs to keep diggers away. I soak the bulbs in my own mix: a quarter cup liquid Lysol to three gallons water. A quick soak is plenty. Spread the bulbs out to dry before planting.



⬅ Alliums, Perennials and Shrub Roses

Allium christophii shines in summer amid pink shrub rose ‘Mystic Marvel’, English lavender (*Lavandula angustifolia* ‘Hidcote Blue’), *Geranium* ‘Rozanne’, lady’s mantle (*Alchemilla mollis*) and Shasta daisy (*Leucanthemum* ×*superbum*).

This bed, positioned just steps from the front door of a beautiful waterside home in Madison, Conn. (Zone 6b), is designed for long-lasting seasonal color and easy maintenance. In summer, the perennials and repeat-blooming shrub roses carry the ball. An unexpected layer of interest is provided by the large, airy umbels of the *Allium christophii*. In spring, tulips are the star attraction—each year a different color. I pick tulip varieties or a blend in that color to provide sequential bloom, April till mid-May. After bloom, we pull the tulips; in fall, we choose a new color and replant.

Opposite, top: The white-on-white color scheme remains appealing from spring’s tulips to summer’s scaevola and fall’s anemones. This page, top to bottom: This woodland hillside was planted in the fall, with a focus on perennials and surprise handfuls of bulbs. This early-summer scene mixes pinks, purples and a shot of lime.



Mark Konlock joined the Green Bay Botanical Garden as Director of Horticulture in 2005. Since then he has developed and designed 11.5 acres of new gardens, redesigned or re-invigorated existing gardens and established GBBG as a regional center for horticultural trial research. His plant-savvy additions have expanded the permanent plant collection from nearly 7,000 plants to well over 70,000. He's particularly fond of spring-flowering bulbs, flowering trees and shrubs and native plants. The following designs are some of his at the garden (Zone 5a).

↑ **Allium 'Mount Everest' with Pink Tree Peonies**

White *Allium* 'Mount Everest' threads its flower stems through the large-flowered 'Hanakiso' tree peony. A complementary swath of white alliums and variegated Solomon's seal combine nearby under a canopy of weeping crabapple.

In this late-spring photo, emerging perennials play the role of understory, but soon they will take over the bloom scene. The mix includes *Geum*, variegated Solomon's seal, baptisia, purple coneflowers, phlox, spiny bear's breeches (*Acanthus spinosus*) and more.

As the summer perennials gain size, they mask the allium's fairly broad, unattractive foliage as it proceeds through die-back. In our naturalized bulb plantings, we leave bulb foliage in place to die back naturally, as it plays a role in recharging the bulbs for next spring's bloom.

A good rule with alliums is don't be skimpy. We group 100 or more 'Mount Everest' in any sweep. I like to dot them throughout perennials so their ball-shape blooms float above the bed.

Pink Tulips and Crabapple Blossoms ➡

Tulipa 'Foxtrot' is paired here with Sargent crab (*Malus sargentii* 'Candymint').

I find it especially elegant to echo colors when planting bulbs underneath spring-flowering trees and shrubs. Nothing beats the exuberance of tulips. Here two-tone 'Foxtrot' increases the intensity of similarly colored 'Candymint' Sargent crab-apple. Under a softer pink crab, I like pale pink *T.* 'Angelique' or rosy *T.* 'Aveyron'.

When massing beds with one tulip variety, I lean towards double-flowered varieties like these. They last longer in the landscape because they do not have the sexual parts to produce seed; other types drop petals once fertilization occurs and energy is put into seed production.



Opposite, top: Alliums are a good mixing bulb because they thread their tall stems through their companions' foliage. This page, top to bottom: Mark likes to play with scale: "The large tulip flowers are more dramatic against the backdrop of small crabapple blossoms." Naturalizing bulbs transform an unmown area.

◀ Naturalized Spring Bulbs in No-mow Grass

Tulipa 'Tinka', grape hyacinth (*Muscari armeniacum*) and *Narcissus* 'Hawera' cavort amid a no-mow grass mix.

For a meadow effect, use enough bulbs to make an impact. And choose types that are likely to behave as perennials or to naturalize, such as species tulips, miniature daffodils and specialty bulbs.

For a site like this, we use a quick, easy planting technique: Use a shovel to dig up a chunk of sod and throw a handful of bulbs in, then replace the sod and tamp down. For a natural look, position the holes randomly, some closer together than others. Place varying numbers and types of bulbs in the holes. Some groupings should be all of a kind, as if spread by nature. Fall rains initiate rooting. In spring, the flowers come up in bulb bouquets.

Always let the bulb foliage die down before any mowing so that the bulbs can rejuvenate to bloom the next year. Better yet, plant in no-mow grass and just let the whole works take care of itself. 🌿



SPACE -

SAVING

SHRUBS



10 compact selections that suit foundation beds and front-yard paths

by **Meghan Shinn**

Spring can be a good time to assess a home's curb appeal. What's going right or wrong in the planted areas immediately adjacent to the house's foundation and main walkways? The foundation bed demands selections that won't grow so tall as to obscure the home's windows, nor so wide that they cover companions or leave no space for seasonal plantings. Also needed are options with an even shorter stature, so that they suit the very front of the foundation bed, the edge of the front walkway or the space between sidewalk and street. Lastly we're looking for selections that can stand at the corner of the house, to the side of the doorstep or alongside the lamppost or gateway, because while they grow tall they remain very narrow.

BENEATH WINDOWS

In my area, it's common to see rhododendrons, yews and Japanese pieris planted in the bed bordering a home's foundation. These evergreen and (in some cases) flowering shrubs likely looked like a good choice when they were added 15 or 20 (or more) years ago, but today they block the windows of the home and leave little space for planting anything else nearby. Recent introductions suit the space beneath windows much better, while still offering eye-catching color from flowers or foliage.

For year-round color in partial sun to full shade, look at Golden Duchess eastern hemlock (*Tsuga canadensis* 'MonKinn'; USDA Zones 4–7). Golden-yellow needles cover its compact frame all year. It matures to just four feet tall and five feet wide, with arching branches that create a mounded form. Its circumference makes it a particularly good choice in foundation beds where only a simple single row of shrubs is desired.

Opposite page: Golden Duchess eastern hemlock offers brilliant color year-round, on a frame that grows just four feet tall and five feet wide.





Above: Tuff Stuff mountain hydrangeas appeal for front-yard plantings because of their compact size and heavy, foolproof bloom. Opposite page, top to bottom: Little Joker ninebark is an adaptable four- to five-foot shrub that brings interest in both flowers and foliage; Velvet Viking Japanese maple has a gorgeous spreading form outlined by lacy red foliage, plus a surprisingly rugged constitution, thanks to Minnesota roots.

For a similarly sized deciduous shrub—which in fact would make a fine neighbor for Golden Duchess hemlock—see Little Joker ninebark (*Physocarpus opulifolius* ‘Hoogi021’; Zones 4–8). This spring- to summer-flowering beauty remains just four feet tall and wide. It has rich reddish-purple foliage touted for its resistance to mildew. Monrovia’s Justin Hancock notes it’s “as tough as they come. It holds up to heat and drought, cold and wind.” Full sun will prompt the best foliage color, but this selection will look lovely and bloom in part sun, too.

A final wide option for the foundation can be found in Velvet Viking Japanese maple (*Acer palmatum* var. *dissectum* ‘MonFrick’; Zones 4–8). Justin points out that this Minnesota-born variety’s hardiness

and petite habit give “a whole new group of gardeners the ability to grow and enjoy the beauty of a Japanese maple.” This dwarf tree boasts a mounding, weeping shape that fills a space five feet wide. Meanwhile it grows just three feet tall. Its lacy burgundy foliage provides color spring through fall, then reveals an elegant architecture when it drops away for winter.

SMALLER STILL

Short shrubs with a round shape make it possible to grow a greater number of plants within the confines of the foundation strip. Natalie Carmolli, of Proven Winners Color Choice Shrubs, points to the Lo & Behold buddleia for this purpose (Zones 5–9). “This is a series of six dwarf, non-invasive butterfly

bushes,” she explains. “They are beautifully fragrant and very long blooming.” ‘Blue Chip’ and ‘Purple Haze’, the largest in the series, reach roughly three feet tall and wide. These sun lovers can be dotted throughout the border, where they’ll provide bright color with their summer flowers without blocking companions or windows.

So too will certain hydrangeas that have been bred to stay compact. Mountain hydrangeas (*H. serrata*) take full or part sun and withstand cold temperatures better than the similar-looking bigleaf hydrangeas (*H. macrophylla*). The Tuff Stuff series of mountain hydrangea blooms on both old and new wood, creating a long, foolproof flowering season for Zones 5 through 9. Its varieties grow no more than three feet tall and wide.



This page, left: Fire Island bigleaf hydrangea stays under four feet tall. Below: *Buddleia* 'Pink Micro Chip' remains smaller still. Opposite page, clockwise from top left: Tater Tot arborvitae makes a low edging with no shearing; Purple Pillar rose of Sharon is a tall, skinny option for tight spots; Tiny Tower spruce makes an elegant marker; Fine Line buckthorn is a highly textural columnar shrub.



As for a bigleaf variety, one might try Fire Island (*H. macrophylla* 'Hortfire'; Zones 4–9), which has consistently rosy-red blossoms (they aren't affected by soil pH). Justin Hancock notes that this rebloomer "reaches about three-and-a-half feet tall and wide, making it perfect for tucking under windows or as a low deciduous hedge along a path or walkway."

UP FRONT

Of course, a pathside planting may need to be shorter than three feet. There are shrubby options that fit this bill and can serve as edging for a deeper bed, too. Circling back to the Lo & Behold butterfly bushes and Tuff Stuff hydrangeas mentioned earlier, we can find two diminutive relations: *Buddleia* 'Pink Micro Chip' and *H. serrata* Tiny Tuff Stuff.

Both of these varieties mature to just 18 to 24 inches tall.

For an evergreen edger, try the adorable Tater Tot arborvitae (*Thuja occidentalis* 'Smntobab'; Zones 3–7). It naturally grows as a 12- to 24-inch ball of dense green foliage in full sun to part shade. No pruning or shearing is required to keep it tidy, so a row of these makes a truly low-maintenance step-over hedge.

AT THE CORNERS

While most spaces adjacent to a foundation or front path demand lower growers, some particular spots benefit from a taller tree or shrub—often, the corners of the house, the doorstep and the start of the walkway need an upright marker.

Here, Natalie Carmolli recommends the sun-loving Pillar series of rose of Sharon (*Hibiscus syriacus*;

Zones 5–9). Purple Pillar ('Gandini Santiago') and White Pillar ('Gandini van Aart') can reach 10 to 16 feet tall, but they remain just 2 to 3 feet wide. Fine Line buckthorn (*Rhamnus frangula* 'Ron Williams'; Zones 2–7) has a similar width, but attains a height of seven feet. "This variety has a low seed set," she notes, "so it won't spread around like conventional buckthorn can."

Sky Pencil holly and Green Tower boxwood have been popular choices for "exclamation marks" in these areas of the landscape, but for a different evergreen Justin Hancock suggests Tiny Tower spruce. It grows six feet tall and two feet wide, with blue-green needles that make it a coolly colorful sentinel perfect for a tight space. ❧

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MEGHAN SHINN is *Horticulture's* editor.



This page: Even larger shrubs like 'Limelight' hydrangea can be a subject for a container. Try it for a few seasons and then move it into the ground, or keep it in check with regular cutting back.





SHRUBS IN POTS

Shrubs and containers each offer delight.
Why not bring them together?

by **Meghan Shinn**

Gardeners love shrubs for a myriad of reasons: their few maintenance needs, their multiple seasons of interest, the habitat and food they may provide for birds, the food they may provide for humans, their versatility in garden design. In response to today's smaller properties and busy lives, breeders have developed petite varieties of classic shrubs that fit into tighter spaces and need no pruning. These small selections are also a natural fit for container gardening.

Paired with the right shrub, a pot can create a long-lasting, even year-round focal point. It can make a simple but strong statement within a garden or mark transition points. If it's not huge, it can be a movable detail. In a small garden, potted shrubs can act as dividers and privacy screens. In patios, courtyards and balconies where all the plants live in pots, shrubs introduce diversity and scale and provide a natural backdrop for perennials and annuals.



Top to bottom: The quick-growing yet shearable Sprinter boxwood (*Buxus microphylla* 'Bulthouse') can easily be kept in proportion to its pot. Waxwing Gold mirror bush (*Coprosma repens* 'Golden Star') won't tolerate winters colder than Zone 9; potted, it can move inside.

Pots expand the planting possibilities regardless of some local conditions, too. Want to try a shrub not hardy in your zone? Plant it in a pot that you can move under cover in winter. Itching to grow blueberries, camellias or other acid lovers although you garden in alkaline soil? Try them in a pot of tailor-made growing mix.

POINTS TO CONSIDER

When choosing a shrub to grow in a container, go for a species that's naturally small or a variety that's been selected for a compact habit. Alternatively, you can choose a shrub that will ultimately grow quite large if you plan to transplant it into a permanent in-ground location within a few years, or if you'd like to try restricting its size through regular root pruning. Whatever shrub you pick, match it to a container that is two to three times the size of the shrub's nursery pot (see sidebar: "Words from the wise: Moving up").

As for growing requirements, there are two key factors to bear in mind. The first is the shrub's winter hardiness. Choose something rated to two USDA zones colder than your own climate. For example, if you garden in Zone 6, the shrub should be able to withstand winters in Zone 4. If it's not that hardy, plan to move it into a cold but sheltered space for the winter. The container must be weighed against your climate, too. In cold-winter areas, it should be frost-proof, so that it won't crack or break as temperatures fluctuate.

The second key consideration is the shrub's moisture needs. Soil in containers dries out much more quickly than ground soil. You can choose a shrub that loves damp earth, but be prepared to water it perhaps twice a day at the height of summer. Even drought-tolerant potted shrubs will likely need to be watered more than you may expect, especially in hot and windy weather. Make sure any container you choose has adequate drainage holes.



WORDS FROM THE WISE MOVING UP

Patricia Smyth, owner of *Essence of the Tree*, a mail-order Japanese maple nursery, specializes in growing woody plants in pots. Here's her advice for choosing containers:

Choosing a container that suits your garden will first depend on the size of your tree or shrub. For optimum health and root growth from a young plant, graduate pot size by doubling the volume of soil. That is, if you buy a tree in a one-gallon pot, choose a container that holds two or three gallons of soil. As the tree matures you'll keep doubling the size of the container until the tree reaches the desired size. You can then use root pruning and reduction pruning to maintain its size and keep the tree in that same container.

Find a container that is durable against the elements, and anticipate the need to lift or move it at times. I have been using polyethylene bowls for my trees for the last five years. They are not damaged by extremes in heat or cold, and they have the appearance of stone or ceramic without the weight. I have kept trees in well-constructed redwood boxes for more than 10 years, through several root prunings, with only the bottoms replaced. It is beautiful how the character of the wood evolves as the tree matures.—PS

PLANTING AND CARE

If you select a large container and shrub, their combined weight will be significant. Put the pot in its final position before adding the soil and shrub. Use a well-draining mix that addresses any special requirements of what you're growing. The steps for planting are the same: Set the shrub so that it sits at the same level as it did in its previous container. Water it in well and top off the soil with mulch to conserve moisture and regulate the soil temperature.

A topdressing of compost and application of a slow-release fertilizer each spring will bolster the potting mix in support of the shrub. A clue that it's time to repot entirely will be slowed, absent or weak growth. Repotting is an opportunity to root prune, which will revitalize the plant while also helping to maintain it in its current container, rather than moving to a larger one. (For one method of root pruning, see "Words of wisdom: Rooting down.") Shrubs that do outgrow their container can be moved into a bigger vessel or into the ground—freeing up that favorite pot for a new subject entirely. ❧

WORDS FROM THE WISE ROOTING DOWN

Nancy Cavanaugh, a *Horticulture* reader, relates her experience growing woody plants in containers:

I have been growing several plants in the same container for over 10 years, however I do not replace the soil at the top. Instead I slide the plant out of the container and remove up to a third of the compacted soil and root mass, and add fresh soil at the bottom of the container.

On plants such as tropical hibiscus standards, I begin by using a pruning saw to remove about two or three inches from the bottom of the root ball. Then I make three or four evenly spaced vertical slices around the remaining root ball. After teasing several roots free, I remove wedge-shape pieces in proportion to the size of the remaining root ball. It's important to remove no more than a third of the existing soil, including what was initially removed from the bottom of the root ball.

Then I clean the container, if necessary, and place two to three inches of fresh potting soil in the bottom. Making sure that the hibiscus is set at the proper level, I work soil into the v-shape spaces. I finish with a one-inch topdressing of compost. I usually do this once a year, in the spring as new growth is beginning.—NC





radical roots

Root crops offer many benefits to the gardener and the garden alike. Here are a few less-common kinds to try

by **Brenda Lynn**

There's nothing quite like pulling a crisp root vegetable from newly thawed ground and prepping it for the table in just a few minutes. Radishes, carrots, turnips and beets are cold-hardy staples that fill the gaps when little else grows. Because they are so versatile, they too easily become an ordinary refrain: the only roots we bother to grow. It turns out there are roots for every season, and growing them in succession with other crops can help loosen and renew soil.

Spring heralds new growth, but as gardeners we know that successful crops begin in the off season. When summer's main crops die back and cooler temperatures set in, we have time to reflect, amend soil and purchase seeds. Planning the next season's garden creates a pact between us and the earth, with all the promise and unknown of a new year. This year, why not make space for something a little out of the ordinary—perhaps a long-forgotten cultural staple or an unconventional relative of a well-known root vegetable?

Opposite: Round, red radishes are a first crop for many new gardeners, and also where they stop with root vegetables. Yet there are several forgotten roots well worth trying, and as easy.



Celeriac

Celeriac (*Apium graveolens* var. *rapaceum*) is the perfect antidote to winter doldrums. Its edible, knobby base emerges from the ground in cool weather, conveniently expanding the soil for other crops to follow. Celeriac's leafy green stalks resemble celery, but celeriac is hardier and easier to grow. The two originated from the same wild species in the Mediterranean; both are members of the parsley family. While celeriac leaves and stalks are perfectly edible, its warty base hides the real treat. Once the lumps and bumps are peeled away, the mild, aromatic flesh pairs beautifully with other roasted root veggies. When boiled down, the creamy flesh makes a delicious soup base. Perhaps its most famous preparation is *celeri remoulade*, a classic French dish that combines grated celeriac root with tangy mayonnaise.

Celeriac adapts to most climate zones. In cooler areas, start seeds indoors about two months before the final spring frost date. Transplant seedlings eight inches apart just before that final frost. Celeriac is a slow-grower, maturing in 90 to 120 days. The swollen stem (hypocotyl) is ready for harvest when it reaches three to six inches across. Generally, celeriac prefers moist, fertile soil and full sun to part shade. Varieties with different size stems, days to harvest and degrees of cold hardiness are available in seed catalogs. In USDA Zone 7 and warmer, successive late-summer and fall planting produces winter and spring harvests. In these milder areas, plants will overwinter if they're covered in leaf mulch. Celeriac grows well alongside nitrogen-fixing peas, greens and radishes.

kohlrabi

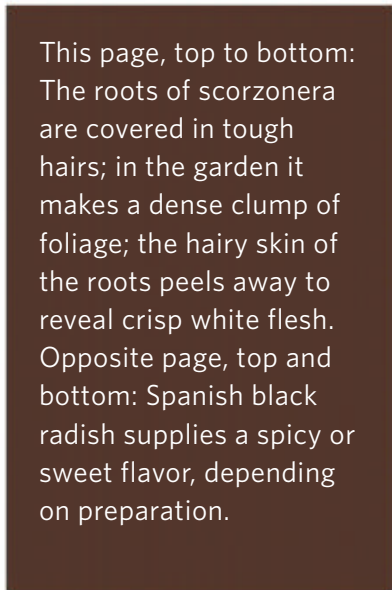
Kohlrabi (*Brassica oleracea* var. *gongylodes*), like celeriac, produces an odd-looking edible swollen stem that sits just above the soil line. Stiff leaf stalks protrude in a rosette from the base. The harvested plant looks a bit like an alien turnip, with a purple, green or white hypocotyl. Once the outer stalks are removed and the smooth, tough outer skin peeled away, kohlrabi is delicious eaten raw, pickled or roasted. It has a sweet yet pungent flair, similar to other roots in the Brassica family. The base is rich in vitamins C and B6 and it is an excellent source of fiber. Though you'll want to discard the stalks, don't toss the leaves on the compost pile. They make a great alternative to kale.

Kohlrabi seeds should be sown directly in the ground, where they germinate quickly. This is a cool-season crop, but it can be stretched for harvest in spring, fall and winter. Seeds germinate when temperatures are between 45 and 85 degrees (F), though cool temperatures are optimal for growth. In northern zones, sow seeds between April and mid-May for summer harvest. In temperate climates, seeds sown in midsummer through early fall yield a winter crop. Kohlrabi prefers full sun and fertile, well-draining soil. When seedlings are big enough to handle, thin them to four inches apart in rows one foot apart. Harvest kohlrabi when the globes reach two to three inches round.

Brassicas release biotoxic compounds into the soil, fighting fungi, bacteria and pests. They are therefore an excellent choice for growing between other crops. Crop rotation is important for kohlrabi, though: don't plant it where other Brassica family members, such as kale, cabbage, broccoli and cauliflower, recently grew. Aromatic cool-season crops like dill, celery and culinary sage grow well alongside kohlrabi.



Above: Kohlrabi produces a lumpy, swollen stem that the author likens to an "alien turnip." This sweet yet pungent root vegetable fights harmful fungi, bacteria and pests in the soil in which it grows. Opposite page, top to bottom: Celeriac puts up leafy green stalks reminiscent of its close relative celery, but it is easier to grow; the stalks are edible, but the real treat lies in its warty root, whose creamy flesh imparts mild flavor alongside other roasted root veggies.



TAPROOTED VEGETABLES SUCH AS CARROTS, PARSNIPS AND DAIKON RADISH LOOSEN COMPACTED SOIL IN A PROCESS KNOWN AS BIODRILLING.

scorzonera

While most roots grown in cool weather loosen soil and create openings for crops that follow, longer tap roots offer natural tillage. Taprooted vegetables such as carrots, parsnips and daikon radish loosen compacted soil in a process known as biodrilling. Hair-like roots branch off and decompose in the soil, creating pathways for water infiltration. Forage radish is best for biodrilling, but maybe not the tastiest.

For something a little out of the ordinary and definitely more flavorful, scorzonera (*Scorzonera hispanica*) fits the bill. Its long, dark taproot covered in hairy roots earns it a long list of interesting monikers, from black salsify to black oyster plant and serpent root. Don't be deterred by its name, which derives from the Italian *scorza negra*, or black peel. The tough, outer layer peels away to reveal crisp, faintly oyster-flavored white flesh. Though it may look and taste a little exotic, scorzonera is closely related to salsify, which grows abundantly on the West Coast. Scorzonera is also common in European cuisine, where it's eaten raw or steamed like asparagus.

Salsify and scorzonera fall in the Asteraceae family and share similar growth habits. Sow seeds in late spring or summer in a sunny location with loose soil. Thriving in Zones 6 through 9, scorzonera is perennial, with fragile roots the first year. A second year of growth makes harvesting a bit easier; a light frost even sweetens the flavor.

radish

A discussion of roots would be incomplete without the well-loved radish. ‘Cherry Belle’ radishes are often the first vegetables children learn to grow, and they’re a mainstay in most kitchen gardens. When fast-growing red globe and French breakfast varieties took hold in the United States, slower-growing winter radishes lost their seats at the table. Spanish black radish (*Raphanus sativus* var. *niger*) remains a European staple. Like scorzonera, its crisp white flesh is protected by a tough, dark skin. There are both round and oblong varieties, and both are quite spicy. Macerating them in salt water tones down the zest. Like other radishes, Spanish black sweetens when braised in butter or roasted.

Winter radishes ripen to the size of a turnip, and go in the ground around the same time. In temperate climates, successive planting in midsummer yields ripe radishes in fall and winter. Cold-hardy varieties are planted after the last spring frost, for early summer harvest. Most varieties mature in about 55 days and store well for several weeks in the refrigerator.

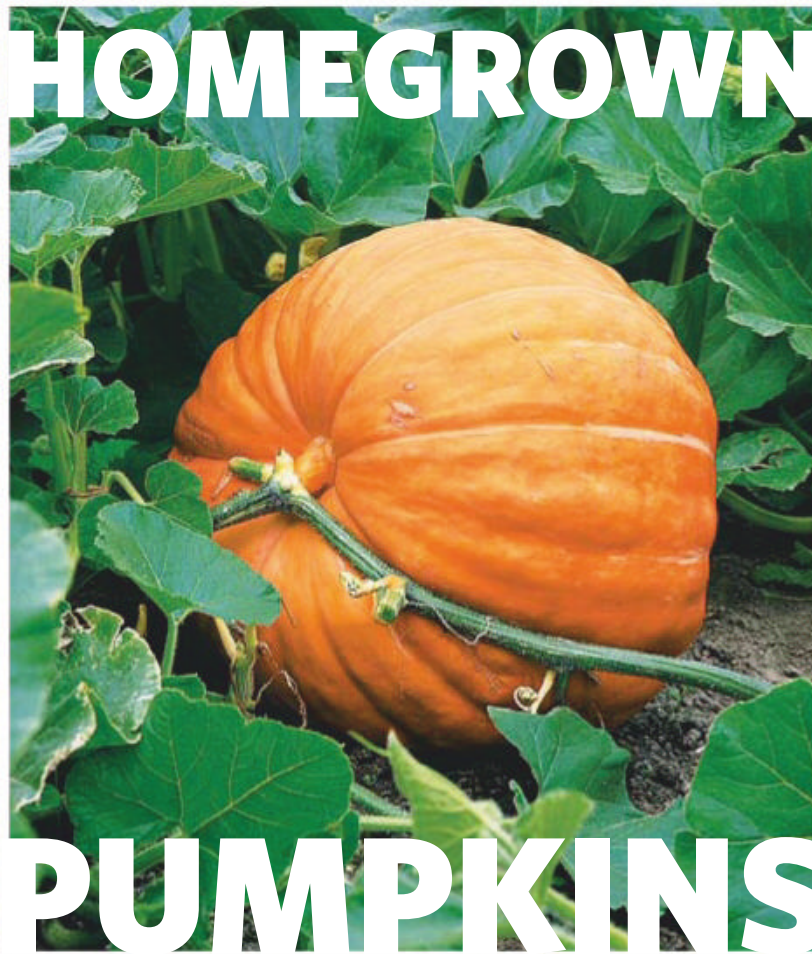
In addition to expanding culinary breadth, growing a variety of crops enhances soil’s regenerative potential. Large-scale agriculture sometimes dictates the food we become accustomed to, and hence the crops we grow in back-yard gardens. Crops that were once regional staples are forgotten when we find new homes and form new habits. This year, why not get back to our roots, and try growing a tasty new crop or two? 🌱

BRENDA LYNN is a Virginia-based outdoor educator, beekeeper and Master Gardener.



This page: 'Wee-B-Little' is an award-winning variety prized for its small, smooth pumpkins. Opposite page: 'Dill's Atlantic Giant' falls at the other end of the size spectrum, capable of producing world-record fruits.





Make space for these treasured
gourds in the garden to enjoy
all that they can offer

by **the National Garden Bureau**

For many, pumpkins are associated with autumn's sweet desserts and festivities. But these versatile fruits can provide interest in the vegetable garden all summer long, with a final reward of unique, home-grown ingredients for recipes or decoration.

A STORIED CROP

Pumpkins and other crops in the Cucurbitaceae family originated in Central America, where native people would roast and consume strips of pumpkin flesh or dry the skins and weave them into mats. When European colonists arrived in the Americas, they prepared a dish believed to be a precursor of modern pumpkin pie. They cut the top off the pumpkin, removed the seeds and filled the inside with milk, spices and honey before baking it over hot ashes.

The popular tradition of pumpkin carving was derived from an Irish custom of carving lanterns out of turnips and potatoes and placing an ember inside to ward off evil spirits. When Irish immigrants arrived in America in the 1800s, they brought this custom with them and applied it to pumpkins.

Today, pumpkins are a staple for fall decorations and recipes. Eating pumpkin provides numerous health benefits: They are high in fiber, potassium, iron and vitamins A, B and C, yet they are low in calories, fat and sodium. Pumpkin is excellent in baked goods, soups, casseroles, pasta and sauces. Cook with pumpkin throughout the year to support heart health and healthy blood pressure.

As a cucurbit, pumpkins are related to squash, cucumbers and melons. Most varieties that we classify as pumpkins belong to the species *Cucurbita pepo*, which also includes varieties of winter squash, summer squash, zucchini and gourds. These pumpkins are characterized by round fruit with a thick shell that has smooth, slightly ribbed skin and a deep yellow to orange color.

Some winter squash varieties from the species *Cucurbita maxima* ('Jarrahdale', 'Turk's Turban' and all giant pumpkins) and *C. moschata* ('Long Island Cheese', 'Rouge Vif d'Etampes') are sometimes also considered pumpkins due to their similar appearance.

The diversity among varieties that are classified as pumpkins is incredible! With sizes ranging from 4 ounces to over 1,000 pounds, various unique shapes and brilliant shades of orange to yellow, white, green, blue, gray, pink and tan, there are endless opportunities to select the perfect pumpkin.

PUMPKINS FOR EATING

When selecting a pumpkin for cooking, it is best to choose a "pie pumpkin," which has dense, sweet flesh. ('Pik-A-Pie' is a go-to favorite.) The sugars and lower moisture of these types hold up best in cooking. It is also easy to grow pumpkins for harvesting edible seeds. To save time, choose a naked-seeded (hull-less or semi hull-less) pumpkin with seeds that do not need to be hulled before eating. The variety 'Naked Bear' is an excellent all-around choice for cooking, edible seeds and making pumpkin seed oil. 'Pepitas', an All-America Selections (AAS) winner, has a strong handle and beautiful golden orange rinds with dark green streaks. The pumpkin is delicious, with nutritious flesh and bountiful "naked" tender, succulent, nutty seeds for roasting!

PUMPKINS TO DECORATE

When selecting pumpkins for carving and fall decoration, choose varieties that suit your style. Traditional carving pumpkins are medium to large in size, deep orange and lightly ribbed with a strong handle. Some standards are 'Gladiator', 'Magic Lantern' and 'Howden'. If you'd like to get creative with your carving, try a warted ('Warty Goblin'), yellow ('Mellow Yellow') or white pumpkin ('Lumina' and AAS-winning 'Super Moon').

For painting, look for a small pumpkin with a strong handle and a smooth surface. An excellent choice is AAS winner 'Hijinks'.

Add additional interest to fall décor using miniature pumpkins with unique colors and patterns. Miniature pumpkins typically weigh under two pounds and can be found in a variety of shapes and colors. 'Hooligan', 'Baby Boo', 'Jack Be Little', and AAS winner 'Wee-B-Little' are favorites that can add a perfect pop of color.





Clockwise from top: Courtesy of Garden Trends; Courtesy of W. Atlee Burpee; Courtesy of Seeds By Design; Courtesy of Johnny's Selected Seeds.



Clockwise from top: 'Naked Bear', an excellent choice for cooking and easy-to-eat seeds; 'Lumina' and 'Super Moon', two whitish varieties for use at Halloween; and 'Mellow Yellow', a good carving pumpkin.

**TO HAVE MATURE PUMPKINS
FOR USE IN AUTUMN, START THEM OFF
RIGHT IN THE SPRING.**



HOW TO GROW PUMPKINS

To have mature pumpkins for use in autumn, start them off right in the spring. Seeds can be direct sown after all risk of frost has passed—between late May and mid-June in most areas. For a jump on the season, they can be started indoors a few weeks prior to the expected last frost. Seeds should be planted an

inch deep in well-drained soil that has warmed to 70°F.

To ensure fruit sets and yields, allow sufficient space between each plant. Give small pumpkins a growing area 12 feet in diameter, large pumpkins a 24-foot-round area and giant pumpkins a 36- to 48-foot area. Each individual plant will require its own space with these dimensions.

Pumpkins perform best when they are fertilized throughout the growing season. Fruit set will be strongest if the flowers are pollinated by bees. If pumpkin flowers are not pollinated completely, the fruit will start growing but it will abort before full development. To ensure a bountiful pumpkin harvest, encourage bees to visit your garden



Opposite page: 'Porcelain Doll', a pink pumpkin useful as both decoration and in the kitchen. This page, clockwise from top: 'Rouge Vif d'Etampes', also known as the Cinderella pumpkin, thanks to its resemblance to the fairy tale's carriage; 'Winter Luxury', touted as the perfect pie pumpkin; and 'Blue Doll', with its beautiful color.



by planting bright daisy-type flowers, or pollinate the pumpkin blossoms by hand.

When the pumpkins have matured, the stem holding the fruit will begin to dry. Harvest the pumpkin by carefully cutting the vine on each side of the fruit stem, leaving a nub at the point where the stem meets the vine. This will encourage the stem to maintain

strength as it dries down and will minimize infection by microbes that can cause decay.

To make pumpkins keep longer, wash the fruits in a diluted bleach solution, allow them to dry and place them in a cool shady spot after harvest. Then they'll be ready to carve, decorate or use in the kitchen.

As pumpkins grow, it is incredible

to observe the changes throughout the season, and it's rewarding to finish with a harvest of beautiful, versatile fruits. The uses of pumpkins in the garden and kitchen are limitless, so let your creativity bloom. ❧

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This article was provided by **THE NATIONAL GARDEN BUREAU** with input from **GARDEN TRENDS/HARRIS SEEDS**.

Plants We



WEeping KATSURA

CERCIDIPHYLLUM JAPONICUM F. PENDULUM

Weeping katsura has a relatively small size that makes it an option for many gardens. It does not produce showy flowers, but its form is beautiful and its foliage catches the eye. The rounded leaves emerge with a reddish cast in spring, turn bluish green in summer and then turn gold or apricot for the fall.

Habit: This deciduous tree slowly grows from 15 to 25 feet tall and 10 to 15 feet wide, with a weeping branch habit.

Origins: The species is native to Japan and China. It's said that the weeping forms of this tree trace their heritage to a centuries-old tree at a monastery in Morioka, Japan. The weeping form *C. j. f. pendulum* may be listed as *C. j. 'Pendula'* in the trade.

How to grow it: Site weeping katsura in full sun to part shade and rich, moist soil generously covered with an organic mulch. It needs good drainage, but it does not tolerate drought. Be sure to supply regular water through its first few growing seasons in the garden, and provide supplemental water during dry spells once it is established. Give it a position sheltered from drying winds. USDA Zones 4–8.

SNOW FOUNTAINS CHERRY

PRUNUS 'SNOFOZAM'

This small flowering cherry is a healthy variety that produces a multitude of pure white flowers in the spring. Its small stature has made it a staple in garden beds and foundation plantings. It produces only a light load of ornamental fruit, but its good fall color (shades of red) makes up for this.

Habit: This ornamental cherry typically reaches between 8 and 15 feet tall and slightly less wide, with weeping branches. Snow Fountains can also be found as a grafted tree that reaches just six feet.

Origins: The cultivar Snow Fountains was introduced in the mid-1980s from Ohio's Lake County Nursery.

How to grow it: For the heaviest flowering, plant this tree in full sun. The soil should drain well. Water the tree regularly during its first growing season. Zones 4–8.



Love

Weeping plants that bring joy to the garden

by Meghan Shinn



WEeping WHITE SPRUCE

PICEA GLAUCA 'PENDULA'

With its rapid growth rate of 12 inches per year, this evergreen tree quickly makes a statement in the landscape. A strong central leader reaches skyward while dense, drooping branches cascade downward. The bluish needles bring color all year.

Habit: In 10 years weeping white spruce can grow to 10 feet tall and just 3 feet wide (under optimal conditions). The habit is both upright and weeping, a combination of its singular leader branch that shoots skyward and its dense weeping branches. Fully mature specimens can be 40 feet tall.

Origins: The species *Picea glauca* is native to most of Canada and parts of the northern United States. The variety 'Pendula' was discovered growing as a natural mutation in Versailles, France, in the 1860s.

How to grow it: Plant this spruce tree in full sun and moist but well-drained soil. It prefers cooler temperatures year-round and it will not do well with humidity or stagnant air. Take care not to damage the central leader; should it suffer an injury or breakage, try training a nearby branch to take over the position, using a stake. Zones 2–8.

WEeping BEECH

FAGUS SYLVATICA 'PENDULA'

The weeping European beech can reach a massive size, with dramatic and dense branching that makes an ample shady hideaway. The smooth-edged, rounded leaves trade their deep green summer color for bronze tones in the fall. The foliage then drops off to reveal smooth gray bark.

Habit: It grows from 35 to 50 feet tall and 20 to 40 feet wide, with branches that extend out and then down. Some forms are more upright than others, making a narrow triangle, while still others create more of a rounded shape, owing to a broad crown.

Origins: *Fagus sylvatica* is a tree native to central and southern Europe. This weeping variety was first introduced in the mid-1830s in England.

How to grow it: Full sun or part shade and rich, well-drained soil will keep it happy. Avoid wet soils. Zones 4–7.



Plants We Love

'RED DRAGON' JAPANESE MAPLE

ACER PALMATUM VAR. *DISSECTUM* 'RED DRAGON'

This compact laceleaf Japanese maple combines fiery color with a gently weeping, spreading shape. Its deeply cut leaves emerge in spring a scarlet red, darken over the summer and then shift to fire-engine red in fall. The graceful architecture of the branches keeps this small tree interesting even after the leaves drop away for the winter. This variety is reported to hold its color and resist scorching better in warm climates than some other red lace-leafed options do.

Habit: 'Red Dragon' is a slow grower, but a mature specimen can be up to eight feet tall. The branches spread and cascade to create a width of about five feet.

Origins: This selection was first introduced in New Zealand in 1990.

How to grow it: Plant 'Red Dragon' Japanese maple in full sun or part sun. Avoid a spot that receives hot afternoon sun, especially in southern regions. It is surprisingly adaptable to soil type, but this tree prefers rich, slightly acidic soil with good drainage and even moisture, which can be promoted with mulch. Zones 5–8.



WEeping BLUE ATLAS CEDAR

CEDRUS ATLANTICA 'GLAUCA PENDULA'

A truly unique evergreen, the weeping blue Atlas cedar appeals to creative gardeners and maintenance-wary homeowners alike. It's a malleable woody plant that can be easily trained to outline and drape a structure, such as a railing or wall, or pruned for dramatic shape. But it also makes a lovely specimen when left to its own devices or with one main stem simply staked straight up and the branches allowed to weep. Powder-blue needles cover it all year; new spring growth is a light lime color.

Habit: This slow grower can reach 15 to 20 feet tall and wide, with a gnarled trunk and weeping branches.

Origins: *Cedrus atlantica* hails from the Atlas Mountains of northern Africa. 'Glaucapendula' reportedly traces its history to a seedling selected at Paillet Nursery in Chatenay, France, around 1900.

How to grow it: Site weeping blue Atlas cedar in full sun and soil with good drainage, and be sure to choose a spot where its ranging branches will not be crowded by other plants or impede passersby. This is an easy-going conifer that adapts to a range of conditions, but it will not take soggy soil. Water it regularly in its first growing season; thereafter it should only need supplemental water in times of extended drought. Pruning, if desired, should be done in winter. Zones 6–9. ❧

Continued from page 21



Above: Few today would recommend Norway maple, which has proven itself weedy, but for many years it was top choice for a street tree.

beetles (*Galerucella* spp.) imported from Asia and Europe to chow down on the plants. To me, that's just asking Mother Nature to put us in our place once again by showing us some unanticipated, unintended consequences of using the beetles. But I guess that, too, is part of the grand plan.

I wouldn't mind it if I could get rid of violets and nutsedge in my lawn with a simple harmless-to-everything-else spray. The nutsedge I may have unknowingly introduced here myself with a contaminated load of mulch from the South. Deep down I know that it would have arrived eventually anyway. And I also

wouldn't mind if lightning struck and killed my street-side Norway maple that the town won't let me cut down, thus ridding me of a million maple tree sprouts every spring. But the reality is that I will probably be dealing with these thorns in my side for my duration.

I am not unmindful that important agricultural crops must be defended from invasives of all kinds by multiple means. But from nature's perspective these crops have usurped one-time native plant species, too. Always and forever there will be winning and losing plants, as there have always been, whether humans have been aware of that fact or not.

And it only worries humans. Mother Nature doesn't care whether lettuce outcompetes kudzu or the reverse.

With apologies to Max Ehrmann, it just may be that whether or not it is clear to us, no doubt the botanical universe is unfolding exactly as it should. Do what you can to control plants that you think have negative consequences in your yard or your local environment. But keep in mind that our efforts to control the successors may not ultimately matter a whole lot in the grand scheme of living things. ❧

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GREG COPPA is a lifelong gardener and author who lives in Rhode Island.

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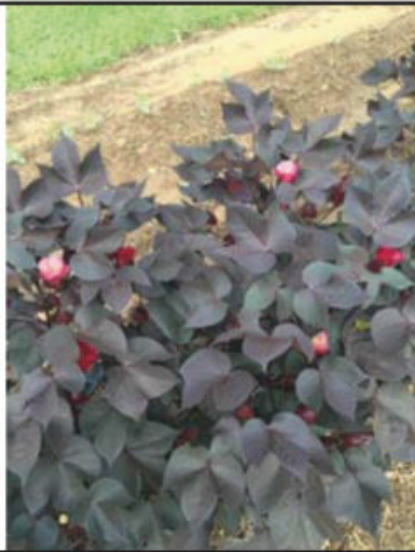
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Sweet Mouthfuls

“HI. I’M JOHNNY CASH.” An iconic salutation, and a perfect way to introduce yourself, especially if you are indeed Johnny Cash. But times have changed. Pop stars now call themselves things like H.E.R., 6LACK, and Lil Nas X. How do they introduce themselves in a hurry? Dunno.

Likewise, in gardening, the days of ‘Raydon’s Favorite’ aster (*Aster oblongifolius* ‘Raydon’s Favorite’) are gone. Mostly, this a good thing. Although ‘Raydon’s Favorite’ is a great plant, I’m willing to bet that old man Raydon didn’t have a marketing degree and that the name never increased sales by even one. But how do you explain a modern handle like *Spiraea japonica* Double Play® Big Bang™ ‘Tracy’ USPP 21,588; CBR 4073?

Let’s break it down. First, the binomial Latin, a plant’s “Cash, Johnny.” *Spiraea* (the genus) and *japonica* (the species). Then a trademarked series name, DOUBLE PLAY (all caps are okay in lieu of symbols). Its role is to lump together similar selections into a line (in this case, a brand of Proven Winners spiraea). If it should also entice buyers, so much the better. Next is the trademark name, BIG BANG. Its primary purpose is to be descriptive and fun and to compel consumers to rush to garden centers, helpless to stop themselves from maxing out their credit cards. ‘Tracy’, a cultivar name, is included here for old time’s sake. Finally, patent numbers.

Trademarks and patents are important because they ensure people get paid. For a thousand years, anyone who introduced a plant, even one that required twenty years, a hermit’s existence and two divorces to develop, simply gave it a name and then watched while competitors propagated it, sold it by the kazillions and were never required to pay them a dime. ‘Winter King’ hawthorns populate America. Bob Simpson introduced it.

He made money only on the handful he grew and sold himself, which, of course, stinks.

So plant introducers eventually learned to use trademarks and patents to sufficiently reward their hard work, brilliant ideas and occasional good luck enough that they can both continue to pursue their passion and eat. And, by the way, supply us with a steady stream of new and exciting plants. If one or two get rich, good for them.

My only complaint is about the names themselves. So many of them riff off the vices of typical Americans like me—candies, cakes and cocktails. Any trip to the garden center exposes me to SUMMERIFIC series hibiscus like ‘Candy Crush’, ‘Berry Awesome’, ‘Berrylicious’ and



Jack Coyler

Above: ‘Berrylicious’ belongs to the SUMMERIFIC line of hardy hibiscus, whose members’ names all sound as sweet.

‘Cherry Choco Latte’. Then I find Coleus Premium Sun ‘Chocolate Covered Cherry’, *Kniphofia* ‘Banana Popsicle’, BARISTA ‘Spiced Plum’ crape myrtles and SUGAR BUZZ beebalms like ‘Pink Frosting’, ‘Lilac Lollipop’ and others. Oh, and then the COCKTAIL begonias: Whiskey, Rum and Vodka. Little wonder any trip to the garden center is followed by a stop at the candy store. Or the bar. Or both. This is why I’m fat! Hey, guys, how about calling the next great spiraea “Jumping Jacks® Tossed Salad™”? ☞

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SCOTT BEUERLEIN is a horticulturist and Manager of Botanical Garden Outreach for the Cincinnati Zoo & Botanical Garden. Find more of his writing at <http://www.gardenrant.com>.

'Whit' Cultivars

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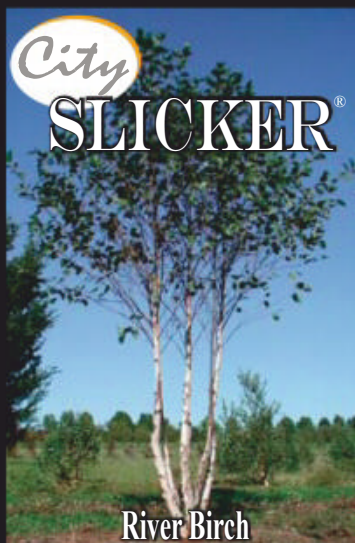
Rainchy[™]

crapemyrtle

Lagerstroemia indica 'Whit XI' PPAF



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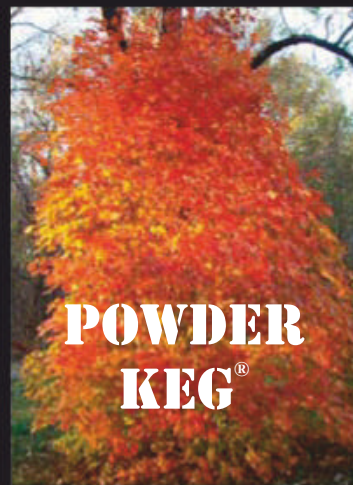
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Crapemyrtle *Lagerstroemia indica*
 plant patent #27085



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Crapemyrtle *Lagerstroemia indica*
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