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The Magazine of the American Horticultural Society

May/June 2000

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Contents

Volume 79, Number 3 · May / June 2000



FEATURES

31 NORTH AMERICAN ANNUALS

BY RAND B. LEE

Marigolds and petunias, move aside. Make room for some beautiful, lesser-known native annuals that will shine in the summer garden.

36 BEAUTY IN THE BARRENS

BY RICK DARKE

In creating her garden in the New Jersey Pine Barrens, Elizabeth White celebrated the beauty and utility of the surrounding natural landscape.

43 AMERICA'S WISTERIAS

BY RICHARD E. BIR

Unlike their often aggressive Asian cousins, North American wisterias require less maintenance in the garden.

48 THE ACCESSIBLE GARDEN

BY ADELE KLEINE

This new garden at the Chicago Botanic Garden offers a wealth of ideas on how to make gardens enjoyable for all people.



ON THE COVER: The pastel blossoms of *Clarkia unguiculata* can turn an ordinary flower bed or cutting garden into a scene worthy of an Impressionist painting. These double-flowered clarkias are part of a hybrid series, possibly 'Royal Bouquet Mixed'. Photograph by Saxon Holt.

DEPARTMENTS

5 AN INSIDE LOOK

6 MEMBERS' FORUM

SMARTGARDEN™, sweet potatoes.

7 NEWS FROM AHS

Corfield is new chairman; 2000 AHS Book Award winners; SMARTGARDEN™: Enriching the soil with organic matter.

II MILLENNIUM FOCUS

As gardens mature, so do those who tend them.

18 CONSERVATIONIST'S NOTEBOOK

The captivating cobra lily.

20 URBAN GARDENER

Build an arbor in a weekend.

22 NATURAL CONNECTIONS

Garden spiders.

24 HABITAT GARDENING

A prairie-style walkway in Illinois.

27 GARDENERS INFORMATION SERVICE

Layering dogwood, planting rhubarb, plants to grow under a tree.

28 OFFSHOOTS

A garden from two perspectives.

52 BOOK REVIEWS

Sanctuary gardens, New England wildflowers, rock garden plants.

56 REGIONAL HAPPENINGS

Botanic garden conference in North Carolina, native plant conference in Pennsylvania, cactus bloom in Arizona.

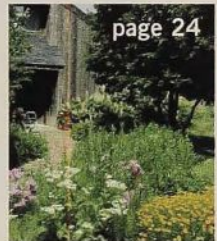
60 NEW PRODUCTS

Seed mixes, herbicidal soap, ergonomic hand tools, plastic carrying tubs.

61 HARDINESS AND HEAT ZONES AND PRONUNCIATIONS

62 NOTES FROM RIVER FARM

The return of annuals.





AMERICAN HORTICULTURAL SOCIETY

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The American Horticultural Society (AHS) educates and inspires people of all ages to become successful and environmentally responsible gardeners by advancing the art and science of horticulture.

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HORTICULTURAL BOOK SERVICE

The AHS Book Service will be discontinued as of June 30, 2000. No orders received after June 30 will be filled, but book orders can still be placed through the Amazon.com link on our Web site. For information or assistance, call (800) 777-7931 ext. 136.

INTERN PROGRAM

To receive an application for the Society's Intern Program, write to Janet Walker, director of horticulture, at the address above or e-mail her at jwalker@ahs.org. Intern application forms can also be downloaded from the Society's Web site at www.ahs.org.

RECIPROCAL ADMISSION PROGRAM

The AHS Reciprocal Admission Program offers members free and discounted admission to flower shows and botanical gardens throughout North America. A complete list of participating shows and gardens can be found in this year's *Directory of Member Benefits* and also on the Web site at www.ahs.org.

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AHS members and friends can visit spectacular private and public gardens around the world through the Society's exclusive arrangement with the Leonard Haerter Travel Company. For information about upcoming trips, call (800) 777-7931 ext. 121 or view the tour schedule on our Web site.

WEB SITE: WWW.AHS.ORG

The AHS Web site is a valuable source of information about the Society's programs and activities. It is also an important resource for getting the answers to gardening questions, finding out about gardening events in your area, and linking to other useful Web sites. AHS members can reach the members-only section of the Web site by typing in this year's password: clematis.

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For information about the Society's annual Youth Garden Symposia (YGS), call (800) 777-7931, or visit the YGS section of our Web site.

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An Inside Look

“Progress in the breeding of horticultural plants can be made only when a need... is combined with the best principles of plant science.”

BLUEBERRIES, ESPECIALLY IN THE FORM OF a cobbler, are divine food to me, ranking just under damson plum as the taste and color of choice. Thinking about the origins of cultivated blueberries reminds me of one of the principles that I have been trained to appreciate: Progress in the breeding of horticultural plants can be made only when a need—as stated by gardeners and farmers—is combined with the best principles of plant science. As a research horticulturist for 37 years with the U.S. Department of Agriculture (USDA), I know how important basic and applied research is to development of better plants.

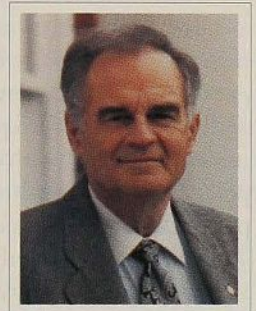
In this issue, Rick Darke's article about Elizabeth Coleman White reveals how this remarkable woman's deep understanding of the ecology and natural history of the New Jersey Pine Barrens translated into a sensitivity to its potential for both edible and ornamental plants. White, who grew up in the pine barrens and made her home and garden there, collaborated with Frederick V. Coville, a USDA botanist, to develop the first commercial-grade blueberries in 1916. Their work sparked a lucrative summer industry for New Jersey that supplemented the fall cranberry crop.

From New Jersey, follow Rand B. Lee as he describes the joys of beautiful but little-known annuals native to a wide variety of habitats throughout North America. If you garden on the wild side, you'll find plenty of new plants to experiment with.

Wisterias are among the most cherished of garden plants, but in the wrong place the Asian species can be difficult to control. Thanks to the efforts of enterprising nursery owners and breeders, however, a number of American species and cultivars are now available. Dick Bir profiles these less aggressive plants, which are better suited to smaller gardens.

Gardens should be enjoyed by all. But challenging garden sites are sometimes inaccessible to part of our population. Adele Kleine tells us about the Buehler Enabling Garden in Chicago, a new garden designed to address inclusiveness in public gardens, and which offers ideas for adaptation in home landscapes. In a similar vein, our Millennium Focus—“Maturity in the Garden”—encourages you to re-evaluate your gardening practices, plants, and tools to meet the evolution of your garden and your own changing needs and interests.

Dedicated gardeners and horticulturists such as White and Coville have helped expand our knowledge and the range of plants available to us. Our mission at AHS is to keep you abreast of horticultural achievements and research, while at the same time showing how this scientific knowledge can be artistically translated into the garden. Our ultimate goal is to help you become even more successful gardeners in the new millennium.



H. Marc Cathey

—H. Marc Cathey, AHS President Emeritus



Members' Forum

SMARTGARDEN™

IN READING THE description of the SMARTGARDEN™ program in the "News from AHS" section in the January/February issue, the following caught my eye: "Heroic efforts in the past to maintain delicate or demanding gardens were predicated on abundant natural resources and are no longer justifiable..."

I suggest that gardens can be very wasteful, and yet not harm the earth. They remind us everyday of our place on the planet, of what is rewarding and meaningful in life, especially in a consuming society.

Also, there was one plant omitted from mention. It is the plant that is coddled and cut often weekly at considerable expense, with a great loss of irreplaceable resource, under great stress, with considerable noise pollution; a monoculture requiring more pesticides than the nation's corn crop. That plant was originally an English convention, maintained by pastoral sheep.

Waste no time on gardens consuming energy and heating up our earth. If each of us reduces the national lawn by ten square feet, we will have made a remarkable contribution to environmental awareness. Then we can cut the remaining blades with a solar powered mower.

Paul Steinkamp
Altamont, New York

EDITOR'S NOTE: *We did not mean to imply that gardening in itself was inherently wasteful or should be curtailed in any way. The point of the SMARTGARDEN™ program is to promote successful gardening practices that are more efficient and environmentally responsible. But in the end, any form of gardening is better than not gardening at all.*

Your point about lawns provides a perfect illustration of the SMARTGARDEN™ concept. While lawns provide open space for recreation and have aesthetic value in setting off other plantings, by reducing the amount of space in our landscapes devoted

to standard lawn grasses, we can conserve natural resources and cut maintenance time. In many areas of the western United States, buffalo grass offers an ideal, drought-tolerant substitute for traditional turf. And there are dozens of options for beautiful, low-maintenance ground covers available to gardeners anywhere in North America (for examples, see "Beauty Beyond Bluegrass" by Andy Wasowski in the May/June 1996 issue of The American Gardener). By replacing part of our lawns with a variety of plants, we can diversify our gardens and reduce pest and disease problems that have been linked to monocultural plantings.

TOXIC TATERS?

I would like to add a cautionary note to the response to the question published in "Gardeners Information Service" in the January/February 2000 issue regarding whether the tubers of *Ipomoea batatas* 'Marguerite' and 'Blackie' can be eaten. While these two plants are grown principally as ornamentals, I have seen them form roots large enough to be eaten. If you are interested in eating them, however, be forewarned that professional greenhouse growers often add systemic insecticides to

such plants or spray them with other chemicals not intended for food crops. If you buy them at a garden center, check with a manager or the grower to find out if any products were applied that might make the tubers unsafe to eat.

Kevin Dahling
H.J. Benken Florist/Greenhouses
Cincinnati, Ohio

EDITOR'S NOTE: *Thanks for the warning. Better yet, order regular sweet potato slips—root sprouts—from a company that specializes in edible plants, or start your own from untreated tubers—store-bought tubers are often treated to prevent sprouting.*

To develop slips, use firm, unblemished sweet potatoes and bury them a half-inch below the surface in a container filled with moist sand or sawdust about two weeks before the last frost in your area. Store the container at 75 to 80 degrees Fahrenheit, and keep the medium moist but not wet. Within two weeks, shoots should emerge from several "eyes." Once these shoots form leaves and reach a height of six to nine inches, use a knife to detach each "slip," retaining a sliver of the flesh and as much of the root system as possible. Plant the slips three and a half feet apart on 10-inch-high ridges or mounds of soil amended with compost or well-rotted manure. Sweet potatoes need a growing season of 90 to 150 days and are very frost sensitive.

One mail-order source for sweet potato slips is Territorial Seed Company, P. O. Box 157, Cottage Grove, OR 97424. (541) 942-9547. www.territorial-seed.com. Catalog free.

Correction

The listing for Stan Hywet Hall and Gardens in Akron, Ohio, published in both the Reciprocal Admission Program (RAP) brochure and the 2000 *Directory of Member Benefits*, was incorrect. American Horticultural Society members are admitted free to the Hywet grounds as part of the Society's RAP benefits, but they must pay a fee to enter the house.

WRITE US! Do you want to voice an opinion or share some gardening information? We'd like to hear from you. Letters to the editor should be addressed to Editor, *The American Gardener*, 7931 East Boulevard Drive, Alexandria, VA 22308, or you can e-mail us at editor@ahs.org. Letters we print may be edited for length and clarity.

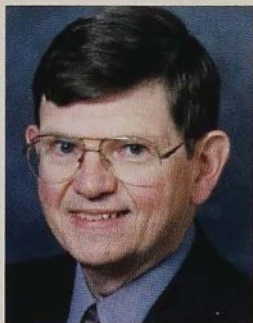


News

AHS Programs and Events • Horticultural News and Research

Corfield is New AHS Chairman

JAMES L. CORFIELD, WHO HAS worked in the commercial horticulture industry for more than 30 years, is the new chairman of the American Horticultural Society's Board of Directors. Corfield officially took office at the



Society's annual meeting in March, succeeding Katy Moss Warner, director of horticultural and environmental initiatives at Walt Disney World Com-

pany. Warner remains on the Board as immediate past chairman.

Currently Corfield is the interim program director of the Ornamental Plant Germplasm Center (OPGC) in Columbus, Ohio, a joint venture involving Ohio State University, the United States Department of Agriculture (USDA), and commercial horticulture industry supporters. The OPGC's mission is to collect and maintain a wide range of herbaceous ornamental plant germplasm—the genetic building blocks for future plant breeding programs. Corfield's challenge is to supervise the development of the center and coordinate its programs with those of existing facilities in the USDA's National Plant Germplasm System.

Corfield holds bachelor and master's degrees in horticulture and marketing from Michigan State University at East Lansing. Since 1997, he has served as a private consultant on marketing and management issues to various commercial horticultural companies. Prior to that, he was president of S&G Seeds,

Inc., a breeder and wholesale distributor of annual flower seeds. He has also held management positions with Vaughan's Seed Company, Jiffy Products of America, and Ball Seed Company.

"Jim's operational and financial expertise will complement the strides AHS has made in recent years to be strongly positioned to serve as a resource to our nation's gardeners as we enter the 21st century," says Linda D. Hallman, president and chief executive officer of AHS.

2000 AHS Book Awards

FIVE EXEMPLARY BOOKS celebrating diverse gardening interests—plant exploration, horticultural history, botanical art, ornamental grasses, and trough gardening—are winners of the American Horticultural Society's 2000 Annual Book Award (see box, next page).

This is the fourth year of AHS's annual book award program, which was initiated in 1997 as part of the celebrations for the Society's 75th anniversary. The award-winning books were selected by a five-person committee co-chaired this year by Suzanne Bales, contributing editor of *Family Circle* magazine, and Thomas Cooper, editor of *Horticulture* magazine. The other committee members were Stephen P. Bender, senior writer for *Southern Living* magazine; Susan Eubank, senior librarian at the Helen Fowler Library of the Denver Botanic Gardens; and Marco Polo Stufano, director of horticulture at Wave Hill garden in New York City.

All horticultural books issued in 1999 by North American publishers and au-

thors were considered for the award. Books are judged not just on content and writing style, but on overall quality including illustration, design, and production. For this reason, awards are presented to the publishers rather than the authors. A prime objective of the award program is to encourage American publishers to issue books that are as well written and technically perfect as possible, yet also innovative in content and appearance.

A gold seal embossed with the Society's name and a leaf symbol distinguishes gardening books that receive the AHS Annual Book Award. Look for these books in your local bookstore or order them through Amazon.com by linking through the Society's Web site at www.ahs.org.

There's Still Time...

...To make plans to attend AHS's 8th Annual National Youth Garden Symposium in Lake Buena Vista, Florida. This year's symposium—titled "Celebrating Children's Gardens in the New Millennium: Design is the Key"—runs from June 8 to 10, with optional pre-conferences beginning June 7.

New features at this year's symposium include an expanded Youth Garden Expo showcasing the best resources, products, and field trips available for those involved with children's gardening. A "Garden of Ideas" poster session will provide a forum for established children's gardens throughout the nation to share their innovative and creative designs and programs.

For more information about the Youth Garden Symposium, visit our Web site at www.ahs.org and click on the "Youth Garden Symposium" button. Or call (800) 777-7931 and ask for a brochure. We hope to see you there!

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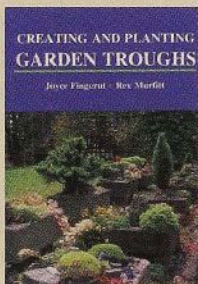
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2000 AHS Award Books

The Color Encyclopedia of Ornamental Grasses: Sedges, Rushes, Restios, Cattails, and Selected Bamboos by Rick Darke. Timber Press, Portland, Oregon. 1999. Publisher's price: \$49.95. AHS price: \$34.97.

This beautifully illustrated book combines the best features of an encyclopedic reference with sound, practical advice on how to use grasses in the landscapes. "The encyclopedic treatment of grasses is authoritative and up to date," says Thomas Cooper, "yet the book also includes a strong focus on garden use of grasses, accompanied by stunning photographs that illustrate the design concepts being described."



Creating and Planting Garden Troughs by Joyce Fingerut and Rex Murfitt. B.B. Mackey Books, Wayne, Pennsylvania. 1999. Publisher's price: \$21. AHS price: \$21.

"This is a much needed practical guide to the construction, planting, and maintenance of hypertufa troughs," says Marco Polo Stufano. Written in a down-to-earth style, the book also details the history of gardening in troughs and describes a wide variety of plants that can be combined creatively in them.

The Explorer's Garden: Rare and Unusual Perennials by Daniel J. Hinkley. Timber Press, Portland, Oregon. 1999. Publisher's price: \$39.95. AHS price: \$27.97.

Heronswood Nursery owner Dan Hinkley's personal account of seeking out promising new garden plants was praised for its beautiful photographs, passionate writing style, and authoritative horticultural information. "This book evokes the great 19th-century English accounts of plant exploration," says Thomas Cooper. "Hinkley goes to a lot of effort to provide information on where in North America these exciting new plants will grow," says Stephen Bender.



The Pressed Plant: The Art of Botanical Specimens, Nature Prints, and Sun Pictures by Andrea DiNoto and David Winter; photography by John Berens. Stewart, Tabori & Chang, New York, New York. 1999. Publisher's price: \$29.95. AHS price: \$20.97.

This book covers the history of the collection of botanical specimens and provides instructions on how to preserve plants for scientific or artistic use. "It's a fascinating account of the role plant hunters and botanists have played in documenting natural history, woven together by exquisite images of pressed plants," says Thomas Cooper. "The photographs jump out because the book is beautifully designed and printed on high-quality paper," adds Stephen Bender.

Washington's Gardens at Mount Vernon: Landscape of the Inner Man by Mac Griswold; photography by Roger Foley. Houghton Mifflin Company, Boston, Massachusetts. 1999. Publisher's price: \$40. AHS price: \$30.

Illustrated with contemporary photographs and reproductions of original garden plans and period artwork, this book documents George Washington's development of the gardens at Mount Vernon. "Everybody's heard about the great gardener Thomas Jefferson was," says Stephen Bender. "This book offers new insights into the gardening interests of one of our most enigmatic presidents."



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Feeding the soil instead of the plants

Is your soil poorly drained, or is it prone to drought? Does it feel sticky in your hands, or does it sift through your fingers like powder? Do the plants growing in it appear starved for nutrients? The solution to each of these common soil woes is the same—add organic matter. Organic matter—compost, leaf mold, grass clippings, rotted manure, or any material that was once alive—has near miraculous power to improve any soil.

At first glance, it seems contradictory—the same material that improves the drainage of a heavy, clay soil can increase the capacity of a light sandy soil to retain water. It all boils down to soil structure, and regardless of soil type, organic matter improves its structure.

Soil is made up of solid material and spaces between the solids—in roughly equal proportions by volume. About 90 percent of the solid portion of most soil is weathered rocks and minerals; these particles are classified according to size, from the smallest to largest: clay, silt, and sand. Most soils are a combination of particle sizes, with one or another predominating. The remaining solid part of the soil is organic matter. The pores between the soil solids serve as a reservoir for both the water and air necessary for healthy plant growth. The smaller the particles, the smaller the pores.

Organic matter improves soil structure by facilitating the formation of soil aggregates—groups of particles bound together—and the resulting larger pore spaces between the aggregates. As soil organisms break down organic matter, they secrete a gummy material that binds particles into aggregates. Good soil aggregation results in a continuous network of pores allowing for better movement of water and air through the soil, and easier penetration by plant roots. It also improves the tilth or friability of soil. A soil with good tilth feels crumbly rather than powdery or sticky, and is easy to work.

The best way to provide continuous, well-balanced nutrition for plants is to feed the soil with organic matter. As soil organisms digest organic matter, they release nutrients—in a usable form for plants. Unlike quick-release chemical fertilizers that offer a glut of

nutrients that may be washed away with the next rain, the decomposition of organic matter is a continuous process; nutrients are released slowly over a long period of time. Of course, the amount of specific nutrients depends on the source of organic matter. Most manures are fairly rich in nutrients, while sphagnum peat moss contributes very few.

There are many good sources of organic matter. Composted kitchen and yard wastes will in a few months yield a rich soil supplement. Leaves raked in fall become crumbly leaf mold, especially if they are chopped and mixed with a bit of soil to encourage their break down. Manure is often free from a nearby farm or stable, or it can be purchased from garden centers. Green manure is a cover crop that is sown, grown, and then turned back into the soil. Legume

cover crops—such as clover and vetch—contribute additional nitrogen because of their symbiotic relationship with nitrogen-fixing bacteria.

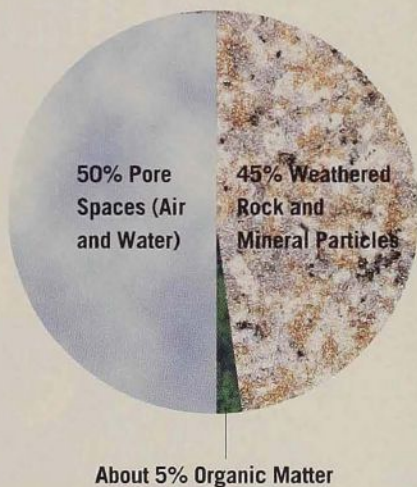
After organic matter has decomposed, it is called humus, which is dark in color, light in texture, and resists further break down. It continues to contribute to the soil environment by improving soil structure, holding nutrients against the force of leaching, increasing aeration, retaining water, and moderating a soil's acidity or alkalinity.

How much organic matter should you add? A good start-

ing point for soils that are worked each year is two to four inches of organic matter spread over the surface annually and then thoroughly worked into the soil. For more permanent plantings, the addition of an organic mulch such as shredded bark or leaves is helpful. The mulch gradually breaks down, and through the action of soil organisms and rainfall, nutrients become available to plant roots. Add organic matter whenever you plant, divide, or transplant perennials, shrubs, or trees.

A soil well nourished with organic matter will sustain a healthy population of organisms, resulting in both improved soil structure and nourishment for your garden plants. This is recycling at its best.

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Maturity in the Garden



Lifestyles and physical abilities may change with age, but these changes needn't keep you out of the garden. Many seniors have discovered that by adopting a few modifications in garden style and using some innovative new tools designed to accomplish tasks without causing excessive strain, they are continuing to find great rewards in the garden. Gardening, after all, is about growing.

Gardeners of Long Standing

BY RITA PELCZAR

TIME IS A CRITICAL dimension in a garden. With a vision of future shade, we plant a sapling, tend it while it's young, and forget about it while we move on to other projects. Then one day we find ourselves resting beneath its wide-spreading branches. Looking around we notice that our once sunny border has become a shady bed. The shrubs we planted years ago could use some renewal pruning. And our ground cover has encroached on the path, obscuring the definition of both path and bed.

Just as gardens evolve over the years and require adjustments, gardeners too must adapt to changes wrought by time. As we grow older, we may find certain tasks more difficult. Tools we cavalierly wielded a few years ago may seem cumbersome and awkward now. Our years of experience,

however, afford us a profound advantage over the beginning gardener—guiding us toward practices we know are reliable, helping us avoid the mistakes of the past, and suggesting new styles that suit our abilities and interests. And perhaps retirement has provided us more time to devote to our horticultural pursuits.

Adopting styles that minimize the impact of diminished physical strength or flexibility helps many gardeners to continue enjoying their avocation when traditional gardening methods become difficult. And a wide range of adaptive tools have been developed that make tasks more comfortable and less of a challenge. For both the garden and the gardener, the key is adaptation.

Why should we continue gardening as we grow older? What are the benefits and

rewards? How do we adapt our gardens to accommodate changing needs and abilities? We asked these questions of some long-time gardeners. Their perspectives offer insight and inspiration to us all.

Frances Jones Poetker

FRANCES JONES POETKER, 87-year-old plant ecologist, florist, and gardener, points with obvious pride to the four southern magnolias (*Magnolia grandiflora*) outside her windows that overlook the Ohio River and beyond into Kentucky. She planted the trees, she explains, in the late '50s, despite neighbors warnings that Cincinnati was too far north—not to mention on the wrong side of the Mason-Dixon Line—for growing that species. Today, the trees stand two-and-a-half stories tall. Their success



Frances Poetker viewing a rare flowering of evening cactus in her garden. A longtime member of the American Horticultural Society Board of Directors, in 1995 Poetker endowed the AHS Award and Medal for Excellence in Floral Artistry.

can largely be attributed to Poetker's understanding of gardening, microclimates, and plant adaptations; their endurance mirrors her long and continuing interest in gardening and floriculture.

Poetker could easily have retired years ago to rest on her laurels, so to speak. She owned and operated her family's florist business for 44 years, wrote a syndicated column called "Fun with Flowers" for 68 major newspapers, was the first woman director on the board of the Society of American Florists, and served as a board member of the American Horticultural Society for nine years; these are just a few of her many and varied accomplishments. And she gives no indication of slowing down; in fact, her schedule is rather daunting. In addition to taking care of her garden, she continues to lecture, participate in and judge flower shows, design weekly floral arrangements for her church, and is currently writing a book—her second—that she hopes will inspire people to take a fresh look at how they view flowers in their lives.

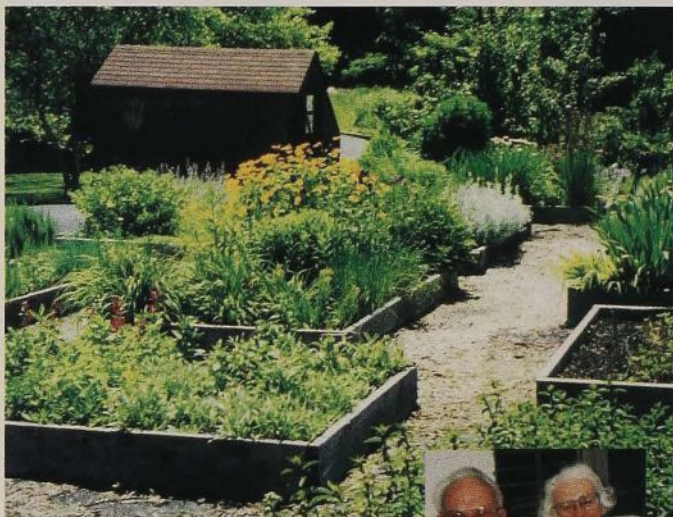
How does she accomplish so much? Her youthful vitality, instantly apparent when you talk to her, must be part of the answer. She surmises that it is gardening and her interest in flowers that has kept her feeling young. "And I don't look my age, isn't that convenient?" she quips.

Her advice to older gardeners includes sharing their gardening knowledge and experience with youngsters. "Excite them with your enthusiasm," she challenges. "Enthusiasm is so provocative; it just carries you on." And it is the best way, she believes, to develop a love of nature in children. Another suggestion is to humanize plants—grow plants that hold memories for you. With a smile, she explains that the ordinary cosmos she grows in her yard was her husband's favorite

flower. "If you can get sentiment going, hard work won't seem very hard." Sage advice from one who continues to bloom.

Maxine and Bill Schuler

WHEN MAXINE AND BILL Schuler moved to rural Washington, Missouri, from their suburban home outside of St. Louis, they made a deal: If after five years either decided that the larger property, with the expansive gardens they planned, was too much for them to take care of, they would return to suburbia without argument. Twelve years later, the Schulers are still in Washington. Rather than consider mov-



Maxine and Bill Schuler, right, have created a series of raised beds for growing a wide variety of ornamental plants and vegetables in their Washington, Missouri, garden, above.



ing, they have adapted the garden to suit when problems arise.

The 10-acre property includes forest, rolling hills, open fields, and a marsh. The Schulers created a series of gardens that takes advantage of these varied sites: a large terrace garden, a vegetable garden,

and a native wildflower garden that includes Bill's native aster collection. They transformed former corn and wheat fields into a meadow garden and a native grass garden where, Maxine laughs, "everything is labeled so we can remember them!"

Together Maxine and Bill make quite a gardening team. In addition to their current garden and one in St. Louis, they have gardened in Oregon, California, and Minnesota. "Bill really got into gardening after the kids were grown and he had more time," explains Maxine, who has been gardening for 45 years. Fortunately, both at 72 are in very good health, though Maxine's vision has begun to deteriorate.

The Schulers have adapted their gardens to accommodate their needs in both simple and dramatic ways. They have reduced the size of their vegetable garden. "I'm not raising corn for squirrels any more," laughs Maxine. When her eyesight began to limit her ability to tend the huge perennial border, she converted it into a deciduous shrub border, leaving only low-maintenance

perennials as ground covers. The slippery slope that led to this garden was a nuisance for her, so Bill constructed an easily navigated boardwalk with large stone steps.

The adaptation that has had perhaps the greatest impact on both the look of the gardens and their ease of maintenance is the series of raised beds that Bill constructed. Nine separate beds range in size from four-by-eight feet to six-by-26 feet—plus

two barrels to contain invasive mint. These allow Maxine to work with her herbs, perennials, annuals, strawberries, raspberries, and vegetables at close range.

With so many plants, the Schulers find it helpful to keep a written account of their gardens. Maxine jots down ideas as they oc-

cur to her, and, she says, "I always keep a record of what I've ordered...I keep notes of new plant acquisitions, where I've located them, and how they do."

In addition to gardening on their own property, the Schulers share the knowledge gained from their experience with others. Maxine is a long-time Master Gardener volunteer at the Missouri Botanical Garden, and Bill volunteers at the garden's Shaw Arboretum in nearby Gray Summit. The fruits of their labor are widespread.

Polly Hill

POLLY HILL BELIEVES she was born with a passion for gardening. And, 93 years later, her interest continues to grow. Her family purchased an old sheep farm on the island of Martha's Vineyard in Massachusetts in the 1920s for a summer home. When she and her husband assumed ownership in the '50s, she decided to "grow an arboretum from seed," and, with family and friends, set off to accomplish just that.

Before that time, the variety of plants grown on Martha's Vineyard was rather lim-



Polly Hill uses a golf cart to move from place to place at her home and arboretum.

ited. Hill considered it "horticulturally impoverished" and wanted to find more plants that would adapt to the rigors of the island environment. Starting plants from seed, she decided, was the surest and most economic way to go about it. Today the Polly Hill Arboretum, which opened to the public in June, 1998, consists of nearly 2,000 different plants on 60 acres, 20 of which are under cultivation, with the remainder in native, second growth woodland.

While she no longer actually digs in the garden, Hill is intimately involved in



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its activities and lives on the property for about six months of the year. “When she is in residence,” explains arboretum director Steven Spongberg, “she is in the collections every day in her golf cart undertaking various projects —helping us decide what should be de-accessioned

from the collection and where new plants should be incorporated, keeping detailed records of flowering and fruiting, collecting seeds, and otherwise offering suggestions and providing historical details of importance.” She also conducts special tours of the property and hosts the arboretum’s most popular public course, “Conversations with Polly.”

Over the winter months, when she is not at the arboretum, Hill still maintains almost daily contact with the staff. “My fax machine stays very busy,” she admits. She is kept apprised of the goings-on in the gardens—from the sightings of birds to the conditions of plants—and during the off-season she works with the staff to coordinate plans for garden modifications that can be accomplished when spring returns.

While she says that it hasn’t exactly kept her young—“I’m getting older every minute!”—Hill believes gardening has been good for her health. She advises gardeners to keep up with their interest as they get older. While you may not be able to do everything you once did in the garden, “you go along with what you *can* do and what’s available,” she explains.

“I was told that you had to be patient when you grow plants. I’m too busy to be patient,” she

Share Your Story

Do you have an adaptation—a style, tool, or technique—that has made your gardening easier or more comfortable? Send your story to us at *The American Gardener*, 7931 East Boulevard Drive, Alexandria, VA 22308, or e-mail to editor@ahs.org. We’ll select the best ones to share with other members in the magazine or on our Web site.

counters. “There is always something to do, something going on.” And so she keeps busy with her garden: appreciating every change from season to season, recording the details of the plants’ growth, looking out for potential new selections, directing necessary adaptations to garden

layouts, and sharing her bountiful knowledge with both the arboretum’s staff and its visitors.

Gerald Taaffe

AVID GARDENER AND garden writer Gerald Taaffe describes his property, centrally located in Zone 4 in Ottawa, as “about half the size of a football field and surrounded on three sides by a tall cedar hedge.” His garden includes several different habitats that accommodate a wide variety of plant taxa. Along with sunny mixed borders, there are wooded, shady areas, a large peat bed, a lily pool and marsh garden, pergolas providing support for a wide variety of climbers, a sunny cactus bed, and a large rock garden.

Taaffe, who began gardening when he was 12 years old, moved to his current garden in 1995, and since then has incor-



Gerald Taaffe takes a moment to appreciate the assortment of aquatic plants thriving in his lily pond and marsh garden.

WHERE TO LOOK FOR IDEAS

You needn't look far to find examples of garden adaptations that could make tasks easier and plants more accessible in your own garden. Raised beds and container gardens enhance many airports, hotel lobbies, restaurants, and shopping malls. While these may be filled with indoor plants, the same style—planted with flowers, vegetables, and herbs—can be employed for your yard or patio.

Many public gardens have focused considerable attention on adaptive or enabling gardens, including the following:

- Denver Botanic Garden
- Brooklyn Botanic Garden
- Enid A. Haupt Glass Garden at the New York Botanic Garden
- Minnesota Landscape Arboretum
- Royal Botanical Gardens in Hamilton, Ontario
- Chicago Botanic Garden's Buehler Enabling Garden (see our story on this garden beginning on page 48).

porated "patios, benches, arbors, an amusing clockwork fountain, and other features to encourage entertaining, creative loafing, and just looking at the green life from different angles." Given the extent of his garden, it is difficult to imagine that much loafing—creative or otherwise—actually occurs!

But Taaffe is concerned with minimizing garden maintenance, and one way he accomplishes this is through careful plant selection. "Converting some areas to low-maintenance flowering shrubs and small trees and ground covers takes a little advance planning, but the results can be very nice indeed," he says. He observes that Southerners are often skilled at making the most of woody plants, while northern gardeners sometimes overlook their value. "Rhododendrons, magnolias, witch hazels, daphnes, bottlebrush buckeye, for example, require almost no work once established," he explains, "and a big, multi-colored carpet of heath and heather is the

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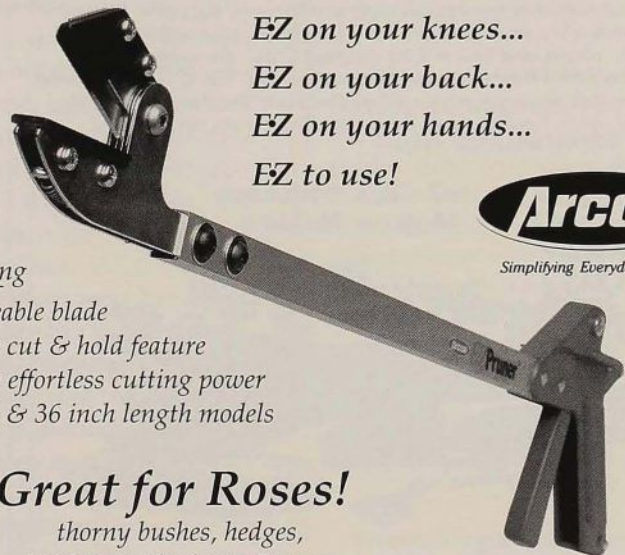
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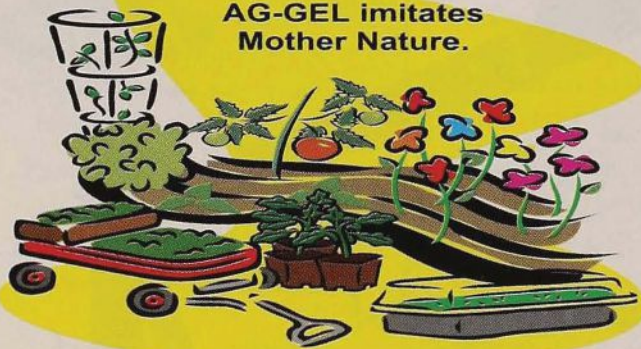
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most effective of weed-smotherers." Other low-maintenance plants that rate high on his list are hellebores, epimediums, and the newest hosta and pulmonaria hybrids.

"As for tinkering-time, even a small rock garden offers a great field for propagating a wide variety of unimaginably lovely and interesting plants," he suggests. And once set up, with a good stone mulch, he finds it is relatively easy in terms of labor.

When asked why we should continue to garden as we grow older, Taaffe replies, "One reason to keep up the good work is the way gardens change and surprise, offsetting the 'been there, done that, got the tee-shirt' mindset that tends to go with advancing years." He reflects that his garden displays significant changes throughout the year, "Every winter and early spring there are a great number of plants or even areas that are due to show what they can do for the first time." He cites a fair-sized patch of Himalayan blue poppies that grew strong and vigorous in 1999—and that he anticipates will explode into bloom this year. "There is always a feeling that the best is yet to come."

Rita Pelczar is associate editor of *The American Gardener*.

Adaptive Garden Styles and Tools

BY BARBARA SCHLEIN

"I HAVE A GARDEN NOW that requires the least possible amount of time. I'm trying to use interesting shrubs for longer seasonal interest and lower maintenance," says Mim Astmann, who adjusted her gardening style from a large perennial-bordered suburban Connecticut house to a small plant-edged patio adjacent to her condominium apartment. Downsizing the garden area, moving it all closer to the dwelling, and concentrating on lower-maintenance plants are dominant themes in design modifications for gardeners as they get older.

After 30 years of serious food gardening in Vermont, Kate Smith's bad back dictated major horticultural retrenchment. Hardy perennials have replaced her vegetables—they require less effort. "I now have a small house, and a small garden much closer to my house," says Kate, "and I'm kind of a 10-minute gardener. I can be on my knees, or else bend over, for 10 minutes. Then I rest 10 minutes." Smith's pattern emphasizes the need to include a bench or seat near the beds as a resting spot when rethinking the garden layout.

Like Astmann, Betty Greene has lowered maintenance in her Connecticut garden by replacing some demanding flower beds with eye-catching hardy shrubs. "My favorites are *Hydrangea quercifolia* and *Hydrangea 'Preziosa'*, both of which offer foliage with red-burgundy tones for autumn interest after flowers are gone by," she reports. Greene recently added iron railings to the stone stairways that link her terraced gardens together; they provide her a sense of security and stabil-

ity that had been lacking in the garden. She says she spends more time in the garden now that she has something to grab onto along the way.

Stability and Access

Nancy DuBrule, a Northford, Connecticut, garden designer, emphasizes that stability and access are often requested when she designs for retired gardeners. "A wide perennial border, without a way to get back into it, is a neglected perennial border. I either design a path with firm footing—and I emphasize *firm footing*—through the border, or I make a narrow border. The garden must be accessible without the gardener having to perform contortions." Walkways wide enough—at least 36 inches—for solid footing offer safety as well as the sensation of security in the garden. Packed stone dust, brick, bluestone, cement, or even asphalt are good paving choices for solidity underfoot; mulch is too mushy and slippery, especially when wet.

Raised beds and containers provide easier access to plants by raising them nearer the gardener, thus reducing the need to bend. Beds can be raised anywhere from six to 30 inches off the ground. The higher the bed, the less bending required to tend it, but raising a bed more than 12 inches is a fairly major construction project. A wide, flat coping atop a 30-inch-high masonry planter offers the ultimate in gardening ease: Plants are easy to reach while sitting down. A bench or chair



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TIPS FOR TOOL SELECTION

1. Look for good balance: The tool should fit your grip comfortably and not require great hand strength to use.
2. Look for light-weight tools that are strong and evenly balanced.
3. Look for good construction: Poorly made tools are tiring to use and can be dangerous as they bend and break easily. Check the spot where handle joins tool; cheap tools often break here.
4. Look for adaptability. Hand grips (like BackBuddy or Motus D-Grip) attached more readily to wood shafts; other tools can often be changed in minor ways to accommodate arthritic fingers or aching backs—by padding handles or adding handle extensions.

placed next to any planting bed becomes a spot for needed respite, and can provide a "perch" from which to water, weed, and cultivate. Bed width should not exceed reach: 24 inches is the recommended maximum width for beds accessible from one side only; 48 inches for those that can be reached from either side.

Lovely gardens are possible without ever leaving a deck or patio. Container gardening is a hot trend, and the selection of both plants and containers is limited only by taste and pocketbook. Kate Smith takes a practical view. "Of course I prefer *real* terra cotta containers for aesthetic reasons," she admits, "but, realistically, the plastic look-alikes allow more reasonable maintenance." Container gardens require more frequent and attentive watering than either raised or in-ground beds, but pots offer a level of style and accessibility that make them extremely attractive.

Growing plants vertically on trellislike supports conserves space and reduces bending. Peas, pole beans, cucumbers, morning glories—all can grow up, not out. Toma-

continued on page 58

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Conservationist's Notebook

Cobra Lily: A Striking Western Native

by Susan Warner

EXCEPTIONAL, EXQUISITE, EXOTIC, ENDANGERED—the carnivorous California pitcher plant is all of these, and more. Also commonly known as the cobra plant or cobra lily, *Darlingtonia californica* is the only member of the pitcher plant family (Sarraceniaceae) native to the western United States. The sole species in its genus, it is closely related to *Sarracenia*, a genus of pitcher plants native primarily in

the southeastern United States. Its prominent hood, faintly resembling the flattened head of a cobra with two forked “fangs” emerging from the base, gives the plant a dramatic presence made even more spectacular because it usually occurs in tightly grouped clusters.

Harsh Habitat

In the wild, cobra lilies are found primarily in mountain wetlands in northern California and southern Oregon. They are restricted to bogs and seeps, where they are flushed by cool, slowly seeping water. These wetlands are often associated with soils that are typically low in the nutrients most plants need to survive and high in toxic elements such as cobalt and chromium. Cobra lilies thrive in this challenging environment by obtaining nitrogen and other essential nutrients from the hapless insects that are consumed beneath their elegant fanged hoods.

Sweet-scented nectar entices unsuspecting insects, which are guided into the ornamental hood by colorful reddish appendages at its base. Inside are many thin, translucent areas that allow light to penetrate into the tubelike stalk of the plant. Seeking an exit, disoriented insects crawl toward these light patches—a mistake that can prove deadly. Downward pointing plant hairs further thwart escape by preventing insects from securing a foothold on the stalk. Most eventually slip down into a pool of digestive fluids at the plant's base. Once there they drown and the



Left: Red-streaked appendages at the base of the cobra lily's “hood” attract insects inside. **Right:** A natural stand of cobra lilies fills a bog in the Siskiyou Mountains in Oregon.

soft parts of their bodies are broken down and absorbed as food for the cobra lily.

Attractive Plants

Cobra lilies can grow one to three feet tall and several tubelike stalks generally emerge from a basal clump. Plants spread by underground runners that can grow a vast distance from the mother plant, eventually forming massive groups that fill boggy areas. They bloom from April through August, producing nodding three-inch-long flowers on narrow stalks. The flowers—composed of five maroon to dark purple petals overlaying yellow-green sepals—are followed by showy, mahogany-brown seed capsules.

The yellow-green leaves and stalks are shaded reddish brown to deep crimson on the appendages and in the veins of the hood and tubular stalk.

Threatened in the Wild

Recently, logging, mining, and land development activities have reduced the already narrow habitat of cobra lilies. Some collectors of carnivorous plants have further depleted natural stands by digging up large clumps for sale. Cobra lily is listed under Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which means plants being shipped out of the

United States must be accompanied by an export permit. Both its fascination to collectors and its limited distribution suggest cobra lily is a candidate for the federal threatened species list.

As with all plants, cobra lilies should not be collected from the wild. In addition to their rarity, they often do not survive sudden changes in habitat. Their cultural requirements are exacting: Constant moisture, cool summer night temperatures, and careful feeding are needed for the plant to live.

If you can provide the appropriate conditions and want to try to grow a cobra lily, purchase the plant from a reputable source that propagates the plants on site. Cobra lilies grown from seeds require at least three years to reach blooming size.

Unless you can provide a garden setting that closely mimics their natural habitat, cobra lilies are best grown in containers; these should be large enough to accommodate runner development and have drainage holes. Plant them in a mix of sphagnum moss and perlite. Keep this medium moist by setting the con-

Sources

California Carnivores, 7020 Trenton-Healdsburg Road, Forestville, CA 95436. (707) 838-1630. www.californiacarnivores.com. Catalog free.

Resources

The Savage Garden by Peter D'Amato. Ten Speed Press, Berkeley, California. 1998.

tainer in a tray of water. Always use cool, distilled water when replenishing the tray—in warm climates using refrigerated water may help prevent heat damage. Shade the containers in the hottest part of the day and avoid placing them on concrete or against a brick wall where they will absorb reflected solar radiation.

To ensure adequate nourishment in an insect-limited environment, a weak solution of fertilizer can be added to the water

once a month from late spring through early fall. Flush the container and tray with cool water at least once a month to prevent a buildup of salts. Once your plants are growing well, underground runners will begin to form and produce new plantlets.

Viewing Cobra Lilies

There are several areas in northern California and southern Oregon where natural cobra lily stands can be viewed. In the Six Rivers National Forest in Del Norte County, California, several substantial stands of cobra lilies are growing in bogs or small streams.

In Lane County, Oregon, there is a particularly well-developed and easily accessed stand at Darlingtonia Botanical Wayside, which is located five miles north of Florence on coastal Highway 101.

These bogs should be visited to appreciate the exotic beauty of this unusual plant. Stick to established pathways and take away only photographs.

Susan Warner is a free-lance writer living in Santa Rosa, California.



National Youth Garden Symposium

Orlando, Florida 🐞 June 8-10, 2000

The American Horticultural Society's 8th National Youth Garden Symposium is being held in Lake Buena Vista, Florida, June 8-10, 2000. We hope that you'll join us for the most exciting symposium to date!

Co-sponsored by Epcot International Flower & Garden Festival, AABGA, and NuLife



The focus of this year's symposium is on *design*: the important elements of a children's garden as well as the process from initial conception to end result. There will be *activities* included in the three-day symposium for the entire family. A new garden, co-sponsored by the American Horticultural Society, will be installed at Epcot that will feature all that's great about a child's natural environment—as a place to both *play* and *learn*. Based on a terrific suggestion from one of last year's attendees, we will offer a *curricula swap*! What a great way to exchange program ideas. And last but not least, we will offer continuing *education credits* for attendees.

Visit our Web site at www.ahs.org/events to register online or get up-to-date information, or call (800) 777-7931 to have a registration brochure mailed to you.

Urban Gardener

A Simply Sensational Arbor

article and photographs by Lee Mitchell

WHETHER IT'S AT THE ENTRY THROUGH a gate or the step towards a hidden bench, an arbor covered with climbing plants enhances the charm of any garden. Many gardeners think building an arbor is costly and complicated, but if you forgo fancy carpentry and keep the arbor simple but sturdy, you can construct one in a weekend that will be an asset in the garden for many years.

I built the arbor shown here in two days, with an assistant to help as needed. (See the facing page for instructions on how to make it yourself.) It's rugged and admittedly somewhat plain, but it's a perfect canvas for a nearly year-round show of climbing plants.

While I've always been around amateur build-it-yourself folks, you can get plenty of information and ideas on building arbors from reference manuals in bookstores and hardware and home improvement stores—or talk with professional or experienced builders. It helps to draw your structure on paper first, then build it mentally to isolate potential problems and find solutions up front. Before you build an arbor, be sure to check your local building and zoning requirements to see if permits are required.

No matter what your arbor looks like, its height and width should provide adequate room to allow someone to pass through comfortably; and the posts should be sunk deeply enough in the ground to ensure structural stability. If you place the arbor along one of your garden's main walkways, make sure you can get your wheelbarrow and other large gardening equipment through, too.

Tips for Planting the Arbor

I find that planting three climbers—selected for timing of bloom, color, fragrance, and compatibility of care—is the most effective way to dress up an arbor for the longest seasonal display. When choos-

ing roses, look for those that are disease resistant and have recurrent blooms. Perennial vines return every year and often become more dramatic in the second or third season. Annuals provide more options for experimentation.

I originally planted the red climbing rose, 'Blaze', which provided a beautiful show of spring blooms on my arbor. But it stopped flowering in summer, and—worse—it gave in to black spot, despite my efforts to prevent the disease. By adding the vigorous white-flowered perennial, silver lace vine (*Fallopia aubertii*, formerly *Polygonum aubertii*), on one side of the arbor, and hyacinth bean (*Lablab purpureus*, formerly *Dolichos lablab*), an easy-to-grow annual vine with purple flowers and pods, on the other, I successfully masked the diseased rose and extended the flowering display right through fall. I would *only* recommend this particular combination, however, if one makes the mistake I did—planting a climbing rose that is hardly resistant to disease. And a vigorous perennial such as the silver lace vine must be pruned back sharply in late fall, or it will take over.



Hyacinth bean, an annual vine with purple flowers followed by purple bean pods, climbs the author's arbor in midsummer.

For an "around-the-clock" display of summer-flowering annuals, team up your favorite morning glory (*Ipomoea tricolor*) with moonflower (*Ipomoea alba*). Add an early-blooming perennial vine such as *Clematis* 'Guernsey Cream', which has creamy yellow flowers, or white-flowered *C. lanuginosa* 'Candida', and your flowering show will begin much earlier.

Experiment with a variety of climbers that match your climate and the site of your arbor. The combinations are endless! 🌿

Lee Mitchell is a free-lance writer living in Randleman, North Carolina.

HOW TO BUILD AN ARBOR IN A WEEKEND

I designed the simple arbor shown here in my garden to span a four-foot gap between two fences. The basic steps for construction are the same for larger arbors, but of course you'll need to adjust the number of posts and beams accordingly.

It's a good idea to wear safety glasses when working with any tools, and wear ear plugs if using power tools. When cutting boards, be sure they are supported on a balanced and level platform, such as a pair of sawhorses.



What You'll Need

Supplies

- 3 or 4 bags of gravel
- (4) 4-inch-by-4-inch-by-8-foot pressure-treated posts
- (2) 4-inch-by-4-inch-by-6-foot pressure-treated posts (cut to length)
- (6) 1-inch-by-6-inch-by-5-foot pressure-treated beams (or 1-inch-by-8-inch-by-5-foot)
- (4) one-piece post beam caps (ties post and beam)
- 16d galvanized nails
- Bag of cement mix and water

- Wire, lattice, or pressure-treated 2-inch-by-2-inch lumber (for supporting plants)
- Wood stain or weather-proofing paint, optional

Tools

- Post hole digger
- Hammer
- Hand or power saw
- Measuring tape or ruler
- Carpenter's level
- Shovel
- Large bucket or wheel barrow for mixing cement

1. With a post hole digger, dig four holes approximately 1½ feet deep, spacing to form the corners of a rectangle of the desired length and width—in this case 2 feet by 4 feet. Pour 2 inches of gravel into each hole.

2. Nail the post beam caps to the top of each 4-inch-by-4-inch-by-8-foot post. These posts will form the corners of the rectangle. Lay two of these capped posts parallel on the ground and connect them at the top with one of the 4-inch-by-4-inch-by-6-foot posts, fitting it into the caps and leaving a 9-inch overhang at both ends (A). Repeat with the remaining two capped posts and 4-inch-by-4-inch-by-6-foot post. Set the two completed units aside.

3. With a saw, notch two 3½-inch-by-3½-inch squares on each of the 1-inch-by-6-inch-by-5-foot boards, 15 inches from each end (B). For a decorative effect, cut the ends of each board at an angle as shown.

4. To assemble the arbor, position one of the capped-post units in front of the holes measuring 4 feet apart. Lift and slide the posts into the holes. Repeat on the other side. Connect one end of the two units with one of the 1-inch-by-6-inch-by-5-foot boards, making sure the posts fit securely into the notches. Repeat at the other end. Lay a level on top of the notched cross beams; if the unit is off level, add or remove gravel in the holes to set the double posts level with each other.

5. Once a level height is achieved, space the remaining pre-cut 1-inch-by-6-inch-by-5-foot boards at measured distances across the top of the arbor (C).

6. Mix the dry cement with water according to directions and shovel an adequate amount into each hole to set the posts. Use the level again to determine that each post is set straight; adjust if necessary. Allow the cement to harden for a day.

7. After the cement has hardened, nail wire, lattice, or other supports to the sides of the arbor to allow climbing plants to grow upward.

8. Apply stain or weather-proofing treatment to the arbor if you like.



Natural Connections

Conquering Arachniphobia

by Branley Allan Branson and Mary Lou Branson

PART OF THE FASCINATION of a garden is the variety of animal visitors it attracts. Some creatures—birds, butterflies, and toads, for example—are almost always welcome. Others—the leaf eaters, the vine borers, the fruit thieves—are discouraged, repelled, or destroyed in an effort to minimize plant damage caused by their marauding. But there are a few wild visitors that, despite their service or benign nature in

the garden, are often shunned because of our peculiar aversions to or misconceptions about them. Among this latter group are garden spiders.

Many kinds of spiders are found in gardens, but they are not all, in a technical sense, garden spiders. That epithet is reserved for the members of the small subfamily Argiopinae. Garden spiders belong to the orb-weaver family (Araneidae), so called because their webs are distinctly circular with concentric strands of silk neatly orbiting a central hub. These beautiful spiders create large, carefully crafted webs, which, on dewy mornings, sparkle in the sun like multi-stranded necklaces. Observing their methodical, nearly magical construction can provide a welcome diversion from the stresses of our busy lives. And while these spiders don't discern between beneficial and "pest" insects in our gardens, they contribute to nature's elaborate system of checks and balances.

A Complex Web

One of the most fascinating features of spiders is their ability to spin silken webs. Their silk glands are contained within the abdomen; each gland opens to the exterior via a spinneret. Garden spiders have three pairs of these spigotlike organs at the posterior end of the abdomen. With them, the spiders are able to spin different kinds of silk: attachment disks for holding individual threads, swathing silk



Resting at the center of its dew-spangled orb web, a banded spider awaits the arrival of its next meal. The orb webs of garden spiders, which can span two feet in diameter, are so-named because they are constructed of circular, concentric strands of silk.

for making egg cocoons or wrapping up captured insects, non-sticky lines, and the gluey capture lines. Spider silk is composed of a special protein molecule and many spiders—including garden spiders—recycle these valuable proteins by eating their old webs.

In choosing a site for a new web, the garden spider normally selects a relatively dry, well-lighted area among shrubs or other plants. It first constructs a frame to support and delineate the web. Next it spins the radial, non-sticky lines that converge upon the center to create the hub. The spiral,

sticky trapping lines are laid down on the radials, leaving a brief free zone, with no spiral threads, around the hub. Finally, the spider spins a zig-zag mass of non-sticky silk across the center of the hub. This is the stabilimentum, and it is here that the spider rests while awaiting the arrival of its next meal. The whole web is arranged in a nearly vertical but slightly inclined plane. If a web is damaged, it will be repaired, but as a spider advances in its life cycle—usually a year—it may rebuild only one-half of the web during alternate days. Web-building is an exhausting process.

SPIDER ANATOMY

Garden spiders share a large number of characteristics with all spiders. The body consists of two main parts: the cephalothorax—the head fused with the thorax—and the abdomen. Eight eyes are arranged in two curved, transverse rows about the head. An undivided plate called a sternum covers the ventral side of the cephalothorax, and the mouthparts, including the labium, are located at the hinged anterior edge.

The cephalothorax also supports the chelicerae, or poison fangs. At rest, each fang lies in a groove on the basal segment. When a spider attacks, poison is injected into its victim through the fangs. Afterward, the spider may swath the prey in webbing, but in any case it retreats until the prey stops struggling, returning later to feed.

A pair of leglike appendages called pedipalps is located behind the poison fangs. These are used to manipulate food close to the mouth, and in males they are modified to facilitate the transfer of sperm to the sexual receptacle of the female. In both sexes, the bases of the pedipalps bear crushing teeth that are used to macerate prey.

All spiders, and particularly the orb-weaving ones, are well supplied with mechanoreceptors—sensory organs that respond to such stimuli as touch, air currents, and vibrations. Most of the mechanoreceptors are sensory hairs that are liberally distributed over the body and legs. Extremely fine sensory hairs called trichobothria, situated in sockets on the legs, detect the presence of an insect caught in the web.

Garden spiders reside at the center of their webs during daylight hours, retiring to the side at night. When spiders are disturbed, they either drop to the ground or run for the cover of plants to hide from predaceous birds and insects such as mud dauber wasps, which stuff



Top: The banded garden spider is distinguished by its orange, black, and white stripes. **Above:** An orange garden spider lurks just above the stabilimentum, a zig-zag pattern of non-sticky silk at the center of its web. Both species are common throughout North America.

them into their nests as food for developing larvae. During the reproductive season, garden spiders hang their egg cases from the web or in nearby vegetation. Large, mature garden spiders are most commonly encountered in late summer or early autumn.

Two Common Species

There are two common garden spiders in the United States: the banded garden spider (*Argiope trifasciata*) and the orange garden spider (*A. aurantia*). Both species enjoy a nearly cosmopolitan distribution in the temperate and subtropical world and throughout most of North America. The body of the female banded garden spider measures about four-fifths of an inch. The cephalothorax is slightly flattened; the oval abdomen is white or light yellow, transversely crossed by many thin black lines. The egg sac is cup shaped and flattened on top. The male is yellowish and white, and much smaller—about one-fifth inch.

Female orange garden spiders are an inch or so long—slightly larger than female banded garden spiders, but males are about the same size as their counterparts. Silvery hairs cover the cephalothorax, which is marked with orange spots and bands. The oval abdomen, which bears a pair of bumps near its attachment with the cephalothorax, is black with yellow or orange spots, and there is a yellow stripe along each side.

Orange and banded garden spider webs can be more than two feet in diameter and are built in small trees, shrubs, tall flowers, or herbs, often near water, which attracts a wide variety of potential prey insects. Though the insect caught in the web may be several times larger than the garden spider—a grasshopper, for example—it is dispatched with ease. As soon as the unsuspecting insect becomes entangled in the webbing, the spider descends upon it and attaches a sheet of silk. With its legs, the spider rapidly rolls the insect over and over, swathing it in silk until it is helplessly trapped. An injection of poison seals the insect's fate.

The design and selection of plants in a garden reflect the gardener's taste and preferences. But the creatures that are encouraged to inhabit the garden along with the plants, contributing their own beauty and balance to that bit of cultivated ground, reveal the gardener's appreciation of nature's diversity and an understanding of the relationships between organisms. Watching a garden spider construct its intricate web—a masterpiece of functional design—one cannot help but be impressed by the wonders of nature. Even in this global information age, your own garden may hold the most fascinating "web sites" around!

Branley and Mary Lou Branson are both retired biologists who live in Richmond, Kentucky.

Habitat Gardening

A Prairie-Style Front Walk: Illinois

article and photographs by Connor Shaw

FOLLOWING THE COMPLETION OF our solar home in 1981, my wife and I turned our attention to landscaping the front walk. We wanted this part of our garden, which offers visitors their first impression, to reflect our informal tastes. Just as our house was built to conserve natural resources, energy savings in terms of labor and water usage were important considerations in the design and plant selection for this area.

We also wanted the planting to have aesthetic value over the entire year, so structure, flowers, fruit, fragrance, fall color, and winter interest were all carefully considered. Last, but not least, we wanted the front walk to say “welcome.”

The front walk itself is a slightly curving 50- by-5-foot pathway built using kiln brick on a 10-inch sand base. Since 1983, the walk has required no care, with the exception of occasionally putting sand down to fill in the spaces between bricks.

Selecting the right plants for the site was critical to our desire to reduce maintenance and water use. Located on the east side of the house, the front walk is surrounded by a silty clay loam that is somewhat poorly drained in spring. In summer and fall, by contrast, the hilltop site is quite dry because it is exposed to south and southwest winds.

After considerable reflection, we chose prairie plants as the dominant theme for the herbaceous perennial planting. We knew they would be adapted to clay soil, sun, and wind because the native prairie plants thrive under those harsh conditions. We also knew that most prairie plants need less water than standard ornamental plants to maintain their appearance. And since prairie plants are by nature informal, they matched our interest in an informal landscape.

A little research revealed that prairie plants would provide an overlapping bloom sequence that would cover the entire growing season from May well into October. And the diversity among prairie



By choosing plants with a range of bloom times, habits, and textures, the author provided interest in all seasons. Left: Daffodils provide early spring color beneath the bare branches of sassafras trees. Above: In early summer, prairie plants such as northern dropseed, purple coneflower, and shooting star have formed a multi-textured tapestry beneath the trees.

plants afforded choices of many different habits, flowers, textures, and colors.

Bones of the Landscape

Before choosing the understory, we put in the woody plants that would offer structure to our prairie garden. For a large shade

tree to anchor the northwest corner of the walk, we chose Chinquapin oak (*Quercus muehlenbergii*), because it tolerates drought and high pH; the soil near the house tends to be more alkaline—pH 7.5 versus 6.5 elsewhere—because of soil disturbance during construction.

In the early days of my nursery business, I was led to believe that oaks are extremely difficult to transplant and very slow growing. So I initially planted a clump of three seedling oaks growing about six inches apart, figuring I would lose one or two. I have since learned that oaks are not difficult to transplant before they are six to eight feet tall. Though growing so closely together they give the impression of a multi-stemmed tree, all three oaks are still doing very well and have grown 35 to 40 feet in 20 years—so much for slow growing!

To create a grouping of midsize trees for the south side of the walk, we chose sassafras (*Sassafras albidum*) for its unmatched fall color, interesting shape, and high tolerance for drought. We planted six sassafras trees on one- to five-foot centers.

The multi-stem oak and the clustering of sassafras were initially greeted with skepticism by my landscaping and gardening friends, who felt the trees were too close together “to develop their full potential.” While I wouldn’t recommend anyone plant oaks as close together as mine are, after decades of planting trees in our garden and in other urban landscapes, it has been my observation that most trees grow better in clusters than by themselves.

For spring color, we planted a redbud (*Cercis canadensis*) against the house on the southwest corner of the walk. The house offered protection from the winds and we elevated the planting above ground level to reduce the risk of verticillium wilt, which plagues redbuds.

We planted bottlebrush buckeye (*Aesculus parviflora*) against the house on the north side of the walk. This also provided an ecology lesson, because for the first 10 years—despite heavy mulching—the shrub’s foliage showed the effects of sun damage and drought by August. Once the Chinquapin oak reached a height of 25 feet, however, it started shading the buckeye, which has since performed exceedingly well.

Filling in the Understory

In all we planted 22 prairie species along the walkway, initially using a total of about 300 plugs to fill the 500-square-foot site. Lower-growing plants were placed along the edge of the walk and the larger plants farther back to give a well-balanced step-down ap-



These images of the walkway planting, taken a little over a year apart, show the bottlebrush buckeye and the clump of Chinquapin oaks to the left of the doorway. Marsh phlox, wild quinine, liatris, and coreopsis are blooming in the foreground of the right photograph.

pearance to the layout. It would take too long to describe all the prairie plants along the walkway (for a complete list, see the table on page 26), but among my favorites are the following plants.

Eastern shooting star (*Dodecatheon meadia*) is one of the true harbingers of spring, producing cascades of pinky purple flowers on nodding stems in April and May. The plants along the walk have

been there 15 years and the clumps have slowly expanded each season. Shooting stars are ephemeral wildflowers that disappear by the end of June, so I planted them among northern dropseed, which fills in around them by that time.

Northern dropseed (*Sporobolus heterolepis*) is a superlative fine-leaved, clump-forming grass growing to two feet high by the end of summer. The seed heads extend another 12 to 16 inches above the leaves in August. In bloom the grass gives off a smell usually equated with cilantro, popcorn, or fresh laundry, although some people think it stinks! The fall color is russet to bronze. The original plants were installed 15 years ago and are still going strong. Northern dropseed makes an excellent foreground plant in any sunny perennial border.

Virginia mountain mint (*Pycnanthemum virginianum*) is one of the few mints that stay where they are planted. We placed it next to the walk, where we can easily break off a piece to enjoy the wonderful aroma, which is among the most intense I know of. The flowers are pale pink to white, blooming very late spring to early summer. Mountain mint maintains an erect habit even when reaching heights of three feet tall!

Wild quinine (*Parthenium integrifolium*) is a plant that the colonists used to make a drink to reduce fevers. The coarse

Sources

Ion Exchange, 1878 Old Mission Drive, Harpers Ferry, IA 52146-7533. (800) 291-2143. www.ionexchange.com. Catalog free.

Midwest Wildflowers, P.O. Box 64, Rockton, IL 61072. Catalog \$1.

Prairie Moon Nursery, Route 3, Box 163, Winona, MN 55987. (507) 452-1362. pmnrsy@hbc.com. Catalog free.

Prairie Nursery, P.O. Box 306, Westfield, WI 53964. (608) 296-3679. www.prairienursery.com. Catalog \$3.

texture of the foliage and long blooming white flowers—which are great in bouquets—are very appealing and help to set off other, more brightly colored, flowers.

Compass plant (*Silphium laciniatum*) has large coarse leaves that contrast boldly with the other more finely textured prairie plants. The real surprise is in August when the plant shoots up about five to eight feet in the air and many one- to two-inch-diameter yellow flowers bloom along the stalk. This plant always makes a great conversation piece.

Not being purists, we integrated a few non-prairie plants along the walkway. Because we didn't have any prairie plants blooming in April, we added daffodils and glory-in-the-snow (*Chionodoxa* spp.) under the sassafras to extend our seasonal spectacle. We also planted 'Zagreb' core-

opsis, a cultivar of the southeastern U.S. native *Coreopsis verticillata*, and leather flower (*Clematis pitcheri*), also from our Southeast. The coreopsis provides yellow flowers in summer, and the clematis, which gracefully clambers over the prairie plants, contributes purple bell-shaped flowers to the display in June and July.

Maintenance

The beds are mulched once a year with finely chopped bark, but we don't apply fertilizers. Once the plants had time to establish healthy root systems, we stopped watering them regularly. Now we only water them if there is a prolonged period without rain during the growing season.

As with all gardens, our prairie needs to be cleaned up, particularly in the spring.

Since fire is part of the ecology of the prairie—and our local jurisdiction allows controlled burning—we decided to try it. It takes only five to 10 minutes to burn off all the old foliage and the burning has now become a rite of spring—with all of us standing by with hoses and buckets.

Eighteen years have passed since the front walk was installed. Just as might have happened through succession in a natural setting, the shade from the trees we planted all those years ago is slowly pushing the prairie out. We now have to start replacing the prairie species with plants better suited to one of the most difficult sites in gardening: Dry shade!

A 20-year veteran of the plant industry, Connor Shaw owns Possibility Place Nursery in Monee, Illinois.

Walkway Plantings by Bloom Time

Botanical Name	Common Name	Height	Bloom Time (months)	Flower Color	Hardiness/Heat Zones
<i>Dodecatheon meadia</i>	Shooting star	8–24 in.	Apr.–June	white, purple	4–8/9–4
<i>Zizia aurea</i>	Golden alexanders	1–3 ft.	Apr.–June	yellow	3–9/10–4
<i>Phlox pilosa</i>	Prairie phlox	1–2 ft.	May–June	pink	4–9/10–4
<i>Heuchera richardsonii</i>	Prairie alumroot	2–3 ft.	May–July	green	4–8/9–4
<i>Baptisia lactea</i>	White false Indigo	3–4 ft.	June–July	white	4–8/9–4
<i>Veronicastrum virginicum</i>	Culver's root	3–6 ft.	June–Aug.	white	3–8/9–4
<i>Asclepias tuberosa</i>	Butterfly weed	2–3 ft.	June–Aug.	yellow, orange	4–9/10–4
<i>Pycnanthemum virginianum</i>	Mountain mint	20–36 in.	June–Aug.	white, pink	4–8/8–3
<i>Parthenium integrifolium</i>	Wild quinine	24–40 in.	June–Sept.	white	3–8/9–3
<i>Phlox glaberrima</i> 'Interior'	Marsh phlox	20–30 in.	June–Sept.	pink, purple	3–9/10–4
<i>Ceanothus americanus</i>	New Jersey tea	2 ft.	June	white	4–8/9–4
<i>Dalea gattereri</i> (syn. <i>Petalostemum purpureum</i>)	Purple prairie clover	1–3 ft.	July–Aug.	pink, purple	5–10/10–5
<i>Liatris spicata</i>	Marsh blazing star	3–6 ft.	July–Aug.	pink, purple	4–9/10–4
<i>Liatris pycnostachya</i>	Prairie blazing star	2–4 ft.	July–Sept.	purple	4–9/9–4
<i>Echinacea purpurea</i>	Purple coneflower	3–4 ft.	July–Sept.	purple	3–9/10–4
<i>Physostegia virginiana</i>	Obedient plant	2–5 ft.	July–Sept.	lilac, purple	4–8/9–5
<i>Rudbeckia hirta</i>	Black-eyed Susan	1–3 ft.	July–Oct.	yellow	3–7/8–3
<i>Sporobolus heterolepis</i>	Northern dropseed	2–4 ft.	Aug.–Sept.	pale pink	3–9/10–4
<i>Andropogon gerardii</i>	Big bluestem	3–8 ft.	Aug.–Sept.	red, purple	2–7/8–3
<i>Solidago rigida</i>	Stiff goldenrod	1–5 ft.	Aug.–Oct.	yellow	4–8/9–4
<i>Aster novae-angliae</i>	New England aster	2–5 ft.	Aug.–Oct.	violet, purple	4–8/9–5
<i>Silphium laciniatum</i>	Compass plant	3–10 ft.	Aug.–Oct.	yellow	5–9/10–5

Gardeners Information Service



LAYERING A DOGWOOD

The lower branches of my *Cornus stolonifera* 'Silver and Gold' have rooted along the ground in my garden. Can I separate these rooted branches from the main shrub and plant them elsewhere?

—M. C., PINKERINGTON, OHIO

The process you describe—known as layering—is indeed an excellent way to propagate your dogwood, as well as many other woody plants that have low, flexible branches, such as azaleas, *Kerria japonica*, and witch hazels (*Hamamelis* spp.).

Wait until you observe new growth from the stem beyond the rooted area, then cut the branch at the node closest to the rooted section between it and the mother plant. Pinching the new growth will help promote bushiness in the new plant. When it has had time—at least one or two full growing seasons—to develop a strong root system, you can pot up the new

plant or move it to a permanent location. For most plants, spring is the best time to do this.

You can facilitate the layering process by bending a supple stem over and burying a short section in a shallow hole. Make sure the soil covers a node, because the tissue around the node is more likely to develop roots. It helps to make a shallow cut or "wound" on the underside of the portion of stem to be buried; applying a rooting hormone in this area can also be beneficial. Secure the buried section to the ground with wire staples or an anchoring rock and keep it well watered.

LOW-YIELDING RHUBARB


This spring my rhubarb plants sent up loads of flower stalks (which I cut off), but they produced few edible stalks. Are they too crowded?

—C. S., HERNDON, VIRGINIA

Rhubarb is relatively slow to establish. Normally, one can harvest a few stalks the second

year from a root-propagated plant and as many as desired from the third year on. Plants propagated from seeds will take an extra year. It is important to leave plenty of leaf stalks the second year to provide nutrients to the developing roots. Always remove flower stalks.

Assuming you have mature plants, they may be overcrowded if they are planted closer than three to four feet apart. If this is the case, simply move some of the plants.

Rhubarb requires full sun and a rich, well-drained loamy soil. It should be planted in a deep hole with plenty of compost or dried manure worked into the soil. Top-dressing with dried manure during the summer or fall of each year will usually improve the plant's performance. 

William May, Gardeners Information Service, and Marianne Polito, Gardeners Information Service Manager

SHARE YOUR GARDENING

problems or successes with AHS members from around the country on the Society's Gardening Community Listserv. Questions posed on the listserv are often answered within minutes by one or more of the many knowledgeable gardeners and horticulturists who participate in this on-line discussion group. To join the listserv, just visit the AHS Web site at www.ahs.org.



The following question and reply were among the many recent postings on the AHS Listserv:

TOO MUCH SHADE

Help! I have two enormous, 90-year-old cedar trees. While I love the trees, finding something that can tolerate the dry, shady conditions beneath them has been a challenge. I am looking for a ground cover to line the walkways and surround the trees. I can't live with the death of another astilbe or hosta.

—T.S., SEATTLE, WASHINGTON

Reply from AHS member Gene Bush, owner of Munchkin Nursery in Depauw, Indiana:

Is there any possibility of limbing up the trees from the base to let in more light? Since these are mature trees, they will suck all the moisture up, but there are plants you can grow there. Instead of a single ground cover, I would try mixing several—you'll get a better survival rate and, in my view, a better display. The trick is to not let anything dry out in the first year of planting: Apply mulch, water regularly, and get those feeder roots out into the competition.

Try hardy cyclamen. You can grow at least half a dozen species and numerous hybrids and cultivars where you garden. Epimediums also make great small, slowly spreading ground covers. The small hairy lip fern (*Cheilanthes lanosa*) will take drier conditions than many ferns. Also try some hardy ground orchids (*Bletilla* spp.), corydalis, and—if you have enough light—wild pink catchfly (*Silene caroliniana*).

Or consider planting ephemeral natives. They come up early, do their thing, and then go dormant around July or so. In spring there should be enough moisture beneath those trees for trilliums, bellworts (*Uvularia* spp.), bluebells (*Mertensia* spp.)...the list is endless.

WE'RE READY TO HELP: For answers to your gardening questions, call Gardeners Information Service at (800) 777-7931, extension 131, between 10 a.m. and 4 p.m. Eastern time, or e-mail us anytime at gis@ahs.org.

Offshoots

The Grass Is Greener

by Sue Marra Byham

I WOULD LOVE TO TAKE YOU THROUGH MY GARDEN. But I'm afraid that would be impossible. I *might* meet you at the end of the drive—but then we would have to part.

I would stroll through a carpet of thyme past a dense clump of conifers, no two alike, flanked by stately hollies. I'd follow a stone wall covered with fragrant old roses to the herb garden with its boxwood border. I might pause to pick a golden raspberry or take a peek at a clan of sleek serpents sunning themselves on a cairn nearby, before heading for the secluded bench that overlooks a hill where wildflowers and perennials flourish in neighborly abundance.

You, on the other hand, would have to slog through the mud past two veteran Christmas trees awaiting reinforcements and follow a stockade fence past four baby rose bushes and a pile of stones to a patch of herbs and vegetables bordered by compost. You might stop to wonder about the proliferation of wild brambles, which yield up their uncommon fruit in the night—all at once—to some ravenous creature I've never met.

You'd likely linger in front of the poison ivy, in which you might glimpse a few snakes—and mistake their sleepy look for one of menace and flee. Let me tell you that although I don't know precisely what they are, I'm sure they're a decent sort. They return every summer to the same respectable haven of old autumn leaves, and they peacefully co-exist with the bluebirds who come to the ivy for its berries.

My path, bordered here by primroses, there with blazing stars and chamomile, meanders picturesquely past the greenhouse, which offers shimmering reflections of my lovely dew pond. There Irish moss gives way to iris and cattails, the frogs and fishes have their kingdom, and the red-winged blackbirds are nesting. Bittersweet and an eclectic variety of sunflowers circle a butterfly garden nearby.

A grove of sassafras trees, defining the west horizon, sweetens the air where the path curves widest.

You, on the other hand, would follow a choppy zig-zag of freshly turned sod around an old shed to a shallow pit. You might discern a pond in progress from the litter of buckets and shovels—or assume a landfill of some sort. But if you visit early in the spring you might find a few red-winged blackbirds jostling for a spot on the seat of a chair I've covered with store-bought sunflower seeds.



Once the site of a pool, the butterfly garden is, in my mind's eye, a glorious mixture of goldenrod and milkweed.

I imagine you'd have no trouble finding the bench, as the surrounding vegetation is also only hip-high, and the piney green paint is a shade less subtle than we intended.

The wildflowers and perennials, though definitely fraternizing, haven't taken the hill yet. Potentilla and plantain glance awkwardly at one another. Black-eyed Susans skip forward while phlox

holds back, clutching at stakes, and hollyhocks wave weakly. Strictly speaking, there is more old cornfield than anything else in that direction, more of what I see as fascinating ornamental grasses worthy of a porcelain vase. I hope you don't disagree.

Would you count only seven slips of lilies-of-the-valley where I see them ringing the house? Appreciate the wild mallow and the Queen Anne's-lace? Stare at the broken flowerpot by the puddle under a drip spout—my stately Toad Hall? Would you know I planted larkspur for the fairies and put my gillyflowers under the windows because they looked so good there in the PBS production of *Brideshead Revisited*? Recognize Shakespeare's woodbine (honeysuckle), know Christina Rossetti's daisies, or admire the bower of wild asparagus that, taking my cue from Dickens, I've envisioned "for the accommodation of spiders"?

I see my garden with my heart and hopes, treasure it for all its romantic potential as well as the glorious realities of everything that sprouts, hops, runs, slithers, or flies in it! I don't begrudge the deer their quince or the rabbits their mums. I will *not* have the dispassionate observer, with his critical eye, over for tea!

No, I'd rather just talk about my garden for now, and keep it to myself. But if you're a kindred soul, why not brew a pot of something and come armchair traveling with me? It's so nice and easy, when you're tired from clipping and shoveling and hauling and hoeing and the hot sun has finally gone down, to lay back and give yourself to a soothing breeze....

There you are! Good! Let me help you with the gate; iron grillwork is awfully heavy. Mind you don't trip over the watch lion. He likes to nap sprawled out by the marble fountain in the afternoon, before the fiddlers begin tuning up, and the lanterns are lit in the conservatory....

Sue Marra Byham is a free-lance writer living in Westtown, Pennsylvania.

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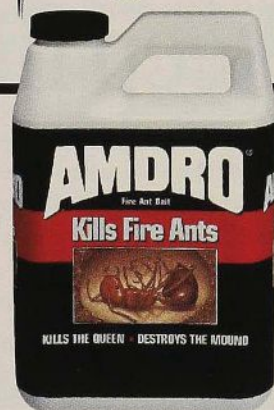
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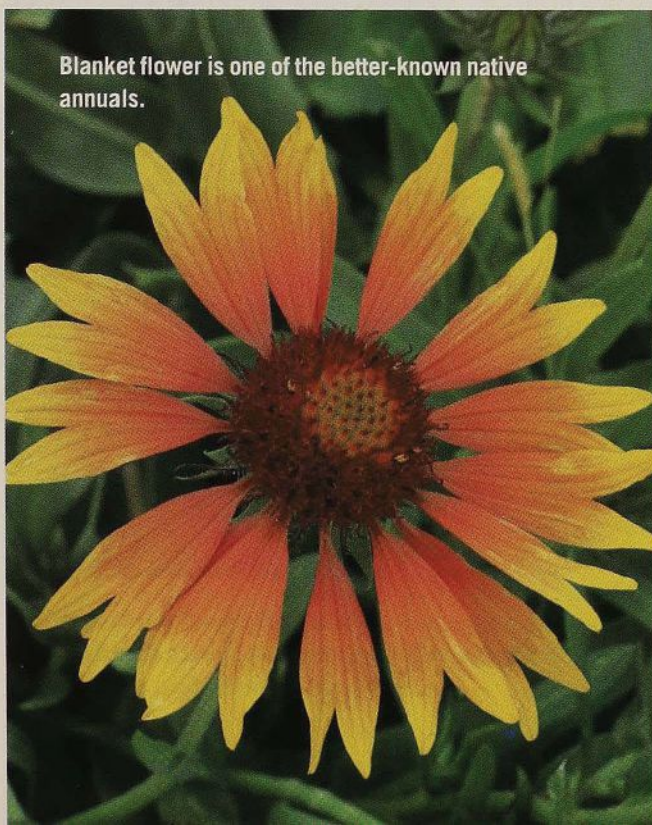

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Native to the Southwest, golden fleece adds an airy texture to ornamental borders.

NORTH AMERICAN ANNUALS

If you're tired of the same old annuals, maybe it's time to try some of these intriguing native species. **BY RAND B. LEE**



Blanket flower is one of the better-known native annuals.

Consider the fate of *Clarkia amoena* subsp. *whitneyi*, the giant godetia or Whitney's farewell-to-spring. A red-spotted, lavender-flowered Californian beauty adapted to shade, it bears three- to five-inch bloom clusters for many weeks in spring. While breeders have used it extensively in hybridization, only a single population of the original is known to remain in the wild. It has few advocates outside of California. It is, after all, only an annual.

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

But perhaps the main reason American gardeners don't grow more native annuals is that—with the exceptions of California poppy (*Eschscholzia californica*), sunflowers (*Helianthus* spp.), and blanket flower (*Gaillardia pulchella*)—few garden books and magazines cover them and even fewer nurseries carry them. There is no Annual Plant Association to lobby for their wider use. Garden encyclopedias

rarely profile them. Wildflower societies do not teach their members about them.

When I spoke with half a dozen highly knowledgeable gardeners, not one could name even three true annuals native to their regions. Yet there are hundreds as beautiful as anything you are now growing. If the horticulture pundits don't write about them, what nursery owner is going to offer seed or plants of annuals nobody has ever heard of?

As it turns out, there *are* a few native plant nurseries around the country that do offer native annuals and, with some digging, I was able to find them. Here are a few treasures I discovered, all of which can be found in commerce (see "Sources," page 33).

Most of the plants described in this article are "true" annuals—that is, they complete their life cycle in one year—but a few may act as short-lived perennials, given the right growing conditions. Because USDA hardiness zones are not relevant for these plants if they are grown as annuals, only AHS heat zones are listed.

FOR THE ROCKERY

ROCK GARDENERS WHO ONLY GROW perennials are missing some real treats, such

SmartGarden™ Tip

GROUP PLANTS BY NEEDS

While some annuals need a lot of water and fertilizer, others fare well in a lean soil with minimal supplementary water. Growing plants with similar requirements close together makes it easier to give them similar attention. To minimize labor, keep thirstier annuals near a water source, or use a soaker hose or drip irrigation system.

Select plants to match their needs to the characteristics of the sites where you would like them to grow. Bigelow's monkey flower (*Mimulus bigelovii* var. *cuspidata*), native to rocky or sandy soils, grows best in a sunny rock garden. *Browallia americana*, on the other hand, will thrive in a richer, loamier soil where it will get afternoon shade and regular irrigation.

Remember that all new plantings, even drought-tolerant annuals, need to be watered deeply and regularly for a few weeks until their root systems have had time to become self-sufficient.



With single or double flowers in pastel shades from pink to lavender, *Clarkia unguiculata* makes a colorful companion to plants with silvery foliage or blue flowers.

as Bigelow's monkey flower (*Mimulus bigelovii* var. *cuspidata*). Most mimuluses, which belong to the same family as penstemons and snapdragons, require moist conditions. Not so *Mimulus bigelovii* var. *cuspidata* (AHS Zone 11–1), a variety that hails from the California mountains. It grows into a squat, green, four-inch-tall plant with overlapping, sharp-tipped leaves. All summer it bears shining, dark magenta flowers—sometimes white-bearded—the throats of which are flecked with gold.

The seeds require light and cold conditioning for germination, so sow them on the surface of a moistened sand- or gravel-based potting medium and store them at 40 degrees Fahrenheit for at least a month. At the end of that period, provide them with light and warmth and they will germinate within six weeks. Plant them out in gravelly or sandy soil, and water them regularly until they are established.

Native to southern California and the Southwest, purple nama (*Nama hispidum*) (AHS Zone 10–4) is a beautiful, four-inch-tall, mounding or mat-forming annual that glows in summer with purple flowers. It thrives on just the sort of good drainage that rock gardens provide, and under those conditions it will spread a foot wide. Though purple nama is drought tolerant, it blooms better and longer with moisture, so don't be afraid to try it if you live in a moist climate. Start the seeds in the same way described for Bigelow's monkey flower.

EDGING AND BORDER FRONTS

ANOTHER SOUTHWEST NATIVE THAT adapts readily to other regions of the country is the Dahlberg daisy or golden fleece (*Thymophylla tenuiloba*, formerly *Dyssodia tenuiloba*) (AHS Zone 12–6). Each plant stands about a foot tall, although most of the plants I've grown in my USDA Zone 6, AHS Zone 6 mountain garden have been more or less recumbent, spreading to about a foot in diameter. This makes it ideal for the front of sunny borders, the hard edges of which it can soften with its misty green foliage and golden yellow flowers that bloom all summer. It also does well in rock gardens, as an edging around steppingstones, and in hanging baskets or window boxes.

My friend and fellow garden writer Nancy McDonald—who gardens in Michigan's Upper Peninsula—wouldn't be without it. "The daisylike flowers are tastefully small," she says. "And there are a lot of them, peppered in with the feathery bright green foliage, which is scented of thyme and chamomile mixed." Golden fleece is drought tolerant, unbothered either by cool nights or hot days, and easy to grow from seed. Start it in six-packs over bottom heat, firmly pressing the seed into the surface of the soil.

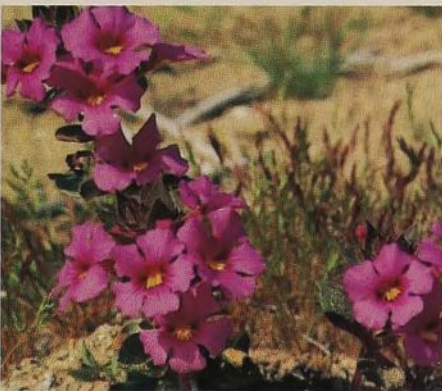
Members of a genus composed entirely of annuals native to western North America, nemophilas (*Nemophila* spp.) all make

great edging plants and can handle anything from full sun to part shade.

Five-spot or spotted nemophila (*N. maculata*) (AHS Zone 12–2) usually spreads along the ground but can grow up to a foot tall. Its solitary, one- to two-inch-wide, five-petaled white blossoms bear a dark violet spot at or near the tip of each petal edge. Sometimes this purple coloring extends into fine veins running the length of the petals.

Baby-blue-eyes (*N. menziesii*) (AHS Zone 12–2) makes four- to 10-inch-tall mats of fuzzy, many-lobed leaves. Its flowers, which bloom in summer on lax stems, are usually pale blue or white, flushed either white or pale yellow at their centers. In the seed strain 'Pennie Black', the petals are deep purple to almost coal black with distinct white edges.

These free-blooming plants look great with golden fleece, and they're beautiful in containers, where their delicate flowers can be admired up close. Sow them about a quarter-inch deep either outdoors where



Top: Native to California, Bigelow's monkey flower is best suited to a rock garden. Above: Provide afternoon shade to get the best out of *Browallia americana*.

they are to grow or indoors six weeks before last frost.

PARTLY SHADED BORDERS

A NATIVE ANNUAL—some sources say biennial—ideal for the front of a partly shaded border is golden smoke (*Corydalis aurea*) (AHS Zone 8–6), which is little known despite the current trendiness of several perennial members of its genus. It is native mainly along the West Coast from east central California north to Alaska but is also found in parts of New England.

From spring into summer, its half-inch, spurred, yellow blossoms open above a many-stemmed, blue-green clump anywhere from six inches tall in cool regions to two feet where summers are warmer. "I grow mine in sandy soil in the part shade cast by our old apple tree," says McDonald. "I plant them six inches apart, though in a warmer climate they would probably spread out more." Like all corydalises, *C. aurea* can be tricky to start if the seed is not absolutely fresh, but cold conditioning outdoors or in the refrigerator will improve your chances with older seed.

I'm stretching a point geographically to include *Browallia americana* (AHS Zone 8–1)—which is actually native to South America—but it is fast becoming my favorite American annual for pots and window boxes. It gets about a foot tall, with many short branches and oval, two- to three-inch green leaves. Its tubular blue flowers with their notched lobes are as close to blue as anything gets in the nightshade family, to which it belongs.

Although *B. americana* hails from the tropics, its need for humidity does not appear to be great; it thrived for me in a moist planter in bone-dry Santa Fe. In cooler regions it may continue blooming into fall and is known to self-sow.

FOR FRAGRANCE AND CUTTING

I HADN'T HEARD OF PAGODA plant (*Monarda pectinata*) (AHS Zone 9–1) until it was recommended to me recently. Standing anywhere from six inches to a foot tall, this little-known annual bee balm has

Sources

Alplains, P.O. Box 489, Kiowa, CO 80117. (303) 621-2247. Catalog \$2.

Mimulus bigelovii var. *cuspidata*

The Fragrant Path, P.O. Box 328, Fort Calhoun, NE 68023. Catalog \$2.

Browallia americana, *Centaurea americana*, *C. americana* 'Alba', *Lupinus subcarnosus*

Moon Mountain Wildflowers,

P.O. Box 725, Carpinteria, CA 93014. (805) 684-2565.

www.ss-seeds.com. Catalog \$3.

Clarkia bottae, *Layia platyglossa*

Native American Seed, Mail Order Station 127, N. 16th Street, Junction, TX 76849. (800) 728-4043.

www.seedsource.com. Catalog free.

Centaureum beyrichii, *Lindheimera texana*, *Sabatia campestris*

Plants of the Southwest, Aqua

Fria, Rt. 6 Box 11-A, Santa Fe, NM 87501. (800) 788-7333.

www.plantsofthesouthwest.com.

Catalog \$3.50.

Cleome serrulata, *Corydalis aurea*,

Kallstroemia grandiflora, *Linanthus*

grandiflorus, *Lupinus texensis*,

Machaeranthera tanacetifolia,

Monarda pectinata, *Nama*

hispidum, *Phacelia campanularia*,

P. tanacetifolia, *Phlox drummondii*

Stokes Seeds, Inc., P.O. Box 548,

Buffalo, NY 14240-0548. (800)

396-9238. www.stokesseeds.com.

Catalog free.

Thymophylla tenuiloba

Thompson & Morgan, Inc., P.O.

Box 1308, Jackson, NJ 08527.

(800) 274-7333. www.thompsonmorgan.com.

Catalog free.

Clarkia pulchella 'Snowflake', *C. un-*

guiculata 'Royal Bouquet Mixed',

Gilia tricolor, *Nemophila maculata*,

N. menziesii, *N. menziesii* 'Pennie

Black'

Theodore Payne Foundation, 10459

Tuxford Street, Sun Valley, CA

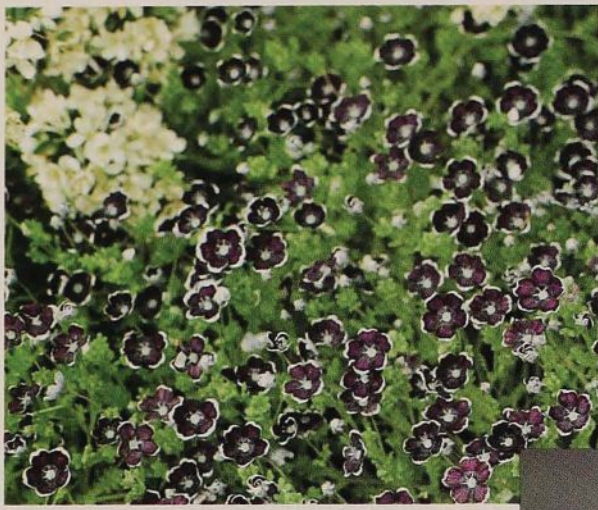
91352. (818) 768-1802. www.theodorepayne.org.

Catalog \$3.50.

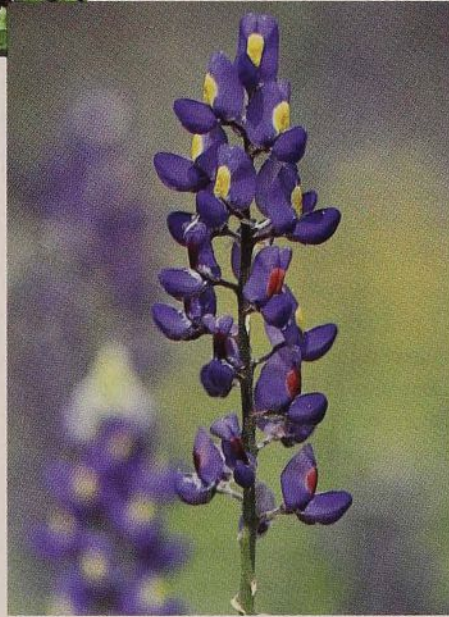
Clarkia amoena, *Gilia tricolor*, *Lupi-*

nus benthamii, *L. nanus*, *Nemophila*

maculata, *N. menziesii*



Left: 'Pennie Black', a seed strain of baby-blue-eyes, has striking deep purple or charcoal gray flowers centered and edged in white. Below: Texas bluebonnet features compact spikes of amethyst purple, pealike flowers with yellow to orange markings.



yellow-green, oregano-scented leaves. From summer till first frost it bears pretty pink or, occasionally, white flowers that are held in whorls around the stem rather than in tufts at the top, as is typical of other bee balms.

Native to rocky slopes and woodlands of the Southwest, pagoda plant tolerates drought, heat, and mildew, attracts both bees and hummingbirds, and self-sows without being a nuisance. To germinate, simply press the seeds into the surface of a slightly moistened, well-drained sowing medium, put the flat in the light, and you will have baby bee balms within the month. Grow it in full sun—afternoon shade would be helpful in regions with particularly hot summers—in well-drained soil.

Square-stemmed like all members of the mint family, *Dracocephalum parviflorum* (AHS Zone 8–1) is an annual dragonhead native to the Northeast, but—oddly—also found in the Southwest. A narrow, upright plant of symmetrical habit, it grows two to two-and-a-half feet tall and bears lemon-scented, matte green foliage and very dense racemes of pale blue, tubular flowers much like those of the perennial *D. moldavicum*. In cooler regions it grows best in full sun, but where summers are hot, site it where it will get some afternoon shade. It reblooms midsummer till frost if you cut it back when it first finishes flowering, and self-sows reliably. To germinate, press the seeds lightly into the surface of the potting medium.

The genus *Clarkia* (AHS Zone 7–1), which includes plants formerly in the genus *Godetia*, consists of annuals native mostly to open slopes along the west coasts of North and South America.

In addition to *Clarkia amoena*, described earlier, several species are worth trying. *C. bottae*, the showy farewell-to-spring, has brilliant lilac-pink flower clusters that

bloom atop eight- to 12-inch stems from spring into summer. The eight- to 10-inch-tall *C. breweri*—with the evocative common name fairy fans—is topped in late spring with deep pink, fragrant blossoms, each three-lobed petal paling to white at its base; a selection 'Pink Ribbons' with purplish pink, lacy flowers is quite stunning.

C. unguiculata (formerly *C. elegans*) is an erect plant that grows one to three feet tall with flowers that range from lavender to burgundy in color. The apricot-pink, double-flowered cultivar 'Apple Blossom' is popular in cutting gardens as is the pastel blend in the 'Royal Bouquet Mixed' series. *C. pulchella*, whose natural range extends from the Pacific Northwest to the Rocky Mountains, bears blossoms in bright pink to lavender; a double-flowered white cultivar 'Snowflake' is also available.

Clarkias despise heat and humidity and do best in sandy, well-drained soils of moderate fertility. They are particularly suited to containers but are also ideal in the front of a sunny border or in a cutting garden; afternoon shade is a must in warmer cli-

mates. Because clarkias resent root disturbance, sow them where they are to grow after danger of frost has passed.

I knew that the perennial Russell Hybrid strain of lupines was developed from our native *Lupinus polyphyllus*, but I was surprised to learn that there are many annuals among our native lupines. *L. benthamii* (AHS Zone 7–2), a true annual one to two feet tall, is built upon the same lines as *L. polyphyllus*, with typical spread-fingered lupine leaves and deep blue flower spikes. It can tolerate full or part sun, and it needs much less moisture than the Russells. Sun-loving Texas bluebonnets (*L. texensis* and *L. subcarnosus*) (AHS Zone 10–1) grow a foot tall and bear spikes of blue and yellow blossoms. Sky lupine (*L. nanus*) (AHS Zone 7–1) stands about eight to 12 inches tall. In the wilds of California it blooms blue, but in the 'Pixie Delight' strain the plants bloom in a range of pale pastels from sky blue through baby pink to white. And in every population of sky lupines you will find some that are sweetly scented.

Or you can try what must surely be the most bizarre member of the lupine family, *L. hirsutissimus* (AHS Zone 8–1), native to southern California. It is a three-foot-tall spring bloomer boasting brownish yellow fur all over and 10-inch flower spikes. Each reddish purple blossom is blotched with gold, but take heed: The plant's hair is a skin irritant.

Most lupines germinate more readily if you nick them with a knife and soak them overnight in hot water before planting. A dusting of legume inoculant can help them get off to a good start. Plant lupines in sandy, well-drained soil in full sun; the California species will do best with afternoon shade in warmer regions.

Bee food (*Phacelia tanacetifolia*) (AHS Zone 9–1)—also called wild heliotrope, fiddleneck, and tansy scorpionflower—grows one to two-and-a-half feet tall when it is not lolling about, with finely cut, fragrant, pubescent, gray-green leaves. Its lilac-blue or mauve flower clusters unfurl from tight coils, hence the association with fiddleneck ferns and scorpion tails.

Native to California and Mexico, *P. tanacetifolia* is so adaptable and drought tolerant it has naturalized all over the United States. It is the only phacelia suited to clay soils and is lovely in hanging baskets.

MORE UNCOMMON NATIVE AMERICAN ANNUALS



Cleome serrulata



Gilia tricolor



Linthus grandiflorus

SUNNY BORDER

Botanical Name (common name)	Native Habitat	Flower Color	Height	AHS Zones	Germination
<i>Cleome serrulata</i> (Rocky Mountain bee plant)	Central/Mountain	pale pink to purple	3–5'	10–3	soak seeds overnight, do not cover
<i>Gilia tricolor</i> (bird's eyes)	California	pale to dark blue with gold centers	12–18"	8–3	sow outdoors in early spring
<i>Layia platyglossa</i> (tidy-tips)	California/Southwest	yellow with white tips	12–18"	12–3	sow outdoors after frost
<i>Linthus grandiflorus</i> (mountain phlox)	Southern California	white to pale lilac	12–20"	10–4	sow outdoors in spring
<i>Lindheimera texana</i> (Texas yellow star)	South	yellow	6–30"	10–6	cold condition
<i>Machaeranthera tanacetifolia</i> (Tahoka daisy)	North Central to Southwest	lilac or white	6–24"	8–1	cold condition, barely cover seeds
<i>Phlox drummondii</i> (Drummond phlox)	South	red, cultivars available in other colors	6–18"	8–1	sow outdoors in early spring

ROCK GARDEN

<i>Centaureum beyrichii</i> (mountain pinks)	South/Central	pink	5–10"	7–4	sow outdoors in fall, do not cover seeds
<i>Kallstroemia grandiflora</i> (Arizona poppy)	Southwest	satin orange	6"	8–1	soak seeds overnight, sow in spring
<i>Sabatia campestris</i> (meadow pinks/prairie rose gentian)	Central/South	pink to lilac	9–15"	12–6	sow outdoors in fall, do not cover seeds

SHADE GARDEN

<i>Hedeoma pulegioides</i> (American pennyroyal)	East/Central	blue, has mint-scented foliage	5–10"	7–1	sow in spring, barely cover seeds
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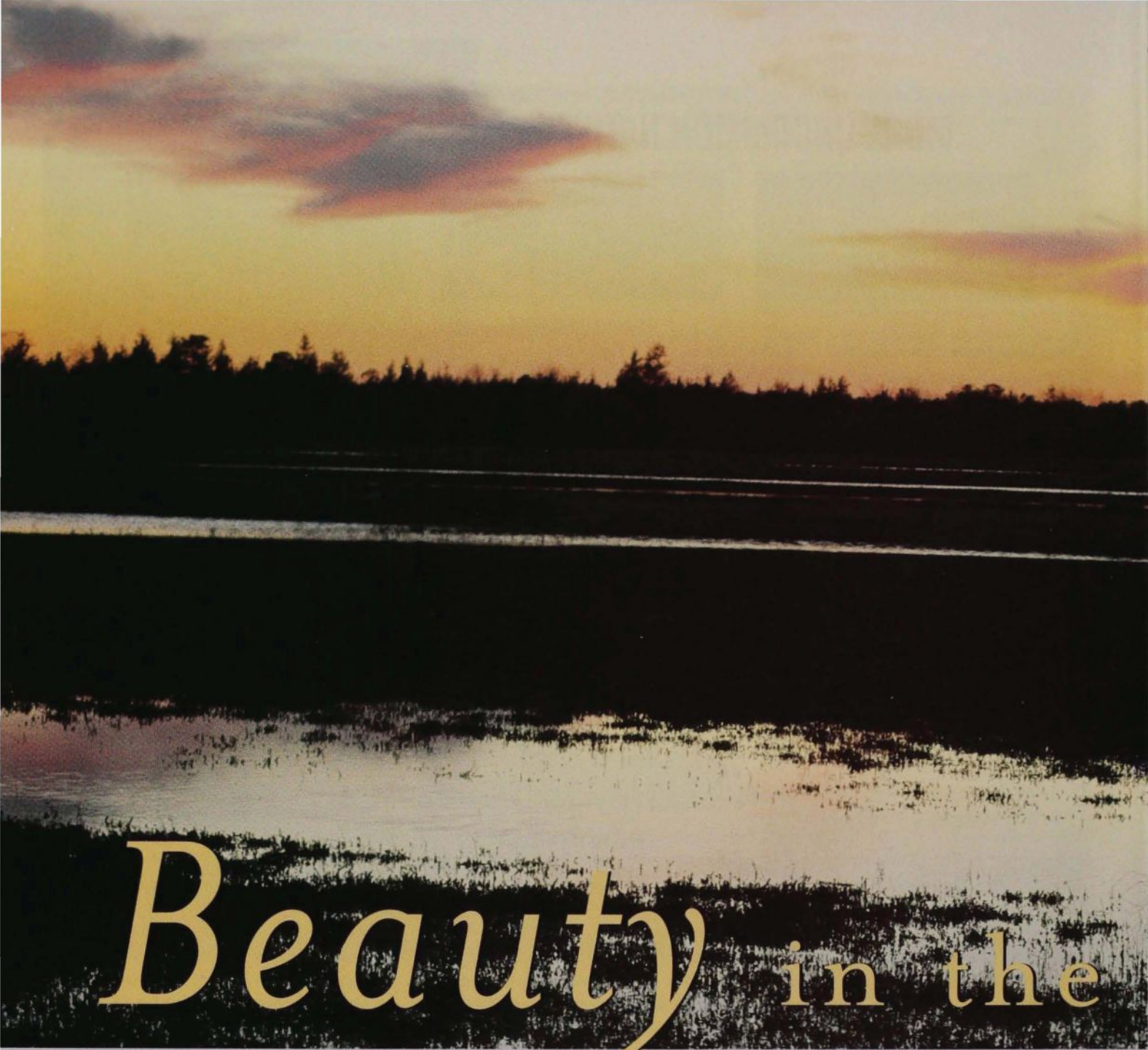
If you have sandy soil, try California desert bluebell (*P. campanularia*) (AHS Zone 9–1). Plants grow six to 24 inches tall, bearing fragrant, downy, oval, slightly wrinkled leaves that alternate up their stems. Stems and leaf-edges are often tinged red. The bell-shaped blossoms are blue with white lines, and very striking en masse.

Deadhead frequently to encourage a summer-long show. If you live in a very hot climate, flowering may slow down in mid-summer, but likely will resume as fall approaches. Phacelias dislike transplanting, so for best germination soak seeds overnight in hot water and sow them outdoors in late spring, or sow indoors six weeks before last frost and transplant them outdoors once the first true leaves have formed.

Centaurea americana (AHS Zone 10–4), the American basket flower, is a Southeastern native that grows three to five feet high. One of our most spectacular native annuals, it bears huge four- to five-inch-wide, rosy lilac flower heads from July onwards that close at dusk even in the vase. The white form, 'Alba', is equally lovely. The fragrant flowers attract bumblebees and butterflies, and the big black seeds are said to be a favorite food of quail. In the fall, or as early in spring as the ground can be worked, plant the seeds about an inch deep outdoors where the plants are to grow. You can also start the seeds indoors about eight weeks before last frost, providing at least a month of cold conditioning. Plant them at the back of a sunny border or in a cutting garden.

For all our hunger for novelty, we gardeners can be a faint-hearted lot; it took me many years to get up the nerve to try some of the little-grown annuals listed in this article. I hope you won't wait so long. And do not assume that a species not native to your region of North America cannot be grown in your garden. Our native annuals have long histories, and you can never be sure what ancient memories of milder or harsher primeval climes may be locked in their green cells. Try some and see; if they do not succeed for you, the cost will not be great. After all, they're only annuals.

Rand B. Lee gardens in Santa Fe, New Mexico. His most recent book is Pleasures of the Cottage Garden, published in 1998 by Friedman/Fairfax.



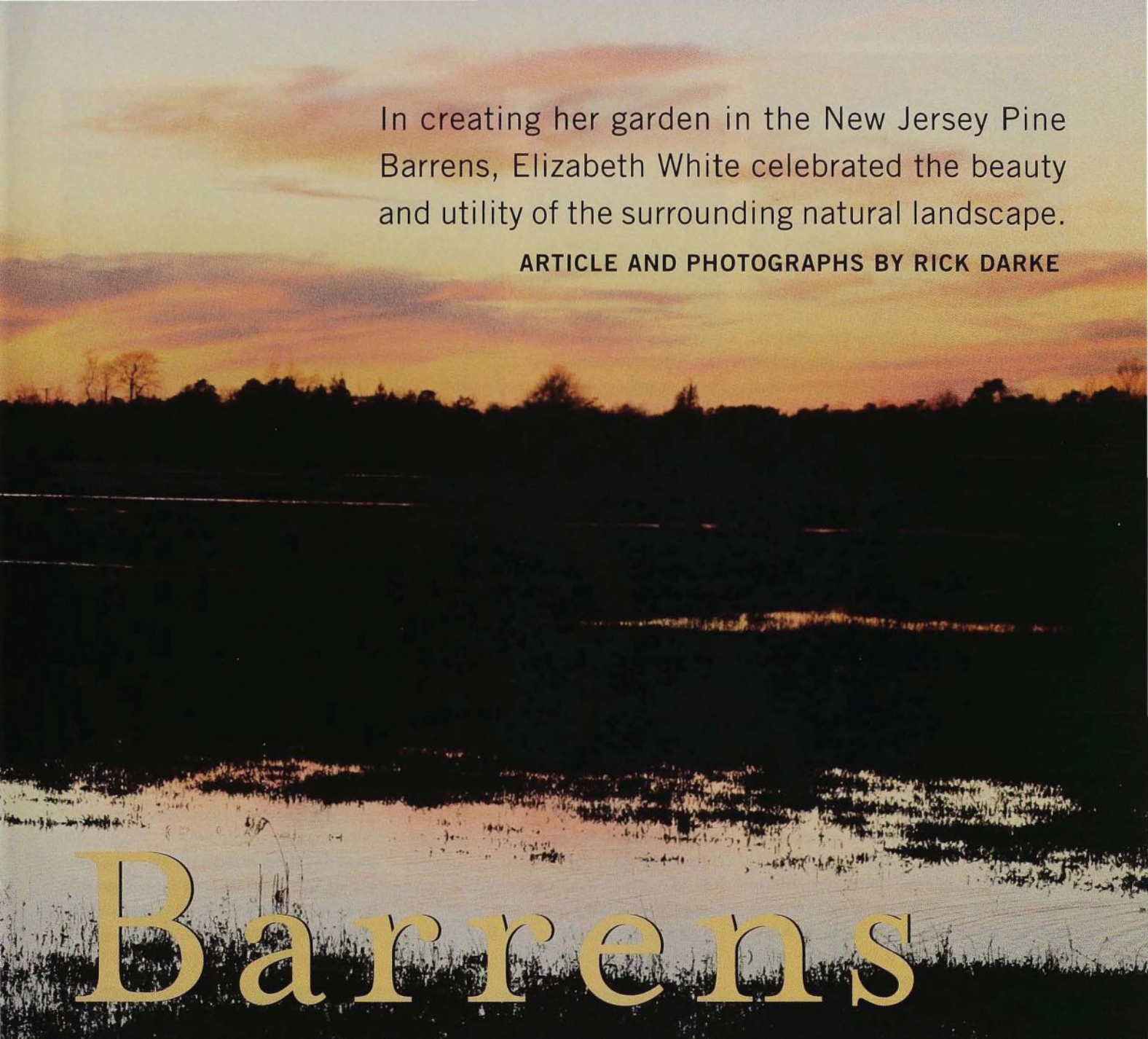
Beauty in the



“The cranberry bog would serve as lawn. It had been started by my grandfather, had furnished the means for Suningive, and inspiration for its garden. For one hundred acres from the windows it stretches to the distant, dark, encircling rim of pines.”

—Elizabeth White

WOR radio broadcast of March 24, 1941, titled “My Garden of Barrens Plants”



In creating her garden in the New Jersey Pine Barrens, Elizabeth White celebrated the beauty and utility of the surrounding natural landscape.

ARTICLE AND PHOTOGRAPHS BY RICK DARKE

Barrens

These words reveal both the romance Elizabeth White felt toward her native place and the straightforward Quaker practicality with which she was raised. She melded these two sometimes contradictory influences into a broadly inclusive vision of landscape and community—one that has real merit for stewards of today's American places.

The eldest daughter of Joseph J. and Mary Fenwick White, Elizabeth Coleman White (1871–1954) was born into a family tradition of cranberry cultivation in the heart of the New Jersey Pine Barrens, a million-acre area of flat, swampy land that covers much of the outer coastal plain of central and southern New Jersey. By the 1850s the primitive bog iron industry that once flourished in New Jersey was in ruins, unable to compete with the output from Pennsylvania's subsurface mines and coal-fired blast furnaces.

A new basis for the local economy was needed, but traditional agriculture was not an option; the word "barrens," applied by 17th-century European settlers, was unfortunately apt: The region's coarse, infertile sands would not support standard crops. Elizabeth White's grandfather, James Fenwick, was among the first to believe the future might lie in the cultivation of a locally adapted native crop, and in 1857 he developed his first commercial cranberry bog. Another cranberry pioneer, J.J. White, married Fenwick's daughter Mary and eventually built the combined operations into a hugely successful enterprise. A new village named Whitesbog was built to serve as the center of operations and to provide housing for employees. By 1912, J.J. White,

The natural beauty of the cranberry bog provided Elizabeth White, inset, with inspiration for her garden, Sunningive.



Inc., was the largest cranberry grower in the state, with nearly 3,000 acres devoted to cranberry cultivation.

CAPITALIZING ON CRANBERRY

THE AMERICAN CRANBERRY (*Vaccinium macrocarpon*) is a low, trailing shrub native to bogs and wet meadows in northeastern North America. Like many members of the heath family (*Ericaceae*), cranberries thrive in the barrens' naturally acid conditions. Growing partly submerged, their trailing stems knit together to create a virtual carpet over the surface of the bog. Commercial bogs are formed by excavating a level plane, planting cranberry starts, and—through carefully managed irrigation—providing the saturated soil conditions the plants require. Irrigation water is plentiful in the pine barrens, where the water table is typically less than 12 feet below the surface.

The eldest of four daughters, Elizabeth White grew up walking the bogs with her father, learning about the business and delighting in the diversity of native plants flourishing at the bogs' edges. She began helping with the family's Whitesbog operations in 1893 and eventually became intrigued with the possibility of cultivating another native pine barrens shrub—*Vaccinium corymbosum*, now commonly known as the highbush blueberry—that grew on the higher ground between the cranberry bogs. White believed a July harvest of blueberries would be a perfect complement to the cranberry crop, which ripened in October. The challenge was to select superior forms and develop methods of propagating and growing them.

Top: White evaluates blueberries, a crop she played a major role in developing. **Right:** White's home, Suningive, is in the lower right of this 1931 aerial view of Whitesbog.

“Blueberry bushes are supremely useful in home gardens large and small. Every season brings special and unusual beauty.”

In 1911, White learned of research into blueberry cultivation being conducted by Frederick V. Coville, a botanist with the U.S. Department of Agriculture. Together they began large-scale research at Whitesbog, with Coville providing the botanical expertise and White—with support from J.J. White, Inc.—providing the facilities and the majority of the plants. In seeking the best bushes to experiment with, White turned to the local people, who she knew possessed an intimate knowledge of where the sweetest, largest-berried shrubs could be found growing wild.

The experiments proved a stunning success, and in just a few years Coville and White had produced their first improved crop. Coville's article summarizing the project made the cover of *National Geographic* in June 1916 and White was widely celebrated for her part in the work, which virtually birthed a new industry and made a significant and lasting contribution to the economy of the pine barrens. Continually innovating, White helped organize the New Jersey Blueberry Cooperative Association and pioneered use of a clear cellophane covering on baskets of ripe blueberries. She was also the

first woman to join the American Cranberry Association and the first woman member to receive the New Jersey Department of Agriculture's citation.

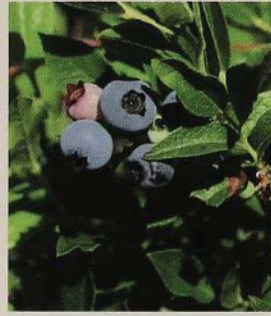
CREATING A SENSE OF PLACE

BECAUSE OF HER DEEP INVOLVEMENT IN her family's business, White was in her early 50s before she began creating a garden of her own. She left her parents' hometown of New Lisbon and built a house for herself at Whitesbog, adjacent to her grandfather Fenwick's original “Old Bog.” The house, which she named Suningive, was finished in 1923.

White set out to make a garden “in harmony with its surroundings” and, though working with modest means, she succeeded admirably by adopting an approach that was at once imaginative, resourceful, and conserving.

White believed in celebrating and taking advantage of the many facets she saw in native pine barrens plants, and blueberries were a prime example. “Blueberry bushes are supremely useful in home gardens large or small,” she noted in a 1937 radio broadcast. “Every season brings spe-





Left: Highbush blueberry and sweet pepperbush add their respective red and yellow autumn colors to the pine barrens. Above: Detail of wild blueberry fruit in its various shades of blue and pink.

cial and unusual beauty. In spring the dainty foliage and great clusters of snowy white flower bells...unfold at the same time. Summer beauty reaches its peak when clusters of fruit are ripening 'just like grapes,' as nearly every visitor says. The laden bushes are glamorous with fruit showing lovely cool tones of frosted green, pink, and blue against the deep green foliage." She went on to describe the fall tones of blueberries as among autumn's most brilliant reds.

Suningive was built on open cultivated ground that for 10 years had been used in experimenting with blueberries. In planning the layout of the house, White recast a remnant research row of blueberries in the

role of a hedge, allowing sufficient space between the hedge and the house to accommodate a driveway. She later recalled what a delight it was to come home on a winter's night and have the bare bright red twigs of the blueberries reflect her car's headlights with a welcoming, rosy glow.

In the initial design of Suningive's garden, White recognized the value of "editing" from existing natural resources whenever practical, believing this approach not only least labor intensive, but most likely to result in a garden that retained its unique regional character. When she built Suningive, a number of native trees and shrubs existed haphazardly at the margins of the bog and blueberry patch, including

white cedar (*Chamaecyparis thyoides*), red maple (*Acer rubrum*), gray birch (*Betula populifolia*), sour gum (*Nyssa sylvatica*), sweet pepperbush (*Clethra alnifolia*), inkberry (*Ilex glabra*), and swamp azalea (*Rhododendron viscosum*), much of it tangled with thorny greenbriers (*Smilax* spp.).

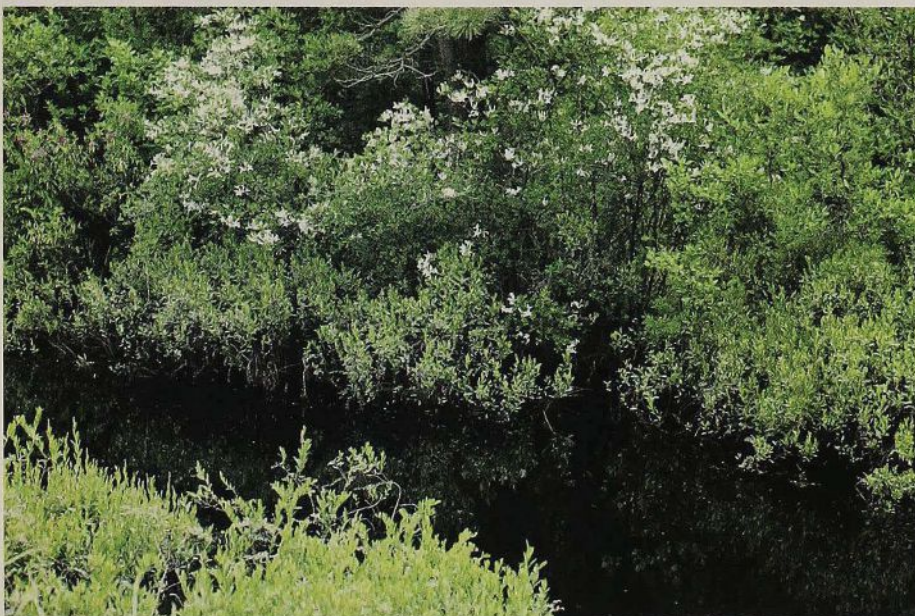
She set about thinning and selecting from these plants, adding new plantings as necessary to create the basic structure of Suningive's landscape. She likened this process to the sculptor's art: "As a sculptor shapes the group he models with more clay here or less there, so the garden's inherited plant groups have been shaped with plants added or cut away; paths have been opened; greenbriers sternly discouraged in an effort to bring all into peaceful harmony."

Under White's eye and hand, vase-shaped clumps of swamp magnolias (*Magnolia virginiana*) and sentinel-like clusters of white cedars became space-makers and dramatic focal points in the garden. Years later she reminisced, "I have been much interested in the simple kind of landscape improvement which can be accomplished by keeping and protecting a strategically located tree or clump of bushes."

LEARNING FROM NATURE

WHITE'S OBSERVATIONS of pine barrens plants in their native conditions frequently influenced her use of them in the garden. She knew that the native pitch pine (*Pinus rigida*) was among the "fire pines"—those few that re-sprout readily from trunk or base after exposure to forest fires or harsh pruning. She put this characteristic to use at Suningive, planting a hedge of pitch pines that she shaped by candling—pinching off new growth to stimulate bushiness—and occasional shearing. White also recognized the subtle balance of her native landscape. She deliberately placed deciduous shrubs in ways that their seasonal transparency would play against the constant, opaque greens of the pines and white cedars.

White was not averse to formal elements in the garden, as long as they worked to enhance the practicality and



Left: Swamp azalea (*Rhododendron viscosum*), here growing on the bog's margin, was one of many pine barrens natives that White encouraged in her garden.

“I have been much interested in the simple kind of landscape improvement which can be accomplished by keeping and protecting a strategically located tree or clump of bushes.”

mood of the place. Recognizing that the old bog to the south was a natural destination, White built two formal pathways leading from Suningive to the edge of the bog, each ending with subtle stone steps to meet the lower level of the cranberries. Native shrubs including mountain laurel (*Kalmia latifolia*), which turns to masses of white blossoms each June, bordered these paths. A mixed ground cover in this area included ferns, bearberry (*Arctostaphylos uva-ursi*), teaberry (*Gaultheria procumbens*), and pine barrens golden heather (*Hudsonia ericoides*).

The east garden just off the house included a large circular bed, but within this formal structure White experimented with a variety of pine barrens natives. A photograph taken in September 1931 shows the bed mostly populated by sand myrtle (*Leiophyllum buxifolium*) and teaberry, with pine barren gentians (*Gentiana autumnalis*) blooming in between.

Nowadays, as the gap between horticulture and ecology diminishes, the notion of “habitat gardening” is gaining greater sway, but White understood it implicitly as she made her garden at Suningive more than 75 years ago. She identified various cultural niches within her landscape and encouraged appropriately adapted native species to populate those places. She knew, for example, that the cultural needs of sand myrtles, teaberries, and gentians were very similar, and by encouraging their association in the sunny, slightly moist sand of the circular bed she could enjoy the beauty of species that would be short-lived or impossible to grow even in other areas at Suningive. Many of her favorite plants, including the gentians, appeared spontaneously without deliberate sowing.

Serendipity also held sway in the pond garden to the west of the house, which evolved when soil was removed for grading elsewhere. “The hollow left, when supplied with water from a nearby irrigating ditch,

became a pool,” she explained. “Lily seeds (*Nymphaea odorata*) came with the water, and by the second summer tiny pads floated on the little pond. The third summer the lilies bloomed. Now they must be thinned each spring to insure open water to mirror sunsets, the moon, and stars.”

White enjoyed the snow white woolly stems and furry orange yellow flowers of

orange milkworts (*Polygala lutea*) to seed into the sphagnum in the pond garden.

White was also keenly aware of the particular niches required by certain plants. She observed that the native climbing fern (*Lygodium palmatum*) was most at home on the north side of blueberry bushes and swamp azaleas, and she ensured that such spots were maintained at Suningive. She knew that, to flourish, turkeybeard (*Xerophyllum asphodeloides*) needed a sunny, sandy spot that would afford constant moisture to its deep roots.

Though she was focused on pine barrens native species, she was never dogmatic in her approach to the garden; she welcomed a sampling of exotic species on the condition that they be well adapted and sympathetic to the whole. Intrigued by carnivorous



gold crest (*Lophiola americana*), which quickly naturalized around the pond. Though terrestrial orchids are treasured rarities to a majority of North American gardeners, they are relatively common in the pine barrens. White observed that three species—rose pogonia (*Pogonia ophioglossoides*), grass pink (*Calopogon tuberosus*), and white fringed orchid (*Habenaria blephariglottis*)—preferred conditions similar to gold crest and—with minimal intervention—she was rewarded with multitudes of all three in the pond garden. She noted that the native wet ground cover of sphagnum moss was the perfect nursery for many delicate pine barrens species, and happily invited sundews (*Drosera* spp.), pitcher plants (*Sarracenia purpurea*), and

plants, she added Venus flytrap (*Dionaea muscipula*) from the North Carolina swamps to the regional array of sundews, bladderworts, and pitcher plants in the pond garden. In higher, drier areas at Suningive, she successfully introduced heath family members and other acid-loving plants such as sourwood (*Oxydendrum arboreum*), Catawba rhododendron (*Rhododendron catawbiense*), fetterbush (*Pieris floribunda*), galax (*Galax urceolata*, formerly *G. aphylla*), and shortia (*Shortia galacifolia*). Nearly all of these survive at Suningive to this day, yet it appears that by luck or intent she introduced no invasive exotics.

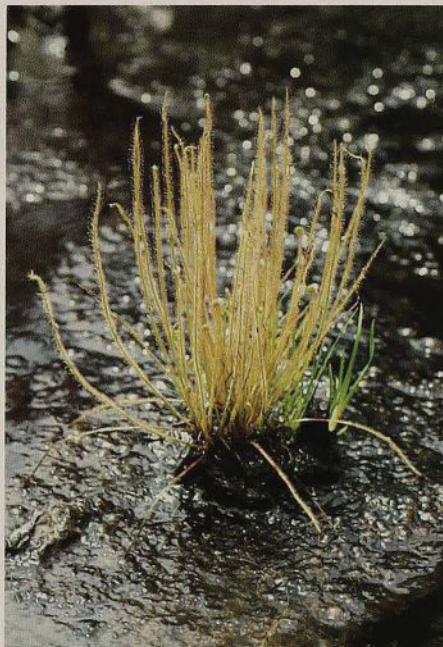
Elizabeth White designed the house itself to be an integral part of her garden. The earth tones of the cedar-sided



Opposite: White grew pine barrens gentian, which blooms in early fall, in a bed with sand myrtle, above left, and teaberry. Delicate carnivorous plants such as thread-leaved sundew (*Drosera filiformis*), above right, shared space with orchids such as grass pink (*Calopogon tuberosus*), right, along the edge of White's pond garden.

dwelling gracefully blended with her naturalistic plantings, and the interior cedar millwork spoke of the simplicity cherished by Quakers and Arts and Crafts architects alike. She located her office on the ground floor and made her living quarters on the second floor, incorporating generous windows on all sides.

In the living room, White designed the huge double-hung windows so that both sash sections could be raised up fully to the top of the frame, allowing an unobstructed view of the landscape. The south view overlooked the garden and the old bog beyond. It was from these windows that she recognized the cranberry bog as a "lawn" that offered seasonal drama unlike any conventional sweep of turf: "For 100 acres from the windows it stretches to the distant, dark, encircling rim of pines. Its velvety surface, green in summer, gradually turns to deep maroon by the middle of October. In December the bogs are flooded [for harvesting] and, for garden purposes, lawn becomes lake—deep blue beneath clear skies; flashing with diamonds on sunny days;



dark and glowering, with white caps racing before an easterly storm wind; smooth, still, and shining when Jack Frost lays his quieting hand upon it."

STAUNCH CONSERVATIONIST

ELIZABETH WHITE'S DEVOTION to pine barrens plant conservation extended well beyond the borders of her garden. With Sydney Hutton as superintendent, White ran her own "Conservation Nursery" at Whitesbog in the 1920s, offering a variety of pine barrens natives including blueberries and American holly (*Ilex opaca*). The nursery advertised within J.J. White company pamphlets.

White became an eloquent voice for the conservation of pine barrens plants, frequently delivering lectures and radio programs. Well-versed in natural history writings of the region, she made her own contributions to the literature, writing about pine barrens plants for a number of

Sources

Eastern Plant Specialties, Box 226, Georgetown, ME 04548. (908) 382-2508. Catalog \$3.

Pinelands Nursery, 323 Island Road, Columbus, NJ 08022. (800) 667-2729. www.pinelandsnursery.com. Catalog free.

Roslyn Nursery, 211 Burrs Lane, Dix Hills, NY 11746. (516) 643-9347. Catalog \$3.

Wild Earth Native Plant Nursery, P.O. Box 7258, Freehold, NJ 07728. (732) 308-9777. www.wildearthnps.com. Catalog \$2.

Resources

A Field Guide to the Pine Barrens of New Jersey, by Howard P. Boyd, Plexus Publishing, Medford, New Jersey, 1991.

The Pine Barrens, by John McPhee. Noonday Press, New York, 1978.

Pine Barrens: Ecosystem and Landscape, edited by Richard Forman, Rutgers University Press, Piscataway, New Jersey, 1998.

The Vegetation of the New Jersey Pine Barrens, by John W. Harshberger (1916). Reprinted by Dover Publications, New York, 1989.

publications, including the Brooklyn Botanic Garden *Record* and the American Rock Garden Society *Bulletin*.

White was especially fond of American holly, which once grew in great stands throughout the pine barrens but was being diminished by development. She believed one means of saving American hollies of pine barrens' provenance was to promote their use in private gardens. In her last years, White became increasingly active with American holly selection and propagation. She eventually developed more than 35 cultivars propagated from trees originally found growing wild in

Visiting Suningive

Elizabeth White's house, Suningive, still stands in fine condition within the remnant village of Whitesbog. The village survived as the center for J.J. White's operation through the 1940s, but the need for large numbers of laborers eventually declined with the introduction of mechanized harvesting. Recognizing the historical and environmental significance of Whitesbog, the state of New Jersey



Mountain laurels and other native plants still bloom in the yet-to-be-restored garden at Suningive.

purchase the village and its surrounding lands, which are now part of Lebanon State Forest. In 1982 the non-profit Whitesbog Preservation Trust was formed to preserve Whitesbog. The trust leases the village from the state, its mission being to restore, protect, and enhance the land, sites, and buildings at Whitesbog and to provide educational and interpretive programs and materials about the history, culture, and natur-

al environment of Whitesbog. Through the trust's efforts, Whitesbog is now listed on both the national and state Registers of Historic Places.

While there is currently no funding to restore the garden at Suningive, a preliminary plan has been developed with the assistance of June Vail, a pine barrens plant expert who assisted White with her garden in her later years. The wild growth that had enveloped Suningive since the 1950s was cleared this fall through the combined efforts of the trust, Lebanon State Forest staff, and J.J. White, Inc., and the magnificent view from Suningive is again open to the old bog.

—R.D.

In and Around the Barrens

The following organizations can provide more information about the pine barrens and visiting the area around Suningive.

Whitesbog Preservation Trust, 120-13 Whitesbog Road, Browns Mills, NJ 08015. (609) 893-4646. www.whitesbog.org.

- Blueberry Festival June 24, 2000.
- Cranberry harvest tours will be scheduled for October.

Lebanon State Forest, P.O. Box 215 Route 72, New Lisbon, NJ 08064. (609) 726-1191.

New Jersey Pinelands Preservation Alliance, P.O. Box 7, 114 Hanover Street, Pemberton, NJ 08068. (609) 894-7300. www.pinelandsalliance.org.

Pinelands Commission, 15 Springfield Road, New Lisbon, NJ 08064. (609) 894-9342. www.state.nj.us/pinelands/index.htm.

New Jersey, and started a commercial nursery called Holly Haven to promote and sell her plants. 'Clark', 'Mae', 'Manig', and 'Farage' were among her most successful introductions. American holly cultivars 'Elizabeth' and 'Miss White' were later named in her honor.

White died at Suningive in 1954, and though her garden has gone largely untended since that time, there is hope for its restoration and renewal. Even in its current state, the garden at Suningive is powerful testimony to White's interlacing vision. It is a reminder of how much can be accomplished by those who know how to make the most of the unique opportunity of place.

The preciousness of the New Jersey Pine Barrens has since been widely recognized. In 1978, the U.S. Congress created the Pinelands National Reserve, the country's first, and UNESCO has since designated it an International Biosphere Reserve.

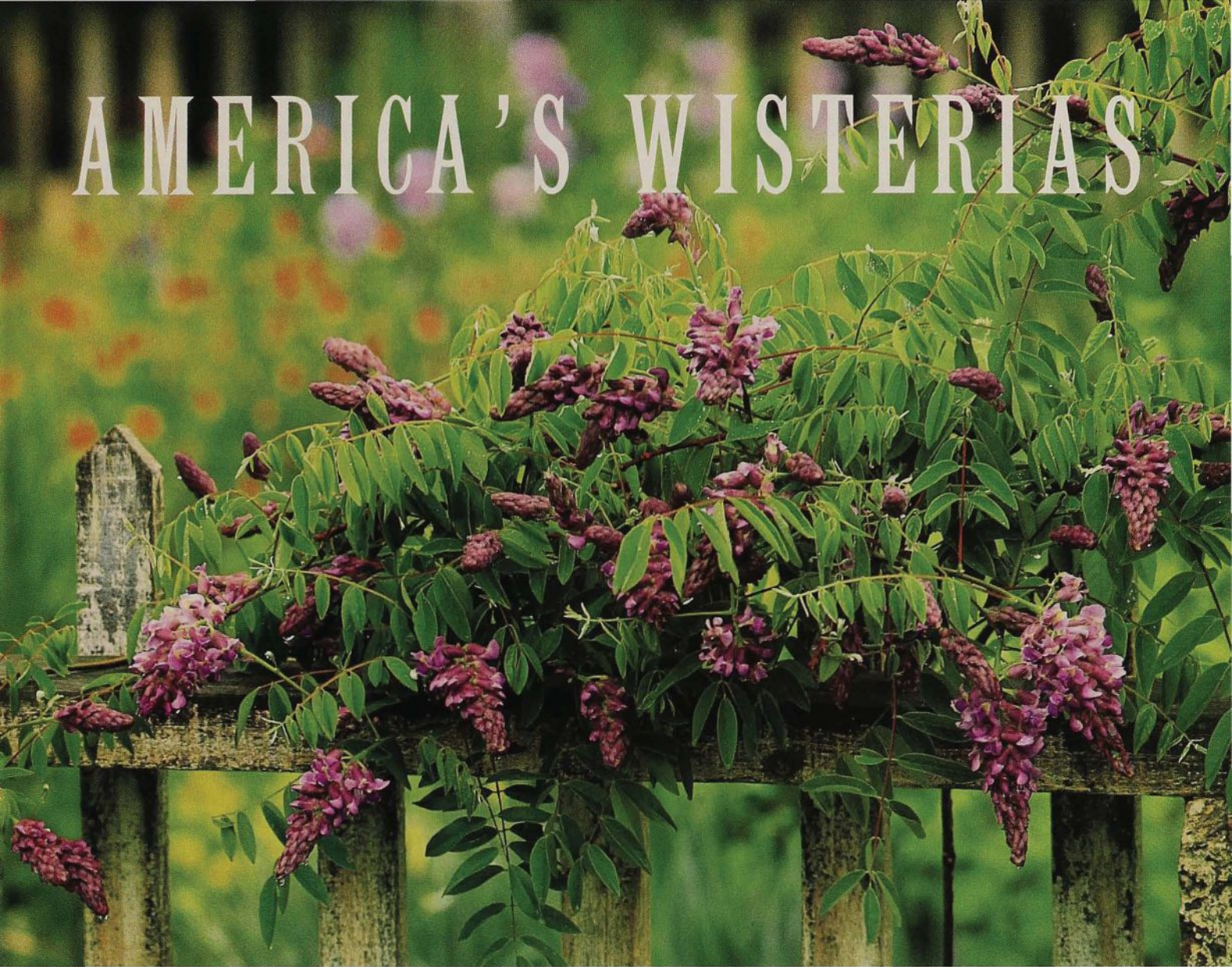
White's legacy also survives in her words, her plants, and the many people she influenced and inspired. Sydney Hutton, White's conservation nursery manager, went on to work at the Conard-Pyle Company, a wholesale nursery in West Grove, Pennsylvania. Still in Hutton family ownership today, the nursery offers a number of pine barrens natives including *Ilex glabra*, *Viburnum nudum*, *Clethra alnifolia*, and *Itea virginica*.

Elizabeth White is certainly one of those Barry Lopez described when he wrote in an article in the Fall 1989 issue of *Orion* of "men and women more or less sworn to a place" who have a genuine feel "for the soul and history, for the turn of leaves and night sounds."

Her own assessment of her work at Whitesbog is as eloquent as any: "Such success as this small naturalistic garden has attained has grown out of an effort to blend as unobtrusively as possible the necessary conveniences of living, such as drives and paths, the straight ditches and other artifices of modern cranberry culture, and the encompassing Pine Barrens country, with its special and peculiar charm." ☞

A writer, photographer, and landscape designer residing in Landenberg, Pennsylvania, Rick Darke's most recent book is In Harmony with Nature: Lessons from the Arts & Crafts Gardens, published in April by Friedman/Fairfax.

AMERICA'S WISTERIAS



For those who want the beauty and fragrance of wisteria but have limited space, North American native species and their cultivars may be just the ticket. **BY RICHARD E. BIR**

Many a gardener has been seduced by the beauty and sensuality of sweetly scented blooms cascading over arbors and trellises. How can a gardener deny his dreams of creating a personal paradise when exposed to the charms of a wisteria display, particularly if he has the great good fortune to find himself under an arbor of pendulous, fragrant wisteria flowers at their peak of perfection? And why should he resist? Our native species of this floriferous vine provide lots of charm without some of the worries associated with exotic species.

ATTRACTIVE BUT AGGRESSIVE EXOTICS

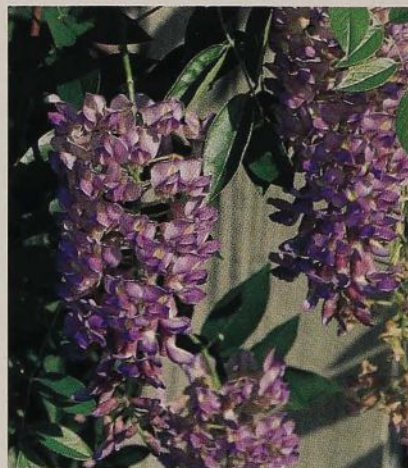
DESPITE THEIR UNDENIABLE BEAUTY, some of the imported wisterias are justifiably included on local invasive exotic lists as “bad/invasive pest . . . do not buy, sell, trade, or plant!” In some parts of the eastern United States, Japanese wisteria (*Wisteria*

floribunda) has not only escaped from cultivation but has aggressively invaded woodland edges, shading out and toppling trees. At the Allison Woods historical restoration near Statesville, North Carolina, Japanese wisteria collapsed a two-acre pine woodland before recovery efforts began in force. Shading from the rampant growth of the vines coupled with their sheer weight was more than the second-growth pines could withstand.

Interestingly, it is the species of *Wisteria* from Asia that have given the genus its invasive reputation. All the troublesome specimens I have observed seem to be *W. floribunda*, although Chinese wisteria (*W. sinensis*) is sometimes blamed. This may simply be a discrepancy of taxonomy. The lumpers among taxonomists suggest that these are the same species, the splitters insist that they are separate; I will

The sedate beauty of American wisteria (*W. frutescens*) graces a wooden fence in this Virginia garden.

“Asian species, in the proper setting with proper management, are among the most spectacular of garden plants. But where their vigor and prolific nature leap ahead of management efforts, the native wisteria species seem better garden choices.”



Left: *W. frutescens* ‘Nivea’, a popular white-flowered selection of American wisteria, bears rounded clusters of blossoms. Elongated flower clusters can help distinguish Kentucky wisteria (*W. macrostachya*), above, from American wisteria.

leave this discussion to others. The question of whether there are eight or more species of wisteria in the world or only five will, perhaps, be sorted out when the traditional taxonomists and the gene jockeys using laboratory techniques get together. There is also a “serious” botanical question concerning whether this genus should be called *WistEria* or *WistAria* since it was allegedly named for an American by the name of Wistar (see box on facing page). Let the taxonomists and systematists settle that argument, too.

For me, these Asian species and their cultivars, in the proper setting with proper management, are among the most spectacular of garden plants. But in small gardens and where the plants’ vigor and prolific nature leap ahead of management efforts—and unfortunately that describes the situation where I garden—the native wisteria species seem better garden choices.

NATIVE SPECIES

MOST CURRENT SOURCES identify two species of wisteria native to North America. American wisteria (*W. frutescens*) is native to the southeastern states from Virginia to Florida and was the first wisteria introduced to European gardens—even before the wisterias of Asian origins. Kentucky wisteria (*W. macrostachya*, also listed in many sources as *W. macrostachys*) is indigenous to a larger, more central area of the United States, ranging from Illinois south to Louisiana.

There are botanists who suggest that these are not two distinct species, but I will continue to refer to them as such until convinced otherwise. In my experience, American wisteria has much shorter racemes of flowers than Kentucky wisteria—the specific epithet *macrostachya* translates as “long spikes.” However, cultivars that blur this distinction have been introduced, includ-

ing Kentucky wisteria selections with shorter racemes and American wisterias with longer racemes; so telling these two species apart by measuring racemes can be frustrating.

Flower color is also an unreliable identifying feature between the native species. Original descriptions identified the flower color of both as blue-violet. But white-flowered cultivars exist for both species, and selections for other color variations have been made. Similar overlaps exist when measuring leaflets or for such generalizations as “Kentucky wisteria blooms after American

wisteria is finished.” This is true most of the time for most cultivars, but not always. Perhaps analyses in a cell biology laboratory will shed light on whether these two species are truly distinct.

GARDEN WORTHINESS

RATHER THAN ARGUING BOTANICAL points, I think it is more profitable to discuss why these plants belong in your garden. Two reasons are paramount: Both species and their cultivars produce beautiful floral displays, though admittedly not as spectacular as their Asian cousins. But in their favor, our native wisterias are far less invasive and more easily managed than the imported species—at least so far.

Fortunately, both North American species flower on new growth, so controlling any unwanted growth via winter pruning will not prevent flowering the next spring. This simplifies the pruning

process significantly. The habit of producing flower racemes on terminals of new growth suggests another reason for pruning: It encourages branching, which increases the number of terminals. More terminals mean more flowers.

Wisterias are legumes. They can grow well in poor soils by teaming up with soil-borne, nitrogen-fixing *Rhizobium* bacteria to manufacture their own nitrogen from the air. Those nodules on the roots of your wisteria are more likely to be beneficial microorganisms than signs of nematodes. There are also reports of wisteria roots having an association with arbuscular—related to woody plants—mycorrhizae that further help them obtain sustenance from the soil.

American wisteria (*W. frutescens*) is generally the smaller of the native species, with blue-violet flowers most commonly appearing in racemes of 30 to 65 in late spring after most of the Asian wisterias have finished flowering. A few cultivars were introduced in the 19th and early 20th centuries. But with the exception of the white-flowering selection, 'Nivea'—which I have seen labeled as *W. frutescens* var. *nivea*, forma *nivea*, and 'Alba', but are all the same thing as far as I can tell—they have not been particularly popular in cultivation until very recently. 'Amethyst Falls', discovered in the wild by Head-Lee Nursery in Oconee County, South Carolina, seems to be

Wister or Wistar?

Wisteria nomenclature can be confusing. Not only is there controversy about whether the American and Kentucky wisterias represent two distinct species or variants within a single species, but the generic name, some insist, should be *Wistaria*. *Wistaria* proponents reason that botanist Thomas Nuttall named the genus after Caspar Wistar, an anatomy professor at the University of Pennsylvania; thus, the genus should accurately reflect his surname. Despite the spelling of the professor's name, however, Nuttall, in his book *The Genera of North American Plants* (1818), spelled the genus *Wisteria*. While this may have simply been a slip-up by Nuttall, there is some speculation that he named the vine not for Caspar Wistar, but rather after a friend, Charles Wister.

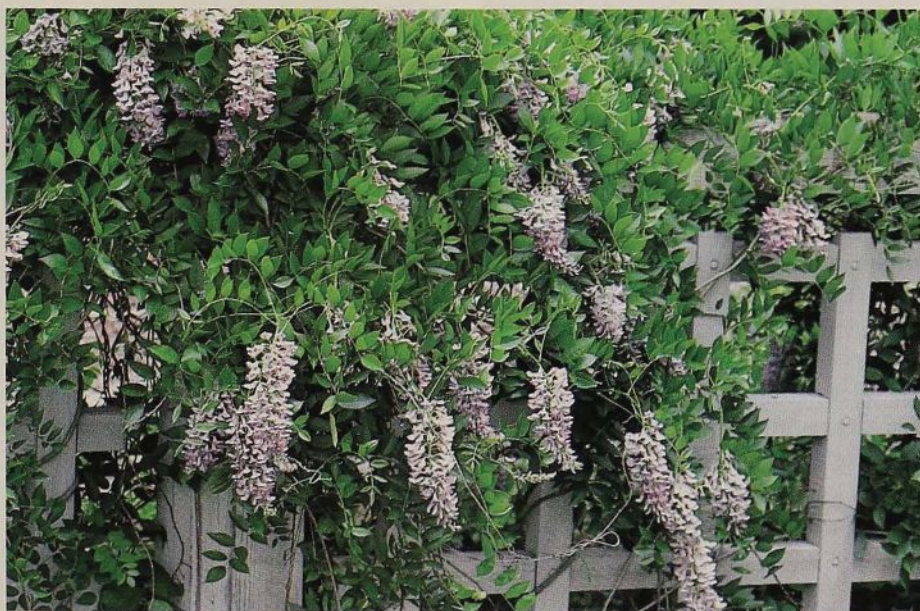
Botanist Mark Catesby introduced the American wisteria to Europe in 1724. In his classic reference for plant systematics, *Species Plantarum* (1753), Linnaeus dubbed the plant *Glycine frutescens*. While that species has been retained, wisterias have long since escaped the genus *Glycine*—which includes soybeans—though just to confuse matters further, that name is still in common use in France.

Whatever you call them, our native wisterias, with their easy-to-manage habit, are making a name for themselves. —Rita Pelczar, Associate Editor

changing this. 'Amethyst Falls' flowers are abundant, and propagation by cuttings is relatively easy. Plants of 'Amethyst Falls' also flower while young—often in gallon containers being offered for sale. The flowers remind me of small clusters of lilac-purple grapes. Larry Mellichamp, director of the Van Landingham Glen Botanical Garden at

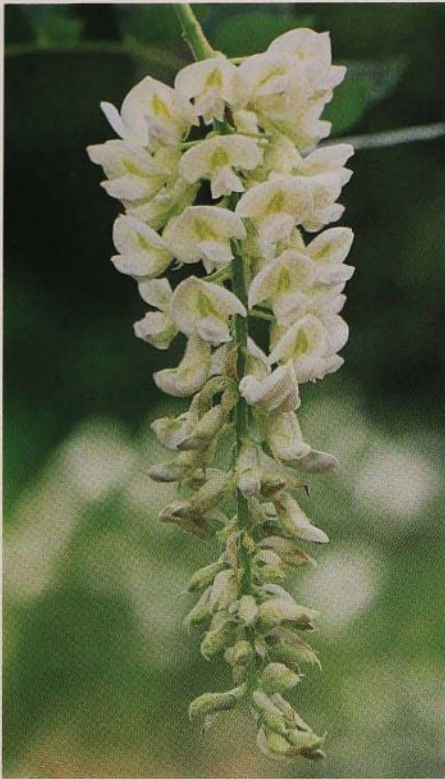
the University of North Carolina—Charlotte, also reports that 'Amethyst Falls' is a repeat bloomer.

Kentucky wisteria (*W. macrostachya*) generally opens its blooms as American wisteria flowers are fading in late spring or early summer. It appears to tolerate significantly colder temperatures; certain selections are reliably hardy as far north as Min-



Using North American wisterias in the cultivated landscape: Above, cascades of Kentucky wisteria flowers soften the top edge of a fence in a Minnesota garden. Right: American wisteria climbs a doorpost at Georgia State Botanical Garden.





The pendulous blossoms of *Wisteria macrostachya* 'Clara Mack' are a sight to behold.

neapolis, Minnesota. The lightly scented flowers are generally a softer violet than American wisteria, and they are borne in racemes of 70 to 80. Louisiana Nursery in Opelousas has introduced many cultivars, and all are reputed to grow in moist soils.

SmartGarden™ Tip

PLANT SELECTION

Assessing the conditions and space available in your garden as well as a plant's maintenance requirements *before* you choose a plant will help you select those that are most likely to thrive.

A sunny, well-drained site is best for all wisterias, but the amount of space needed and the effort required to maintain them are critical considerations for choosing among the species. The vigorous Asian wisterias require lots of space, pruning several times a year, and vigilance against their invasion into unwanted areas. With their smaller, more restrained habit, American and Kentucky wisterias are better suited for smaller gardens, and because they flower on current season's growth, pruning is significantly simplified.

One of their introductions, 'Bayou Two O'Clock', reportedly will grow with its roots in shallow water.

The three cultivars of Kentucky wisteria that I currently find most exciting are 'Clara Mack', 'Aunt Dee', and 'Blue Moon'. 'Clara Mack' was discovered by Mike Creel in a South Carolina garden and was introduced by Woodlanders, Inc., a mail-order nursery in Aiken, South Carolina. It is described as bearing white flowers on shorter and fuller racemes than other Kentucky wisteria, but the plants I saw in bloom last spring at the J.C. Raulston Arboretum in Raleigh, North Carolina, had racemes nearly 18 inches long.

'Blue Moon' was developed by Harvey Buchite and introduced by Rice Creek Gardens in Minnesota. It is fully hardy in Minneapolis and, according to Betty Ann Addison of Rice Creek Gardens, flowers as many as three times per season. 'Aunt Dee', named and introduced by Bloomington Garden Center in Bloomington, Minnesota, has been reliably hardy and vigorous through at least 30 years of Minnesota winters.

WISTERIA CULTURE

IF YOU ARE GROWING wisteria vines for flowers, please do some planning before you plant. If you just want leaves and stems, planning is not nearly as necessary.

Native wisterias climb anything that is handy, then flop on top of and twine around it in an effort to obtain maximum sunshine. If you want flowers, find sunshine for your plants or a place where they will be allowed to climb and expose their leaves to the sun even though the roots are in the shade.

Since the native wisteria species flower on terminal racemes, it is important to have plenty of terminals to produce flowers. This means providing strong supports as well as pruning. Growing them on pillars, deck rails, fences, or walls will result in a more satisfying display than some of the devices that have been created for Asian wisterias, which were designed to have the pendulous flowers hanging down through lattice or something similar. The native wisteria selections will be better appreciated where the terminals can be seen from the side or above.

Sources

Fairweather Gardens, P.O. Box 330, Greenwich, NJ 08323. (856) 451-6261. Catalog \$3. *W. frutescens* 'Amethyst Falls'

Forestfarm, 990 Tetherow Road, Williams, OR 97544. (541) 846-7269. www.forestfarm.com. Catalog \$4. *W. frutescens*, *W. macrostachya* and cultivar 'Clara Mack'

Greer Gardens, 1280 Goodpasture Island Road, Eugene, OR 97401. (541) 686-8266. www.greergardens.com. Catalog \$3. *W. frutescens* and cultivar 'Nivea', *W. macrostachya* 'Clara Mack'

Louisiana Nursery, 5853 Highway 182, Opelousas, LA 70570. (318) 948-3696. Catalog \$6. *W. frutescens* and cultivar 'Nivea', *W. macrostachya* and cultivars 'Abbeville Blue', 'Bayou Two O'Clock', 'Pondside Blue'

Rice Creek Gardens Nursery, Inc., 11506 Highway 65 NE, Blaine, MN 55434. (612) 754-8090. www.ricecreekgardens.com. Catalog \$2. *W. macrostachya* 'Blue Moon'

We-Du Nursery, Route 5 Box 724, Marion, NC 28752. (828) 738-8300. www.we-du.com. Catalog \$2. *W. frutescens* 'Amethyst Falls'

Woodlanders, Inc., 1128 Colleton Avenue, Aiken, SC 29801. (803) 648-7522. www.woodlander.net. Catalog \$2. *W. frutescens* and cultivars 'Amethyst Falls' and 'Nivea', *W. macrostachya* 'Clara Mack'

Resources

Wisterias: A Comprehensive Guide, by Peter Valder, Timber Press, Portland, Oregon, 1995.

Concerns about frost injury exist among many experienced wisteria gardeners but not for our native species. The native wisterias begin growth later in the year and flower after danger from frost should be over.

Indicating that wisterias grow best in “average garden soil” seems like an absurd statement when considered across an area as diverse as North America, but it is generally true. They may need a little extra water until they become established, but after that they are remarkably tolerant of drought as well as frequently flooded roots.

They adapt to a wide range of soil pH and other nutritional conditions. Native wisterias do not, however, thrive on extremely acidic or alkaline soils, and they seem



W. frutescens 'Amethyst Falls' produces grapelike racemes of flowers.

to require low to moderate levels of most standard nutrients. Their need for additional nitrogen is minimal, thanks to their symbiotic relationship with *Rhizobium* bacteria. If you garden in sterile subsoil and your native wisteria seems anemic, a low rate of a balanced fertilizer may be in order; but if you want flowers, do not feed wisterias heavily. Rich soils and abundant fertilizer will grow lush, beautiful vines, but few flowers.

As if we needed another reason to grow this delightful flowering vine, a reference I found in researching this article suggested that the fresh flowers of Kentucky wisteria can be eaten as a salad. They are also supposed to be good cooked in batter as fritters. I confess I have never eaten wisteria flowers, but I wonder what they taste like. Probably not chicken.

Richard E. Bir, a horticultural Extension specialist at North Carolina State University, is a fellow of the International Plant Propagators Society and author of Growing and Propagating Showy Native Woody Plants, published in 1992 by the University of North Carolina Press.

How to Tame Asian Wisterias

If allowed to grow unchecked, the vigor of Asian wisteria vines can be a problem in some places. However, a few precautions that are simple to write about—if not to accomplish—can effectively limit the invasiveness of these impressive flowering vines. Before deciding to plant an Asian wisteria, consider the following.

WHERE DO YOU LIVE?

If you garden in a place without trees that has sparse rainfall, an Asian wisteria is less likely to be a problem. In much of the eastern United States, however—where sunshine, trees, and rainfall can be abundant—conditions may be suitable for seeds to germinate and vines to climb to the point that they become a serious nuisance. Urban and desert environments are not as likely to be invaded by wisteria.



A floriferous Chinese wisteria (*W. sinensis*) shows the appeal—and the potential problem—for growing the Asian species in most American gardens.

PRUNING: THE KEY TO CONTROL

Wisteria invades by being allowed to grow unchecked and propagate. It may root when vigorous vines touch the ground, it may spread by root sprouts, or new plants may grow from seed. Proper pruning can control all of these potential sources of invasiveness. Impressive displays of tree-form, arbor, and wall-hugging Asian wisteria are kept in check by pruning out spent flowers and seed pods, as well as by reducing the aggressive shoots to manageable proportions. Root sprouts should be mowed or otherwise removed whenever seen.

Wisteria floribunda is the most frequent escapee from gardens. Proper pruning is essential to ensure flowering and avoid unwanted seedlings. Remove spent racemes and any seed pods immediately after flowering. Then prune the most vigorous new shoots back to two or three leaves. In late summer, remove new shoot growth that does not conform to your arbor or other vine supports. This will usually result in good flowering the following spring. After leaves have fallen, usually by mid-winter, a touch-up pruning to reduce excess growth may be needed as well. However, the flowers of *W. floribunda* arise from buds formed the previous season, so harsh winter pruning will reduce the number of flowers and should be avoided if you are growing wisteria primarily for their flowers.

If your wisteria is hopelessly out of shape, you can always cut it back almost to the ground and start over.

—R.E.B.

The Accessible GARDEN

For all who visit, the Buehler Enabling Garden provides an opportunity to experience the many pleasures that a garden has to offer. **BY ADELE KLEINE**



Above: The raised beds at Buehler enable a gardener to plant with ease from her wheelchair. Background: A colorful combination of 'Wirosa' Savoy cabbage and Sonata Series cosmos fill one of the garden's raised beds.

GALEN GATES; INSET: WILLIAM BIDERBOST, COURTESY OF CHICAGO BOTANIC GARDEN

The new Buehler Enabling Garden at the Chicago Botanic Garden (CBG) in Glencoe, Illinois, is designed to be enjoyed by everyone who visits, regardless of age or physical ability. Just watch the reactions of visitors in the garden and it quickly becomes apparent this objective has been fulfilled.

As I toured the garden, I overheard an elderly visitor declare spontaneously, "It's like being in heaven." She inhaled the aroma of a scented geranium that was within easy reach of her wheelchair and added with obvious pleasure, "It's the right height!"

The new enabling garden opened last July to rave reviews from gardeners, horticulturists, and landscape designers around the country. It is larger and more extensive than Chicago Botanic Garden's previous enabling garden, which was among the first of its kind when it opened in 1977. Gene Rothert, CBG's manager of horticultural therapy services, says the new garden was designed and built for "anyone who wants to keep gardening as an important part of their life, regardless of ability or age." Equally important, he adds, "It will serve as a model for health and human service agencies that want to incorporate gardening either to advance their goals, or just for fun."

Buehler represents a new generation of accessible public gardens because it goes beyond providing a place for visitors of all physical abilities to get up close and personal with beautiful plant displays. The entire garden is a teaching facility where people can learn how to accommodate physical limitations while pursuing an active interest in gardening. Everywhere you look there are examples of barrier-free gardening strategies, as well as tools and techniques that make gardening easier and more accessible to all.

Garden volunteers lead visitors through the garden and interpret the space. "People are absolutely amazed by it," says volunteer Sandy Kroll of nearby Highland Park. "When they come in, they can smell the aroma of the wall gardens filled with peppermint geraniums. Water is on two levels, so that you can hear the fountain as it makes water music masking traffic noise, and kids love to play in the lower-level water."

THE GARDEN PLAN

THREE YEARS OF PLANNING AND CONSTRUCTION preceded the opening of the enabling garden. Rothert coordinated the overall plan, drawing inspiration for the project from other therapy gardens, landscape designers, and his home garden, with additional input

Wide paths and plants grown in containers and at various heights contribute to Buehler's accessibility for all.

from staff and volunteers. The garden's designer, Geoffrey Rausch, a landscape architect with Marshall, Tyler, Rausch of Pittsburgh, Pennsylvania, explains that the plan evolved from a coordinated effort; everyone at CBG—staff, volunteers, donors—helped come up with ideas. "Gene [Rothert] provided the technical expertise...and the whole staff was involved," says Rausch. Several agencies concerned with services for the disabled—including the Smithsonian Institution, the National Center on Accessibility, and the American Horticultural Therapy Association—also contributed ideas.

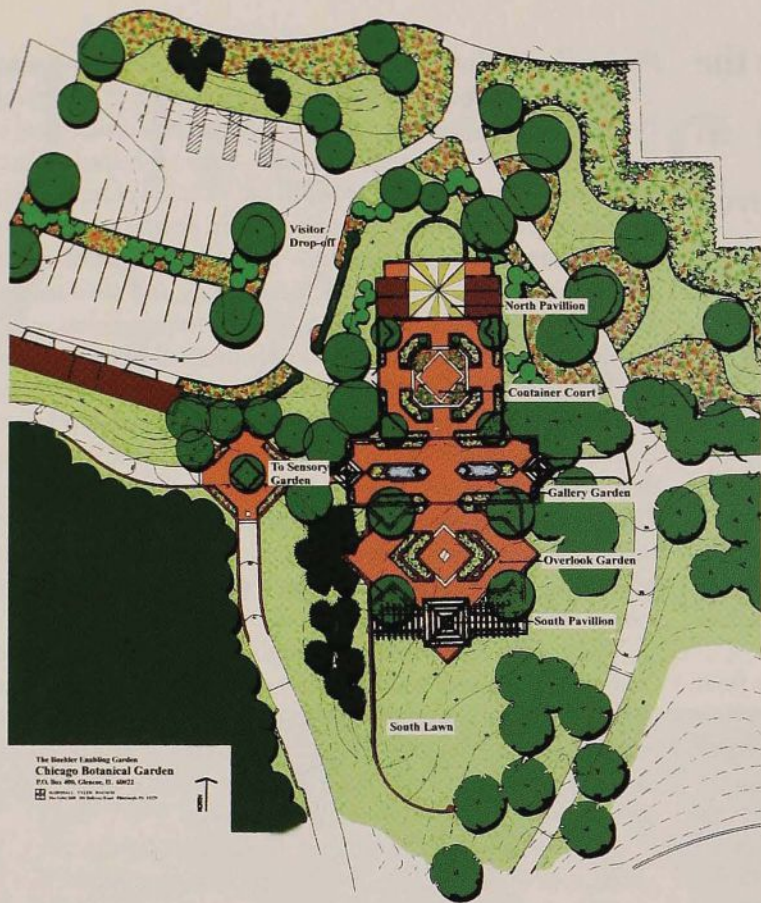
Although the garden's overall size is fairly small—approximately 11,000 square feet of demonstration area—it includes an impressive array of garden styles and plants. Easily accessed, it is located in an area near the education building, adjacent to the sensory garden. Rausch, who also designed the earlier enabling garden at CBG, was pleased with the prominent location. Even before it was built, there was a feeling about the garden, says Rausch, that "this was a special thing. They didn't want it to be hidden, they wanted it out in the open where people would see it, and see into it."

Wide paths lead visitors through three connected garden "rooms"—a container court, a gallery garden, and an overlook garden. Brick and stone raised beds, trellised archways, the two-level water garden, container plantings, vertical garden walls, a raised seating lawn, and an area that offers restful vistas provide ample inspiration to novice and experienced gardeners alike.

To contrast with the natural flowing patterns created by the plants, Rausch chose an angular pattern as the dominant design element in the hardscape. "I wanted everyone to see in and those inside to peer out, so we used diamond-shaped lattice windows in the outer walls to achieve this," he says. "In a small space, I created a mazelike feeling with implied closure, using low wall divisions to make an area seem larger."

Missy Marshall of Marshall, Tyler, Rausch assisted in plant selection. Her goal was "to prove that a garden for teaching...could be as attractive as any garden." She did not want the architectural structure of the garden to dominate a visitor's attention to the extent "that the plants would look like an afterthought." The plants were carefully selected to meet one or more of the following criteria: providing sensory stimulation, contributing to horti-





Visiting Buehler

Chicago Botanic Garden, 1000 Lake Cook Road, Glencoe, IL 60022. (847) 835-5440. Horticultural Therapy, (847) 835-8248. www.chicago-botanic.org

- Open daily 8 a.m. to sunset (closed on Christmas Day)
- Admission free. Parking fee for non-members \$7; for Seniors on Tuesday \$5. Parking free for members.

Left: This plan of the Buehler Enabling Garden shows how large paved areas in the design allow visitors to navigate easily from one garden to the next.

paliered against a wall combine with large tubs of gardenias to illustrate a variety of plant shapes, pruning techniques, and fragrances. Unusual plant combinations, such as 'Chattahoochee' phlox and weeping Siberian peashrub (*Caragana arborescens* 'Pendula') in containers, challenge the visitor's imagination. In the vegetable area, a Scots pine (*Pinus sylvestris*) makes an effective companion to tomatoes, garlic chives, and 'Blue Hill' sage (*Salvia x sylvestris*).

cultural therapy programs, advancing the garden's collection, and requiring a minimum of maintenance.

GARDEN FEATURES

IN ADDITION TO MORE THAN 100 VARIETIES OF ANNUALS showcased in the garden each summer, Buehler contains 3,100 small trees, shrubs, and perennials, all clearly labeled so visitors can identify the plants and take ideas home with them. Selected for minimal maintenance, the plants are non-invasive, do not require deadheading, are drought tolerant, and will not quickly outgrow their space.

Six-foot-tall vertical panels of mixed geraniums in vibrant colors greet the visitor at the garden's entrance. Nearby witch hazels es-

One special feature of the garden is a series of raised planters that demonstrate differing heights for comfortable gardening. Nineteen raised beds, from 18 to 41 inches high, burst with colorful plants and rich scents to create a dazzling first impression. On closer inspection, the value of the height variations among the beds becomes apparent. Some accommodate gardening in a wheelchair or while seated on ledges; other, lower beds are sized for children; higher beds offer toeholds to help the gardener stand erect. Gaps between vegetables and herbs, planted in shallow pans at three different heights, provide leg room for seated gardeners.

Container gardens feature a colorful mix of herbaceous plants—including love-lies-bleeding, coleus, and variegated ivy—and grasses. The restful vista area overlooks a pond, where the Evening Island is planted with lavender and grasses. Here, benches accommodate visitors beneath rustling wind chimes and a per-

Horticultural Therapy Forum at CBG

The Sixth International People-Plant Symposium will be held July 19 to 23, 2000, at the Chicago Botanic Garden in Glencoe, Illinois. Titled "Interaction by Design," the symposium will combine the biennial conference of the People-Plant Council and the annual conference of the American Horticultural Therapy Association.

The symposium will address the issues of communication, universal design, and therapeutic applications as they relate to the design and use of outdoor spaces. Concurrent sessions will feature presentations on topics such as research, design projects, and therapeutic programs. Among the speakers will be Diane Relf of Virginia Tech University, Roger Ulrich of Texas A & M University, Clare Cooper Marcus of the University of California, and Gene Rothert of Chicago Botanic Garden.

For more information, call (847) 835-8261, or e-mail continuingeducation@chicagobotanic.org.

gola adorned with colorful hanging baskets of scaevola and pentas. The baskets of flowers operate on pulleys that raise and lower the containers for easily accessible maintenance. Nearby vertical wall gardens—planted with ‘Sophie’ blue star (*Laurentia axillaris*), red coleus, ‘Snowflake’ bacopa, and coastal water hyssop (*Bacopa caroliniana*)—are interspersed with waterfall walls.

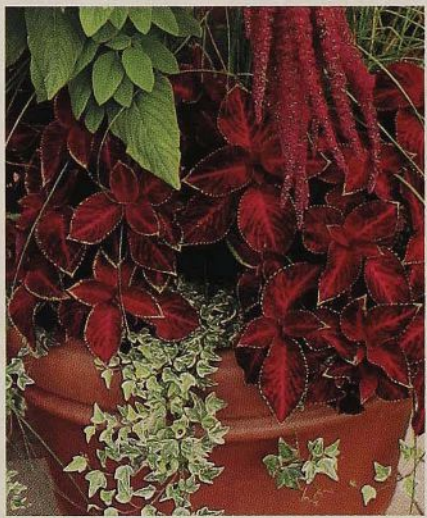
The adjacent sensory garden features fragrant plants such as heliotrope, lemon verbena, peppermint geranium, tuberose, eucalyptus, and gardenia. Silver plectranthus, asparagus fern, Chinese lantern, and various grasses stimulate the sense of touch. Boldly colored flowers like red zinnias and pink cosmos—and the glossy, variegated leaves of croton—add brilliance to the beds that many visually impaired visitors can appreciate. The touch garden has a metal grid of 12-by-12-inch squares laid down on a bed to help visitors with poor vision locate plants by feeling and counting squares. Signs are in Braille.



A TEACHING GARDEN

BESIDES SERVING AS an inspiring demonstration garden that shows visitors how to make gardening easier, Buehler’s horticultural therapy program has visitors actively participating in gardening efforts. Maria Gabaldo, coordinator of the garden, explains that activities are custom-designed for each group to address the purpose of the visit, the needs of the group, and the time available. “A one-session activity,” Gabaldo explains, “could be a sensory tour of the garden, or a chance to harvest lettuce and make a salad... A monthly therapy program would cover planting, deadheading, and grooming plants; pests and watering; harvesting; and finish with closing down the garden.”

The design layout and equipment are optimal for summer classes. Those in wheelchairs can approach from a parking area behind the garden, along an apple tree-lined path where an electric eye opens a gate near the classroom. The north end of the garden houses a canvas-roofed area, with a sink, tables of adjustable heights, and storage cabinets that move up and down with the push of a button. A rolling cart stores potting mix and provides a potting shelf.



Top: Volunteers plant a raised bed, which features wide ledges for sitting or placing tools. Above: A container at Buehler planted with coleus, amaranths, and ivy.

MAKING A GARDEN ACCESSIBLE

The staff at the Buehler Enabling Garden suggests 10 easy ways to make your garden more accessible.

1. Use tall containers to raise the soil level to a comfortable working height.
2. Plant low-maintenance plants in hard-to-reach areas of your garden.
3. Make sure your pavement is level and firm to provide good traction at all times.
4. Use soaker hoses for hard-to-reach areas of your garden. They help conserve water and can remain in place for an entire season.
5. Plant dwarf or slow-growing trees and shrubs, which require less maintenance.
6. Keep a few hand tools tucked away at various locations in your garden to save steps when retrieving tools.
7. Use levers on gate latches, doors, and water faucets. They are much easier to turn than round knobs.
8. Use specially designed tools to garden with ease in traditional ground-level beds.
9. Take advantage of vertical space to reduce bending: Use hanging baskets, trellises, and wall gardens to keep plants within easy reach.
10. Fill large containers and raised beds with easy-to-work soil made from equal parts (by volume) of topsoil, sand, and peat moss or compost.

Nearby, the Tool Shed sells books and adaptive tools; the latter are displayed on a cart so people can pick them up and try them. “We have some very lightweight tools, for arthritic patients,” says Howard Bresler, the garden’s volunteer tool specialist. “By using something as simple as black plastic foam pipe insulation on your tool handles,” Bresler continues, “you can have a better grip. Ergonomically designed trowels and cultivators have grips at a right angle to the stem to lighten wrist and arm pressure.”

John Kessler of Deerfield, Illinois, is a stroke victim who volunteers in the garden and adapts tools to help other disabled gardeners. “I am disabled, paralyzed since 1979, but I do garden maintenance two or three times a week—weeding, planting, pruning,” says Kessler. His tool adaptations include tools with Velcro cuffs to support the wrist or arms of those with a weak grip or paralysis, as well as extension tools to cut flowers that are out of reach with standard pruners.

No matter what your age or physical limitations, the Buehler Enabling Garden proves that gardening can be exciting and rewarding. In his book, *The Enabling Garden*, Rothert writes that “life with a mobility impairment is a constant challenge in adaptation—we’re masters at it.” In a well-planned space, with adaptations, anyone can experience the joy of gardening.

A free-lance writer and dedicated gardener, Adele Kleine teaches flower arranging classes at Chicago Botanic Garden.

Book Reviews

Garden Retreats: Creating an Outdoor Sanctuary.

Barbara Blossom Ashmun. Photographs by Allan Mandell. Chronicle Books, San Francisco, California, 2000. 149 pages. 8³/₄" x 9". Publisher's price, softcover: \$22.95. AHS price: \$19.

Sanctuary: Gardening for the Soul.

Photography by Dency Kane. Lauri A. Brunton and Erin Fournier. Friedman/Fairfax Publishers, New York, New York, 1999. 140 pages. 10¹/₄" x 11¹/₂". Publisher's price, hardcover: \$35. AHS price: \$27.

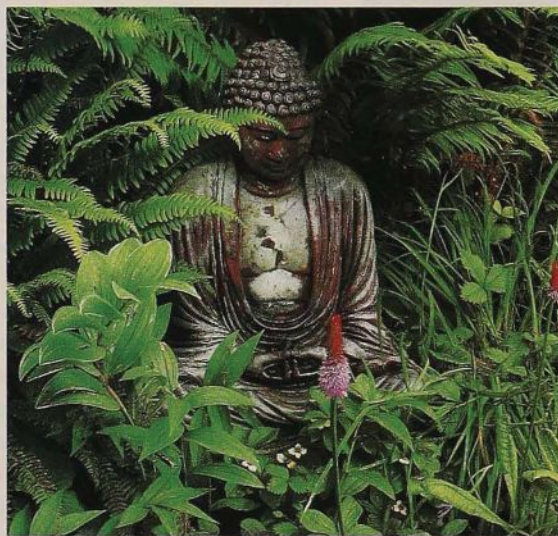
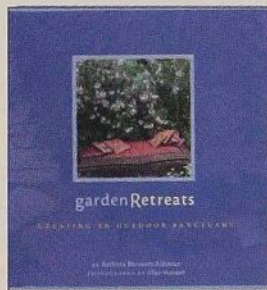
THINKING OF THE GARDEN as a sanctuary conjures up images of people lolling about in lawn chairs or engaged in meditation or yoga. Gardeners are usually too busy for such things; most of us consider ourselves lucky if we can find time for a stroll in the garden after work and before sunset. But the truth is our gardens are already sanctuaries, and the very act of gardening is in itself an escape. *Garden Retreats* and *Sanctuary* suggest ways to consciously enhance that experience.

While both books emphasize the personal nature of a retreat or sanctuary, they tackle the subject in very different ways. *Garden Retreats: Creating an Outdoor Sanctuary* is the one you should turn to for practical advice. Here you can find clever ideas that can be imitated, such as a curlicue trellis formed by wrapping Virginia creeper stems around a metal frame.

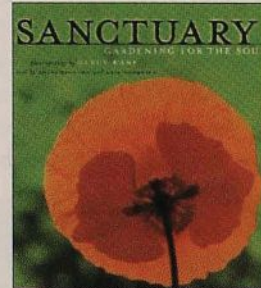
Ashmun analyzes specific gardens, drawing attention to focal points such as walls, entrances, paths, and trees. In particular, she addresses those who claim to lack creativity, of-

fering concrete suggestions to overcome that handicap. She suggests that repetitive tasks like weeding can free the unconscious and stimulate the imagination in the same way that meditation does. She also recommends taking photographs to encourage attentive looking. And she says we should build our gardens around the things we love, heeding the faint echoes of our childhood memories and fantasies. Most of all, she encourages an openness to possibility, advising us to silence the critic within and listen instead to our imaginations. Taking notice of the small pleasures of everyday life is important, she argues, for awareness of small details transforms the simplest sitting space into a garden retreat.

Sanctuary: Gardening for the Soul suggests we begin by exploring our own psyches to find what contributes to our sense of well-being in the garden. Each chapter is



A statue of a meditative Buddha lends a peaceful atmosphere to a garden of ferns. From *Garden Retreats*, photo by Allan Mandell.



devoted to a particular aspect of a sanctuary garden: peace, change, passion, mystery, and contemplation. Unfortunately, the advice on how to go about making any of these sanctuaries a reality is

rather vague. Many of the ideas here are ones you would probably come up with yourself: The sound of water is soothing, fences and walls create a sense of enclosure.

Perhaps the most interesting section deals with the difference between labyrinths and mazes. Whereas mazes are really just puzzles created for amusement, labyrinths are composed of complex geometric paths that lead into the center and back out. Historically, labyrinths were used for spiritual journeys and religious ceremonies; they are still used for enhancing prayer and emotional healing.

It is telling that the photographer's name is listed first on this book. The photographs are glorious, but they seldom serve to illustrate what is being described in the text. A large majority of them are beautiful close-ups of plants, but the captions neither identify the plants nor tell us whose garden we are seeing—a distinct disadvantage if we want to tour some of these gardens or grow these plants.

—Norma Prendergast

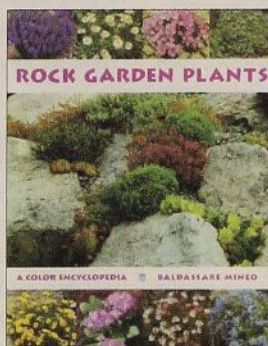
An art historian and writer, Norma Prendergast gardens in Ithaca, New York.

Rock Garden Plants: A Color Encyclopedia.

Baldasarre Mineo. Timber Press, Portland, Oregon, 1999. 284 pages. 8³/₄" x 11¹/₄". Publisher's price, hardcover: \$59.95. AHS price: \$45.

TO OPEN THIS BOOK is to enter the enchanting world of rock garden plants.

True to its title, the book contains concise text and color photographs of more than 1,300 plants for the rock garden. The overall quality of the photographs is very good and the text, though brief, contains essential cultural information. As the owner of a retail and mail-order nursery—the well-respected Siskiyou Rare Plant Nursery in Medford, Oregon—the author recognizes the importance of being able to visualize plants in a garden setting. The photographs and text, in fact, are valuable to anyone who is ordering rock garden seeds or plants—or simply pondering such things as flower color, foliage, form, and season of bloom for his or her garden.



carefully read the helpful text that accompanies each photograph and to study the lists of plants for specific purposes at the back of the book.

There are some things that the book doesn't purport to include. There is nothing about rock garden design and construction or on propagation. The author wisely refers the reader to other sources of information and suggests the desirability of joining one or more rock garden societies.

The library of rock gardening books is sparse, so it is very encouraging to have a quality volume such as *Rock Garden Plants* to add to the shelf.

—Don Humphrey

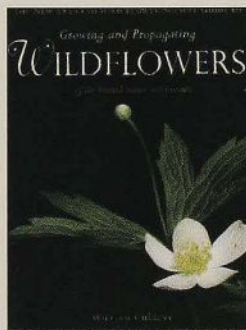
Formerly manager of Green Springs Gardens in Alexandria, Virginia, Don Humphrey battles the odds by tending a rock garden in hot and humid northern Virginia.

The New England Wild Flower Society Guide to Growing and Propagating Wildflowers of the United States and Canada.

William Cullina. Houghton Mifflin, Boston, Massachusetts, 2000. 305 pages. 8 1/2" x 10 7/8". Publisher's price, hardcover: \$40. AHS price: \$40.

I HAVE BEEN GROWING and propagating native plants professionally as well as in my own garden throughout my life. I'm also an avid reader who is running out of bookshelf space, so I choose carefully when adding a new book to my library, particularly when it's on a subject I thought had already been thoroughly covered.

The New England Wild Flower Society Guide to Growing and Propagating Wildflowers of the United States and Canada begs comparison with some well-worn classics already on my shelf. For wildflower propagation clues, I frequently turn to Harry Phillips and the North Carolina Botanical Gardens staff's *Growing and Propagating Wildflowers*, which was published in 1985.



Cullina's book includes much of the same information as Phillips' does, but for many more wildflowers—some 200 genera and almost 1,000 species. Propagation information is shared from his experience gained both at Niche Gardens, a nursery in North Carolina, and—more recently— from his years as chief plant propagator at the New England Wild Flower Society in Framingham, Massachusetts. In addition to this first-hand experience, he has included much of the newest information gleaned from research since Phillips' book was published.

To convey information on wildflower propagation, Cullina and the publisher have adopted a very user-friendly layout similar to the format used in Michael Dirr and Charles Heuser's classic *Reference Manual of Woody Plant Propagation*. However, Cullina's propagation advice is geared towards the home garden rather than a commercial nursery or horticultural research perspective.

In addition, Cullina includes brief, clear explanations—mostly in layman's terms—of complicated scientific concepts such as North American Floristic Provinces and the impact of soil physics and chemistry on wildflower growth.

While Cullina is an advocate of what he calls "ecological gardening," which he defines as finding plants that fit your site rather than modifying the site to fit the plant, the information provided in his book allows gardeners to follow their own inclinations on this matter.

The stated central purpose of this book is "to show you the possibilities that abound in our native flora so that you can choose plants that are both appealing and adapted to the climate and soils of the region in which you live"—and in this Cullina has certainly succeeded. In my mind his book is the best single source of wildflower propagation information available.

—Richard E. Bir

A horticultural extension specialist at North Carolina State University, Richard E. Bir is a Fellow of the International Plant Propagators Society and author of *Growing and Propagating Showy Native Woody Plants*.

The representative coverage of rock garden plants is good when one considers the large number of species in some genera. The book covers 33 species and hybrids of *Primula*—a genus with more than 400 species, many of which are unavailable or very difficult to grow. Nine of the 19 species in the genus *Cyclamen* are discussed, excluding only those that are either tender or rarely grown.

For *Penstemon* fans, the emphasis is on the deservedly popular "shrubbies" of the subgenus *Dasanthera* from the northwestern United States. For the remaining 360 species of this North American genus, including many dryland rock garden forms only recently brought into cultivation, readers will need to turn to *Penstemons* by Robert Nold (Timber Press, 1999), which was reviewed in the March/April issue of this magazine.

Rock Garden Plants offers excellent coverage on gardening in various regions and climates. In the past, North American rock gardeners have tended to be concentrated in the Northeast and Northwest. But in recent years there has been a large increase in rock gardening in the upper Southeast, the Rocky Mountain region, and California and the Southwest.

Only a gardening fanatic, willing to go to great lengths, could grow all of the plants in this book successfully, but it is amazing to learn how many of them can be grown in our modified garden environments. It is, however, important to

Gardeners' Books

Because the **AHS Horticultural Book Service is being discontinued as of June 30**, no further phone or mail orders will be filled after that date. However, AHS members will still be able to order books at a discount by linking to Amazon.com through the Society's Web site at www.ahs.org. Through this partnership with Amazon.com, AHS members can receive better discounts on most titles, faster delivery, greater inventory, and improved access to hard-to-find books.

The books listed here have not been critically evaluated; they have been chosen for description based on unusual subject matter or substantive content. Until June 30, members can continue to order books by calling Trish Gibson at (800) 777-7931 ext. 136.

Specialty Gardens

My Garden Book.

Jamaica Kincaid. Farrar, Straus, and Giroux, New York, New York, 1999. 229 pages. Publisher's price, hardcover: \$23. AHS price: \$17.

IN THIS NEW collection of essays and articles from *The New Yorker* and other magazines, Kincaid writes about the garden in winter, the garden in spring, the seduction of plant catalogs, English gardeners, and the yearning for an abundance of plants. She compares gardening in Vermont, where she lives, to Antigua, where she was born and raised. She discusses friends' gardens and a few public gardens, as well as her own roses, hostas, and nasturtiums.

A Garden of Fragrance.

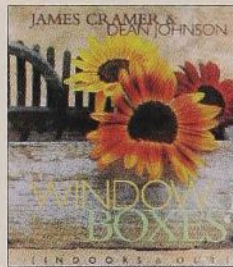
Suzy Bales. Regan Books, New York, New York, 2000, 192 pages. Publisher's price, hardcover: \$35. AHS price: \$27.

ORGANIZED BY THE AROMATIC properties of the plants, this book provides gardeners with detailed advice on how to design, plant, and maintain a garden of fragrant plants. Spectacular photographs demonstrate that a fragrant garden can also be visually appealing. Ap-

pendices offer information on essential oils and their properties, lists of fragrant plants, and mail-order sources.

Window Boxes, Indoors & Out.

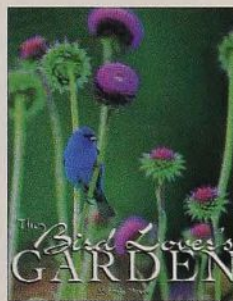
James Cramer and Dean Johnson. Artisan, New York, New York, 1999. 176 pages. Publisher's price, hardcover: \$27.50. AHS price: \$20.



JAMES CRAMER and Dean Johnson share their ideas for creative window boxes. From a wheelbarrow filled with colorful flowers to a bird-bath filled with herbs, they show how creative gardeners can make a window box out of ordinary objects. More than 150 color photographs accompany the information on seasonal plants and unusual ways to display them.

The Bird-Lover's Garden.

Melinda Myers and Pat Kite. Friedman/Fairfax Publishers, New York, New York, 2000. 128 pages. Publisher's price, hardcover: \$25. AHS price: \$18.



THIS BOOK helps gardeners turn their backyards into havens for many types of birds. It discusses how to plan a bird-friendly garden, which plants will attract birds, and elements for attracting birds. Also included is a regional guide that identifies the most common birds to visit home gardens.

For Your Garden: Cottage Gardens.

Teri Dunn. Friedman/Fairfax Publishers, New York, New York, 1999. 72 pages. Publisher's price, softcover: \$12.95. AHS price: \$11.

IF YOU ARE INTERESTED in planting a cottage garden with four-season appeal, this book offers inspiration. Numerous color photographs illustrate breathtaking gardens, and favorite cottage plants are featured in close-up shots.

Traditional and non-traditional ways of defining garden boundaries are presented, and various embellishments—such as water pumps, sundials, lampposts, birdhouses, and window boxes—are described and depicted.

Vegetables

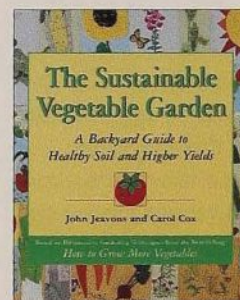
Chile Peppers.

Beth Hanson, guest editor. Brooklyn Botanic Garden, Brooklyn, New York, 1999. 111 pages. Publisher's price, softcover: \$9.95. AHS price: \$9.

A NEW BOOK in the 21st-Century Gardening Series by Brooklyn Botanic Garden, *Chile Peppers* reviews the history of the chile pepper, relates its medicinal uses, and explains what causes chile peppers to be hot. Detailed instructions on growing chile peppers are provided, along with extensive information on the disorders, pests, and diseases of chiles. Recipes are included, and the "Encyclopedia of Chiles" by Paul Bosland details the five species of domesticated chiles.

The Sustainable Vegetable Garden: A Backyard Guide to Healthy Soil and Higher Yields.

John Jeavons and Carol Cox. Ten Speed Press, Berkeley, California, 1999. 118 pages. Publisher's price, softcover: \$11.95. AHS price: \$10.



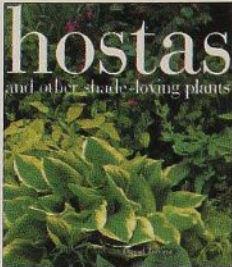
THIS BOOK presents, in easy-to-understand terms, the basic principles of sustainable vegetable gardening that were first outlined in *How to*

Grow More Vegetables by Ecology Action. Beginning gardeners will learn how to foster the soil's life-giving cycles of nourishment and replenishment, and implementation techniques that will produce yields up to four times greater than those obtainable with conventional methods. The added benefit is that by following these methods, you will also be preserving and enriching the soil itself.

Ornamentals

Hostas and Other Shade-Loving Plants.

Richard Bird with David Tarrant. Graphic Arts Center Publishing, Portland, Oregon, 1999. 144 pages. Publisher's price, softcover: \$14.95. AHS price: \$13.



ESSENTIAL reading for shade gardeners, this book offers step-by-step instructions and color photographs to help in selecting the correct plants for shady areas. Design and maintenance are also addressed by the authors, who encourage gardeners to work *with*, rather than *against*, nature. The book includes an encyclopedia of hosta species and cultivars and other shading-loving plants, as well as a list of hosta suppliers from around the world.

New Perennials:

The Latest and Best Perennials.

Jenny Hendy with David Tarrant. Whitecap Books, Ltd., North Vancouver, British Colum-

bia, Canada, 1999. 144 pages. Publisher's price, softcover: \$14.95. AHS price: \$13.

SOME OF THE NEWEST plants available to gardeners, as well as other worthy plants that have been rediscovered, are presented in this book. It provides advice on border design, preparation, and planting. Color photographs show how to combine herbaceous perennials with shrubs, bulbs, and annuals. Ideas and advice are given for growing plants and designing gardens in various styles.

Landscape Features

Landscape Construction: Procedures, Techniques, and Design.

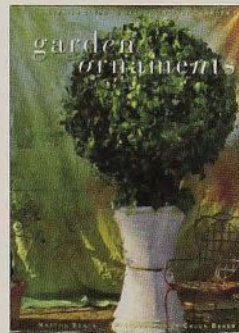
Floyd Giles. Stipes Publishing, Champaign, Illinois, 1999. 250 pages. Publisher's price, hardcover: \$44.80. AHS price: \$28.80.

WRITTEN BY a landscape contractor, this book explains how to design and build dozens of popular landscape features. Over 600 black-and-white photographs and illustrations demonstrate procedures, methods, and designs. Topics covered include: patios, wooden decks, brick

walks, retaining walls, arbors, gates, fences, drainage systems, lighting, and mailboxes. Explanations are also given for mastering basic techniques such as measuring distance, figuring area, and taking soil samples. This guide will help gardeners understand what is involved in a good landscape installation.

Garden Ornamentals.

Martha Baker. Clarkson Potter/Publishers, New York, New York, 1999. 208 pages. Publisher's price, hardcover: \$40. AHS price: \$30.



DISCOVER HOW garden ornaments can enhance any style of garden and how various elements can be most effectively combined. Beautiful photographs highlight gardens from all over the country. The book includes instructions for several projects, including building a stone wall and building a trellis. A resource guide is also provided.

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 Or call toll-free (800) 777-7931 ext. 136.

Prices in effect until June 30, 2000. After expiration date, no further orders will be filled. Please allow four to six weeks for delivery. Prices subject to change without notice.



Regional Happenings

NORTHEAST

MAY 12 & 13. **Hill-Stead Museum's May Market.** Lectures, demonstrations, sales. Hill-Stead Museum, Farmington, Connecticut. (860) 233-9853.

MAY 20 & 21. **Spring Plant Sale.** Landis Arboretum, Esperance, New York. (518) 875-6935.

JUNE 2-4. **"Evergreen" Open House.** Visit the famed woodland gardens of landscape designer Robert Gillmore. Landscape Education Project. Goffstown, New Hampshire. (603) 497-8020.

JUNE 3. **15th Annual Plant Sale.** Tower Hill Botanic Garden, Boylston, Massachusetts. (508) 869-0314.

JUNE 3. **Plant Sale.** Rhode Island Wild Plant Society. URI Greenhouses, Kingston, Rhode Island. (401) 783-5895.

JUNE 3. **Spring Gardens in Bloom.** Tours, lectures, demonstrations. Old Sturbridge Village, Sturbridge, Massachusetts. (800) 733-1830.

JUNE 10. **Annual Wildflower Sale.** New England Wild Flower Society. Garden in the Woods, Framingham, Massachusetts. (508) 877-6574.

JUNE 12-17. **"Hildene" Peony Festival.** Historic estate of Robert Todd Lincoln. Manchester, Vermont. (802) 362-1788.

JUNE 16 & 17. **Pocket Gardens of Portsmouth Tour.** Self-guided tour. Portsmouth, New Hampshire. (603) 436-4762.

JUNE 24. **Private Gardens of the Kennebunks.** Tour. Biddeford, Maine. (207) 284-1337.

JUNE 25. **City Spaces, Country Places Garden Tour.** Tour of 10 private gardens in Worcester. Sponsored by Tower Hill Botanic Garden, Boylston, Massachusetts. (508) 869-0314.

MID-ATLANTIC

MAY 13. **Cyburn Market Day.** Plant and craft sales. Cyburn Mansion, Baltimore, Maryland. (410) 367-2217.

MAY 14. **62nd Annual Garden Days.** Friends

AHS Events

Events sponsored or co-sponsored by AHS are indicated by an **AHS** symbol. Expanded and updated Regional Happenings listings can be viewed on the Society's Web site at www.ahs.org.

Hospital, Philadelphia, Pennsylvania. (215) 831-7817.

MAY 20 & 21. **Virginia Peninsula Rose Society Show.** Coliseum Mall, Hampton, Virginia. (757) 838-3899.

JUNE 10. **Backyard Wildlife Habitat™ Tour.** Virginia yards and gardens certified by the National Wildlife Federation. (703) 790-4434.

JUNE 10. **Earth On Our Hands.** Tour of private Virginia and Maryland gardens. National Capital Area Federation of Garden Clubs. (703) 680-5425.

JUNE 10 & 11. **Blue Ridge Garden Festival.** Virginia's Explore Park, Roanoke, Virginia. (540) 989-5652.

AHS JUNE 25. **Family Picnic.** Friends of

River Farm. River Farm, Alexandria, Virginia. (703) 768-5700.

SOUTHEAST

MAY 1-SEPT. 4. **Butterflies!** Huntsville-Madison County Botanical Garden, Huntsville, Alabama. (256) 830-4447.

AHS **Southern Living Gardening School** MAY 13. Biltmore Estate, Asheville, North Carolina. (888) 844-4696.

MAY 24. Opryland Hotel, Nashville, Tennessee. (888) 997-9672.

JUNE 3 & 4. **82nd Royal Poinciana Festival.** Miami, Florida. (305) 859-9455.

JUNE 15. **Natives Made For the Shade.** Lecture by George Sanko. Georgia Perennial Plant Association. Atlanta History Center, Atlanta, Georgia. (770) 955-1303.

JUNE 24. **Tropical Fruit Festival.** Mounts Botanical Garden, West Palm Beach, Florida. (561) 233-1749.

NORTH CENTRAL

MAY 11-20. **Tulip Time Festival.** Holland, Michigan. (800) 822-2770.

Asheville Hosts Conservation Meeting

THE FIRST EVER WORLD BOTANIC GARDENS CONGRESS (WBGC) will convene June 25 through 30 at the North Carolina Arboretum in Asheville, North Carolina, promising to be a landmark plant conservation meeting as well as a "can't miss" opportunity for representatives of North American botanical gardens and conservation groups to welcome and associate with an unprecedented assemblage of international colleagues. Titled "Partnerships Within and Beyond the Garden," the WBGC is jointly organized by Botanic Gardens Conservation International, the Center for Plant Conservation, and the American Association of Botanical Gardens and Arboreta. Each of these organizations will also be holding their annual conferences during the congress. The WBGC is expected to attract upwards of 500 participants from some 50 countries and will mark the launch of the International Agenda for Botanic Gardens in Conservation, a new global strategy for safeguarding plant species and protecting biodiversity that will be implemented by botanic gardens and their network organizations worldwide.

Registration rates range between \$320 and \$635, depending on membership status and time of registration. Half day and single day registrations are also available. For more information, call (610) 925-2500 or visit the North Carolina Arboretum's Web site at www.ncarboretum.org and click on the WBGC link.

—Margaret T. Baird, Communications Assistant

MAY 12 & 13. **Annual Perennial Plant Sale.** Frederik Meijer Gardens, Grand Rapids, Michigan. (616) 957-1580.

MAY 20. **Annual Plant Sale.** Belle Isle Greenhouse, Detroit, Michigan. (313) 852-4064.

MAY 19–21. **A Bloomin' Sale.** Annual plant sale. Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440.

JUNE 1–4. **Cleveland Botanical Garden Flower Show.** Cleveland, Ohio. (216) 721-1600.

JUNE 3 & 4. **Garden Fair Extravaganza.** Klehm Arboretum and Botanic Garden, Rockford, Illinois. (815) 965-8146.

JUNE 24–26. **2000 Boerner In Bloom Festival.** Boerner Botanical Gardens, Milwaukee, Wisconsin. (414) 529-1870.

SOUTH CENTRAL

MAY 20. **Greater Fort Worth Herb Festival.** Fort Worth Botanic Garden Center, Fort Worth, Texas. (817) 488-7262.

MAY 27 & 28. **Plant Sale & New Gardens Highlight Tour.** The German School, Hermann, Missouri. (800) 932-8687.

JUNE 3 & 4. **Butterfly Festival.** Botanica: The Wichita Gardens, Wichita, Kansas. (316) 264-0448.

JUNE 10. **Kentucky Herb Festival.** Franklin County Fairgrounds, Frankfort, Kentucky. (606) 234-1452.

NORTHWEST

MAY 13. **Garden Expo 2000.** Spokane Community College, Spokane, Washington. (509) 535-5903.

JUNE 17. **Lakewood Garden Tour.** Pierce College, Lakewood, Washington. (253) 964-6614.

JUNE 28–JULY 2. **2000 Lily Show and Symposium.** North American Lily Society. Monarch Hotel, Clackamas, Oregon. (503) 656-1575.

SOUTHWEST

JUNE THROUGH AUGUST. **Santa Fe Greenhouses Summer Garden Tours.** Santa Fe, New Mexico. (877) 811-2700.

JUNE 17 & 18. **Wildflower Festival.** Lookout Mountain Nature Center & Preserve, Golden, Colorado. (303) 526-0594.

WEST

MAY 20. **Through the Garden Gate Tour.** Tour of private gardens. Petaluma Historical Museum, Petaluma, California. (707) 778-4398.

Remembering Aldo Leopold in Pennsylvania

A FIXTURE ON THE CONFERENCE CALENDAR long before the recent resurgence of interest in native plants, the annual Native Plants in the Landscape Conference, to be held June 8 through 10 at Millersville University in Pennsylvania, will celebrate its 10th anniversary this year with the theme, "Revisiting Leopold's Land Ethic: Celebrating the Past and Envisioning the Future." Since its inception, this meeting has regularly attracted a cross-section of native plant enthusiasts, including environmental and landscape professionals, backyard gardeners, educators, and students. "We've decided this year to step back and look at the underpinnings of what we're about—environmental ethics and aesthetics—as well as address more traditional topics of native plant horticulture and conservation," says Program Chair Cyane Gresham. Scheduled speakers includes Buddy Huffaker, executive director of the Aldo Leopold Foundation, and Carl Leopold, a plant physiologist at Boyce Thompson Institute at Cornell University and a son of Aldo Leopold. Another highlight is the native plant sale, which will be open to the general public at scheduled times.

Registration costs range from \$125 to \$195; continuing education credits are also available. For more information, contact the Department of Continuing Education, Millersville University at (717) 872-3030, or e-mail roma.sayre@millersv.edu.

Tucson's Enchanted Evenings



The ghostly flower of night-blooming cereus

IF YOU HAPPEN TO BE IN OR AROUND Tucson, Arizona, from late May through early August, be sure to check on the status of the night-blooming cereus (*Peniocereus greggii*) collection at Tucson's Tohono Chul Park. If your timing is right, you'll be lucky enough to witness the fleeting, fragrant bloom of this spectacular desert native.

Nicknamed the "Queen of the Night," the large, creamy white flowers of the night-blooming cereus—a member of the cactus family—bloom only at night, and each flower lasts just one night. With over 250 plants, Tohono Chul Park has what it believes is the largest collection of night-blooming cereus in the United States.

When many of the flowers will be blooming at once, the park schedules a "bloom night," usually from around 4 p.m. to midnight. On these nights the park is decorated with luminarias and visitors are taken on small tours to view the "Queen," observe Sphinx moths pollinating the flowers, and listen to the telling of the Tohono O'odham legend about the origin of these mysterious plants.

To stay informed on upcoming bloom nights, call the park's Queen of the Night Hotline at (520) 575-8468, or visit the Web site at www.tohono-chul-park.org. You can also e-mail marketing@tohono-chul-park.org and request an e-mail announcement when a bloom night is called.

—M.T.B.

MAY 20. **26th Annual Plant Sale.** Huntington Botanical Gardens, San Marino, California. (626) 405-2141.

JUNE 3 & 4. **9th Annual Orange County Herb Faire.** Fullerton Arboretum, Fullerton, California. (714) 278-3579.

JULY 1. **National Cactus and Succulent Show.** Huntington Botanical Gardens, San Marino, California. (626) 405-2141.

CANADA

MAY 12–14. **International Tulip Festival.** Truro, Nova Scotia. (902) 895-6328.

MAY 21–28. **Lilac Festival.** Royal Botanical Gardens, Burlington, Ontario. (905) 527-1158.

JUNE 2–4. **VanDusen Flower and Garden Show.** VanDusen Botanical Garden, Vancouver, British Columbia. (604) 878-9274.

continued from page 17

toes and winter squash also benefit from this approach. Tending and harvesting is easier in the vertical plane than in horizontal beds. And setting spatial limits on the garden right from the start will reduce the time and energy needed for success.

Mobility and the mature gardener don't necessarily go hand in hand. Natalie Peterson, a photojournalist, says, "I'm changing the way I lift and bend. And I can't kneel for long periods. Instead, I sit propped on an old blanket in mid-garden and work from side to side." Joan Clark, gardening in Branford, Connecticut, and the Berkshire Mountains of western Massachusetts, finds raised beds definitely easier to work in but says, "Everyone's more aware of body mechanics now than ever before. I tend to stick to tools that are ergonomic."

Ergonomic Tools

"Ergonomic" is a big buzz-word with the body-conscious crowd regardless of age. Mature gardener and massage therapist Lloyd Carter defines ergonomic tools as "those designed to reduce operator discomfort and fatigue, and therefore injury." Current mail-order equipment catalogs offer a wide variety of garden tools to do just that. Even some seed and plant catalogs now offer adaptive tools. T-grip and D-grip handles allow for a better grasp on spades and shovels; extension handles permit gardeners to avoid bending over to shovel and rake. Devices such as the BackBuddy and the Motus D-Grip clamp onto long-handled tools to reduce back strain by custom-adapting for more upright posture.

Ergonomic design is most apparent in hand tools. The HandForm series trowels aim at sufferers of carpal tunnel syndrome and arthritis. FistGrip™ tools keep the wrist aligned with a plastic handle that projects at a right angle from the tool shaft, for gripping with the fist. To immobilize the wrist totally, a cuff secured with Velcro is also available to strap the tool close to the forearm for maximum support.

Many hand tools now come with handles 24 inches long, to eliminate leaning over beds raised higher than 12 inches. Others offer handles that extend from 18

Resources

Accessible Gardening: Tips and Techniques for Seniors and the Disabled by Joann Woy, Stackpole Books, Mechanicsburg, Pennsylvania, 1997.

Accessible Gardening for People with Physical Disabilities by Janeen R. Adil, Woodbine House, Bethesda, Maryland, 1994.

Easy Gardening: No Stress—No Strain by Jack Kramer, Fulcrum Publishing, Golden, Colorado, 1991.

Easy Lifelong Gardening: A Practical Guide for Seniors by John Pierce and Roland Barnsley, Trafalgar Square Publishing, North Pomfret, Vermont, 1993.

The Enabling Garden by Gene Rothert, Taylor Publishing Co., Dallas, Texas, 1994.

Square Foot Gardening by Mel Bartholomew, Rodale Press, Emmaus, Pennsylvania, 1992.

American Horticultural Therapy Association, 909 York Street, Denver, CO 80206-3799. (303) 331-3862. www.ahta.org

to 32 inches; others have a soft-textured grip to reduce fatigue. That soft grip—heaven-sent to arthritic fingers—is achieved with foam cylinders that slide over tool handles. OccuMitts therapeutic support gloves and standard bicycle gloves with padded palms and cropped fingers provide more hand support than regular gardening gloves.

Ruth Kurle, 74-and-no-bones-about-it, says the development of pruners with revolving handles "is absolutely one of the best inventions ever—means I can go on pruning for a long time without tiring." Some pruners and grass clippers now offer padded handles as well, and those with a

Sources

A.M. Leonard, Inc., P.O. Box 816, Piqua, OH 45356. (800) 543-8955. www.amleo.com. BackBuddy

The Calais Co., Inc., P.O. Box 355, Mendham, NJ 07945. (973) 543-5665. calaisco@aol.com. Fist Grip™ tools

Green Goods, 54 Range Road, Suite #7, Windham, NH 03087. (800) 688-9594. OccuMitts

Langenbach Tools, P.O. Box 453, Blairstown, NJ 07825. (800) 362-1991. www.langenbach.com

Lee Valley Tools, P.O. Box 1780, Ogdensburg, NY 13669. (800) 871-8158. www.leevalley.com. Telescoping tools

Motus, 39 Nanton Boulevard, Dept. TH298, Winnipeg, MB, Canada R3P 0N1. (204) 489-8280. Motus-D Grip

Stillbrook Horticultural Supplies, P.O. Box 600, Bantam, CT 06750. (800) 414-4468. www.stillbrook.com

Walt Nicke Co., P.O. Box 433, Topsfield, MA 01983. (978) 887-3388. www.gardentalk.com. HandForm

ratchet design require less grip strength to cut. Ratchet loppers are also available, as are six-foot-long trigger-grip loppers, which allow extended reach. And for upright trimming, there are stand-up grass clippers. For those who get down and dirty, foam kneepads, padded kneeler benches, and sit-on scooter carts offer varying degrees of knee relief for today's mature gardeners, who are pretty far from the ol' rockin' chair.

Horticulturist and writer Barbara Schlein operates Fountain Gardening Service in Woodbridge, Connecticut, which specializes in autumn and winter gardens.

Classifieds

CLASSIFIED AD RATES: All classified advertising must be prepaid. \$2.50 per word; minimum \$60 per insertion. Copy and prepayment must be received on the 20th of the month three months prior to publication date. Send orders to: AHS Advertising Office, 1775 Jamieson Street, Suite 210, Alexandria, VA 22314-5715. Phone (703) 518-4700; fax (703) 518-8495.

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Exotic House Plants: 1,200 photos, 150 in color, with keys to care, \$8.95.
Shipping additional. Circulars gladly sent.

ROEHRS Co., Box 125, East Rutherford, NJ 07073. (201) 939-0090. FAX (201) 939-0091.

GARDEN STATUARY

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PEONIES

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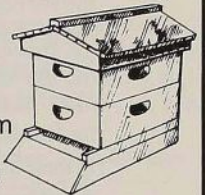


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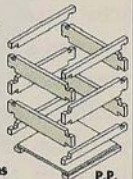
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Pronunciations and Planting Zones

Most of the cultivated plants in this issue are listed here with their pronunciations and USDA Plant Hardiness and AHS Plant Heat Zones. If 0 is listed in place of USDA hardiness zones, it means that plant is a true annual—it completes its life cycle and dies in a year or less. Tropical plants that are hardy only in USDA Zone 11 are listed by minimum average temperature. To purchase an AHS Plant Heat Zone Map, call (800) 777-7931 ext. 0.

A-C

- Aesculus parviflora** ES-kyew-lus par-vih-FLOR-uh USDA 3-7, AHS 8-4
- Arctostaphylos uva-ursi** ark-toh-STAFF-ih-loss yew-vuh-UR-sigh 2-8, 9-3
- Bacopa caroliniana** buh-KO-puh kair-o-lin-ee-AN-uh 10-11, 12-1
- Betula populifolia** BET-yew-luh pop-yew-lih-FO-lee-uh 3-6, 6-1
- Browallia americana** bro-WAL-ee-uh uh-mair-ih-KAN-uh 0, 8-1
- Calopogon tuberosus** kal-o-PO-gon too-buh-RO-sus 3-11, 12-1
- Caragana arborescens 'Pendula'** kair-uh-GAN-uh ar-bor-ESS-enz 2-8, 8-1
- Centaurea americana 'Alba'** sen-TAW-ree-uh uh-mair-ih-KAN-uh 0, 10-4
- C. cyanus** C. SIGH-an-us 0, 9-1
- Chamaecyparis thyoides** kam-ee-SIP-uh-riss thy-OY-deez 3-8, 8-1
- Clarkia amoena** KLAR-kee-uh uh-MEE-nuh 0, 6-1
- C. botata** C. BOT-ay 0, 7-1
- C. breweri 'Pink Ribbons'** C. BREW-ur-eye 0, 6-1
- C. pulchella** C. pul-KEL-uh 0, 6-1
- C. unguiculata** C. un-gwik-yew-LAY-tuh 0, 7-1
- Clematis lanuginosa 'Candida'** KLEM-uh-tiss lan-yew-jih-NO-suh 4-8, 8-1
- C. pitcheri** C. PITCH-ur-eye 6-9, 9-6
- Clethra alnifolia** KLETH-ruh al-nih-FO-lee-uh 3-9, 9-1
- Consolida ambigua** kon-SAH-lih-duh am-BIG-yoo-uh 0, 9-1
- Coreopsis tinctoria** kor-ee-OP-sis tink-TOR-ee-uh 4-9, 12-1
- Corydalis aurea** kuh-RID-uh-liss AW-ree-uh 0, 8-6

D-K

- Dodecatheon meadia** doh-deh-KATH-ee-on MEE-dee-uh 4-8, 8-2

- Dracocephalum parviflorum** drak-o-SEF-uh-lum par-vih-FLOR-um 0, 8-1
- Fallopia aubertii** fuh-LO-pee-uh aw-BER-tee-eye 5-9, 9-5
- Gaillardia pulchella** gay-LAR-dee-uh pul-KEL-uh 8-11, 12-1
- Galax aphylla** GAY-laks ah-FIL-luh 5-8, 8-5
- Gaultheria procumbens** gawl-THEER-ee-uh pro-KUM-benz 3-8, 8-1
- Ilex glabra** EYE-leks GLAB-ruh 5-9, 9-3
- I. opaca** I. o-PAH-kuh 5-9, 9-5
- Itea virginica** eye-TEE-uh vir-JIN-ih-kuh 5-9, 10-7
- Kalmia latifolia** KAL-mee-uh lat-ih-FO-lee-uh 4-9, 8-3

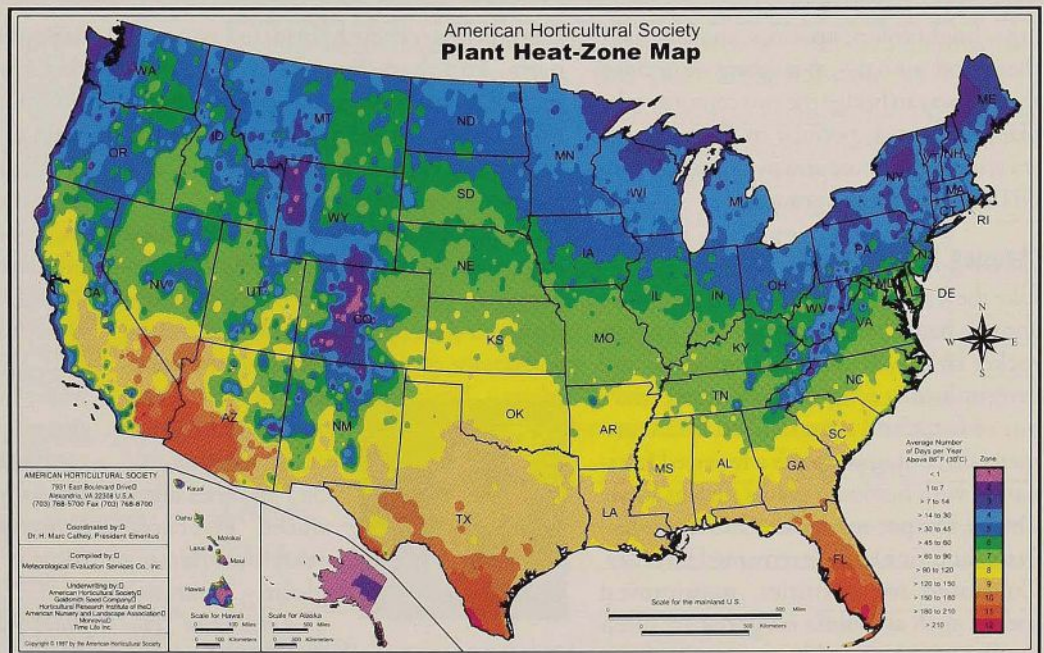
L-P

- Lablab purpureus** LAB-lab per-BER-ee-us 10-11, 12-1
- Laurentia axillaris** law-REN-tee-uh ak-sih-LAIR-iss 9-11, 12-6
- Leiophyllum buxifolium** ly-oh-FIL-lum buk-sih-FO-lee-um 6-8, 8-6
- Lupinus benthamii** loo-PY-nus ben-THAM-ee-eye 0, 7-2
- L. hirsutissimus** L. her-soo-TISS-ih-mus 0, 8-1
- L. nanus 'Pixie Delight'** L. NAN-us 0, 7-1
- L. subcarnosus** sub-kar-NO-sus 0, 10-1
- L. texensis** L. tek-SEN-sis 0, 10-1

- Lygodium palmatum** lie-GO-dee-um pal-MAY-tum 7-10, 12-8
- Mimulus bigelovii 'Cuspidata'** MIM-yew-lus bih-guh-LO-vee-eye 0, 11-1
- Monarda pectinata** moh-NAR-duh pek-tih-NAY-tuh 0, 9-1
- Nama hispidum** NAM-uh HISS-pih-dum 0, 10-4
- Nemophila maculata** neh-MOF-il-uh mak-yew-LAY-tuh 0, 12-2
- N. menziesii** N. men-ZEES-ee-eye 0, 12-2
- Nigella damascena** ny-JEL-luh dam-uh-SEE-nuh 0, 12-1
- Nymphaea odorata** nim-FEE-uh o-doh-RAY-tuh 2-10, 12-1
- Nyssia sylvatica** NIS-suh sil-VAT-ih-kuh 5-9, 9-2
- Oxydendrum arboreum** ok-sih-DEN-drum ar-BOR-ee-um 5-9, 9-3
- Parthenium integrifolium** par-THEE-nee-um in-teg-rih-FO-lee-um 5-9, 9-3
- Phacelia campanularia** fuh-SEE-lee-uh kam-pan-yew-LAIR-ee-uh 0, 9-1
- P. tanacetifolia** P. tan-uh-see-tih-FO-lee-uh 0, 9-1
- Pieris floribunda** PY-er-iss flor-ih-BUN-duh 5-8, 8-4
- Pinus rigida** PY-nus RIH-jih-duh 5-8, 8-4
- Polygala lutea** pah-LIG-ah-luh LEW-tee-uh 7-9, 9-6
- Pycnanthemum virginianum** pik-NAN-theh-mum vir-jin-ee-AN-um 4-8, 8-2

Q-Z

- Quercus muehlenbergii** KWER-kus mew-len-BUR-gee-eye 4-8, 8-2
- Rhododendron catawbiense** ro-doh-DEN-dron kuh-taw-be-EN-see 4-8, 8-1
- R. viscosum** R. viss-KO-sum 4-8, 8-1
- Salpiglossis sinuata** sal-pih-GLOSS-iss sin-yew-AY-tuh 0, 8-1
- Salvia x sylvestris** SAL-vee-uh x sil-VES-triss 5-9, 9-3
- Sassafras albidum** SASS-uh-frass AL-bih-dum 4-8, 8-3
- Shortia galacifolia** SHOR-tee-uh guh-lah-sih-FO-lee-uh 6-9, 9-6
- Silphium laciniatum** SIL-fee-um lass-ih-NAY-tum 5-9, 9-5
- Sporobolus heterolepis** spor-OB-olus het-ur-o-LEP-iss 3-8, 10-2
- Thymophylla tenuiloba** thy-mo-FIL-luh ten-yew-ih-LO-buh 0, 12-9
- Vaccinium corymbosum** vak-SIN-ee-um koh-rim-BO-sum 4-8, 8-1
- V. macrocarpon** V. mak-ro-KAR-pon 2-7, 7-1
- Viburnum nudum** vy-BUR-num NEW-dum 5-9, 9-5
- Wisteria floribunda** wis-TEER-ee-uh flor-ih-BUN-duh 5-9, 9-5
- W. frutescens** W. froo-TESS-enz 6-9, 9-6
- W. macrostachya** W. mak-ro-STAY-kee-yuh 6-9, 9-6
- W. sinensis** W. sigh-NEN-siss 5-8, 8-1
- Zinnia haageana** ZIN-ee-uh hah-jee-AN-nuh 0, 12-1





Notes from River Farm

Victorian Style Comes Full Circle

by Janet Walker

RETURNING BY PLANE FROM A winter vacation earlier this year, I happened to catch my first glimpse of River Farm from the air. Primed then in the chilly grays and umbers of early March, it was like a canvas waiting to receive our impressions; the palette and style were ours to choose. There is, quite literally, a lot of ground to cover here, so no single treatment will work throughout. We are

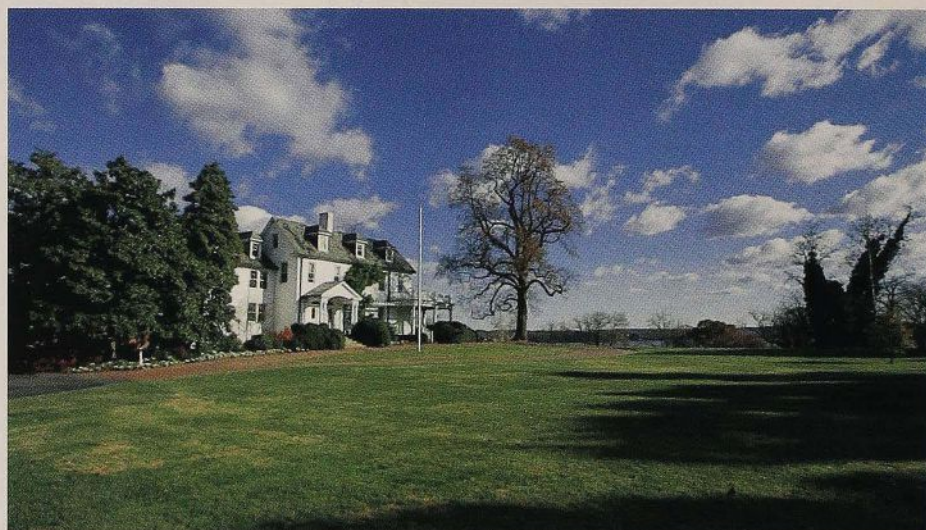
addressing the overall design of the gardens one step at a time, beginning with the areas closest to the main house, which is visually dominant from most angles and serves as the centerpiece of the grounds.

Built around 1900, at the very end of the American Victorian period in gardening, the house has seen many changes in gardening taste and style in its first century of life. For this reason, the garden beds immediately surrounding it—which contain historically important foundation plantings such as River Farm’s famous boxwoods—present intriguing challenges in selecting appropriate seasonal accents.

Given the current revival of interest in some of the standards of Victorian gardening—bright colors, novelties, and especially the period annuals—this spring we decided the best way to bridge the two centuries is by planting annuals popular in the Victorian era around the house and in cutting gardens on other parts of the grounds.

Choosing Period Annuals

Like the Victorian style itself, some of these annuals had fallen from grace. For a while, rocket larkspur (*Consolida ambigua*) and love-in-a-mist (*Nigella damascena*) were out of favor and even hard to find commercially, but now there’s a renewed fascination with heirloom plants such as these. Others, like pot-marigold (*Calendula officinalis*) and zinnia, have remained favorites. Cultivated for centuries, unimproved species such as *Zinnia haageana* are often smaller, tougher, and in many cases more



fragrant than their hybridized counterparts. And then there are “wallflowers” such as painted tongue (*Salpiglossis sinuata*)—a lovely annual that has for some reason always been in the background, and never really enjoyed a heyday.

Pansies are underfoot everywhere these days, and their progenitor, the Johnny-jump-up (*Viola tricolor*), deserves our thanks and recognition. Bachelor’s button (*Centaurea cyanus*) was enormously popular in the early 1900s, and cosmos (*Cosmos bipinnatus*) had just been introduced. The excellent, everlasting globe amaranth (*Gomphrena globosa*) and the native

calliopsis (*Coreopsis tinctoria*) are other period annuals perfect for our setting, and the common sunflower (*Helianthus annuus*), again surging in popularity, will join them.

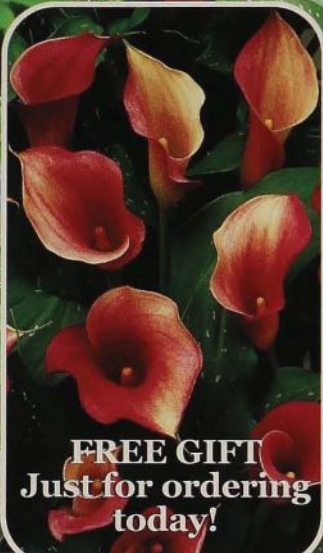
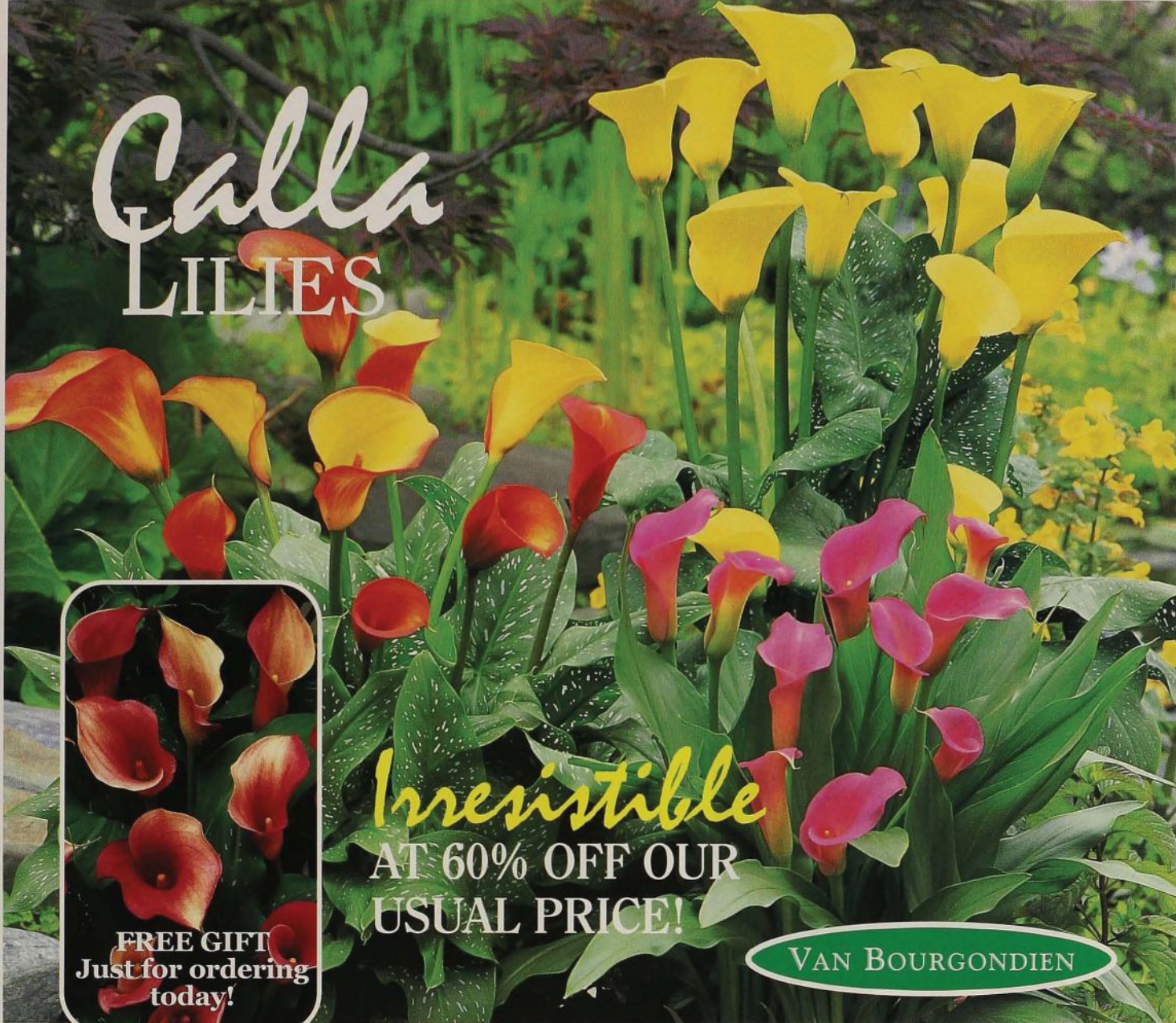
All of these annuals are good for cutting and easy to grow. Although deadheading and pinching back are often necessary for best results, this is part of the fun of gardening. Most of these plants need good sun and tend not to bloom well if the soil is too rich, but this doesn’t seem overly picky. Many make up for it by being drought-resistant and self-sowing, and are therefore good helpers in the garden, especially in the late summer months when a splash of color is especially welcome. They ought to come in handy around your house, too. 🌻

Janet Walker is director of horticulture at River Farm.



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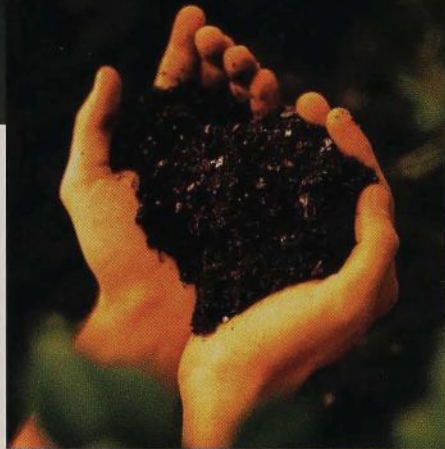
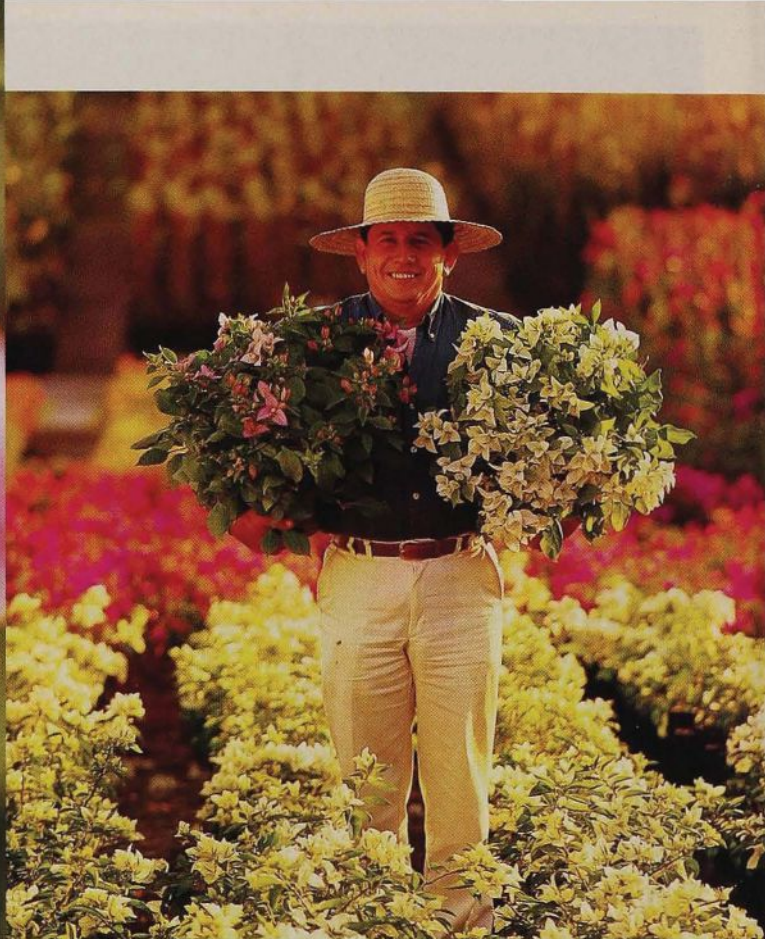
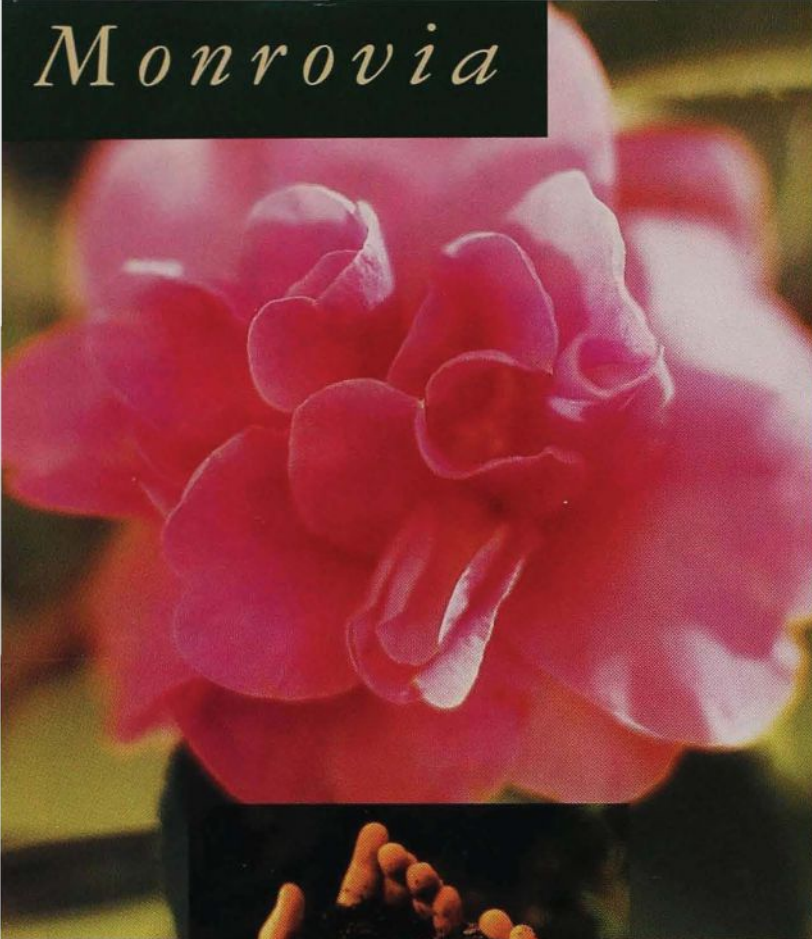
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