

WEED LAWS: *How Gardeners Can Avoid Being Victimized*

THE AMERICAN GARDENER

A Publication of the American Horticultural Society

May/June 1998 \$3.95



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- 62 *On the cover: The large yellow lady's-slipper (Cypripedium parviflorum var. pubescens) is native to damp woodlands and swampy areas throughout much of the Northeast. Beginning on page 28, Paul Martin Brown tells us where to see these and other beautiful native orchids in the wild. Photograph by Hugh and Carol Nourse.*

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commentary

Much like clothing styles, plants and gardening techniques tend to drift in and out of fashion over time. Those who have gardened for many years or who are familiar with the works of the classic garden writers know that many of the latest “trends” in gardening are merely a resurrection of earlier interests and practices.

Yet some things never really go out of style. Mock oranges—those favorites of our mothers and grandmothers—still merit a place in the garden for their fragrant, graceful white flowers and versatility. In this issue, nurseryman Terry Schwartz describes mock oranges that have stood the test of time. We’ll also tell you about some native species that blend in nicely with naturalized landscapes.

Planting less formal, more natural landscapes is another gardening technique currently enjoying renewed interest. In some cases, however, gardeners who plant natural landscapes are being prosecuted under outdated weed laws. Andy Wasowski and Bret Rappaport describe some cases that have gained national attention and offer tips on how to avoid becoming the victim of such laws.

In keeping with the theme that our gardening past is reflected in the present, Susan Davis Price continues her series on our gardening heritage. She tells us about the influence of African, Italian, and Asian immigrants.

Charles E. Williams chronicles the ecological damage invasive Eurasian bush honeysuckles have inflicted on our natural landscapes and offers suggestions for native shrubs and honeysuckles that can be used as replacements in our gardens. And orchid expert Paul Martin Brown takes us on a tour of the best places in North America to see the crown jewels of our native flora—orchids—in the wild.

This issue marks an end and a beginning for our magazine, as Kathleen Fisher, editor since 1989, departs to pursue free-lance work. Kathy’s leadership ensured a smooth transition for our magazine in 1996, when the name changed from *American Horticulturist* to *The American Gardener*. We wish her every success. This issue welcomes David J. Ellis, assistant editor of the magazine since 1994, to the position of editor. David brings skills and knowledge that will only expand the quality and depth of your magazine. The best magazines are constantly evolving, and in this issue we have brought back a full-page photograph on the cover and my opening commentary. Additional changes you may see in the coming months will be a combination of planning, hard work, and the expanding activities of our Society. They are also a reflection of you, our members. The extent to which we are able to stay in touch with and anticipate your needs will be a measure of our success. I encourage you to share your thoughts with us. Send me an e-mail at lhallman@ahs.org, pick up the phone, or write. Don’t let us for a moment, even accidentally, take you for granted. We have much to learn from each other.



TONDA PHALEN

A handwritten signature in black ink that reads "Linda D. Hallman". The signature is written in a cursive, flowing style.

—Linda D. Hallman, AHS President/CEO



members'
forum



GAURA LINDHEIMERI

At a gardening class several years ago, the discussion turned to little-known and used, but rewarding, perennials. The instructor asked, "How many of you are familiar with gaura?" Sad to say, not many hands went up.

Talk about a workhorse! *Gaura lindheimeri* flowers from late May in my USDA Zone 5 garden to late July, at which time I cut it back and it blooms again from late August to near frost. This is no wimpy "I'm almost done in" bloom, but one nearly as strong as the first flush. All told it gives nearly 12 weeks of bloom before it earns a well-deserved rest. Noninvasive; drought-, disease- and insect-resistant; and beautiful to boot. How much more can one expect from a perennial?

But the best part is its incredibly graceful presence in the garden. The small white-and-pink blossoms are borne on slender stems about three-and-a-half feet tall. These dance continuously in the slightest breeze, creating an almost ethereal movement in the garden that is a



delight to the eye.

Gaura's open, graceful form is also a wonderful contrast to more solid plants. I have it next to a *Hosta sieboldiana* var. *elegans* and near a floribunda rose called 'Fashion'.

This is a terrific plant that deserves a place in the border of the most demanding gardener. It won't let you down.

Judith Boasberg
Leawood, Kansas

Hardy in Zones 5-9 and heat tolerant in Zones 10-5, this native of Louisiana and Texas is, indeed, gaining popularity among American gardeners. "If and when breeders produce a fuller inflorescence and brighter flowers," writes University of Georgia horticulturist Allan Armitage, "this plant will be used far more extensively." Improved varieties that are already available include 'Siskiyou Pink', a deep pink-flowered selection from Siskiyou Nursery in Oregon; 'Corrie's Gold', a variegated selection with cream to gold leaf margins; and a dwarf selection called, depending on which reference you consult, either 'Whirling Butterflies' or 'Swirling Butterflies'. Sources for these cultivars and the species include Forestfarm, 990 Tetherow Road, Williams, OR 97544-9599 (catalog \$4); Siskiyou Rare Plant Nursery, 2825 Cummings Road, Medford, OR 97501-1538 (catalog \$3); and Roslyn Nursery (see page 18).

Keep on sending us paeans to your favorite plant along with a photograph of yourself in your garden. If we publish your submission, you'll get your choice of one of the eight books chosen to receive the 1998 AHS Annual Book Award—see the list on page 8.

MIXED EMOTIONS

As a member of the American Horticultural Society for many years and author of 130 gardening and horticultural

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books—the latest being *Women of Flowers: A Tribute to Victorian Women Illustrators*—I was happy to see your article “Botanical Illustration” by Diane Bouchier (January/February), yet most unhappy to see it.

Unhappy because you mention *Contemporary Botanical Artists: The Shirley Sherwood Collection* but not *Women of Flowers*. Yet your article is mainly about 19th-century botanical artists.

In my books and lectures I have always mentioned the American Horticultural Society as well as the Garden Writers Association of America—which honored *Women of Flowers* with its Award of Excellence as best book of 1996. I will continue to do so because of the excellence of both the Society and the magazine but, truly, some apology is necessary. It took me seven years to write and accumulate data for my book and 30 years of collecting botanical art—my personal library.

Incidentally, some of the original prints that were used as illustrations in my book are to be exhibited at the Chicago Botanic Garden from April 11 through May 31 this year.

Jack Kramer
Naples, Florida

While we do apologize to Mr. Kramer for neglecting to bring his excellent book to our members' attention when it came out in 1996, we did not list it with resources for Diane Bouchier's article because the main focus of that piece was on 20th-century botanical artists. *Women of Flowers* can be purchased through the AHS Horticultural Book Service for \$31.50; book code STC 003. For more information on the Chicago exhibit, call (847) 835-5440.

Editor's Note: Diane Bouchier wrote to remind us that we inadvertently left out information about the American Society of Botanical Artists, Inc., of which she is founder and a member of the board of directors. Founded in 1995, the society is dedicated to promoting public awareness of botanical art and encouraging its development as an artistic tradition. With more than 600 members, the society has gained the support and recognition of a number of botanical gardens, including Morton Arboretum, Brooklyn Botanic Garden, New York Botanic Garden, Denver Botanic Garden, and Strybing Arboretum. Activities sponsored by the society include juried art exhibitions, slide lectures on botanical art, educational programs, and an annual conference. For more information, write to ASBA, P.O. Box 943, Wading River, NY 11792.

NEOMARICA CONFIRMED

I am intrigued by the yellow iris pictured in the Members' Forum of the January/February issue of *The American Gardener*. Is there any possibility that it could be *Trimezia martinicensis* rather than *Neomarica longifolia*? The most obvious distinction between the two is that the former has a rounded flowering stem as opposed to a flattened, leaflike bloom stalk.

This iris—by whatever name—is common in and along the edges of small bodies of water in Hawaii and the Caribbean, where I have seen it in bloom in the winter months. It presents a scene reminiscent of *Iris pseudacorus* in the Northeast states.

I got mine many years ago by collecting an offshoot of one I found in the Virgin Islands. It summers out of doors and usually flowers in the house in January.

Elise C. Sigal
Newton Centre, Massachusetts

John Bryan, author of the indispensable two-volume *Bulbs*, checked our photograph and confirms that it is indeed *Neomarica longifolia*. Bryan says one of the easiest ways to distinguish the plants is that the three larger outer petals of *Trimezia* normally curl up and over the center of the flower, while those of *Neomarica* tend to lay nearly flat. Also, the swordlike foliage of *Neomarica* often extends well above the flower stems, which is not usually true of *Trimezia*. But even an expert can have trouble distinguishing these tropical and subtropical relatives in the iris family. “Your reader is to be congratulated on her knowledge and attention to detail,” says Bryan.

Corrections

George Briggs, the recipient of this year's AHS professional award, is executive director of the North Carolina Arboretum, Asheville. His professional affiliation was incorrectly cited in the 1998 list of American Horticultural Society award winners in the Directory of Member Benefits.

The cover photograph for the March/April issue of *The American Gardener* should have been credited to David Cavagnaro.

The photo on page 40 in the same issue was incorrectly credited to Susan Davis Price; it was provided courtesy of Mission San Juan Capistrano.

1998 AHS Book Awards

Seven books published in 1997 were selected to receive the American Horticultural Society Annual Book Award. The awards were presented at the Society's Annual Meeting, held last month in Memphis, Tennessee. An eighth book was honored in a special category for children's books.

The Annual Book Award program was inaugurated last year, as part of the Society's celebration of its 75th anniversary. Three books published in 1996 carried off the first annual awards. In 1997 the book committee also selected "75 Great American Garden Books"—published since AHS's founding in 1922—that they considered exemplary.

Award books are chosen by a six-member committee co-chaired by Steve Lorton, Northwest correspondent for *Sunset* magazine, and Valerie Easton, librarian at the University of Washington's Elisabeth C. Miller Library. Other members are Suzanne Bales, contributing editor of *Family Circle* magazine; Sarah Boasberg, a Washington, D.C., landscape designer and former chairman of the AHS Board of Directors; Thomas Cooper, editor of *Horticulture* magazine; and Pamela Lord, a founder of the Garden Book Club.

"There were a huge number of high-quality books published last year," observes Lorton. "The committee doesn't try to choose the very best book, or the best three, but to select books of merit that we think any American gardener would be happy to add to his or her library."

"In another 75 years, some of the books we've selected for this year's award might not make a similar list," says Bales. "We should consider these books trailblazers—a new kind of book, or books in categories lacking in good books, or the best book to date on a given subject."

A prime objective of the award program, says Easton, is to encourage publishers to issue books that are as technically perfect as possible, yet also innovative in both content and appearance. Books considered must be products of American publishers and authors. Committee members review books throughout the year and nominate the ones they believe should be considered among the finalists. The group then meets in New York each January to make award selections.

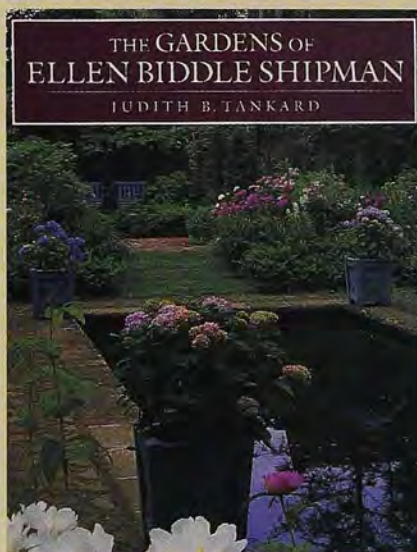
The committee attempts to weed out books containing factual errors or misleading publicity (one book the committee liked had been published earlier in a similar form, a fact not acknowledged by the publisher). Books are judged not just on writing but on graphics, design, and quality of production. For this reason, the awards are given to the publishers rather than the authors.

The 1998 winners:

Breaking Ground: Portraits of Ten Garden Designers by Page Dickey, Artisan. AHS member price \$40.50 **WOR 003**
Committee members thought the title especially appropriate for this book, which offers personal profiles of 10 landscape designers who are on the cutting edge of that field. Putting it over the top was its final chapter, in which the author brought the disparate points of view home to the reader by relating how her visits with these landscaping stars changed her perspective on her own garden.

A Gardener's Encyclopedia of Wildflowers by C. Colston Burrell, Rodale Press. AHS member price \$27 **ROD 017**
Ironically, given the rapidly growing interest in native plants, there didn't seem to be a book on the market with the prima-

ry goal of describing popular and widely available American flora. This book not only fills that niche, but does so with striking photographs and clear, accessible text that offers organic solutions to problems.



The Gardens of Ellen Biddle Shipman by Judith Tankard, Sagapress. AHS member price \$36 **SAG 006**

In spite of our country's rich garden tradition, there are few highly readable books recording that history. This one is especially engrossing in that it describes how a woman rose to the top in the male-dominated profession of landscape architecture.

Hollies: The Genus Ilex by Fred Galle, Timber Press. AHS member price \$51 **TIM 116**

The author, already widely admired for his massive 1987 work on azaleas—and profiled in the November/December *American Gardener*—has penned a similarly definitive work on this group of popular trees and shrubs.

Moss Gardening by George Schenk, Timber Press. AHS member price \$31.50 **TIM 100**

This was not a topic that might have been deemed promising by most publishers. But the rising popularity of gardening with moss, combined with the reader-friendly style of Schenk—who made the "75 Great American Garden Books" list with his book on shade gardening—produced a clear winner.

Taylor's Dictionary for Gardeners by Frances Tenenbaum, Houghton Mifflin Company. AHS member price \$22.50 **HOU 015**

Compiled by a veteran garden-book editor, this dictionary offers concise definitions of garden terms useful for beginning gardeners yet packed with enough information on people, botanical lore, and scientific terms to enrich the knowledge of the most experienced.

A Year of Roses by Stephen Scanniello, Henry Holt and Company. AHS member price \$22.50 **HOL 007**

Does the world need another book on roses? This one is special because of its approachability. Scanniello, rosarian at the Brooklyn Botanic Garden, is one of the country's rising rosarians—thoroughly grounded, yet new enough to the game to calm the fears of beginners who fret about pruning and black spot.

A Tree Is Growing by Arthur Dorros, Scholastic Press. AHS member price \$3.25 **SCH 001**

Among several impressive books published for children last year, this one stood out for exquisite illustration and depth of information. Designed with numerous sidebars, it is written clearly enough for grade schoolers, yet provides information so substantial that adults will also find it enlightening.

monly grown throughout North America. Citing examples from the plants in the exhibit, Cathey explained that using codes for both heat tolerance and cold hardiness will help gardeners select plants that will flourish in their region.

The AHS display attracted considerable attention from local news media, including an interview with Larkin that appeared on the morning news show of the Fox television network's Washington, D.C., affiliate. During the course of the exhibit, Larkin also gave three lectures on container gardening and discussed plants that are most likely to thrive in the D.C. area's hot summer months.

CHARTING THE SOCIETY'S FUTURE

In January, the Society's Board of Directors and senior headquarters staff participated in a visionary strategic planning retreat to clarify the Society's mission and identify critical goals for the future. Subsequently, at the end of March, a special task group of the Board met at River Farm to identify strategies supporting the long-range goals and to develop outcome statements that measure implementation. From this planning process, the Board of Directors approved a new official mission statement:

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.

Our stated goals focus on what AHS needs to be doing over and above what we are doing today. In the next three to five years:

- AHS will be its members' primary inspiration and resource for gardening through education and knowledge exchange.
- AHS will be recognized as the public's source for innovative programs and services promoting the value of gardening and the appreciation of gardens.
- AHS' George Washington's River Farm will be America's showcase for the art and science of horticulture.

The strategies now under development are critical to the Society's ability to organize and focus its resources to achieve these important goals.

According to AHS President and CEO Linda Hallman, "Implementing the goals

of the strategic plan will require a commitment from all of us. But with the volunteer leadership of some of America's most devoted gardening experts, in concert with the efforts of our skilled and dedicated staff, we can increase the Society's visibility and viability and establish an even greater leadership role in gardening and horticulture."

A strategic plan is a living document that will continue to be reviewed and updated annually by the Society's Board of Directors. AHS members are encouraged to participate in the process. Send suggestions or comments to Linda Hallman, 7931 East Boulevard Drive, Alexandria, VA 22308-1300, or e-mail them to lhallman@ahs.org.

IMMORTAL WORDS FROM NASHVILLE

Through the magic of audiotape, those of



Sara Stein

you who were not able to attend the Society's Annual Meeting in Nashville early this month still have the opportunity to hear the keynote speeches given by AHS award winners Sara Stein and Darrel Morrison.

An audiotape containing both speeches is available for \$35 by calling (800) 777-7931, ext. 10, or by mailing a check—payable to AHS—to TAPE, American Horticultural Society, 7931 East Boulevard Drive, Alexandria, VA 22308-1300. The price includes shipping and handling.

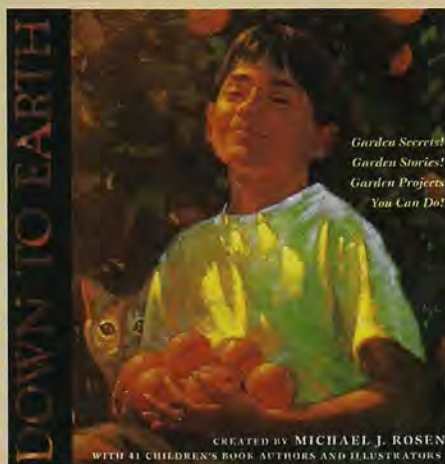
Specialty Journal for Plantaholics



If you like to be the first to know about new forms and cultivars of ornamental plants and how to get them, consider subscribing to *Plants*, a quarterly British journal that offers the latest information on plants developed by breeders and nursery owners. Although we don't ordinarily recommend British gardening publications, this one caught our eye because it covers plants and innovative breeding programs wherever it finds them, including North America. One issue we reviewed included an article about Plant Delights Nursery in North Carolina.

The journal was started by gardening enthusiast Dirk van der Werff in 1995 and now goes out to plant nuts in at least 16 countries. Each *Readers Digest*-sized issue is 36 to 44 pages with four to eight pages of color photos. A year's subscription costs \$35 (\$50 for Canadians). Send checks (no credit card orders) to *Plants*, Aquilegia Publishing, 2 Grange Close, Hartlepool TS26 0DU, United Kingdom. Check out the *Plants* Web site at www.aquil.demon.co.uk.

Childrens' Book Benefits Community Gardens



Profits from the sales of *Down to Earth*, a children's book published in March by Harcourt Brace & Company, will benefit community gardening programs funded by Share Our Strength (SOS), an organization dedicated to preventing and alleviating hunger and poverty in the United States and throughout the world.

Thirty-eight well-known authors and illustrators combined their talents to create the book, which is composed of beautifully illustrated vignettes of their childhood gardening memories and visions. The book, edited by Michael J. Rosen, also includes an activity section

with 33 projects designed to inspire children to discover the joys of gardening. Recommended for kids aged five to 12, the hardcover book is available through the AHS Horticultural Book Service. AHS member price: \$16.20 HBC 002.

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highway sideshows

by Kathleen Fisher

BACK IN THE 1950S, WE ALL WANTED our front yards to look like *Ward and June Cleaver's*, and that ideal carried over to our roadsides. We planted them and managed them, says Bonnie Harper-Lore, as though they were "the nation's front yards." In the '70s, the energy crunch taught us that this wasn't practical, and in the '90s, environmental consciousness taught us that it also wasn't wise. Harper-Lore, roadside vegetation coordinator for

the Federal Highway Administration, says while federal tax dollars can help pay to build new highways, maintaining them is up to each state. Does your state scalp every mile of roadside, or let invasive exotics like *Ailanthus altissima* and Japanese honeysuckle take over? Is it planting colorful non-native annuals that look great but need high maintenance? Or is it preserving rare ecosystems in spite of the fact that they might not seem picturesque viewed at 55 miles an hour? Here's a look at the federal picture, as well as what a few states are doing and why.

This natural stand of blazing star cheers motorists on Route 36 in Shelley County, Missouri.



when mow is less

Although the federal government has encouraged natural vegetation along highways for three decades, many state departments of transportation (DOTs) lack written landscape policies. Their top priority—reasonably—is safety, says Bonnie Harper-Lore, roadside vegeta-

tion coordinator for the Federal Highway Administration. There's often nothing left in the budget after potholes are patched. If so, brush removal wins over beautification.

Other states are learning that natural roadsides can both save money and appeal to the public. They can leave rare ecosystems untouched. They can enlist garden clubs and native plant societies to help maintain plantings. They can devote a couple of seasons to re-establishing native grasses, which then seldom require mowing or spot-spraying in the future.

It's a slow process. "There is always a lot of resistance to doing things differently," says Harper-Lore. "But as I travel the country I try to stress that working with nature actually ties in well with the common-sense approach many highway managers are looking for."

One goal is to educate the DOTs about invasive non-native weeds, which not only damage rural areas ecologically but strain public relations when the plants escape to neighboring lands. "Some states are still trying to get crown vetch grow-

ing,” says Harper-Lore. Another state hand-collected purple loosestrife (*Lythrum salicaria*) seeds in the 1980s, spread them up and down the roadsides, and is now paying to eradicate the plant. “It makes us all look bad,” she observes.

This doesn't mean a natives-only policy. In urban areas, in particular, a stand of prairie plants may look wildly out of place, so to speak. In addition, topsoil is usually compacted or missing. The answer may be more parklike plantings of trees, shrubs, and bulbs that are not native, but reflect the urban landscape.

The jury is still out on plants like cosmos, a non-native garden annual. “It's not invasive,” says Harper-Lore, “and the public loves it. It creates a wonderful splash of color.” But in many states, it's not reliable. “Ohio started off that way and got terrific media coverage, but then the next year the winter was too harsh for the seeds they had.”

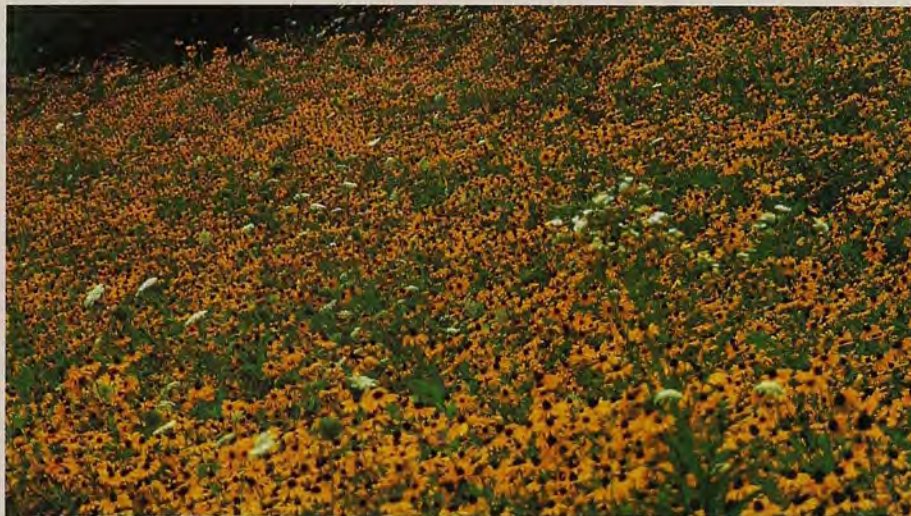
It's often difficult, however, for states to obtain native seeds. “The Northeast and Northwest have a hard time because there are few seed producers,” says Harper-Lore. While some states have established their own nurseries, she doesn't advocate that solution. “I think we should use existing commercial sources, who have generations of experience in seed production.” Note to potential producers: Seeds of prairie phlox (*Phlox pilosa*) sold for \$750 per pound during the 1997 season.

Here's a look at how some states are managing their roadsides.

wisconsin

While landscape architect Jens Jensen worked primarily in Illinois, his love of the prairie left an indelible imprint on this state through the University of Wisconsin's landscape architecture program, of which Harper-Lore is a graduate. Lief Hubbard and Dick Stark, landscape architects with the state's department of transportation, like to quote a public speech Jensen made in 1940: “You have a beautiful state gifted with all the charm and loveliness of nature. You are the keepers and not the destroyers.”

Wisconsin stopped mowing many highways in the 1950s. Now it mows only every two to three years, which keeps down woody plants such as box elder, buckthorn, and mulberry, yet preserves nesting sites for birds. Given this long-standing commitment to preservation, says Stark, potential for destruction arises not so much from



Black-eyed Susan, with Queen-Anne's lace, brightens up a North Carolina roadside.

new highway construction but from new utilities. “They like to bury their lines, which means tearing up everything. But they have to contact the DOT district office for permission. We will try either to avoid destroying native plantings or to restore the area.”

In 1987, when 42 miles of U.S. Highway 42 were widened from two to four lanes, state transportation officials used it as an opportunity for research. Working with a university design, the DOT planted 1,400 pounds of seeds on 135 acres. “There was a drought during the initial pe-

riod,” says Stark, “so the grasses didn't do as well as I would have liked, but we did have a contractor watering trees and shrubs.” Salt-tolerant species were of particular interest here, where roadsides take a beating from de-icing efforts.

In 1991 the state embarked on an ambitious plan to survey 12,000 miles of roadside vegetation. What was the ratio of natives to exotics? How attractive might individual sites be to travelers? How many of these sites were sizeable enough to warrant maintenance efforts? After four years, however, grant money ran out with only

A Highway History

1930s—Jesse M. Bennett publishes *Roadsides, the Front Yard of the Nation*. In it, he extols “attractive and useful roadsides which can be obtained by preserving or creating a natural—or approach to natural—condition in keeping with the adjacent or surrounding country.” Natural roadsides would also be economically sound, he notes. But, ironically, it was the title of the book that set national policy.

1950s—Newly developed herbicides join mowing to control roadside vegetation. This mow-spray method further helps to achieve the front-yard look, which highway agencies believe the public wants.

1965—The National Beautification Act, championed by then first lady Lady Bird Johnson, encourages removal of billboards, screening of junkyards, and landscaping of roadsides.

1969—The National Environmental Policy Act establishes the notion of minimal disturbance of natural areas.

1970s—The energy crunch forces vegetation managers to mow less and limit use of herbicides. Natural vegetation returns and wildlife habitat increases.

1987—The Surface Transportation and Uniform Relocation Assistance Act requires federally funded highway projects to plant native wildflowers with one-quarter of one percent of landscape dollars.

1991—The federal Intermodal Surface Transportation Efficiency Act provides funding for highway enhancements. One category is landscaping.

1994—President Clinton signs an Executive Memorandum recommending that federal properties and federally funded projects landscape with regional native plants, use less chemicals and irrigation, and create demonstration projects to increase environmental awareness.

—K.F.

America's Treeways

In the rapidly growing Fairfax County, Virginia, suburbs of Washington, D.C., traffic-clogged backroads are giving way to speedy new parkways. But it's a misnomer, since these once arboreal lanes now look like they've been given boot camp crew cuts.

Enter America's Treeways, a program of the National Tree Trust.

Founded in 1990 as a result of the America the Beautiful Act, America's Treeways is one of four programs within the tree trust intended to promote public awareness of and support tree planting. Each year, it makes more than a million trees available for volunteers to plant on public lands.

"We have programs in more than 30 states now, and every one is a little different," says Tree Trust program director Jacqueline Bentz. One of the biggest plantings last year was in Tacoma, Washington, where some 200 volunteers planted 20,000 trees and other plants on 10 acres on both sides of an interstate in

less than a day. Teen-agers were given a crash course in horticulture and served as team leaders.

The Virginia program is a coordinated effort of the state DOT and the Virginia Department of Forestry. In the Washington suburbs a key player has been Fairfax Releaf, an all-volunteer non-profit, although the local Audubon Society, community associations, scouts, and 4-H members have helped with reforestation.

John Muse, roadside development manager for the Virginia DOT, says the state was one of the first to participate in America's Treeways, and last year was honored for its efforts by the Federal Highway Administration. He finds youth groups "a perfect fit" for the tree-planting program, although for safety reasons children have to be 12 years or older.

"Safety is paramount," he says. "We encourage groups to identify sites, but sometimes we're just not comfortable because of the volume,

speed, or proximity of traffic." In one recent case, where there was no safe off-road parking, volunteers participated by growing the trees out for a year, then gave them to a contractor to plant.

But in nearly all other cases, volunteers do the hands-on installation. Since 1992, Muse estimates the state has saved \$175,000 that they would have paid to have trees professionally planted. Because roadside soil is often compacted, they may pay to have planting holes augered, usually 10 feet apart, before volunteers arrive with seedlings. Thirteen growers nationwide provide the trees, which range in size from 18 inches to three feet. Muse tries to select state-indigenous species such as dogwood, redbud, ash, oak, and red maple. Mulch from county recycling is added if possible, and sometimes the ground is inoculated with mycorrhizal fungi to improve survival rates. Tree tubes are being used more often, since they protect seedlings from

rodents and snow, and seem to speed growth.

"We've found some sites where we have 88 percent survival after three years," he says. "It can be somewhat Darwinian—the survival of the fittest—but it's cheaper to replace trees than it is to water them."

To be cost-effective, Muse says, the ideal site has to be at least a half acre, or big enough for 100 to 200 trees. Because the areas can't be mowed, the DOT erects signs indicating them as America's Treeways sites. "Mowing has happened inadvertently," says Muse, "and I always try to point out to volunteers that hardwoods will come back from their roots."

For more information on America's Treeways or the National Tree Trust, call (800) 846-8733, or write the NTT at 1120 G Street NW, Suite 770, Washington, DC 20005.

The funding process takes several months; proposals for 1999 were being considered this spring. —K.F.



Wood's rose in full bloom and distant ski runs divert drivers on this lonely stretch of highway in Utah.

3,000 miles studied. A single researcher was rehired to finish the work.

california

Three years ago, armed with a federal grant and aided by the California Native Plant Society, the California Department of Transportation (Caltrans) identified 11 roadway sites to serve as examples of West Coast native plant communities. "These sites are natural treasures, and it made sense to preserve them for a lot of reasons—aesthetic, scientific, and cultural," says Caltrans landscape architect George Hartwell. In addition, none of them had to be planted or irrigated.

The sites vary from one-and-a-half to five miles along both sides of the roadway. The first to be preserved typified California's vanishing vernal pools. Others include

PHOTO COURTESY OF UTAH DOT

sierra forests and chaparral woodlands.

"There were 25 sites nominated, but some of them could become attractive nuisances—not places where it would be safe for the public to slow down or stop," Hartwell says. Eventually, Caltrans will build kiosks where visitors can learn about the economic and environmental value of each particular ecosystem.

Hartwell and others emphasize the different needs of urban and rural areas. Caltrans maintains some 23,000 city acres that are formally landscaped and often planted with non-natives. Summer irrigation in such areas is essential to reduce the risk of fire. "It's important to be compatible with the surroundings," he observes.

Rural areas face the twin dangers of fire and erosion. In this case, however, studies show natives to be superior. "Non-native grasses have been planted here primarily to feed cattle," says Hartwell. "While they might provide more nutrition than native grasses, they tend to have more biomass above the ground, which makes them more of a fire hazard, and less underground, which makes them less effective for erosion control."

California has not ruled out fire as a means of controlling unwanted vegetation, he says. Reducing vegetation with either wholesale applications of herbicides or low mowing can pave the way for non-native species. "If you manage natives properly, they will outcompete non-natives. But we will probably never have the ability to create self-sustaining landscapes."

utah

Driving through Utah, you can travel from arid desert to alpine terrain within a few minutes. Here are just a couple of the problems confronting roadside vegetation manager Ira Bickford.

Rainfall is about 16 inches a year in places such as Salt Lake City, where rest areas are highly visible. How do you ensure that seeds will germinate?

Wetlands are sparse. Noxious weeds like purple loosestrife and tamarisk (*Tamarix* spp.) outcompete other wetland species and discourage wildlife. Tamarisk will dry out the ground in which it takes root.

"We're shooting to do more with less," says Bickford, and this means cooperating with other government agencies. Along its 5,800 miles of roadway, the state has 300,000 acres of right-of-way. It doesn't make sense to wage war on weeds just along roadsides, so by working with the federal

Bureau of Land Management, the DOT has widened the scope of attack.

Bickford says the department plants natives whenever possible—sometimes collecting seeds from rights-of-way before construction—because once established, natives will flourish. Yet compromise is inevitable. Taxpayers want colorful wildflowers, but when the agency plants wildflowers they also get weeds. When they spray weeds, they kill the wildflowers. "The solution has been to plant native and adapted grasses, continue weed control, and then plant or encourage wildflowers to come in on their own," says Bickford.

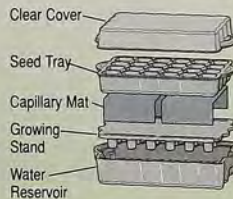
The department has sometimes contracted out for hand-mixed, site-specific seed assortments. "This can get pricey," he notes. "The shortcoming of not buying a custom mix is that you get non-natives, such as California poppies, and that opens a can of worms" in Utah.

Some of our most invasive non-natives were originally planted for erosion control, and there aren't always benign native substitutes. Sometimes it's essential to stabilize a roadside and stop runoff, in which case the Utah DOT may plant crested wheatgrass (*Agropyron cristatum*), a Eurasian species that has naturalized throughout the inter-

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mountain West. It germinates quickly and reseeds in shallow soils, where natives fail.

The department is trying to educate the public about such outstanding natives as Palmer penstemon (*Penstemon palmeri*) and Rocky Mountain bee plant (*Cleome serrulata*), which blooms large and purple in the north, smaller and yellow in the south. As beautiful as the latter is, he notes, it won't create sweeps of color. "It's not something you see naturally in groups."

texas

Anyone who has ever marveled at the Lone Star State's spring show of bluebonnets won't be surprised to hear that it has a long history of highway plantings. Texas didn't begin by landscaping so much as by not interfering with nature.

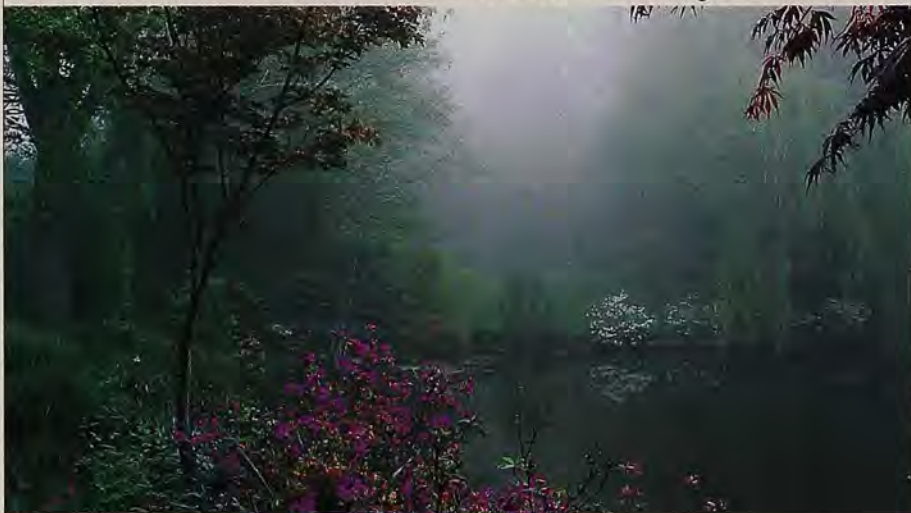
"In the 1930s, our administration recognized when it was building highways that our wildflowers would come back," says Melody Hughes, a floriculturist with the state DOT. "They issued directives not to mow until the flowers went to seed." The department obtained permission to mow pastures along rights-of-way, so the "wildflower hay" could be used to reseed bare areas elsewhere—one of the least expensive means of seeding prairie plants.

Of course, in 60 years the program has evolved. "We're trying to plant more native types, because they need less maintenance," says Hughes. Mowing has been cut back even further, to encourage not only Texas's famous spring wildflower spectacle, but also summer- and fall-blooming plants. Since 1983, this reduced mowing has pared annual roadside maintenance costs by 23 percent. The state has also raised mowing height to seven inches, which studies showed to be the optimum height for wildflowers.

In the 1970s, Lady Bird Johnson established beautification awards to encourage local jurisdictions throughout the state, and those have been continued since she retired from the program in 1990, Hughes says.

In spite of Texas's long history of natural roadsides, the competing ideal of "the front lawn look" makes continual public education a necessity. "In the spring, we get complaints about crews mowing wildflowers," Hughes says. "Closer to July and August, we get the other type of complaint. People wonder where their tax dollars are going if they don't see us mow. We have over a million acres of roadsides, and as the years go by we contract more work out. That means we have even less control."

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Volunteers Can Make a Difference!

Florida launched its roadside preservation efforts in 1963, according to Gary Henry of the state DOT's environmental management office. He credits Florida garden clubs and the "increasing recognition from the public" for its vitality. In 1996, garden clubs and businesses donated some 15 tons of seeds—natives or hybrids of natives—for roadside plantings.

The agency welcomes calls alerting them to threatened natural sites. "Our worst nightmare is the accidental mowing of beautiful stands because of complacent attitudes about the program," says Henry. DOT personnel participate in an interagency effort—the State Committee for Environmental Education (SCENE), which teaches children about native plants. "It's true that some people find them too subtle. This generation hasn't had a chance to appreciate them because they never walk through them."

Florida is hardly alone in seeking public support of roadside plantings. In 1973, the federal government launched Operation Wildflower, through which the

Federated Garden Clubs of America provided seeds or seedlings, and state DOTs supplied labor and equipment. Today many citizen efforts are more varied and informal.

Wisconsin has one of the oldest native plant traditions in the country. In 1919, a group called Friends of the Native Landscape founded a chapter there. Today the state is home base for the Wild Ones (see page 52), whose members keep DOT personnel apprised of natural areas that should be under "bulldozer alert."

In Maryland, scouts and students—who get community service credit—help plant 20 to 30 projects a year.

The New Hampshire DOT has a Roadside Development Section that guides groups in creating wildflower plantings. Officials reason that businesses donating seeds get good publicity, civic groups gain greater environmental awareness, and children get a valuable outdoor learning experience.

Connecticut and Arkansas have both received grants from the Federal Highway Administration to create



Volunteers sow wildflower seeds along a New Hampshire thoroughfare.

demonstration plantings. The former state worked with a local garden club and the latter with the U.S. Forest Service and a local citizen group.

In Utah and other states, there are so many volunteers for the Adopt-a-Highway program that they have to be split into teams: one to pick up litter and one to do the plantings.

Yet all is not rosy. In Missouri, digging of wildflower plantings is a "tremendous problem," says Stacy Armstrong of the Highway and Transportation Department. She's trying to spread the word that while it might be

okay to pick an occasional bouquet, digging wildflowers with the intent to sell is a class-A misdemeanor that could result in a \$1,000 fine or a year in jail. "Each plant is a separate offense," she adds.

And state DOTs often can't control local jurisdictions. Henry says that if a Florida citizen complains that a particular strip of roadside needs mowing—often believing erroneously that tall vegetation attracts rats or snakes—maintenance crews follow the path of least resistance. "They mow."

If you feel your state's highways could use less mowing and more nature, don't just saunter out and start seeding. Liability issues are paramount for volunteers along roadways, especially children. Track down your state department of transportation through the blue pages of your telephone directory. More likely than not, they are eager to hear from you.

—K.F.

maryland

Since 1990, Maryland has returned nearly 4,000 acres to nature through its Grow Don't Mow program, and planted more than 200 acres in a customized wildflower mix of one-third annuals and two-thirds perennials that bloom from early spring through late fall.

The initial goal has been high visibility. "We're concentrating on our public areas such as rest areas and designated scenic routes," says Charles Adams of the state's Office of Environmental Design (OED).

The species are not all natives—far from it. "Queen-Anne's lace, black-eyed Susan, chicory, and ox-eye daisy are plants that meet

with a lot of debate," Adams acknowledges. "We're starting to eliminate the ox-eye daisy because it tends to outlast everything else."

Dame's-rocket (*Hesperis matronalis*) is another non-native that can jump its bounds, but its long-lasting magenta petals are eye-catching. "The problem with a lot of natives is that they're not showy, and they don't grow in masses," says Adams. Some exceptions are purple coneflower, lanceleaf coreopsis, and milkweed.

Like other states, Maryland has learned the importance of grasses, which compete better than wildflowers against invasives such as thistles. The OED, with Federal Highway Administration support, has contracted with the University of Maryland for studies on warm-season grasses and native forbs. Harry

Swartz, a horticulturist in the university's Department of Natural Resource Sciences and Landscape Architecture, is a fan of native grasses such as big and little bluestem, Indian grass, and switchgrass. In some cases these grasses make dramatic new stands with just an annual mowing after they're dormant, he says. In other cases, their seed can be collected from intact ecosystems such as military bases, river scours, dunes, and savannas.

"The seeds germinate well, and with very little selection," Swartz says. "There is a hump during the first couple of years when people might think it's an ugly planting, and then they'll start saying, 'That's nice.'"

Kathleen Fisher is a free-lance writer in Alexandria, Virginia.



offshoots

THE YARD

by Leo Vanderpot

“Once in this life a man ought to concentrate upon the remembered earth, I believe. He ought to give himself up to a particular landscape in his experience, to look at it from as many angles as he can, to wonder about it, to dwell upon it. He ought to imagine that he touches it with his hands at every season and listens to the sounds that are made upon it. He ought to imagine the creatures there and all the faintest motions of the wind. He ought to recollect the glare at noon and all the colors of the dawn and dusk.”

—N. Scott Momaday, *The Way to Rainy Mountain*, 1969

There is talk now (I hear it secondhand) about the current owners trying to sell off the back lot of a house I once owned. My heart aches at the thought of it. To me, they go together perfectly—the house with its yard, the yard with its house. If pressed, if it were my decision, I’d probably rather make do in the garage in the backyard and sell the house. But other changes in my life took me away from that spot, and since I no longer live there, it’s not up to me.

The size of this backyard and its garden overwhelmed me at first, before I learned to love its other qualities. Before I moved there, a dozen roses meant 12 stems from a florist. In this yard, it meant the rosebushes, each a demanding tyrant sometimes but glorious, too, at other times.

There were at least 10 kinds of iris, from giant bearded to miniature Japanese, which were walled in a low circle of fieldstone.

Two lilacs come to mind, and some asparagus that never did well. Ground covers naturally found the ground they wanted. English ivy mixed with pachysandra without quarrel around the house’s foundation. *Vinca minor* lolled luxuriantly with its deep emerald green leaves along a gray slate path next to an eight-foot privet boundary. I added some fall crocus and was pleased to see that I had made a good guess about what privet needs as companions. Beneath a handsome cedar, lily-of-the-valley spread confidently toward the driveway.

I have fond memories of a sand pile made at great effort inside a circle of logs for my

younger children. The trucker dumped two cubic yards of sand in the driveway and I hauled it almost 100 feet to a spot under the shade of a cherry tree. A basketball hoop and backboard took me the better part of one Saturday to put up on the front of the garage.

Most of that is gone now. The peonies somehow are still there. That cedar next to the garage is gone, along with its companion underplantings that, in addition to the lily-of-the-valley, included an ancient bleeding heart. Also gone is a white birch that I dug from an abandoned nursery in Tarrytown one day in 1975. And a contractor hired by the current owners—or the owners before them—replaced the sewage pipe and took out a good part of an eye-pleasing retaining wall.

I didn’t take much with me when I left that garden. I still have an anvil pruner with yellow handles that goes back that far. It gets pretty silly, I suppose, being sentimental about a tool that is more than 20 years old. The important thing is that it still works. Sometimes when I’m puzzled about what to do with a plant that I’m trying to fit into the garden I now own, my mind takes me back to the perfect spot in this garden that is no longer mine. I think I know where the sun is, but that is not the case—I know where the sun used to be. I know the drainage is perfect, with no wet spots like I have now. And then of course, time spins ahead and I am back to the reality of today, with puddles that seem to take forever to disappear.

My copy of *Wyman’s Encyclopedia of Gardening* goes back that far. It was a birthday present in the early 1970s. Stuck in it is a plastic plant tag for red-twigged dogwood that has served as a bookmark ever since I planted those shrubs in that special garden. This year, I finally decided to grow *Cornus stolonifera* again, in my current garden.

We are better, in the long run, at feelings than particulars. A man with a wife and six children could go into that yard at about 7:30 on a summer evening, say on a Thursday, and he could putter around with the hose and pull a few weeds and watch the sun go down on the other side of the Hudson River, and if he wasn’t happy, at least he didn’t have to take a tranquilizer to get to sleep that night, to face Friday morning in his office. Since we can’t buy that peace of mind, it follows that we most certainly should never try to sell it.

Leo Vanderpot is a free-lance writer in Millbrook, New York.





gardeners information service

My neighbor has a beautiful magnolia growing in her yard. I'd like to grow one of my own from seed. How would I go about doing this?

—A.Z., Atlanta, Georgia

The best way to grow magnolias from seeds is to replicate what would happen to the seeds in nature. It is easiest to collect good seeds just before they fall from the tree. If you pick them before they are fully ripe, simply keep them in a warm, dry spot for a few days. Then remove the outer coat of the seeds, soak them in water for up to three days, and either rub them across a rough surface or squeeze them firmly without crushing them. Wash the seeds in soapy water to remove the oily film that coats them, then rinse them several times. Now that you've removed both the outer coats

and the oily layer, the seeds need to be kept moist at all times. You can plant them outdoors in fall or store them over the winter and germinate them in spring. Either way, magnolias require a two- to four-month cold period at 33 to 40 degrees Fahrenheit in order to break dormancy.

If you want to plant your seeds in spring, rinse them in a solution of one part chlorine bleach to nine parts water, pack them in moist sphagnum moss, and store in a tightly sealed plastic bag in the refrigerator. Check the bag frequently to make sure the sphagnum moss is still evenly moist but not waterlogged. In late winter, sow the seeds about a half-inch deep in sterile, soilless potting mix and cover with plastic or glass to retain humidity. If you start to see evidence of mold or fungus, loosen the cover to let excess moisture out, then recover. Germination usually takes place in a few weeks but can take as long as several months.

(The above information was adapted from *The World of Magnolias* by Dorothy J. Callaway, which is available for \$45 to AHS members through the AHS Book Service; book code TIM 142.)

A large part of my northern New Jersey property is somewhat wet. I have established lawn on these areas, but I would like to plant some native trees and shrubs that love wet ground. Could you give me some suggestions?

—A.S., Newton, New Jersey

One way to get some ideas for woody plants that tolerate "wet feet" is to visit wetlands in your area and note what is growing there naturally. There is a wide variety of deciduous native shrubs to consider, including buttonbush (*Cephalanthus occidentalis*), a rounded, three- to six-foot-tall shrub that bears white flowers in

August followed by characteristic button-shaped fruits. Common elderberry (*Sambucus canadensis*) forms thickets of arching stems bearing compound leaves. The foliage is crowned in early summer by flat-topped white inflorescences, followed in fall by edible reddish purple berries. Spicebush (*Lindera benzoin*) is an upright shrub that grows six to 12 feet high and bears greenish yellow flowers in April before the leaves. The leaves turn yellow to gold in the fall, and brilliant scarlet berries add fall and winter interest. Various deciduous hollies, including the many cultivars of winterberry (*Ilex verticillata*), are also tolerant of wet soils.

Deciduous native trees to choose from include sweetbay magnolia (*Magnolia virginiana*), also called swamp magnolia. This elegant tree has dark green, glossy leaves with silvery undersides and grows from 10 to 20 feet tall. Fragrant, creamy white flowers bloom from May or June to September. Black gum (*Nyssa sylvatica*) can reach 30 to 50 feet tall with a spread of 20 to 30 feet. Its leaves turn yellow, orange, scarlet, and purple in fall. For larger gardens, another good choice is bald cypress (*Taxodium distichum*), a deciduous conifer that grows 70 to 80 feet tall and spreads to 20 feet in diameter.

Native evergreens to consider include inkberry or swamp holly (*Ilex glabra*), eastern arborvitae (*Thuja occidentalis*), and black spruce (*Picea mariana*). The last is not heat-tolerant and is not recommended south of Virginia.

I live in coastal North Carolina, just above Wilmington. Are there any agaves that are hardy this far north? When I checked with my local nursery, the ones they found didn't like temperatures below 50 degrees Fahrenheit.

—A.L., Leland, North Carolina

Plant Delights Nursery in Raleigh, North Carolina, offers several agaves they rate hardy to USDA Zone 7, as well as a couple—*Agave havardiana* and *A. neomexicana*—described as hardy to Zones 5 and 6, respectively. Nursery owner Tony Avent says that in his experience agaves don't mind low temperatures as much as they mind cold combined with wet weather and poor drainage. For best results, Avent recommends planting agaves early in the growing season in an area that gets full sun, has well-aerated soil, and is protected from winter winds. The drainage of the planting site can be improved by building a raised bed and amending soil with gravel or sharp sand. For a catalog, send 10 first-class stamps or a box of chocolates—no kidding—to Plant Delights Nursery, 9241 Sauls Road, Raleigh, NC 27603. The catalog is also available online at www.plantdel.com.

—Sara Epp, Information Assistant

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mail-order explorer

ROSLYN NURSERY: RHODODENDRON RHAPSODY

by David J. Ellis

Known in its early years principally for rhododendrons, Roslyn Nursery in Dix Hills—a small community on Long Island, New York—has blossomed into one of the largest mail-order sources of select ornamentals in the Northeast. In addition to hundreds of rhododendron and azalea cultivars, Roslyn offers a wide selection of hard-to-find conifers, flowering shrubs and trees, herbaceous perennials, grasses, ferns, and vines.

The nursery was formed in 1984 by Philip and Harriet Waldman, who had stumbled quite innocently into the world of plant fanaticism several years earlier while re-landscaping one side of their home. Philip planted some lavender-flowered rhododendrons along a new garden path, but Harriet was less than happy with the color. A visit to the garden of mutual friends opened the Waldmans' eyes to the marvelous variety of flower colors in the genus. "From that moment on I began a journey of no return—a rhododendron nut," wrote Philip of the experience.

Despite having to learn how to propagate and grow rhododendrons and other ornamentals from scratch, Waldman quickly overran the garden with new plants. In 1980, the Waldmans sold their house and bought another property on three-and-a-half acres. That space, too, was exhausted rapidly, and when Waldman decided to form a nursery in 1984, he purchased an additional four acres in nearby Dix Hills. Further expansion was required in 1988, so the Waldmans bought two more acres in Bohemia for propagation and storage of nursery stock.

"We had one greenhouse in 1983—now we have about 25 greenhouses here and at Bohemia," says Waldman, who somehow managed to run both a nursery and a

thriving dental practice—he jokes that he ran the dental practice in his "spare time"—until he retired from the latter last year. Harriet handles the business side of the nursery and accompanies Phil on his quests for new plants. The Dix Hills nursery is also a retail center, open year-round, where hordes gather in the spring to view the azaleas and—more often than not—take a few home with them.

Longtime friends and customers are amazed by Waldman's ability to pick up so much about plants in such a short time. "It's incredible," says Herman Gehrich, president of the American Rhododendron Society. "Generally when you come into something as late as Phil did, it's difficult to acquire all the knowledge. But he's a very focused person, and when he gets into something he really works at it."

Richard Schnall, vice president of horticulture for the New York Botanical Garden, met Waldman through membership in Hortus, an organization for horticulturists and plant experts in the New York City area. "I've used him as a supplier of plants for the botanical garden," says Schnall. "He has a wonderful collection of plants, particularly in the area of rhododendrons." Waldman has helped the garden find replacements for plants missing from its collection of Dexter hybrid rhododendrons.

Tony Dove, chief of grounds management with the Smithsonian Institution in Washington, D.C., says Waldman's success is due in part to an encyclopedic memory and tremendous organizational skills. "When I've walked with him through the nursery, out of the thousands of rhododendrons we passed he could tell me the history of each individual plant and the color range of all the flowers."

Dexter hybrids, Japanese arisemas, and several varieties of *Rhododeja japonica* are among many Roslyn plants that Dove has integrated into his 10-acre home garden in Maryland. "He has a wide range of plants that are difficult to find from any other sources, including many unusual perennials and lots of rhododendrons and other ericaceous plants," says Dove.



The 'Florence Waldman' azalea, left, is named after Waldman's mother. Roslyn is well known for being one of the first nurseries to offer new plants such as the Carolina silverbell cultivar 'Wedding Bells', below.



PHOTOS COURTESY OF PHILIP WALDMAN

According to Richard Jaynes, a well-known kalmia breeder and owner of Broken Arrow Nursery in Hamden, Connecticut, Waldman often visits his nursery to scout out prospective new mountain laurel introductions. "He'll sometimes spot things that we've barely paid any attention to and say, 'Hey, what's that?'" says Jaynes. "He's an incredible person in terms of his energy and his capacity to absorb new information."

Although the nursery now requires a staff of 20 to 25 people during the spring and summer, the Waldmans still do most of the initial propagation themselves, traveling around the country and the world to botanical gardens, nurseries, and private gardens to take cuttings from new and unusual plants. "A lot of the plants we sell are not available in the trade, so the only way we can offer them is to propagate them ourselves," says Waldman. "We probably take 80,000 to 100,000 cuttings a year."

Nicklas Nickou, a retired physician who has amassed a renowned collection of plants in his Branford, Connecticut, garden, says he first encountered Waldman when he was starting the nursery. "He called me up and said he had heard that I had a lot of rhododendrons and asked if he could take some cuttings," recalls Nickou. "He took a tremendous number of cuttings and I watched him and he did it very skillfully. After he took 50 to 100 cuttings off one of my best rhododendrons you could hardly tell it had been touched."

Waldman has also become an accomplished hybridizer who has introduced close to 100 plants, mostly rhododendron and azalea cultivars. Among his favorites are 'Janice Lynn', 'Florence Waldman', and 'David Waldman'—evergreen azalea cultivars named, respectively, for his daughter, mother, and father. He has yet to name a plant for Harriet, who has jokingly warned him that it "has

to be something so unusual or rare that there is nothing else like it."

Phil Normandy, plant collections manager at Brookside Gardens in Wheaton, Maryland, says that when he first received a catalog about 10 years ago, what surprised him about Roslyn was the range of plants available. "I'm always skeptical about mail-order places, so when I started looking at this catalog I thought, 'This is a pretty broad range of stuff—is it for real?'"

Since then Normandy has gone on to purchase a number of plants from Roslyn for use at Brookside. He notes that the plants are "typical of mail-order—small and relatively expensive—but many are hard to find, and for a home gardener that's fine because they usually don't need an instant landscape."

Skimming through Waldman's latest offerings, Normandy picks out several plants that are nearly impossible to find at the retail level. "He's got a new *Euonymus alatus* 'Rudy Haag'—a dwarf selection," says Normandy. "*Corylopsis sinensis* 'Winterthur'—you can't get that anywhere. *Viburnum dilatatum* 'Asian Beauty' is a wholesale offering from Don Shadow. And *Thuja* 'Green Giant' is one of the hot plants right now—he's one of three nurseries that offer it to the homeowner."

David J. Ellis is editor of *The American Gardener*.

To receive a catalog, send \$3 to Roslyn Nursery, 211 Burrs Lane, Dix Hills, NY 11746. The catalog can also be viewed on the Internet at www.cris.com/~Roslyn/. The Dix Hills section of the nursery is open for retail sales Monday through Saturday from 9 a.m. to 5 p.m. and on Sundays in April and May. Call (516) 643-9347 for additional information.

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urban gardener

WINDY CITY MAKEOVER

by Alice Joyce

The working-class neighborhood of my Chicago childhood was dominated by concrete and asphalt. The effect of that impoverished landscape has been a lifelong quest for order and beauty—first as a studio potter, then, for more than a decade, as a sculptor, experimenting with forms of welded steel, cast resins, and raw earthy pigments.

When I moved into my first home 20 years ago, the same yearnings compelled me to start a garden. The early 20th-century “two-flat” is in Lakeview, a city ward long populated by German immigrants. At the time I bought it, graffiti attested to the neighborhood’s prevailing but brief state of flux. When the 1980s real estate boom arrived, Lakeview’s sturdy homes, tidy streets, and proximity to the lakefront made it ideal for gentrification.

Yet even today, the view from my front porch has changed little. Looking west at the handsome graystones—our red brick is an anomaly—I see Norway maples dominating the parkway, and although well-heeled professionals occupy almost every building, the majority of wooden porches still adhere to an unwritten rule dictating a lackluster color combination of battleship gray floors and stairs with white railings.

The prevailing flora is equally uninspired. Where former residents might at least have tended a scattering of tulips or an occasional dahlia, the new owners dote on postage-stamp expanses of sod, installed at considerable expense only to fade and die shortly thereafter. Occasionally I see an isolated foundation planting from another era, such as a lilac that begs to be pruned.

This humdrum vista convinced me to pursue a more exalted plan. My goal was to create a distinctive and diverse alternative that would offer a visual respite to those passing on their way to or from the elevated train station a block away—including the hordes of fans who infiltrate the neighborhood to attend Cubs games.



A creative tapestry of perennials and annuals was the perfect solution for the author’s small front yard.

When I peeled away the weedy lawn, I discovered fairly fertile if somewhat sandy soil that had been left long ago by the receding of Lake Michigan. Yet despite that amenable circumstance—and years of artistic endeavors that allowed me to envision a garden setting—my knowledge of plants and horticultural practices was nil. Considerations of soil conditions and light requirements were disregarded out of ignorance, and unbridled enthusiasm prevailed. When a plant caught my eye, I bought it.

I watched roses succumb to black spot and invasive monsters such as purple loosestrife (*Lythrum salicaria*) threaten to consume the more demure species. Slowly I caught on to Gardening Rule #1: Beware of gifts from acquaintances who are “dividing” vigorous plants from their own yards, and Rule #2: Check first to learn if a plant might be hardy in my USDA Zone 5 garden.

Some major life changes—out-of-state studies and then marriage—had to occur before I finally hunkered down, summoned the determination to rework all my confused efforts, and erased any discernible legacy of the building’s previous owners.

Ten years ago, a friend helped me remove the remaining turf between the front of my building and the street. I amended the 17-by-15-foot area with peat moss, compost, and manure, and reconfigured its perfectly flat plane into an undulating surface. Rounded rocks of varying sizes, partially buried in the reconstituted soil, outlined the new mounds of earth and defined key planting areas. The asymmetry of the beds provided a counterpoint to the plot’s overall regularity. Flagstones set on edge into

the ground at slight angles further traced and interconnected elements of the design.

Tenacious hostas, periwinkle (*Vinca minor*), and bugleweed (*Ajuga reptans*) quickly formed a pleasing carpet and anchored taller, mounded forms. The informal borders were progressively filled with perennials, bulbs, and herbs that would thrive despite the lack of afternoon sun. The divided blue-green foliage of rue (*Ruta graveolens*), delicate mother-of-thyme (*Thymus serpyllum*), and downy silver *Artemisia ludoviciana* ‘Valerie Finnis’ added texture as well as fragrance.

PHOTO COURTESY OF ALICE JOYCE

In spite of my initial blunders, I made a few appropriate selections early on. A flowering quince (*Chaenomeles japonica*) that I planted as soon as I moved in has thrived and heralds each spring with radiant orange-red blooms on arching stems.

On the other hand, an interplanting of seemingly formidable *Lavandula angustifolia* 'Hidcote' and robust Russian sage (*Perovskia atriplicifolia*) succumbed to the first savage cold season. Towering *Cleome* and night-scented *Nicotiana* eased the pain of loss, immediately providing color and form and later self-sowing vigorously.

Mingling with these are drought-tolerant natives. Sweet Indian plantain (*Cacalia suaveolens*) displays its bold, arrowhead-shaped leaves, and purple giant hyssop (*Agastache scrophulariifolia*) contributes imposing spikes. More recent additions include Canadian burnet (*Sanguisorba canadensis*), with late-season creamy flowers that set off the orange of butterfly weed (*Asclepias tuberosa*).

A prominent feature is a pathway of flagstones set in contrasting pea gravel and bordered with brick. It leads from the base of the front stairs to a sidewalk that marks the lot's eastern boundary. Toddlers who escape from momentarily distracted parents love to totter along its inviting, if limited, expanse.

Small children also seem captivated by the rustic arbor that spans part of the path. Two-foot-tall sections of lattice enclose the lower part of its sides and eight-foot stakes buried a foot in the ground form the corners, but its personality results from grape vines that arch over the top and randomly connect and soften the more angular components. Our front picture window is the perfect spot to view the birds that seek shelter in this niche.

Each year before the trees fully leaf out, the periwinkle's cheerful blossoms echo the bugleweed's deep blue spires. Crimson *Dianthus deltooides* 'Brilliant' then announces summer's onset by spilling out over a narrow strip adjacent to the path. The towering native columbine (*Aquilegia canadensis*) planted in the rear fraternizes with hybrid specimens and surprises me with both the shape and extensive spread of its progeny. After taking their sweet time to establish, two *Baptisia australis* now flower profusely to create a perfect indigo complement to the columbine's soft pastels.

Recently we expanded the front garden out to the parkway. Parched soil, tree roots, and regular trampling by drivers exiting their cars limit this area to mere aspirations of respectability. Still, black-eyed Susans, *Heliopsis* cultivars, and daylilies prosper, thanks largely to generous applications of compost. In summer, we compost in a four-sided wire mesh bin that sits in the shadow of the garage. In winter, a heavy-duty plastic trash can drilled full of holes holds three months of vegetable scraps, coffee grounds, and spent cut flowers and forced bulbs. In spring, this mix is added to oak leaves gathered from the park in fall and used to mulch our beds. While the finished compost makes a wonderful soil amendment and top dressing, I find its most fetching quality is as a gold mine of seedling feverfew, lady's-mantle, and free-flowering *Malva sylvestris* 'Zebrina'.

The compost has done much to help me meet my longtime goal of a serene streetside landscape for passersby to enjoy. I've been rewarded with many hours of pleasant conversation. New neighbors routinely pause, taking time to ask the name of a plant, voice admiration, or comment on the garden's design. After a chat at the front sidewalk, I revel in leading curious newcomers through to my other, hidden garden behind the building, for private tours and further horticultural discourse.

Free-lance writer Alice Joyce won a first prize in Chicago's landscape awards program before moving recently to San Francisco.

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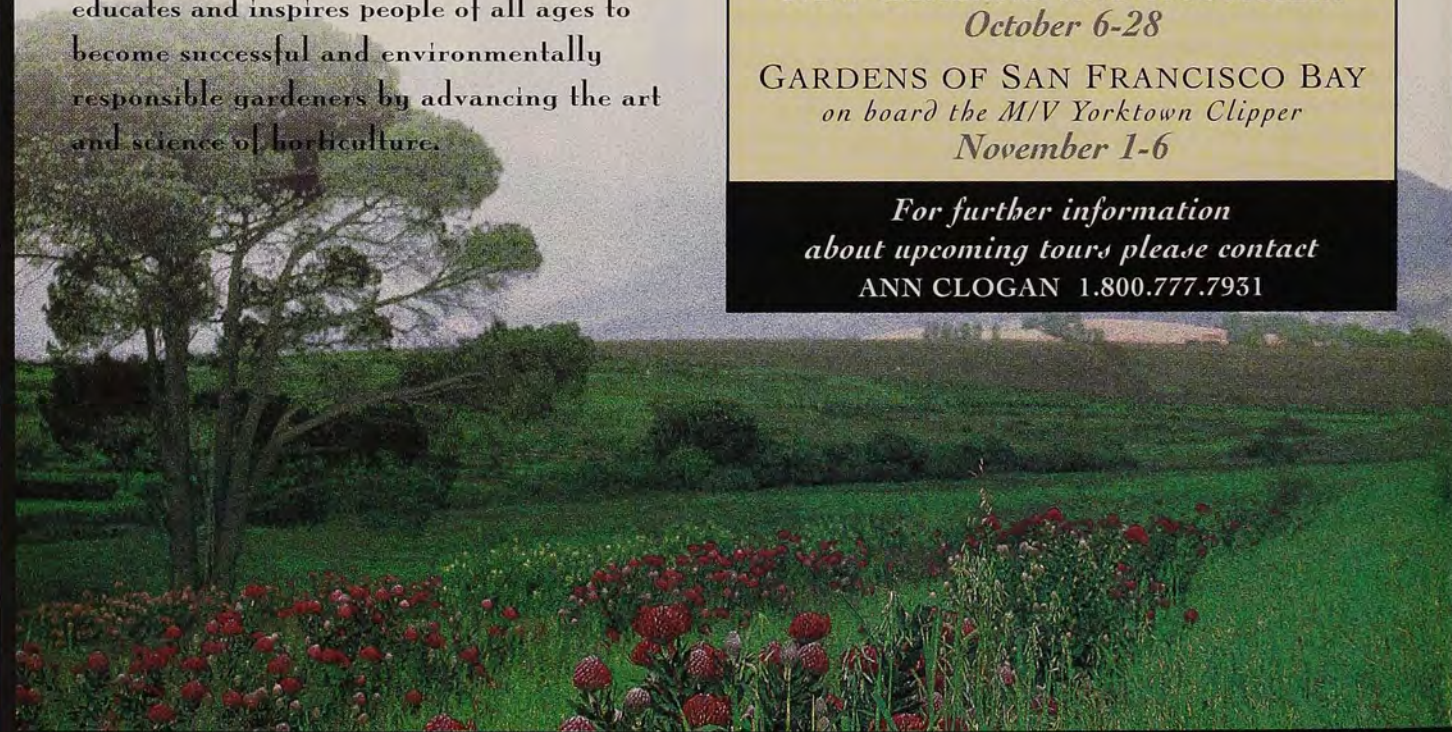
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PHOTOS BY ARABELLA DANE



plants and your health

HERBS FOR HEADACHES

Story and photographs by Steven Foster

Much like the common cold, headaches come and go as they please—no one can escape their wrath. An occasional headache is one thing, but if you are one of the estimated 50 million Americans who experience headaches on a regular basis, you are well aware that they can be far more than an annoyance—they can be debilitating. Tension, migraine, and cluster headaches are the most common of the dozen major types of headaches from which people suffer. These headaches are primarily caused by muscle contraction (tension) or by constriction of blood vessels (migraine and cluster).

Headaches are often regarded as a by-product of the stresses of modern life, but they are certainly nothing new to the human experience. If you thumb through old herbals, you will occasionally come upon suggested treatments—often couched in the archaic language of the day—for what we would now describe as a headache. For example, feverfew (*Tanacetum parthenium*, formerly called *Chrysanthemum parthenium*), a common garden perennial, has a history of use for the treatment of headaches dating at least to the time of Dioscorides, a Greek physician who lived in the first century.

The famous English herbalist Nicholas Culpeper, whose 17th century *English Physician*—the most widely printed English-language herbal of all time—also described the use of feverfew for headaches. “It is very effectual for all pains in the head coming of a cold cause, the herb being bruised and applied to the crown

of the head; as also for the Vertigo, that is a sunning or swimming of the head.”

Yet the use of dried feverfew flowers and leaves for headaches is more than just a passing historical footnote. Both in Europe and North America, feverfew has become a rising star in the modern treatment of headaches.

FEVERFEW AND MIGRAINES

As many as one in eight people suffer from migraines—severe recurrent headaches that are sometimes accompanied by nausea. Several articles published in the past decade in British medical journals have catapulted feverfew into recognition as a potential preventive for these debilitating headaches.

Adopting a unique approach, researchers bypassed animal studies and instead sought volunteers who were already using feverfew for self-treatment of migraine. In a 1985 study conducted at the City of London Migraine Clinic, 17 patients who had been self-treating with feverfew were involved in the double-blind study, which examined the effects of withdrawal of feverfew on users who considered it beneficial. The nine patients who received a placebo reported an increase in the frequency and severity of migraines and associated nausea and vomiting. This provided the first clinical evidence of the efficacy of feverfew in migraine prevention.

Another clinical trial in 1988 investigated the use of feverfew to prevent the symptoms of migraine. Fifty-nine patients were assessed at the end of the randomized, double-blind, placebo-controlled trial. The researchers observed significant improvement in



Willow, left, peppermint, below, and feverfew, bottom, are among the best researched of the many plants that herbalists have traditionally used in the treatment of headaches.



the reduction of the mean number, severity, and vomiting associated with migraine attacks.

Researchers have concluded that a compound in feverfew called parthenolide is primarily responsible for its effectiveness in preventing migraines, although the exact mechanism by which it works is still uncertain. Canadian regulatory authorities have proposed that for use in treatment of migraines, feverfew leaf products should contain a minimum of 0.2 percent parthenolide. Consumers should look for information on parthenolide content on the product label. Feverfew should not be taken during pregnancy or in combination with blood-thinning drugs.

WILLOW BARK

One of the classic mild painkillers or analgesics in herbal medicine is the dried bark of several willow species, which is often described as an aspirin substitute. White willow (*Salix alba*) is most commonly listed and is often recommended to relieve pain associated with mild headaches.

It is a common misconception that the active compounds in aspirin—salicylates—were originally derived from willow bark; they were actually first isolated from meadowsweet (*Spiraea* spp.) in the mid-19th century. Salicin-related compounds known as phenolic glycosides are found in willow bark in amounts ranging from one to 11 percent.

When willow bark is ingested, these compounds go through a series of chemical changes in the intestines, liver, and bloodstream and are eventually converted to salicylic acid, which has similar properties to the acetylsalicylic acid contained in aspirin. The former produces fewer side effects, however, and does not have the blood-thinning qualities of aspirin.

In the case of willow bark, however, achieving an effective dose is complicated by factors such as delivery form, dosage, and the amount of active components in the bark. And if you make a tea of willow bark, you have to get beyond its horribly unpleasant bitter taste even to ingest it. In his book *Herbs of Choice: The Therapeutic Use of Phytomedicinals*, Varro E. Tyler provides an interesting comparison. Anyone using willow bark with a very low percentage of active constituents would have to drink close to five quarts of willow-bark tea to get the therapeutic equivalent of two aspirin. If it's good quality material, about three cups will do. Don't look for willow bark to replace aspirin anytime soon.

OTHER HERBS

Various members of the mint family, including lavender (*Lavandula angustifolia*) and peppermint (*Mentha \times piperita*) have traditionally been used for the treatment of headaches. Various components of their volatile oils have spasmolytic activity, which means that they have the ability to reduce muscle spasms. Some types of headaches, including tension headaches, may be caused by a simple constriction of blood vessels in the muscle tissue surrounding the skull. Several studies have shown that a dab of peppermint oil applied to the temples can help relieve a tension headache.

Since headaches are one of the most common afflictions of humans, the search for relief will continue. For now, the best-researched herb against symptoms of a specific type of headache—migraines—is feverfew. Additional remedies for this common human malady may yet be found in the annals of traditional herbal usage.

Steven Foster has written numerous books and articles on herbs and their medicinal uses. He lives in Fayetteville, Arkansas.

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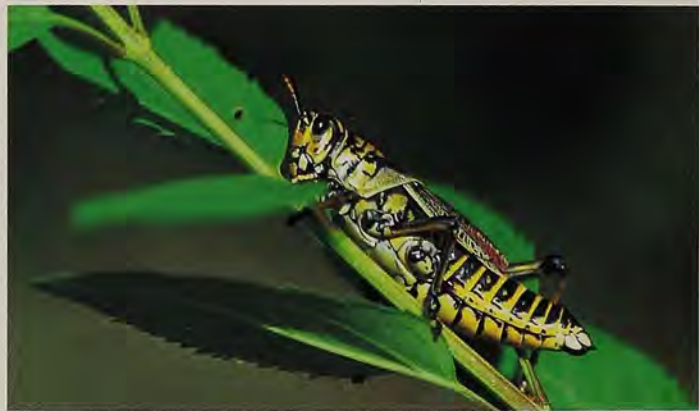
BETTER LIVING THROUGH PLANT CHEMISTRY

by Murray S. Blum

We are always telling our children not to eat plant parts because they may be poisonous, but eating certain plants can also be a hazardous pastime for insects. Plants manufacture a large variety of chemical compounds that range from merely distasteful to highly toxic. But some insects have developed efficient strategies for neutralizing, or even taking advantage of, the life-threatening effects of toxic compounds as diverse as nicotine, cocaine, and strychnine.

Some plants have evolved chemical defenses to deter insects—and other animals—from eating them. Perhaps the best known example are the milkweeds (*Asclepias* spp.), many of which contain cardiac glycosides. These compounds—related to digitalis, which is used in heart medications—can be toxic even at low doses, although vomiting usually purges the compound from the body before a fatal dose is ingested.

But even the most toxic plants are consumed by at least a few insect species that have developed the ability to accumulate and concentrate the toxins—in essence becoming a poisonous extension of the plant. As a deterrent to predators, these insects generally advertise their toxicity with bright colors. Insects that use this type of defensive strategy are described as aposematic. As entomologist May Berenbaum notes in her book *Bugs in the System*, “Curiously, the colors assumed by most aposematic insects are the very same colors used by humans to warn of potential dangers—



The ability of the larvae to tolerate toxins in their bodies provides them with highly effective repellents.

red (like stop signs), yellow or orange, and black (like highway warning signs).” Sometimes, however, predators ignore the warning signs and eat these insects. Those that survive the toxins usually don’t make the same mistake again, thus making survival more likely for other members of that particular insect species.

RAIDING THE PLANT PHARMACY

Insects use toxic plant chemicals in a variety of ways. As noted above, just eating the plant may render the insect toxic or at least unpalatable. Monarch butterflies warn away potential predators with their orange-and-black coloration, but as a last line of defense rely on stored toxins they acquired as larvae from milkweed plants. The small milkweed bug (*Lygaeus kalmii*) and red milkweed bee-

tlis (*Tetraopes tetropthalmus*)—both of which have red carapaces highlighted by black markings—also specialize on milkweeds. The brightly colored larvae of many tiger moths feed on a variety of unrelated poisonous plants, including foxgloves (*Digitalis* spp.), groundsels or ragworts (*Senecio* spp.), and even milkweeds. These amazingly adapted moths actually distill the toxins found in their leafy diets into even more deadly concentrates.

From foxgloves and milkweeds, tiger moth larvae obtain cardiac glycosides or cardenolides. From ragworts they get various poisonous alkaloids—nitrogen-containing compounds that include nicotine, cocaine, and morphine. The ability of the larvae to tolerate such toxins in their bodies provides them with highly effective repellents for invertebrates and powerful poisons for vertebrates. Tiger moth larvae are such versatile storers of plant toxins that they can feed on a plant that contains cholesterol derivatives, then switch to an alkaloid-producing plant and store both kinds of toxins in their bodies. A predator gets a double-barreled toxic insult if it tries to feed on these larvae!

Some insects convert the defensive chemicals of their plant hosts into compounds that are more suitable for their defensive needs. Leaf beetles in the genus *Chrysomela* ingest salicin, a bitter

compound found in willows, and transform it into an even more powerful repellent. In addition to making this defensive compound, leaf beetle larvae use salicin for a more benign function—to produce glucose for nourishment.

Researchers have discovered that insects also use plant chemicals to protect them from microorganisms. For example, larvae of the corn earworm (*Helicoverpa zea*) are much less susceptible to attack by a pathogenic fungus (*Nomuraea rileyi*) if they have fortified themselves with a chemical compound found in tomatoes. Similarly, by consuming pinene—a chemical found in a variety of conifers—the larvae of the Douglas fir tussock moth (*Orygia pseudotsuga*) reduce their likelihood of being infected by certain bacteria.



As a deterrent to predators, the red milkweed beetle, opposite top, and the small milkweed bug, above, ingest milkweed toxins. The lubber grasshopper, opposite bottom, exudes foul-smelling plant juices.

DISHONORABLE DISCHARGE

In other cases, ingested compounds may be rapidly externalized and used as predator deterrents. For example, the brownish “tobacco juice” some grasshoppers exude when threatened is mostly consumed plant material fortified with plant toxins. The flightless lubber grasshopper (*Romalea guttata*) found in the southeastern United States discharges a substance that smells somewhat like creosote. Similarly, the larvae of gregarious sawflies—related to wasps—store pine or eucalyptus oils in pouches opening through the mouth. When disturbed, the larvae simultaneously disgorge these oils, the turpentine-like constituents of which effectively repel predators. Ingested plant

toxins can also be externalized by being discharged through the anus. When threatened, milkweed bugs (*Oncopeltus fasciatus*) defecate feces enriched with milkweed toxins.

DEFENDING THE NEST

If it is of great importance to pass one’s genes on to the next generation, then it is obviously crucial to promote the survival of one’s offspring. Many female insects help achieve this objective by fortifying their eggs with plant toxins they obtained and stored when they were brightly colored larvae. Tiger moths use alkaloids obtained from groundsels or ragworts; milkweed bugs use cholesterol derivatives from milkweeds; and large white butterflies such as *Pieris brassicae* use bitter mustard oils from cabbages and other plants in the mustard family.

Scientists are continually discovering “curiouser and curiouser” relationships between insects and toxic plants. Who knows what amazing story awaits us down the next entomological rabbit hole?

Murray S. Blum is emeritus professor of entomology at the University of Georgia.

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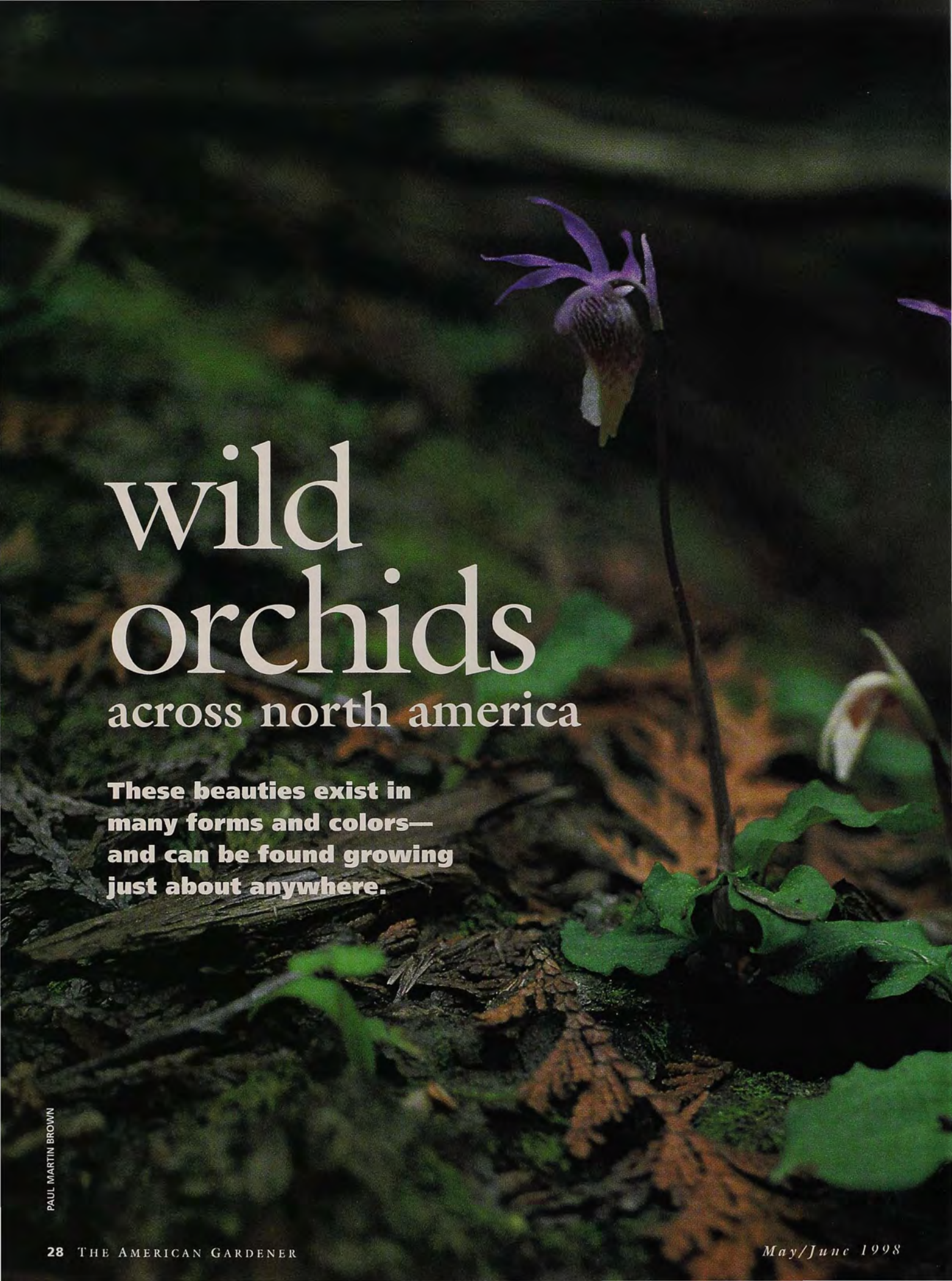
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A close-up photograph of a purple wild orchid flower with a white and purple patterned lip, growing from a forest floor covered in brown leaves and moss. The background is a soft-focus green forest.

wild orchids

across north america

These beauties exist in many forms and colors—and can be found growing just about anywhere.



by Paul Martin Brown

Most people think orchids are both exotic and rare. But even though their habitats are increasingly threatened, it's safe to say that no matter where you live in the United States or Canada, you shouldn't have to travel more than an hour to see orchids growing in the wild. We have more genera of orchids than temperate Europe or Asia, and more species within those genera. From the cold and barren north of Newfoundland and Alaska, with their abundance of lady's-slippers and rein orchids, to the eastern seaboard and its complement of ladies'-tresses and spectacular fringed orchids, you can find more than 225 species, from showy to demure.

Wild orchids flourish not only in the cool mossy northern forests and bogs, and the open swamps and pocosins of the South, but in the dry forests of the West and in mid-America's prairies and grasslands. Vacant city lots can be home to several species. You can even see orchids blooming in the occasional seep of southwestern deserts. Just remember: These beautiful plants are protected in most areas and will die if removed from their native habitat. Never dig orchids—or any other plants—from the wild.

Newfoundland

Visit northern Newfoundland in July and you're sure to encounter spectacular stands, often in the thousands, of

The eastern fairy slipper is a denizen of moist cedar woodlands in our northern states and Canada.



The dwarf form of the large yellow lady's-slipper, above, is distinguished by its nearly flat petals. Opposite, clockwise from upper left: Sierra rein orchids thrive along stream banks on the West Coast; spotted lady's-slippers share habitat with bunchberry; even before its flowers open, the phantom orchid creates an almost unearthly spectacle on the forest floor; and eastern fairy slippers raise their jewel-like flowers on delicate stems.

small round-leaved orchid (*Amerorchis rotundifolia*). Above a single oval leaf, daintly four-inch spikes of three to 10 delicate white flowers spotted with pink rise on a slender stalk. They appear in moist, mossy woodlands and the open, windswept barrens of the northern peninsula.

The bogs and swamps of west central Newfoundland, especially in Gros Morne National Park, have extensive stands of our largest northern slipper orchid, the showy or queen lady's-slipper (*Cypripedium reginae*). It's an apt name for a three-foot plant with as many as four big, pink-lipped white flowers. You can often spot clumps in wet roadside ditches on the park's south side.

Farther north in open limestone barrens, you can see great swaths of large yellow lady's-slippers (*C. parviflorum* var. *pubescens*) without getting out of your car. Many

of the plants grow less than six inches high and look like molten gold on the landscape. In eastern and southwestern Newfoundland, open sphagnum bogs harbor some of the world's largest colonies of the brilliant pink dragon's-mouth (*Arethusa bulbosa*), grass pink (*Calopogon tuberosus*), and rose pogonia (*Pogonia ophioglossoides*).

North of Channel Port-aux-Basques are several expansive bogs where all three species flower in mid-July. A sharp eye might spot white-flowered forms, especially of the dragon's-mouth, or even its rare blue form (*Arethusa bulbosa* forma *subcaerulea*). Returning on the same route in late July and early August, roadside ditches and open moist fields host both small and large purple fringed orchids, *Platanthera psycodes* and *P. grandiflora*. The common names refer to flower size. Both can be more than three feet tall with as many as a hundred purple and lavender fringed flowers. They're especially abundant in the Codroy Valley, where it's not uncommon to find white-flowered forms of both along with the green fringed orchid (*P. lacera*).

Alaska

On the other side of the continent, Alaska shares some species with Newfoundland but also has its own specialties, such as the curious spotted lady's-slipper (*Cypripedium guttatum*).

In late June, Kodiak Island's cloud-shrouded meadows and hillsides are often so thick with wildflowers that it's difficult to walk without stepping on them, but fortunately there are trails that give excellent access. When the clouds do part, the landscape glows with living jewels. The deep purple-flowered Fischer's orchid (*Dactylorhiza aristata*) often grows in company with the cranberry and pale yellow pouches of the yellow spotted lady's-slipper (*Cypripedium yatabeanum*) and less spectacular orchids that are nevertheless worth close inspection. If you look carefully among the meadow flowers you can find the green spikes of rein orchids (*Platanthera* spp.) and the rare two-leaved adder's-mouth (*Malaxis diphyllus*).

On Alaska's mainland, a few hours from Anchorage, you can easily find the delicate, single pink and yellow flowers of the eastern fairy slipper (*Calypso bulbosa* var. *americana*); the tiny white sparrow's-egg lady's-slipper (*Cypripedium passerinum*), with a pouch finely speckled with purple; and the white-and-cranberry spotted

lady's-slipper (*C. guttatum*). A species shared with Newfoundland, the small round-leaved orchid is often accompanied by a far-northern species, the rather plain yet intriguing green-flowered northern twayblade (*Listera borealis*). Try Denali National Park in late June to mid-July. Less than a mile inside its entrance and not far from public buildings you can be surprised by stands of spotted lady's-slipper, northern twayblade, and eastern fairy slipper.

West Coast

Beginning in early March, even the most casual visitor to Mt. Tamalpais State Park near San Francisco can spot hundreds of western fairy slippers (*Calypso bulbosa* var. *occidentalis*) raising their pale pink and lavender slippers above the redwood duff. They even grow—at their peril—in more than one unpaved parking area. Scattered among them is the leafless western spotted coralroot (*Corallorhiza maculata* var. *occidentalis*) and here and there a few pale orange Vreeland's striped coralroots (*C. striata* var. *vreelandii*).

If you visit Olympic National Park in Washington State during early July, you can see more than a dozen orchid species, all on roadsides or nearby trails. Hurricane Ridge Road is only eight miles long, but you'll need several days to see all it has to offer. Watch carefully for the tall, white, cinnamon-scented spikes of bog candle (*Platanthera dilatata*) in the wet seeps and then explore the surrounding woodlands for other orchids: western spotted coralroot, Alaska piperia (*Piperia unalascensis*), white piperia (*P. candida*), tall green northern bog orchid (*Platanthera hyperborea*), an occasional fairy slipper, and heart-leaved twayblade. In the park's dry coniferous woods you can find small stands of the phantom orchid (*Cephalanthera austiniiae*), with its snowy white stems and flowers. Lakeshores are home to the colorful chatterbox or stream orchid (*Epipactis gigantea*), which gets the former name from the way its green, orange, and yellow flowers nod in the wind, as though they are conversing.

In California, the chatterbox orchid can often be seen growing with the sierra rein orchid (*Platanthera dilatata* var. *leucostachys*) along stream banks. The latter begins blooming in May in California and, at higher elevations, flowers can last into September.

The Southwest

Some Mexican species—including rein orchids, crested coralroots (*Hexaletris* spp.),





and several adder's-mouths—are creeping over the borders of Texas and the southwestern states. The adder's-mouth's are usually green-flowered, with the exception of the cranberry or red adder's-mouth (*Malaxis porphyrea*). Four *Malaxis* species are found in the "sky-islands" of southeast Arizona—mountainous areas distinguished by more moderate temperatures and increased rainfall. You're sure to find several of them while exploring Miller's Canyon or Carr Canyon near Fort Huachuca.

In mid-August, when the desert near Tucson is sweltering but nearby mountains are cool and comfortable, the adventurous can drive and then climb to Rustler's Peak in Coronado National Forest to see three species of adder's-mouths side by side: slender (*M. tenuis*), rat-tailed (*M. ehrenbergii*), and purple (*M. porphyrea*). While in Tucson, be sure to drive to the top of Mount Lemmon and search the trails at the end of the road for Thurber's bog orchid (*Platanthera limosa*). Its small green flowers make it one of the least showy green rein orchids, but it is one of the rarest in the United States and this is the most accessible place to hunt for it.

The Rockies

The broad spine of the Rocky Mountains from Canada to northern Mexico is an orchid-hunter's dream, offering an abundance of eastern fairy slippers in the far north, a variety of rein orchids within the range's main body, southern specialties such as *Malaxis* and *Platanthera*, plus every species of coralroot.

Pick a park! Glacier in the northern Rockies, Yellowstone and Grand Teton in Wyoming, or Rocky Mountain in the central Rockies of Colorado are all home to myriad orchids. Early in spring—which varies from park to park and elevation—one of the first orchids to flower is the eastern fairy slipper. Its exquisite pink, yellow, and white single slippers haunt secluded patches along trails, especially Calypso Trail in Rocky Mountain National Park.

Central Prairies

The prairies of the central states and provinces support fewer species than either coast, but they have painted some of my favorite scenes. In spring, the small white lady's-slipper (*Cypripedium candidum*) blooms, followed in early July by the tall eastern and western prairie fringed orchids (*Platanthera leucophaea* and *P. praeclara*) waving their large, fragrant, white-fringed flowers. Still later, hundreds of white Great

Plains ladies'-tresses (*Spiranthes magnicamporum*), raise creamy spikes among autumn wildflowers. At an inch in diameter, the individual flowers are some of the largest among ladies'-tresses.

The vast, mixed forests of the upper Great Lakes, often underlaid by extensive limestone deposits, make suitable homes for nearly all of the eastern species and a good representation of western species as well. Coralroots abound, and the spectacular red-and-white-striped coralroot (*Corallorhiza striata*) makes a memorable show in spring and early summer.

Ontario's Bruce Peninsula, which juts out into Lake Huron's Georgian Bay, offers extensive untouched habitats for nearly 50 orchid species. Late June and early July bring forth wide roadside swaths of brilliant large yellow lady's-slippers. In hidden enclaves is the curious white-and-red ram's-head lady's-slipper (*Cypripedium arietinum*), with its pronounced pouch and intricate veining. Broad wetlands produce the showy lady's-slipper; on Flower Pot Island, at the peninsula's tip, you can find the elusive fairy slipper. These are soon followed by clumps of striped coralroot and the dazzling yellow form of the western spotted coralroot.

The Deep South

Visiting the lower Mississippi River Basin and adjacent south central states, you'll find a good selection of ladies'-tresses, grass pinks, and fringed orchids, but the region's most spectacular offering has to be ivory-lipped or Kentucky lady's-slipper (*Cypripedium kentuckiense*). The flowers on these lush, majestic plants are the largest of our lady's-slippers, ranging in a color from deep yellow to ivory-white. They are usually found in wet, deciduous woodlands, often those subject to periodic flooding. Both the large yellow lady's-slipper and the southern small yellow lady's-slipper (*C. parviflorum* var. *parviflorum*) may grow nearby.

In midsummer, moist grasslands and roadsides are aflame with swaths of orange—or yellow—fringed orchid (*Platanthera ciliaris*). Less frequently you can see the orange—or yellow—crested orchid (*P. cristata*) and, most rarely, the yellow fringeless orchid (*P. integra*).

Florida and the Gulf Coast

There are a couple of misconceptions about this country's epiphytic—tree-dwelling—orchids. Most people believe that they're confined to southern Florida; in fact, their range is much greater. Nor are



The creamy white flowers of grass-leaved ladies'-tresses, opposite, spiral around the stems of this inhabitant of dry meadows and roadsides. Spreading pogonia, above, has whirlybirdlike sepals surmounting its terminal pink flower.

they all showy. Many of our southern terrestrials are every bit as beautiful.

As you continue south you'll still find fringed orchids and grass pinks, plus several *Spiranthes* relatives such as *Sacoila lanceolata*, the scarlet ladies'-tresses or beakless orchid. Damp woodlands and swamps of the South offer the curious shadow-witch (*Ponthieva racemosa*) and several species of false rein orchids in the genus *Habenaria*.

Some of the prime orchid-viewing spots in Florida are around the visitor's centers in Everglades National Park. Watch the open rocky grassland and the local hammocks—areas of hardwoods usually set slightly above the surrounding grasslands or pine forests.

The famed Fakahatchee Swamp in Collier County is home to many of the rarest species in Florida, but it is not a place for the novice to explore. Park naturalists often lead winter walks, however, as do independent organizations. Here you might see such Florida epiphytes as the night-blooming epidendrum (*Epidendrum nocturnum*)—which, contrary to its name, can also be seen blooming in the daytime—several of the curious leafless orchids, and the Florida



Bog candle, above, can be found in wet seeps at Washington State's Olympic National Park. Opposite, clockwise from upper left: the spidery large whorled pogonia blends in with surrounding vegetation; not so the flaming orange plumes of the orange fringed orchid; the mixed forest of the Great Lakes region is the most common habitat for the striped coralroot; Native Americans called the pink lady's-slipper "moccasin flower" because of its inflated pink lip.

tresses; summer, for the Florida adder's-mouth (*Malaxis spicata*), various fringed orchids, and the Florida butterfly orchid (*Encyclia tampense*). In fall, you can find all four species of *Habenaria*: water spider (*H. repens*), our only aquatic orchid, with its spiderlike green flowers; false water spider (*H. distans*), known from only two sites in the United States; the common toothed habenaria (*H. odontopetala*), which continues producing spikes of green flowers throughout winter; and, along roadsides, the long-horn habenaria (*H. quinqueseta*). The last is becoming harder to find as roadsides are more closely mowed or treated with herbicides.

Winter is the orchid hunter's favorite season here. The massive stands of shadow-witch are starting to unfold their white-and-green butterflylike flowers above rosettes of dark green leaves, and the leafless stems of the early or Wister's coralroot (*Corallorhiza wisteriana*) are flowering near the Cypress Swamp Trail. In February and March several specialties of the park are in bloom. This is one of the few sites in the country—all in Florida—for speckled ladies'-tresses (*Cyclopogon cranichoides*). Spurred neottia (*Eltroplectris calcarata*), with flowers like miniature egrets on foot-high stems, are scattered throughout the dense hammock, and the open grasslands near the park entrance are dotted with spikes of ladies'-tresses.

The Mid-Atlantic and Southeast

In spite of rapid development in our mid-Atlantic and Southeast, you can still find large stands of orange fringed orchid, orange crested orchid, southern white-fringed orchid (*Platanthera blephariglottis* var. *conspicua*) and spreading pogonias or rosebud orchids (*Cleistes divaricata* and *C. bifaria*) in accessible sites.

The pine barrens of New Jersey are perhaps one of the best orchid strongholds in this area, with thousands of acres preserved as the Pinelands. Near the entrance to the restored Village at Batsto, meadows are turned solid pink in June by grass pinks and rose pogonias. Many of the bogs and river savannas are still home to various fringed orchids and a few sites still support the northernmost population of the yellow fringeless orchid and rosebud orchid.

In late July, even the most lackadaisical nature lover will be able to spot the white-fringed orchid—with foot-tall stems bearing several dozen big fringy flowers—along any number of roadsides. Traveling south

in New Jersey you'll see more species begin to appear. Near Cape May, several sites protect the crane-fly orchid (*Tipularia discolor*), snowy orchid (*Platanthera nivea*), and lace-lipped ladies'-tresses (*Spiranthes laciniata*)—the latter two at their northern limit.

Farther south along the Atlantic seaboard, ladies'-tresses assert their hold. *Spiranthes* can be easily identified by the numerous small white flowers usually spiraling around the upper part of the slender stem, but individual species are exceedingly hard to tell apart. Bloomtime, leaves, and habitat are all helpful clues with which you can tease out an identification with the help of a good wildflower guide.

One of the best places to see orchids of the southern coastal plain is the Green Swamp in southeastern North Carolina. Its savannas, pocosins, and swampy woodlands are fabled for diverse species that include upland spreading pogonia, rosebud orchid, yellow fringeless orchid, snowy orchid, orange fringed orchid, orange crested orchid, many ladies'-tresses, and several others more typical of the Deep South.

The Northeast

I'm fortunate to make my home in New England, which, along with New York, is home to more than 60 orchid species, most of them easily seen and well preserved despite rampant development. There is hardly a state or local park in southern New England that does not have such familiar spring sights as woodlands full of pink lady's-slippers (*Cypripedium acaule*) and in the late summer and fall, endless roadsides of nodding and yellow ladies'-tresses (*Spiranthes cernua* and *S. ochroleuca*).

One of our rarest orchids, the small whorled pogonia (*Isotria medeoloides*), is centered in western Maine and eastern New Hampshire. Its cousin, the curiously beautiful large whorled pogonia (*I. verticillata*), is a frequent resident of southern New England oak-pine woods, often in colonies of more than a thousand. Both species have one or two flowers set neatly on a whorl of five leaves atop a slender stem. The former is only three or four inches high in flower, basically green with a white lip, and the petals and sepals are of equal length. The latter is nearly a foot tall, purple, green, and white, with curling sepals much longer than the petals.

Orchids fairly common farther south or west reach their northern limits here: crane-fly orchid (*Tipularia discolor*), in southeastern Massachusetts and Long Is-

clamshell orchid (*Encyclia cochleata* var. *triandra*). It is an experience not to be missed, as long as you don't end up among the missing!

If you explore north and central Florida, you will be seeing primarily terrestrials, for which all of the state and county parks are prime habitat. Perhaps the finest is Highland Hammock State Park in Sebring, Florida. It is the oldest state park in Florida and offers a large, virtually undeveloped area with good trail and road systems. Nearly 20 species of orchids have been recorded in the park, which is home to one of the largest populations of shadow-witch (*Ponthieva racemosa*) in the country.

Stopping anywhere along the loop road and following one of the trails should yield views of several species at any time of year. Spring is the time for grass pinks and ladies'-



land; orange fringed orchid (*Platanthera ciliaris*) in coastal Connecticut and Rhode Island; and orange crested orchid (*P. cristata*) on Long Island.

Between Memorial Day and Labor Day, take a ride through the Green Mountains of Vermont, the White Mountains of New Hampshire, or the wild backwoods of northern Maine, watching carefully for spikes of white, purple, pink, and green. Many species of fringed and rein orchids line the roadside ditches and open fields; purple fringed orchids are abundant in late July and August. Late June in central and northern Vermont reveals cattail swamps full of showy lady's-slippers. At the same time in northern Maine, near Caribou, it's easy to spot large yellow lady's-slippers.

Native Orchids in the Garden

It would be unfair to both would-be growers and native orchids not to say a few words about trying to grow these wildlings in a home garden.

Many of our wild populations, such as yellow lady's-slippers, have been reduced or wiped out by collecting, which in many sites is not only unethical but illegal. Most of these collected plants are doomed to an

unnatural death soon after transplanting. That's because terrestrial orchids grow in the wild with a variety of associated mycorrhizal fungi that, at different stages, facilitate seed germination, plant growth, and, eventually, flowering and the setting of seed. Most species also have very specific habitat requirements.

Species of many mature orchids offered by nurseries originated as collected plants, but are labeled "nursery grown" because they have passed through several growers' hands by the time of sale.

Fortunately, several orchids have shown the ability to adapt to suitable garden settings, and each year more species are being propagated by reputable growers in the United States. These plants have been grown in laboratories, then "weaned" to improve their chances of succeeding in a garden. By purchasing only propagated orchids, you will decrease the demand for collected plants and discourage collecting.

If you doubt that plants are from propagated sources, ask. Most retail distributors purchase propagated orchids directly from the originating growers. So if a seller can't or won't name the plants' source, don't buy them.

Propagators all have excellent handouts with detailed cultural information. A good general guideline is common sense. You will have great difficulty growing Alaskan species in south Florida, for example, but with care and perhaps some protection you probably can grow Minnesota species in New Jersey or vice versa. Consider whether your garden, with minor alterations, can match the orchid's native habitat. This means doing your homework and asking questions.

Yellow-flowered lady's-slippers are by far the easiest orchids to grow in a variety of garden situations, and propagated plants are becoming readily available. (Note: These varieties of *Cypripedium parviflorum* are sometimes listed as *C. calceolus*.) Also widely available are several showy, bog-growing species such as rose pogonia (*Pogonia ophioglossoides*), grass pink (*Calopogon* spp.), and wetland species of ladies'-tresses (*Spiranthes* spp.). They require you to build an artificial wetland, but you'll find the extra effort well worth it.

Paul Martin Brown is founder of the North American Native Orchid Alliance and editor of its quarterly Journal.

Resources

NORTH AMERICAN NATIVE ORCHID ALLIANCE. In addition to publishing the quarterly *North American Native Orchid Journal*, the alliance makes a variety of reprints and hard-to-find publications available to its members, and it sponsors an annual North American Native Orchid Conference. This year the conference will be held July 8–11 at Lake Itasca State Park in northern Minnesota. For more information about the conference or joining the

Alliance, write to Nancy A. Webb, NANO, 84 Etna Street, Brighton, MA 02135-2830, or visit the Alliance's web site at www.naorchid.org.

THE WILD ORCHIDS OF CALIFORNIA by Ronald A. Coleman, Cornell University Press/Comstock Publishing Associates, 1995.

ORCHIDS OF INDIANA by Michael A. Homoya, University of Indiana Press, 1993.

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ORCHIDS OF THE NORTHEAST: A FIELD GUIDE by William K. Chapman, Syracuse University Press, 1997.

WILD ORCHIDS OF THE NORTHEASTERN UNITED STATES: A FIELD GUIDE by Paul Martin Brown. Drawings by Stan Folsom, Cornell University Press/Comstock Publishing Associates, 1997.

Sources

The following companies sell propagated North American native orchid

plants through mail-order. **BLUESTEM FARM NATIVE PLANTS**, 55920 Lehman Road, Baraboo, WI 53913; (608) 356-0179. Species list free with SASE.

CYPHAVEN, 2291 280th Street, Adel, IA 50003; (515) 993-4841. www.orchidmall.com/cyp.haven. **RAISING RARITIES**, P.O. Box 405, Jacksonville, VT 05342; (802) 368-7273. Brochure \$1 with SASE.

SPANGLE CREEK LABS, 2295 County Road #445, Bovey, MN 55709. Species list free with business-sized SASE.

If you enjoyed Paul Martin Brown's tour of the wild orchids of North America, look for **WILD ORCHIDS ACROSS NORTH AMERICA: A BOTANICAL TRAVELOGUE** by Philip Keenan, due out from Timber Press this fall. Free copies of the book will be awarded to three members who send us the best

written accounts—250 words or less—of their own experience viewing native orchids in the wild. Submissions should be addressed to *The American Gardener*, 7931 East Boulevard Drive, Alexandria, VA 22308. We'll print the three responses in an upcoming edition of the magazine.

Eurasian Honeysuckles

From Boon to Bane

Pretty to look at but aggressive in nature, these shrubs won't stay confined to the garden.



by Charles E. Williams

Winter in the farm-dominated landscape of southwest Ohio reveals a checkerboard of open fields separated at intervals by woods. In 1990, I was visiting the area as a postdoctoral forest ecologist, eager to hit on a fruitful topic of investigation. Intrigued by this fragmented forest, I meandered through several areas dominated by American beech, sugar maple, and various hardwoods. But it wasn't the forest canopy that caught my attention—it was the shrub layer, often thick enough to impede my movement. On close inspection I realized that the woodland floor was dominated by a single shrub species, one unfamiliar to me. What was it, I wondered, and what role did it play in the forest ecology?

The first question was easy to answer with a little botanical sleuthing. The ubiquitous shrub was the Amur honeysuckle, *Lonicera maackii*, a highly invasive native of eastern Asia. The second question proved much more complicated.

Since that initial meeting with Amur honeysuckle, I have been involved with several projects focusing on the ecology

and management of non-native bush honeysuckles in eastern American forests. Gardeners often quiz me about using these shrubs in their home landscapes: What harm can there be in growing them when they're so beautiful and popular with birds? Are all of the non-native bush honeysuckles potential pests? Are there native shrubs with the same virtues that they could plant instead?

Black Sheep and Gray Areas

Most gardeners in the eastern half of the country know well the invasive tendencies of Japanese honeysuckle (*L. japonica*), a twining vine that invades roadside ditches and forest edges, gobbling up herbaceous ground covers and strangling saplings. Yet there are cultivated cousins that appear to be perfectly docile, and nurseries continue to introduce new *Lonicera*—ground covers, hedges, vines, even an edible variety.

Tatarian honeysuckle is beautiful in flower but invades natural areas.

There is almost never any assurance offered that these new varieties will stay confined to the border or trellis.

The genus *Lonicera* consists of some 180 species that are widely distributed across the Northern Hemisphere. About one-third of these are in cultivation; one-third of those are vines and the rest shrubs. The bush honeysuckles are upright, multi-stemmed, and generally deciduous, ranging from six to 15 feet tall. Virtually all of the ones being cultivated in North America today hail from Europe or, more commonly, eastern Asia—China, southern Russia, Korea, and Japan. They're attractive enough in spring, with abundant and slightly fragrant yellow-white to rose-colored tubular flowers. But they're even more eye-catching in fall, when the flowers are followed by copious displays of red to orange berries that stay on the branches well into winter. The few bush honeysuckles native to North America, such as the fly honeysuckle (*L. canadensis*), are dowdy in comparison, with inconspicuous flowers and few fruits.

Eurasian bush honeysuckles virtually flowed into the United States in the mid-to late 1800s, a peak period of plant exploration in Asia by Europeans and Americans. Among the immigrants brought here as ornamentals and still common today are Morrow's honeysuckle (*Lonicera morrowii*), Amur honeysuckle, fra-



By eating and excreting berries of Eurasian bush honeysuckles, birds such as this American robin have unwittingly aided their spread.

grant honeysuckle (*L. fragrantissima*), Standish's honeysuckle (*L. standishii*), and pretty honeysuckle (*L. x bella*), a hybrid of Tatarian (*L. tatarica*) and Morrow's honeysuckles. Tatarian honeysuckle arrived about a century earlier, in 1752.

Beginning in the 1930s, species with vigorous vegetative growth and prolific fruit production—particularly varieties of Tatarian and Amur honeysuckles—were widely planted as windbreaks, for erosion control, and as wildlife food and habitat. From the 1960s through the 1980s, selective breeding of these two species by the federal Soil Conservation Service—now called the Natural Resource Conservation Service—and others created veritable “supershrubs” with even more fruit and foliage. They were planted with the best of intentions: to quickly revegetate and stabilize degraded lands, and to provide fruit and cover for birds and small mammals. But these “improved” cultivars set the stage for the large-scale biological invasion of North America by bush honeysuckles.

Reports of escape and naturalization began to multiply in the 1950s and '60s, but alarms had been sounded much earlier. As early as 1903, the distinguished botanist Alfred Rehder noted that Tatarian and European fly (*L. xylosteum*) honeysuckles had escaped from cultivation in eastern North America. A note in the archives of the Morton Arboretum near Chicago describes Amur honeysuckle as a “weed in arboretum since 1924, when first brought in.” In her 1920 book *Our Northern Shrubs*, Harriet Keeler noted that Tatarian honeysuckle “has escaped quite extensively.”



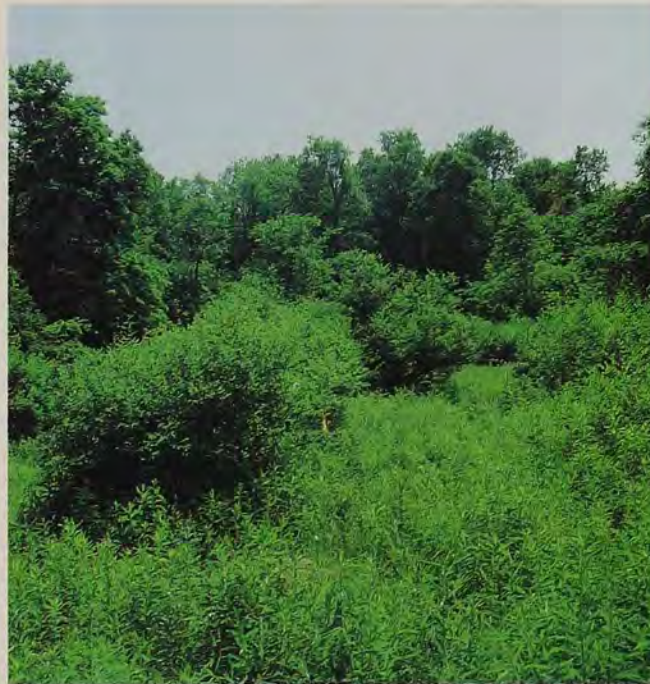
Underappreciated Natives

Of the nine shrubby honeysuckle species native to North America—listed below with growth habit, flower color, and native range—few are widely cultivated despite commercial availability. The Andersen Horticultural Library's *Source List of Plants and Seeds* indicates six of these are available through retail mail-order. Species that are native to your region are the best garden prospects (those with an asterisk are included in the Andersen Library list).

Coral honeysuckle

Botanical Name	Common Name	Growth Habit	Flower Color	Native Range
<i>Lonicera albiflora</i> *	Western white honeysuckle	Shrubby vine	White or yellow white	Western Arkansas to Arizona
<i>L. arizonica</i>	Arizona honeysuckle	Shrubby vine	Reddish, orange inside	Texas to Arizona
<i>L. canadensis</i> *	Fly honeysuckle	Shrub	Yellow-white, red tinge	Eastern North America
<i>L. conjugalis</i> *	Double honeysuckle	Shrub	Purple	Western North America
<i>L. interrupta</i> *	Chaparral honeysuckle	Shrub	Yellow	Arizona to California
<i>L. involucrata</i> *	Twinberry	Shrub	Yellow or red	Midwestern and Western North America
<i>L. oblongifolia</i>	Swamp fly honeysuckle	Shrub	Yellow	Midwestern and Southeastern North America
<i>L. sempervirens</i> *	Coral honeysuckle	Shrubby vine	Red	Eastern North America
<i>L. utahensis</i>	Utah honeysuckle	Shrub	Yellow-white tinged red	Western North America

Perhaps the most graphic example of the rapid spread of a Eurasian bush honeysuckle is illustrated by Amur honeysuckle. In 1961, forest ecologist E. Lucy Braun found the species in a single Ohio county during her survey of the woody plants of the state. By 1994, Amur honeysuckle was recorded in 34 Ohio counties as well as 24 eastern states and Ontario. This explosive naturalization was not confined to Amur honeysuckle, however; Tatarian and Morrow's honeysuckles are equally widespread in eastern North America. Three other species—Standish's, fragrant, and European fly honeysuckles—plus the hybrid pretty honeysuckle are also naturalized in a wide swath of North America from California to Maine and Ontario, south to North Carolina and Tennessee.



Woodland edges, roadsides, and abandoned fields provide the open areas most Eurasian bush honeysuckles, including these Morrow's honeysuckles, tend to colonize.

Fruitful—and Multiplying

How was this epic spread of these non-native shrubs made possible? Obviously, humans must take the blame for introducing Eurasian bush honeysuckles to urban, suburban, and rural habitats. But we plant many non-native shrubs that never wreak such havoc. The key to the bush honeysuckles' escape and naturalization was the

same characteristic that charmed the eye of gardeners and won the hearts of naturalists: the fruit it bears in such abundance.

The fruit of Eurasian bush honeysuckles is a fleshy berry containing an average of six or seven seeds. Multiply this by the many

thousands of fruits a large, established shrub can produce and you have a formidable seed source. One study in southwestern Ohio estimated that an Amur honeysuckle could produce up to 1.2 million berries per shrub, with approximately 400 million berries produced per hectare (two-and-a-quarter acres).

Low in nutrients, bush honeysuckle berries are not birds' number one food choice—which is a reason the fruits remain so long on the shrubs, coloring gardens into spring—but they do offer birds sustenance once fruits of other species are gone. More than 20 avian species in eastern North America, including favorites such as eastern bluebird, cedar waxwing, and American robin, feed

on fruits of bush honeysuckles.

The birds then excrete or regurgitate the seeds in a variety of habitats. Generally, Eurasian bush honeysuckles are shade-intolerant and need moderate light to germinate and grow. They are most abundant and productive in open habitats such as forest openings and edges, fields, and roadsides. But some species, such as Amur honeysuckle, can persist in a suppressed state in the low light of closed-canopy forests. Here they grow slowly and wait for

Buyer Beware

Since there are some 180 honeysuckle species, it stands to reason that at least a few may be noninvasive when introduced to new environments. But how can you avoid choosing one that could become a pest beyond the garden? Ask several questions about a variety before you purchase it.

Is it a hybrid or an unfamiliar cultivar? A good rule of thumb is to avoid buying hybrid honeysuckles or cultivars of unknown origin. A hybrid such as pretty honeysuckle (*Lonicera ×bella*), for instance, is the product of two non-native invasive parents, one drought tolerant and the other amenable to wet soils, so it has inherited a double dose of peskiness.

How well adapted is the species to your specific region? Although it may seem counterintuitive, some species can be too well adapted to an area. One 1998 catalog lists a Japanese variety from the collection of a Northeast arboretum, which would indicate its desirability for gardeners in that area. But how long has it grown there? Has it been too well tended to show invasive potential? The cream honeysuckle (*L. etrusca*), a vine native to the Mediterranean region of southern Europe, was introduced to cultivation for its tolerance of dry soil and bright sun, and has now naturalized in Mediterranean-like habitats of the West.

Does the species fruit prolifically or sprout aggressively?

These are key traits that speed escape and naturalization, and they should raise red flags for gardeners. On the low end of the fruiting spectrum for non-native *Lonicera* is the box honeysuckle (*L. nitida*), native to central and western China. This small-leaved evergreen species, often used as hedging, rarely fruits in cultivation and so lacks the capacity to escape and naturalize widely.

Catalogs frequently fail to offer information on parentage. An interesting example is the goldflame honeysuckle, *L. ×beckrottii*. It is the product of *L. sempervirens* (a native with a name that sounds like it could be invasive) and *L. ×americana* (a southern European import with a name that makes it sound like a native). It is another light fruiter and, after decades on the market, does not appear invasive. Like many honeysuckles, it does sometimes have problems with aphids. Some new *Lonicera* varieties are being sold as aphid-resistant; another irony of invasive tendencies is that pest resistance can lead to uncontrolled spread in the wild.

Thoroughly research the plants that interest you. Knowledge is the most powerful tool in the management of non-native plant invasions.

—C.W.

disturbance—such as tree fall or insect outbreak—to open the canopy to more light. These species have an additional edge: They are dispersed while nondormant, which means they can conceivably germinate year-round if they have adequate soil moisture, sufficient light, and moderate temperatures.

Virtually all Eurasian bush honeysuckles are upland species and grow best in well-to-moderately drained soils. Morrow's and pretty honeysuckle, however, also tolerate wet soils and can invade fens, bogs, and lakeshores as well as drier upland habitats.

If the honeysuckle fruit isn't eaten by birds, that doesn't mean the seeds are lost. Seeds can build up in the soil beneath the shrubs, paving the way for seedlings to emerge as much as a year later. Seed banks can be quite dense: Up to 1,100 seeds per square meter of soil have been recorded under established Amur honeysuckle shrubs in northern Kentucky. Before the seeds will germinate, it's usually necessary for the soil to be disturbed, by animals digging or humans cultivating—ironically, often by conservationists pulling bush honeysuckles during control campaigns. Seeds also can be washed downslope during rains and thus invade new habitats.

Eurasian bush honeysuckles have yet another trait that may explain their success in invading new habitats—extended leaf longevity. They are among the first woody plants to develop leaves in the spring and among the last to shed them in fall. This gives them a greater photosynthetic window in which to produce and store the carbohydrates they need to grow and produce fruit. In low-light habitats, such as the understory of a mature forest, this may help them eke out a living until a canopy-opening disturbance gives them light for optimal growth.

A Gloomy Scenario

So far, there has been no documented case of a Eurasian bush honeysuckle causing extinction of a native species. Nevertheless, the plants have great potential to damage natural ecological systems. A mature stand of bush honeysuckle creates heavy shade and intense root competition. Soon native ground cover plants are fewer and less varied, and tree seedlings are overcome.

Of great concern is the loss of potential keystone species vital in maintaining ecological balances. For example, woodland vernal herbs, such as trout lily (*Erythronium americanum*) and spring beauty (*Claytonia virginica*), are physiologically active during early spring when other plant



A good alternative to bush honeysuckle is arrow wood (*Viburnum dentatum*), a shrub that produces white flowers in summer followed by blue-black berries.

species are dormant and abundant rains can leach nutrients from the forest soil. These herbs may function as “vernal dams,” capturing available nutrients from soil water, incorporating them in aboveground plant parts, and re-releasing them after their non-perenniating tissue (i.e., leaves and stems) decomposes in summer. If vernal herbs are shaded out by bush honeysuckles, essential nutrient cycles could be disrupted.

When it comes to our native animals, the effects of Eurasian bush honeysuckles are less clear-cut; the copious food and cover they provide may actually benefit some populations. A recent study in Illinois showed that some bird species—including wood thrush, American robin, northern cardinal, and rose-breasted grosbeak—selected non-native bush honeysuckles over native shrubs as nesting sites.

But the study didn't prove conclusively that the birds found the honeysuckles a more desirable home. The woods had been so heavily browsed by white-tailed deer and cattle that native shrub species were uncommon. Non-native bush honeysuckle, unpalatable to deer, had simply filled the void. The benefit to the site's bird population may have come at a cost to native plants and other organisms in that habitat, and to the vital ecological functions they provide.

Some Attractive Substitutes

For gardeners, what are some alternatives to bush honeysuckles? The most viable option is native shrubs, many of which are both attractive and useful. In the north-eastern United States, natives such as spicebush (*Lindera benzoin*), inkberry (*Ilex glabra*), gray dogwood (*Cornus racemosa*), northern bayberry (*Myrica pensylvanica*), red chokeberry (*Aronia arbutifolia*), and arrow wood (*Viburnum dentatum*) are well adapted to home landscaping and wildlife plantings and are often available from commercial nurseries.

All of these are similar to Eurasian bush honeysuckles in hardiness, growth form, and flower and fruit production, yet are noninvasive. A good strategy is to learn from a regional field guide what shrubs naturally occur in your area and assemble a list of candidate species. Then check with a local native plant society, arboretum, university, or state conservation agency for information on obtaining and growing the ones that interest you.

If your property is already home to Eurasian bush honeysuckles, these organizations can also advise you on ways to remove or at least control them. One approach is to cut them to the ground and paint the stumps with a triclopyr product—one brand name is Brush-b-Gone. We usually add some dye to the herbicide so we know which stumps we've treated. Sometimes we cut open the stems and paint them again.

Since there are so many species of *Lonicera*, you might wonder if it isn't likely that some are noninvasive. In general, it's difficult to predict how a plant will behave in a new environment since an area's characteristics can help determine if the variety will be invasive or not. Some plants that grow rampantly in one area of the United States are almost meek in others.

As you shop for additions to your garden, keep in mind that the very traits that make a plant tempting—plentiful fruit, rapid growth, and the ability to persist in a variety of environments—may indicate invasive potential. Given the explosive spread of Amur, Tatarian, and Morrow's honeysuckles in North America, it is likely that other Eurasian species could follow suit. My advice is to consider any new *Lonicera* varieties with a great deal of skepticism, and if you do decide to grow them, do so with a vigilant eye.

Charles E. Williams is associate professor of biology at Clarion University of Pennsylvania, where he teaches ecology and plant biology.

ROB SIMPSON

Mock Oranges

An old favorite still makes scents in today's gardens.

by Terry Schwartz

FDR is on the radio. His promises of better days ahead are interspersed with the friendly “pop” from the exhaust of a gasoline-powered Maytag. But there seems to be less time to wash clothes now that it's early summer, with dew dripping from the columbine and the smell of fresh bread mingling with the perfume of rugosa roses.

When little sister runs in excitedly, slamming the screen door behind her, mother first scolds her for not shutting it quietly, then sees that her small hands are cupped around a dozen white mock orange blossoms. Together, they float the flowers in a bowl of water and set it on the oilcloth-covered table.

Mock oranges (*Philadelphus* spp.) are thought to have been among the first plants that settlers brought to American shores. But while they have been grown in gardens for well over 400 years, the 1930s and '40s seem to have marked their heyday. Their major drawbacks and primary virtue are similar to those of lilacs: When the blooming season is over, most varieties appear ungainly and need quick camouflage. Powdery mildew and other scourges can deface their leaves. But during a brief span in early summer they can perfume an entire neighborhood and etch memories to last a lifetime.

Even though the genus has ebbed in popularity, breeders have continued to introduce new shapes and sizes, so that if you don't have room for the old-fashioned 10-foot *Philadelphus × virginalis*—which will get almost as wide—you can choose a modest mound or a demure dwarf. And although the plants can succumb to frost damage and become somewhat ragged in



Philadelphus inodorus, a native mock orange, bears large creamy flowers.

JERRY PAVIA

Native Mock Oranges

In addition to *Philadelphus lewisii*, a few other North American native mock oranges are available in the trade and worthy of consideration for both formal and informal gardens.

A native of California—as you might suspect from its name—*P. californicus* is an erect shrub that grows to nearly 10 feet high. Its oval to elliptic leaves have fine hairs on new growth but become smooth as the foliage matures. The large creamy white flowers—usually grouped three to five in upright panicles—are distinguished by prominent golden stamens and a heady fragrance.

Another western species is the evergreen Mexican mock orange (*P. mexicanus*), which is hardy to USDA Zone 8. It has long, supple stems that can be trained somewhat like a vine—it can reach 15 or 20 feet tall, given support—or will arch to cover banks or slopes. It has oval leaves with unevenly serrated margins, and its single, cup-shaped flowers have a roselike scent. Yucca Do Nursery in Texas has in recent years offered unnamed selections of Mexican mock orange, one of which may be hardy to Zone 6 or 7.

P. microphyllus, a southwestern native, is a compact, upright shrub featuring small glossy green leaves, peeling bark, and yellow-centered fragrant white flowers up to an inch in diameter. Hardy in Zones 6 through 9, this species tends to be less elegant than some other mock oranges and may fit best in informal landscapes. We could not find a source for plants of this species, but seed is available from both Southwestern Native Seeds and Far North Gardens (see “Sources”).

For gardeners in the East and Midwest, a good mock orange to consider is *P. inodorus*, native from Pennsylvania west to Tennessee and as far south as Florida and Louisiana. Although the flowers are not fragrant—the species name means “unscented”—they are spectacular, featuring four large, creamy white petals highlighted by prominent golden stamens. This erect, arching shrub, hardy in Zones 5 through 9, can reach six to nine feet high and has smooth, oval to elliptic leaves.

—David J. Ellis, Editor

northern gardens, many of our best cultivars were developed in the northern states and Canada. Those in our Minnesota yard when I was a youngster never died back and flowered faithfully every year. Even if the canes do die back, they reflush readily in the spring.

None of them are fussy about soil conditions, as long as drainage is good. They do best in full sun, although farther south they can take some shade. Some—but not those that are most winter hardy—are touted for yellow fall foliage or exfoliating bark.

Tried and True

Among the 50-odd *Philadelphus* species native to North America, Europe, and Asia, the most commonly found in North American gardens is probably *P. coronarius* or sweet mock orange, which hails from the Caucasus. Most reference books limit its hardiness to USDA Zone 5, but I can vouch for it into Zone 4. Sweet mock orange is one of the bigger species, reaching nine to 12 feet tall with a similar spread. Racemes of cup-shaped flowers that smell intensely of citrus adorn the plant from May to early June.

Two cultivars offer a change of foliage color. Before the rise in popularity of *Spiraea japonica* ‘Goldflame’, golden mock orange (*P. coronarius* ‘Aureus’) was one of the most common golden-leaved plants in the home landscape. Its leaves, which emerge golden yellow and mature to a yellow-green, can burn in intense sunlight. It

doesn’t flower as heavily as the species, and in Zone 3 it’s borderline hardy, so it needs protection from cold as well as direct sun. But with a maximum height of six feet, it lends itself to a lot of landscaping uses. *P. coronarius* ‘Variegatus’, which has leaves with broad white margins, is not as widely available and is not hardy in the upper Midwest. The flowers, while fragrant, are likewise less profuse than the species. It will get taller than ‘Aureus’—up to eight feet.

One of the most readily available but still underused mock oranges for western gardeners is Lewis mock orange (*P. lewisii*). Native from British Columbia south to California, it’s hardy to Zone 4 and grows to 10 feet high and wide with arching branches. The species is generous in producing its one-inch-diameter flowers, but unfortunately they’re almost entirely lacking in the signature mock orange scent. It is praised instead for showy, shredding bark.

The double white flowers of the old standby virginal mock orange (*P. ×virginialis*) look almost like roses, and when they open in June, the fragrance is intense. In the northern states, as with many other mock oranges, it can become ragged from

Its mounded form makes ‘Galahad’, below, one of the author’s favorite mock oranges. Virginal mock orange, opposite right, produces flowers that are both spectacular and fragrant, while golden mock orange’s brilliant foliage, opposite left, make it a striking accent plant.



dieback. You can either plant it toward the back of your shrub border and forget it until the next June, or prune it after flowering, in which case it will produce particularly soft green foliage the following summer. This eight-foot-tall hybrid has been the source for several selections of similar stature.

If you choose *P. ×virginalis* 'Natchez', stand back! When this one blooms you'll need a pair of sunglasses to protect your eyes from the intense whiteout. Although it's not highly fragrant, it makes up for this shortcoming with an abundance of one-and-a-half-inch-diameter flowers.

Hardier Choices

While the last two are reliable to Zone 5, if you live farther north, consider *P. ×virginalis* 'Minnesota Snowflake'. Introduced and patented in 1935, this fragrant selection has beautiful double white flowers and was first grown commercially by my employer, Bailey Nurseries in Saint Paul. In the late 1930s and '40s, Bailey was producing 50,000 of them a year.

With that many plants in annual production, a sport—or genetic variation—was bound to arise. In the '50s, a Bailey employee walking through a field of 'Minnesota Snowflake' noticed a plant smaller than the rest with fine-textured foliage. With a maximum height of three feet and prolific double flowers, *P. ×virginalis* 'Miniature Snowflake' is a virtual ball of snow at bloom time—perfect for a peren-

nial border or foundation planting.

Also hardy to Zone 4 is a Canadian selection, *P.* 'Buckley's Quill'. Each one-inch-wide flower on this spectacular plant is a pompom of 30 quill-like petals—its fragrance is as wonderful as any of the older cultivars. 'Buckley's Quill' grows about six feet tall and four feet wide.

Another Canadian introduction, available only recently in American garden centers, is *P.* 'Snowgoose', which tests have shown to be hardy to -25 degrees. This selection produces its fragrant double flowers so heavily that they virtually cascade toward the ground on arching branches.

Although the double-flowered mock oranges are extravagantly showy, the single-flowered types have their own charm. One of my favorites is *P.* 'Galahad'. Soft yellow centers—invisible on the doubles—make this plant worthy of any garden, and its mounded form makes it stand out from the crowd.

Like Proust's narrator biting into his madeleine, I'm taken back in time by the scent of a mock orange. I imagine sitting under an elm that my grandmother planted at the turn of the century, listening to the banter of aunts, uncles, and cousins arriving at our family reunion. Tables covered with checkered linen tablecloths are laden with platters of roast beef, mashed potatoes, pies of every sort, and pitchers of milk. A concentrated citrus smell wafts from the mock oranges my mother planted, and I can see relatives relax as they

Sources

FAR NORTH GARDENS, P.O. Box 126, New Hudson, MI 48165-0126. Phone and fax: (810) 486-4203. Catalog \$2, deductible.

FORESTFARM, 990 Tetherow Road, Williams, OR 97544-9599. (541) 846-7269. Catalog \$4.

LAS PILITAS NURSERY, Star Route Box 23X, Santa Margarita, CA 93453. (805) 438-5992. Price list \$1.

SOUTHWESTERN NATIVE SEEDS, P.O. Box 50503, Tucson, AZ 85703. Catalog \$2.

WOODLANDERS, INC., 1128 Colleton Avenue, Aiken, SC 29801. Phone and fax: (803) 648-7522. Catalog \$2.

YUCCA DO NURSERY, P.O. Box 450, Waller, TX 77484-0655. (409) 826-6363. yuccado@phoenix.net. Catalog \$3.

enter the perimeter of that fragrance.

As both gardener and nurseryman, I can't think of another genus as fragrant as *Philadelphus*. It's true that they're in bloom for only a short time in early summer. But as with many things in life, fleeting moments are often those we remember the longest.

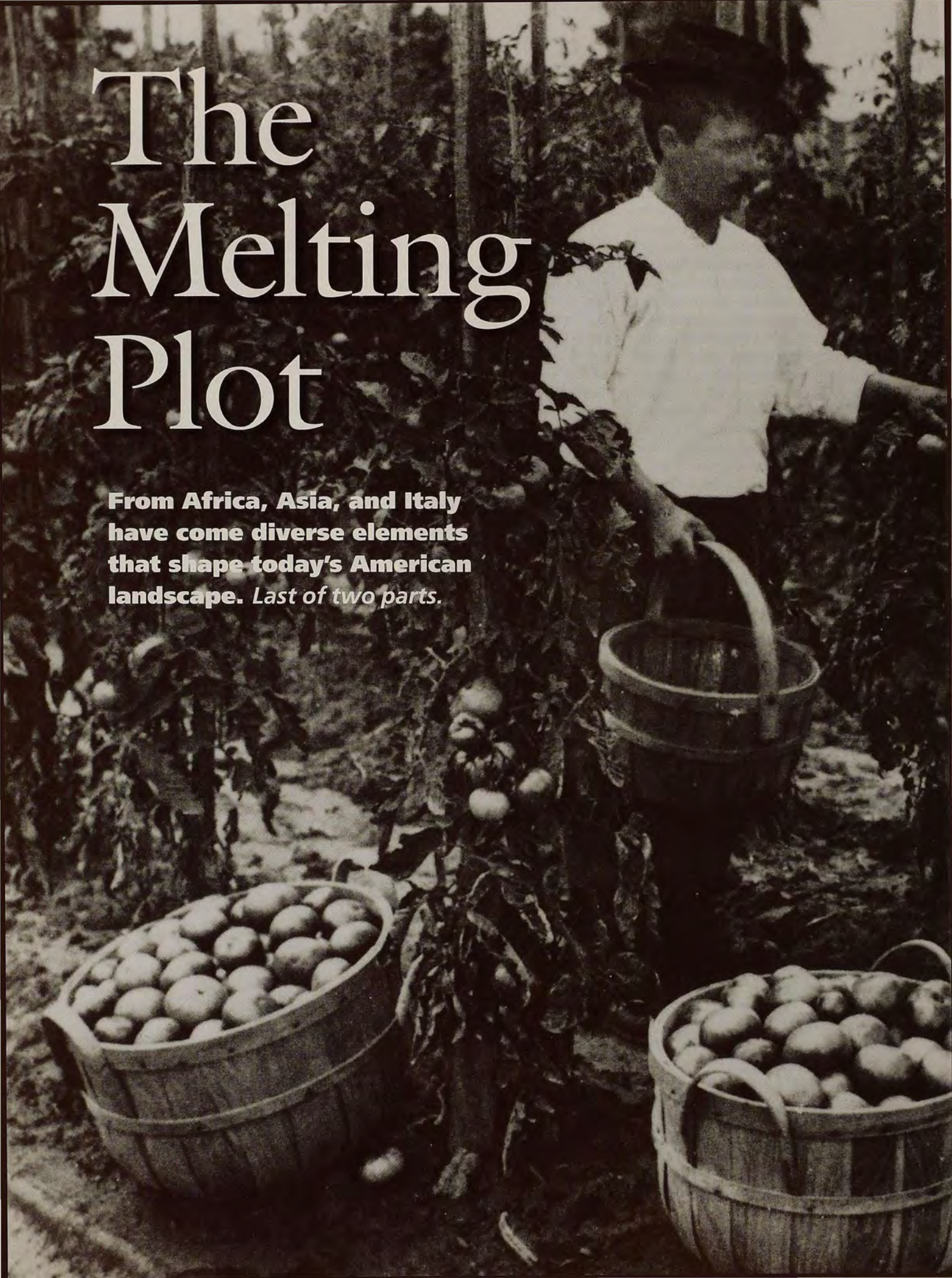
Terry Schwartz, inventory manager at Bailey Nurseries, has worked in the nursery industry for 25 years.



TERRY SCHWARTZ (OPPOSITE); BILL JOHNSON; DIANE GIACOIA

The Melting Plot

**From Africa, Asia, and Italy
have come diverse elements
that shape today's American
landscape. *Last of two parts.***





An Italian farmer and child in Vineland, New Jersey, harvest tomatoes—a staple in Italian cooking—in this circa-1915 photo.

by Susan Davis Price

Until only a decade ago, a distinctive landscape pattern characterized rural roadsides in the American South. Homesteads were bright with flowers growing in used tires, tomatoes in pots, and herbs in old washtubs. The ground around the house was free of grass and swept clean, with a stone-edged path leading to the door. Light was caught and colored in “bottle trees” hung with inverted glass containers of assorted hues. “Found objects,” such as antique sewing machines or auto parts, were arranged about the front yard. Out back, a lush vegetable plot and areas for hog slaughtering were evidence of traditional farm activities.

“The disappearance of these gardens has happened rather suddenly,” says Richard Westmacott, a University of Georgia professor of environmental design who studies African American gardening traditions. “This generation has had to commute into the city because the rural jobs are no longer there for them, and they often don’t have time to maintain gardens.”

Yet elements of these African American landscapes have been recorded for generations. In her 1937 novel *Death Is a Little Man*, Minnie Hite Moody described similar yard treatments in the city:

Even on Judith Street the women try to make the dooryards pretty ... Eenie Weaver has the fanciest dooryard, with a fine blue hydrangea in a tub ... and love-entangled trailing from old cooking-pots suspended from the ceiling. Her yard is swept clean and bare; the walking-path is set off from the yard itself by a double row of bright broken tiles salvaged from the dump

Even as slaves, African Americans were often allowed and sometimes encouraged to have gardens of their own. Though tending a plot often meant sowing and weeding by moonlight, slaves readily undertook the task to supplement their allotted food and achieve a measure of self-expression and independence. After emancipation, gardening for subsistence was even more of a necessity for most.

Conclusive evidence about the African origins of American blacks’ landscape traditions is hard to come by. Still, it’s safe to assume that the millions of Africans brought forcibly to the South contributed ideas about gardening styles along with the okra, sesame seeds, and black-eyed peas that they introduced.

The neatly swept yard so common during much of this century was certainly a practical solution to the heavy foot traffic of animals and family members. The practice probably arrived with slaves from West Africa. There, villagers had swept the hard-packed dirt morning and evening to keep insects and snakes away from the houses and to provide a clean surface where people could congregate. Later, in American slave quarters, women swept the space between the cabins every day.

Another tradition, trimming garden beds with stones and found objects, may well have roots in Europe as well as Africa. The Victorians were fond of setting off circular beds with brick or tile edging; they saw any bed as unfinished without some kind of border.

The style was already familiar to freed slaves, however, because stones were widely used in Africa to set off circular spaces for ceremonial and household functions. Even today in parts of Africa, villagers mark off their dooryards with inverted bottles. In adapting the custom, African Americans probably “made do” with materials at hand—bricks from a collapsed house, stones from the field, or empty medicine bottles rammed neck-down into the earth.

Turn-of-the-century photographs in the Library of Congress show an affinity for container gardening that was observable in African American yards throughout most of the 1900s. The style’s popularity may well stem from the transience most blacks had endured as slaves, tenant farmers, or urban renters. Gardeners need a sense of permanence to plant trees, hedges, and lawns. Container gardens satisfy quickly and travel well.

Whether these post-Reconstruction landscape patterns originated as African traditions, adaptations to enslavement, or reactions to the uncertainties of emancipation, many of them accompanied African Americans as they left the South for other parts of the United States and Europe. The vernacular African American garden may be characterized by such features as swept yards and bottle trees, but its style has been described as improvisational, offering up discarded items in a new guise. Hubcaps become fence posts, broken plates form walls. While the materials may vary according to what’s available locally, the spirit remains consistent from the Deep South to the West Coast. A 1988 exhibit at the California Afro-American Museum, “Home and Yard: Black Folk Life Experience in Los Angeles,” featured photographs of yards with ferns in toilet bowls, aloes in recycled tires, and fountains made of broken clocks and cast-off dinner plates.

Echoes of Asia

Today, gardeners across America are enriching their vegetable gardens with crops from Asia, such as bok choy, snow peas, and daikon. Our enormous debt to that continent for ornamental plants has a much longer history and includes the now quintessentially American lilac, peony, and chrysanthemum.

In landscape design, Asia’s contributions have found their most receptive audience along the West Coast. Japanese gardens have been admired and reproduced in many parts of the country, of course, but in the West, their influence extends well beyond transplanted “tea gardens.”

Part of the explanation can be found in Californians’ love of the exotic at the turn of the century and the openness to fresh ideas



...African Americans probably “made do” with materials at hand—bricks from a collapsed house, stones from the field, or empty medicine bottles rammed neck-down into the earth.

that has long permeated the lifestyle of that coast. To some observers the coastal terrain, with its towering forests and dramatic water views, is not unlike the landscape of Japan. Mount Rainier has often been compared with Mount Fuji.

More important, the West has long had rich cultural and trade ties with the Far East. Beginning in the late 19th century, many West Coast businessmen did a brisk trade with the Orient, bringing back design ideas as well as material goods. One was George Turner Marsh, who lived for some years in Japan then returned to this country to import Asian artwork. Marsh had such a strong interest in Japanese landscapes that he sponsored the first public Japanese garden in California at Golden Gate Park in 1894. The garden was expanded during the Panama-California Exposition of 1915.

The Pacific Coast, moreover, was the destination of many immigrants from Japan and China. Not only did the large Japanese population there provide direct links with that country’s art and gardening styles, but many of the first arrivals became gardeners and nurserymen.

The Domoto brothers, sons of a Japanese landowner, came here in 1884 believing that their relative wealth would pave the way to urban professions. Like other Asian immigrants, they found their aspirations limited by racism and took a road more open to

them. They built a reputation on high-quality floral stock and the introduction from their homeland of such plants as ginkgo, wisteria, azaleas, and persimmons.

Other Japanese, such as Fujitaro Kubota, who immigrated to Seattle in the 1920s, came to this country specifically to establish a landscape business. Kubota’s main interest was in landscape design, although he grew nursery plants as well. Entering the region’s flower and nursery industry in its infancy, first-generation Japanese such as these men helped familiarize coastal gardeners with Asian plants and landscaping styles.

West Coast designers were quick to recognize the beauty and functionality of Japanese-style homes and gardens and to incorporate these attributes into their own work. Among other borrowings were the use of local materials to establish regional identity and adoption of a monochromatic palette of greens and grays.

Though flowering plants such as iris and azaleas have their place in Japanese gardens, these landscapes are not organized around bright spots of color. More important is the underlying structure of carefully placed stones and berms, clipped evergreens, graceful deciduous trees, and actual or implied water, intended to provide year-round pleasure. The result of these concise, asymmetrical arrangements of simple materials is a tranquility that contrasts with the busyness of American gardens.

Also appealing to non-Asians were the ways in which the Japanese used small spaces. They made tiny urban lots seem larger through subdued color schemes and miniaturized landscape elements—trees

that were kept small and low berms that suggested hills. Winding steppingstone paths led to hidden destinations, implying that more lay ahead.

This evocation of mystery has been widely adapted to non-Japanese garden styles, as has the technique of “borrowed scenery” or *shakkei*. When working for wealthy clients, Japanese designers often arranged elements so a spectacular mountain view or dense forest would act as a backdrop for house and garden, making the property appear even grander.

Also appealing to American designers was the Japanese reverence for nature. Garden elements—rocks, plants, water features—were painstakingly chosen, then arranged as distillations of craggy mountains or peaceful shores.

Even Westerners unattuned to the complex symbolism of Japanese landscapes seek to capture their sense of tranquility, and adopt bits and pieces of the style with circular steppingstones, asymmetrical arrangements, and artfully placed boulders.

Italy's Little and Grand

To calculate the value of other nations' gifts to American gardens is a difficult task, but in any reasonable reckoning, we owe Italy a great deal—agricultural products as well as garden structures and designs.

The great Italian migration to America began in 1880 and continued until interrupted in 1914 by the start of World War I. In those final 14 years, more than three million Italians came here, most of them farmers escaping a meager existence on exhausted soil.

Often the new arrivals took jobs growing and processing the fresh fruits, grapes, and vegetables they had raised in the old country. More than half of the 60,000 Italians in California in 1900 were engaged in agriculture; many helped to develop the state's market-gardening and grape industries.

Even when Italians held jobs in factories and commerce, they tended large vegetable gardens at home. Making efficient use of small spaces, they staked up tomatoes and beans and trained squash vines over trellises. Their fondness for eggplant, broccoli, and zucchini spread slowly to those around them, eventually making those vegetables commonplace in American diets.

Long before they came here, Italians were the first Europeans to include the American tomato in their cuisine. Just 30 years after the Spanish conquered Mexico in 1521, Italian herbalist Pier Mattioli wrote that his countrymen ate the vegetable fresh with a little salt, pepper, and oil—as we do today. Four hundred years later the tomato still held pride of place in Italian immigrant gardens, where there was great interfamily competition to grow exemplary crops.

Most families also tended fruit trees and lush grape arbors. The



Japanese gardens have been admired and reproduced in many parts of the country...but in the West, their influence extends well beyond the transplanted “tea gardens.”

abundant vines offered respite from the sun as well as the makings for jelly and wine. Early Italian immigrants so completely re-created their homeland that visitors often said their enclaves seemed like villages transported from the old country. Fig trees—often heirloom varieties brought from Italy—were a central feature of many immigrant gardens, especially in urban areas where few other fruits could be grown.

Just as Italy's farmers and working class exerted a strong influence on our cuisine, its upper class exerted a strong influence on landscaping ideas. Many of our garden ornaments and structures, such as

pergolas, urns, and fountains, came from Italy.

Much of this influence arrived here about the same time as the first wave of Italian immigrants, as Victorian Americans traveled abroad and brought ideas home. The novelist Henry James wrote often and appreciatively of Italian gardens. In 1894 American painter Charles A. Platt published the first English-language book on the Italian villa garden.

Newly wealthy American entrepreneurs,

eager to establish a glorious past, began to construct estates in the Italian manner. They built their formal, terraced gardens with balustrades and elegant pools. Classical statuary and urns added a sense of age.

Soon, middle-class Americans were incorporating features of the estate landscapes into their own yards, aided by a building-product industry that turned out inexpensive versions of villa features. Vine-draped pergolas and loggias, clipped hedges, and terra-cotta pots turned up in the neighborhoods of St. Paul and Cleveland.

With the rise of fascism before World War II, echoes of Italy became anathema, and that country's influence on American gardens began to wane. Formal pools and classical urns were replaced with patios and plastic planters. In the past decade, however, formalism has regained favor; antique vases and statuary are making sense once again, as are arbors, reflecting pools, and pergolas.

By choice and necessity, American taste has become eclectic. As long as Americans lived in ethnic enclaves, it was easy to preserve old traditions. When they moved out and mingled cultural traditions, their habits changed. No longer can we find “little Italys” or mission gardens that feed the monastery and surrounding community. Now we live in subdivisions where Japanese lanterns and pebble steppingstones border English flower beds; we grow bok choy along with tomatoes. And “found objects,” from garage-sale statuary to bits of broken mirror, are appearing in national magazines as exemplifying a new trend in gardening.

Susan Davis Price is a free-lance writer in St. Paul, Minnesota.

The truth about Weed Laws

**Naturalistic landscapes
are still falling victim to
these outdated laws.**

by Bret Rappaport and Andy Wasowski

Picture this: Your mailman arrives and drops off the usual batch of bills, supermarket flyers, and mail-order catalogs. But what's this? Something from the city! It looks important—even ominous. When you read the official epistle you're so stunned you have to sit down. It informs you:

Your neighbors have lodged a complaint against your home. It has been determined that your home is painted in a color that does not conform to neighborhood standards. You have 10 days from receipt of this notice to repaint your home with one of the three shades of white deemed acceptable by your neighbors. If this is not done, the city will paint it for you, at your expense.

If this sounds like something out of Orwell or Kafka, consider this: Every year, all over the country, hundreds of homeowners receive similar notices from their city governments. The difference is that these complaints are not about the color these people selected for their homes but rather the plants they selected for their landscapes. Accused of growing “weeds,” these homeowners are often prosecuted by their municipalities and persecuted by their neighbors.

As columnist Dave Barry would say, we're not making this up. It happened to Evelyn Connors in Tulsa, Oklahoma.

It happened to Stephen Kenney in New York state.

It happened to Sandra Bell in Toronto, Canada.

It happened to Marie Wojciechowski in Chicago.

And should you deviate from the traditional manicured lawn and box hedge landscape and opt for a more natural landscape, it could happen to you.



Evelyn Connors of Tulsa stands victorious among a stand of purple coneflowers. City officials—who considered them weeds—had ordered her to mow them down, but subsequent media coverage of her plight garnered enough public support for the order to be rescinded.



A rolling expanse of green lawn has been part of the ideal American home landscape since the late 19th century. Maintaining this highly artificial ideal, however, requires enormous amounts of labor—as well as excessive use of water, pesticides, and synthetic fertilizers.

The Origin of Weeds

Before humans were “civilized,” there were no weed laws because there were no weeds—plants were pretty much stable components of a bioregion. Weeds tend to be products of various kinds of human disturbance, such as cultivation or construction. The first weed laws were enacted in the early part of this century for the benefit of farmers. These laws were intended to regulate specific plants—so-called noxious weeds—that were harmful to agriculture. Nearly all of these weeds were non-natives, such as crabgrass, chickweed, johnsongrass, and bindweed. These agrarian weed laws were usually enacted at the state level.

In the 1940s, however, counties, municipalities, and eventually even subdivisions began passing their own weed laws and covenants. More often than not, they were strictures not against any particular species, but against herbaceous vegetation that surpassed a maximum height. Used properly, community weed laws protect our property values from neighbors who leave rusting cars in their yards for poison ivy and briars to climb on. But in many cases the laws are used against homeowners who’ve opted for landscapes more likely to attract wildlife, more reflective of their

region’s native vegetation, and requiring less irrigation and pesticides than those with a conventional manicured look.

The Lawn Ethic

Virginia Scott Jenkins’ comprehensive book, *The Lawn*, notes that landscape conformity began in the late 19th century. In 1870, Frank Scott wrote what many considered the landscaping “bible” for America’s homeowners—*The Art of Beautifying Suburban Home Grounds*—in which he stated: “A smooth closely shaven surface of grass is by far the most essential element of beauty on the grounds of a suburban home.”

In his 1875 book, *Gardening for Pleasure*, Peter Henderson made quite clear what he thought of homeowners who did not conform: “It is gratifying to know that such neighbors are not numerous, for the example of the majority will soon shame them into decency.”

At the end of World War II, returning GIs marched to suburbia, where lawns were the only acceptable home landscape. Wartime technologies that produced gunpowder and poison gas to fight the Axis were rapidly converted in peacetime to make herbicides, pesticides, and chemical fertilizers.

Lawnmower sales soared from 362,000 in 1947 to 4 million by 1961.

Today Americans spend around \$27 billion on lawn care—10 times more than we spend on school textbooks. And weed laws are being used against gardeners who deviate from the norm.

The Land Ethic

The preceding viewpoint—we think of it as the Lawn Ethic—is in contrast to that of naturalist/philosopher Aldo Leopold, who believed “a thing is right when it tends to preserve the stability and integrity of a biotic community; it is wrong when it tends otherwise.” The Land Ethic he espoused offered a springboard for what has become the science of restoration ecology and the practice of natural landscaping.

Leopold held that the Land Ethic would never succeed unless it was practiced by private citizens. But it wasn’t until the 1970s that the natural landscaping movement really got going. Rachel Carson’s *Silent Spring* and subsequent environmental alarms had raised our awareness of disappearing rain forests, polluted oceans, depletion of the ozone layer, and the greenhouse effect—all big and highly technical issues that leave the average concerned citizen feeling overwhelmed and

ANDY WASOWSKI (LEFT); JIM HODGKINS (RIGHT)



Toronto resident Sandra Bell, here with her son Colin, successfully went to court over a city ordinance that prohibited her natural approach to landscaping. Unlike a conventional lawn, Bell's front yard supports a great diversity of plant species.

impotent. For most people, landscaping and gardening represent their most direct interaction with nature.

Weeding Out Bad Laws

One sunny June afternoon in 1995, Evelyn Connors—an 82-year-old widow in Tulsa—received a notice from her city government ordering her to mow down her “weeds,” which were in fact a mass of our native purple coneflowers. But an anonymous neighbor didn't like them and filed a complaint. Tulsa soon learned that it had picked on the wrong 82-year-old widow.

Connors, an avid gardener, contacted the *Tulsa World*, and the next day she was front page news—not just in Tulsa, but all over the country. Soon she was receiving letters of support from irate homeowners and children from California to the Carolinas. There has even been talk of making a TV movie about her. Before long the mayor came to her home, apologized, and rescinded the citation.

The issue isn't limited to the United States. When Sandra Bell was prosecuted for “excessive weeds” under a Toronto ordinance, she testified that when she moved into her Toronto home in 1990, the front yard contained only three species: Virginia creeper, sedum, and a Kentucky bluegrass

lawn. Bell's aim was to create an “environmentally sound” natural landscape containing more than 40 different species. “I have a child,” she told the court, “and I feel it's important that I show him that we can exist within nature's way, not just our way.”

Harry Merren, a York University geography professor, testified at her trial that traditional landscapes “express an urge to dominate or control nature,” while natural gardens are “a commitment to living in greater harmony with nature.” The Canadian appeals court found that the practice of natural landscaping was a matter of conscience that could not be prohibited without a compelling reason. Bell joined a growing roster of natural landscapers who had beaten city hall.

For other natural landscapers, the path to victory is sometimes more difficult. One of the few to lose a case was New York State resident Stephen Kenney, whose development brought action against him for planting a meadow of black-eyed Susans, coneflowers, and long-naturalized exotics such as ox-eye daisies and bachelor's-buttons. He was fined \$50 a day, running up a total of \$30,000. Although an appeals court reduced that amount to \$500, neighbors continued to threaten him, vandalizing the meadow and shooting birds in

his yard. He eventually moved elsewhere in the state.

The case of the Chicago 5 is perhaps the most ironic because three of the defendants practiced their natural gardening in cooperation with a branch of government: Mike Regenfuss was cultivating a natural landscape as part of a Cook County and Nature Conservancy restoration project; Debra Petro was growing native Illinois prairie and savanna plants as part of a city prairie reconstruction project; and Rich Hyerczyk was growing native plants as regional ecologist for a county restoration project. These three and two other natural landscapers grew tired of being threatened with prosecution and filed suit in 1991 to have the Chicago Weed Ordinance declared unconstitutional. When they noted that the very government that was attempting to prosecute them was rapidly expanding its own natural plantings, the city assured the court that legitimate natural landscapers had nothing to fear. In the four years since, it appears that no attempts have been made to prosecute other Chicagoans under that weed law, but the law remains intact.

The Tolerance Trend

Chicago's weed law is an example of the most onerous kind on the books—those



The perfect lawn is often only attained by waging chemical warfare, a concept hailed in a post-World War II ad, above right. While attitudes towards the use of chemicals have become less sanguine in the decades since, some homeowners still go to great lengths to have a lawn—even if it's artificial turf, above. Facing page: A naturally landscaped yard in California.

enacted beginning in the 1940s and still most common today. It flatly outlaws “any weeds in excess of an average height of 10 inches.” There is no attempt to define what a weed is, although it is commonly understood to be any plant that is not familiar nursery stock and exceeds the arbitrary height.

A second, more tolerant type of weed law allows natural landscaping but only if the homeowner obtains municipal permission first. Madison, Wisconsin, was the first major city to recognize the legitimacy of natural landscapes by enacting an ordinance that requires the homeowner to file an application and then get a majority of the neighbors to approve. While better than the fiat laws, this ordinance still places unnecessary restrictions on property owners’ right to landscape in the manner they choose.

The ordinances enacted in White Bear Lake, Minnesota, and Lawrence, Kansas, to name just two, represent the third generation of weed laws. Natural landscaping is permitted without neighbor approval or city permission, with two provisos: True weeds and other rank vegetation are prohibited, and there must be a setback along the front and/or perimeters of the lot where herbaceous vegetation may not ex-

ceed a certain height, such as 10 or 12 inches. (The best of these laws are flexible so that small lots would not be required to have a 20-foot setback.) The Nebraska legislature is considering a similar statewide law.

Resources

WILD ONES NATURAL LANDSCAPERS, LTD., P.O. Box 23576, Milwaukee, WI 53223-0576. Yearly membership \$20.

This nonprofit organization shares information on biodiversity and environmentally sound practices in home gardens, school projects, and community landscapes. The Lorrie Otto Seeds for Education Program, named after the group’s founder, awards funds and/or seeds to schools, churches, or other groups building outdoor classrooms.

SOURCE BOOK ON NATURAL LANDSCAPING FOR LOCAL OFFICIALS.

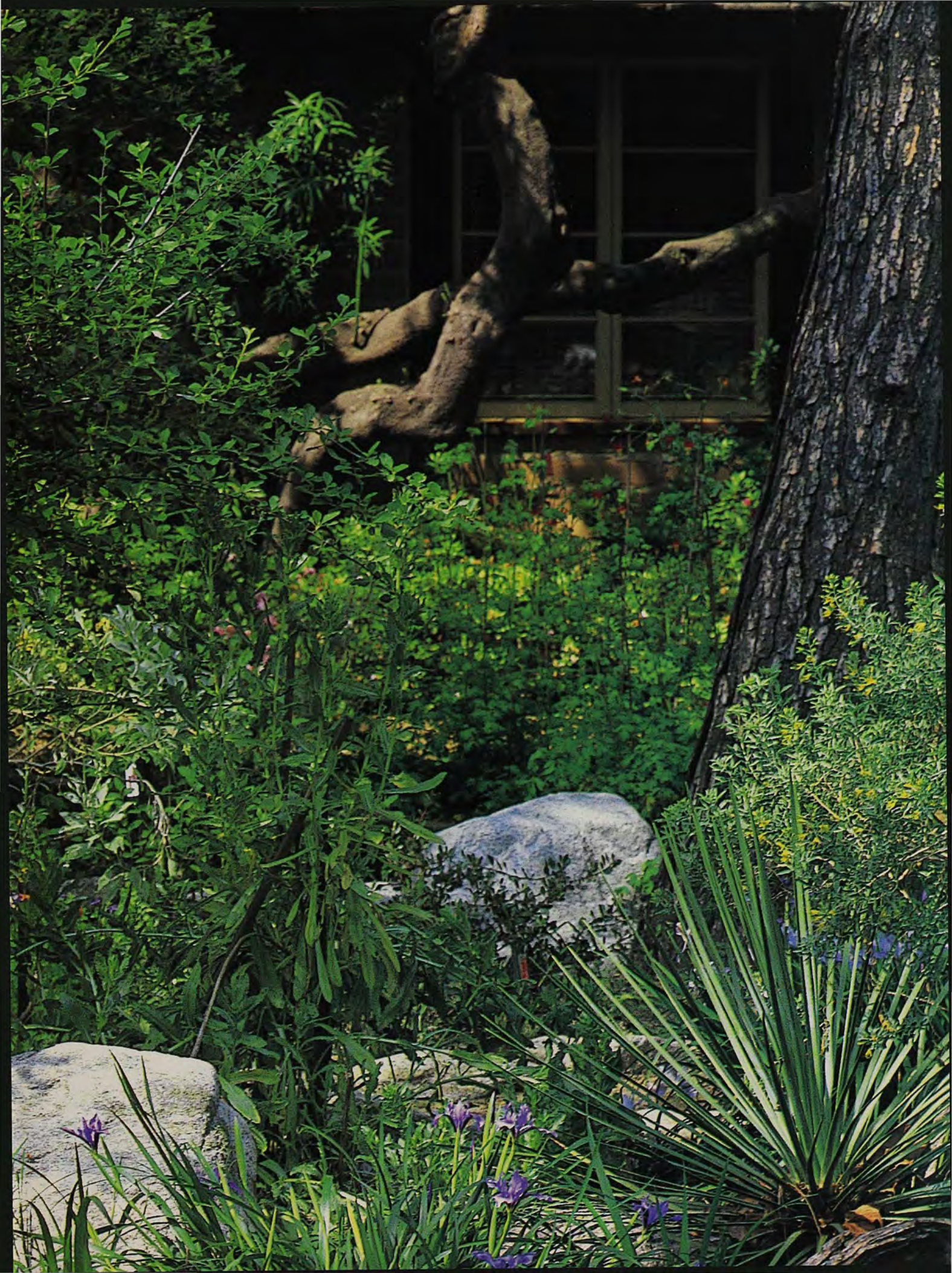
For a free copy, write to: Northern Illinois Planning Commission, 222 South Riverside Plaza, Chicago IL 60606. Or visit EPA’s web site at www.epa.gov/greenacres.

The fourth generation of laws is not a weed law at all, but an official sanction of natural landscapes. Long Grove, Illinois, requires developers to include scenic easements of native plants and employs a naturalist to advise builders and homeowners. Fort Collins, Colorado, has a 10-acre nature preserve in the heart of its downtown and employs a full-time wildlife biologist to certify backyard habitats.

Myths and Misconceptions

Natural gardening is still a relatively new idea that many people find unsettling. Nevertheless, fiat laws are gradually being overturned by private citizens, regional and national nonprofits, and government agencies. The Wild Ones (see “Resources”), started by Lorrie Otto in Bayside, Wisconsin, in the early ’60s, was in the vanguard of this movement. In 1972 the National Wildlife Federation began its Backyard Wildlife Program to certify backyard habitats, and as a result has become involved in defending natural landscapes. Native plant societies now exist in virtually every state. The National Wildflower Research Center, founded in Austin, Texas, in 1983 by former first lady Lady Bird Johnson, has done a great deal to further research and education.

PHOTOS BY ANDY WASOWSKI





Except for the lamp post, this naturally landscaped residence in Milwaukee could be a cabin in the woods. In fact, the plants here are a harmonious blend of native and non-native perennials including ferns, Virginia creeper, and a creamy-flowered *Aconitum*.

And in 1994, President Clinton legitimized the natural landscaping movement by issuing an Executive Memorandum that not only recommended natural landscaping at all federal facilities and federally funded projects, but presented guidelines for doing so.

There are constitutional arguments for natural landscaping:

Landscaping as Free Expression. Although there are no published decisions accepting this position, natural gardening can be seen as an artistic or political expression, or both. A Chicago artist, Chapman Kelly, did succeed in saving a project called Wild Flower Works II by arguing his First Amendment rights.

Landscaping as Religion. Native American and Eastern religions—Islam, Hinduism, Sikhism, and Bahai—teach the need for a harmonic relationship between humankind and nature, and the Judeo-Christian theology encourages stewardship of the earth.

Weed Laws as Unconstitutionally Vague. A number of weed laws have been struck down because they fail to define the term “weed.” The judge in a New Jersey case called a law “repugnant” to punish a person for an act “the criminality of which depends not on any standard

erected by the law which could be known to the defendant in advance, but one erected by a judge or jury after the trial has been completed.”

Weed Laws as Irrational Under Common Law. Another fairly remarkable Chicago case involved Marie Wojciechowski, who gathered seed to grow in her own yard from a prairie established at a city-run animal control center. She even got a letter from a city landscape architect inviting her to call if she needed more help—then was prosecuted for growing the city’s own plants. Two University of Illinois professors noted that the law was based on a number of misconceptions about natural plantings. Here are the most common:

Natural landscapes harbor vermin. Vermin, such as Norway rats, live in garbage. Natural landscapes have nothing in them to sustain rats or other rodents that carry diseases. Our native field mice are grain eaters that don’t spread disease.

Exposure to the *Ixodes* ticks, which spread Lyme disease, is a serious consideration in many parts of the country. But this can occur in both natural and conventional landscapes since white-tailed deer, white-footed mice, birds, raccoons, and even dogs and cats can be transporters

of the ticks. Ken Pinkston of Oklahoma State University’s Entomology Department states that he is “unaware of any studies that show an increase in tick-borne diseases in areas with natural landscapes.” Exposure to ticks can be minimized by incorporating low mowed areas and gravel or wood chip paths, and by staying out of higher vegetation.

Natural landscapes are fire hazards. The fire hazard in any landscape—natural or conventional—comes from deadwood and other dry vegetation. Well-tended natural landscapes are composed mostly of green, leafy materials that just don’t burn. While prairie grasses are flammable, they sustain heat for only 20 seconds, according to U.S. Forest Service expert David Seaberg. He has testified that a grass fire would have to burn within four feet of a house for seven-and-a-half minutes to ignite the wood in it.

Natural landscapes harbor mosquitoes. Mosquito larvae are bred in standing water, which must be present for 10 days for them to complete their life cycle. Natural landscapes attract birds and predator insects that feast on adult mosquitoes.

Natural landscapes produce allergy-causing pollen. A major cause of watery eyes and sniffles is air-borne pollen from

PHOTOS BY ANDY WASOWKI

ragweed, which is found in disturbed areas such as vacant lots and not in healthy natural landscapes. Another common cause is non-native grasses such as bluegrass. Showy flowers also have pollen, but this is carried about by insects and hummingbirds; it never gets into the air to become an irritant.

We haven't mentioned aesthetics in relation to misconceptions about natural landscapes because, in the final analysis, that argument is illogical. Some home-

owners think pink flamingoes, plastic sunflowers, concrete deer, and Astrourfed front stoops are attractive, and they also have a right to free expression.

One thing is certain: The lawn ethic will not go the way of the Model T anytime soon. For now the onus is on natural landscapers to educate our neighbors and our governments—to explain that we like our grasses and flowers high because we like our chemicals and our water bills low, and because we know that whenever

the sun is out, we'll be the ones with the clouds of butterflies.

Current president of Wild Ones Natural Landscapers, Ltd., Chicago attorney Bret Rappaport has successfully defended numerous natural landscapers. Andy Wadowski, with his wife, Sally, has written several books on native landscaping. They are currently working on Landscaping with Prairie, due out in spring 1999 from the University of Minnesota Press.

Acting Unnatural

If you're planning a natural landscape, you may fend off hostility from neighbors with the following tactics:

- 🌿 Add human touches—a bench, a stone pathway, a bird-bath. This makes your landscape appear more “planned” and designed.
- 🌿 Put up a small sign designating your property as a wildlife sanctuary or natural zone. In Texas, natural landscapers can earn a “Texas Wildscapes” sign by meeting the requirements of the state's Parks and Wildlife Department.
- 🌿 Frame your landscape with a mowed area of grass or

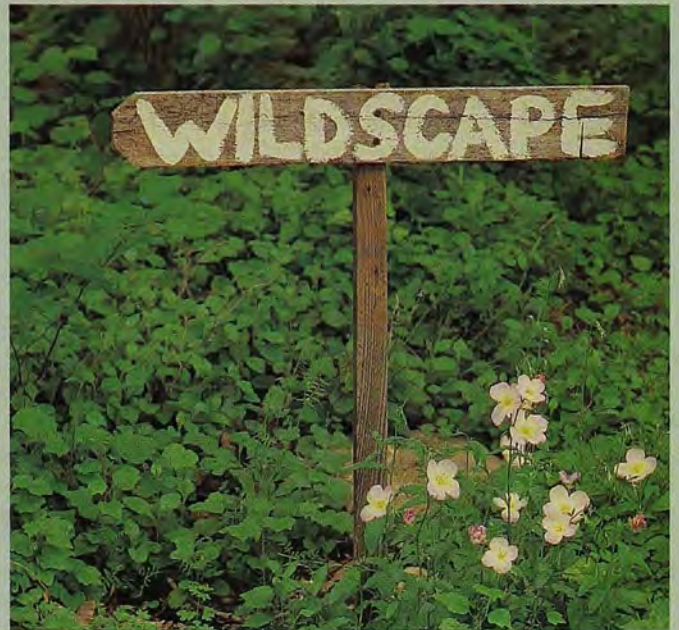


ground covers, or a low stone wall. This creates a tended—and intended—look. Think about the mess you'd have if you threw paint on your wall, but put a picture frame around the splotch and suddenly it can be accepted, if not actually appreciated, as art.

- 🌿 Work with community officials to rewrite oppressive weed laws. Don't start by demanding that the current law be abolished. Suggest amending it to list noxious weeds that ought to be outlawed.
- 🌿 Invite the neighbors over and introduce them to your garden. Explain why it's the way it is.

Ultimately, community acceptance will come about only with education and exposure to natural landscapes. As African conservationist Baba Dioum wrote, “We will conserve only what we love, we will love only what we understand, and we will understand only what we are taught.”

—B.R. and A.W.



Adding a handpainted sign, above, or a conventional feature such as a garden bench, left, will help reassure neighbors that your landscape is planned.



book reviews

🌿 *amaranth*

🌿 *Henry Mitchell*

🌿 *Merry Hall*

🌿 *Armitage CD-ROM*

STALKING THE WILD AMARANTH: GARDENING IN THE AGE OF EXTINCTION

Janet Marinelli. *Henry Holt and Company, Inc., New York, 1998. 256 pages. 6 1/8 x 9 1/4". Publisher's price: hardcover, \$25. AHS member price: \$22.50. HOL 016*

This book begins with a simple botanical trek along the shore of Long Island in pursuit of the imperiled seabeach amaranth (*Amaranthus pumilus*). After winding through millions of years of evolution and thousands of years of human-nature interaction, it ends—amid the perceived wreckage of shattered ecosystems and declining biodiversity—with the powerful message that we can help restore this fragmented web from our own backyards.

Marinelli, director of publishing at Brooklyn Botanic Garden, has penned a sweeping and thoughtful study of gardening traditions and philosophies set against the dramatic canvas of evolution and extinction, “islands” of biodiversity, and gardening’s role in ecological restoration.

Extinction has been an integral part of evolution and ecological development since the beginning of life on earth. Various cataclysmic events can be linked to the extinction of approximately 95 percent of all species. Yet the ascendancy of humans during the past several thousand years has had a far more insidious impact on the loss of species.

Marinelli notes that the rate of extinction through human development is “hundreds, if not thousands, of times higher than the natural background rate.” More important, these losses are not limited to tropical rain forests. Extinction is here today in North America, thanks—in part—to our propensity to “subdivide” ecosystems with roads and planned communities, drain wetlands, pave watersheds, and generally disrupt the web of life through poorly conceived agricultural and horticultural practices.

But the book is not filled with doom and gloom; more than half is a hopeful look at how we can adapt the many types of gardens that are important to us to meet the needs of a changing world. “We stand at the threshold of a new iteration of ecological garden design whose concerns and goals are deeper, more coherent, and more complex than simply swearing off chemicals and swearing by wildflowers,” Marinelli observes.

Another good chunk of the book is devoted to a lively history of gardening traditions. Marinelli seamlessly blends personal experience—her evolution as a suburban/urban gardener mirrors that of many of us—and a vigorous, well-considered summation of the literature from the classical writers of Greece and Rome to Capability Brown, Colonial Americans, the Victorians, Gertrude Jekyll, and modern garden “theorists.” This sets the stage for understanding the role of landscapes and gardening in our culture and in our own localized ecosystems.

Defly knitted into the overall fabric of the book are ruminations on basic garden philosophy, the sciences of ecosystem analysis and ecological restoration, and the emergence of the current native-plant movement. Marinelli presents a well-balanced summary of the “natives-versus-exotics” debate and comes away unconvinced by the arguments of native-plant purists.

Among the more profound and pragmatic sections of the book is the discussion of how a garden must act like nature. We are introduced to a new type of natural landscape geometry, one rich with species crammed into every available niche from

the canopy to underground. This richness is biodiversity itself, a complex interweaving of species that is far removed from the traditional turf plot with its specimen trees and foundation plantings.

Marinelli supplies these and other insights as she quietly challenges us to rethink our relationship with our gardens. Using a combination of well-reasoned plant selections, playful experimentation, education, and imagination, we can help our gardens to evolve naturally. In turn, our efforts will

help to create a new gardening aesthetic and—hopefully—a tradition of ecological restoration at the heart of most American gardens.

Under this scenario, Marinelli posits, the future could be brilliant. Each natural garden could form a vital link with its neighbors, developing corridors and connections between larger ecological reserves—such as national parks and wilderness areas—and allowing species to migrate and expand

their range. Slowly, species-rich gardens will replace the monocultured lawn; the fractured web of life will be mended; and the complexity of our gardens will yield beauty and biodiversity resilient enough to withstand looming environmental pressures.

—Joseph M. Keyser

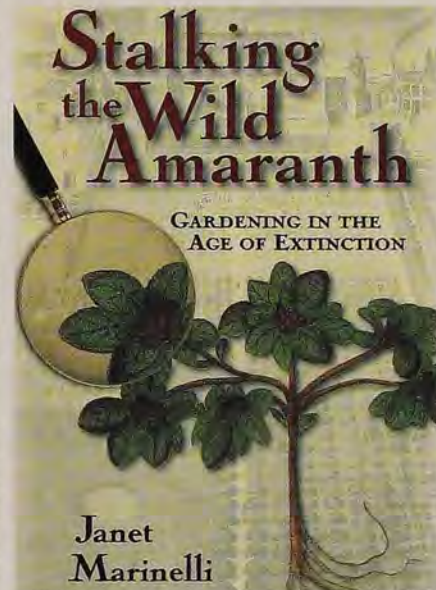
Education specialist for the Montgomery County, Maryland, Department of Environmental Protection, Joseph M. Keyser tends an ecological rooftop garden in Arlington, Virginia.

HENRY MITCHELL ON GARDENING

Henry Mitchell. *Houghton Mifflin Company, Boston, 1998. 243 pages. 5 7/8 x 9 1/4". Publisher's price: hardcover, \$24. AHS member price: \$21.60. HOU 026*

We are running out of superlatives for Henry Mitchell’s writing. He was, as Allen Lacy observes in the introduction to this book, America’s best. Those of you who own well-thumbed copies of his earlier books, *The Essential Earthman* and *One Man’s Garden*, only need be told that a third collection of his garden columns is now available.

But if you are in the enviable position of

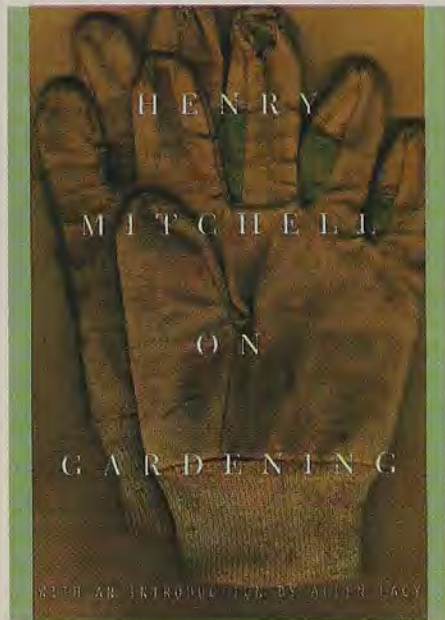


approaching these collections for the first time, you may want some background. Henry Mitchell wrote a weekly gardening column, "The Essential Earthman," for the *Washington Post* for more than 20 years, until his death in 1993. [A profile of Mitchell appeared in the September/October 1997 issue of *The American Gardener*.]

Henry Mitchell on Gardening is the third and—according to the publisher—final collection of "Earthman" columns. Susan Davis's delightful illustrations accompanied the columns in the *Post*, and are used as chapter headings here. The drawing that introduces the February chapter is itself worth the price of the book.

Henry Mitchell wrote clearly and simply for a newspaper audience that consisted of gardeners at all levels of experience plus a great many people who did not garden at all. Not one of his columns is too advanced or too simple for such an audience to enjoy. You won't agree with his every opinion—he is right, for instance, about *Rudbeckia fulgida* 'Goldsturm', though mistaken about the scent of paperwhite narcissus—but you will take pleasure in reading them nonetheless. His columns are often general and philosophical, but when he gives instructions they are precise and helpful, without pedantry and without talking down to us.

Henry Mitchell understood, better than any other garden writer I've read, the dif-



ference between focus and narrow-mindedness, reveling in his passions and opinions but allowing us our own—although he could be a curmudgeon at times and complain with the best of us. On every page we see his love of plants and of life, though without the soupiness that

statement might lead you to expect. To his eternal credit, Mitchell loved dogs as much as he loved plants, and dogs crept into his columns often. I could find no quotation more typical, nor more lovely, to illustrate his writing than this:

"There is no need to think of September as the trash bin of the year, with just scraps of leftover things in the garden, because many things are only coming to perfection at the end of summer—a soft and gleaming season that reminds me of a long-eared hound with his yearly bath, sweet like a hay field."

—Nancy McDonald

Nancy McDonald is co-editor of *The American Cottage Gardener*.

MERRY HALL

Beverly Nichols. *Timber Press, Portland, Oregon, 1998. 320 pages. 5 1/4 x 7 3/4". Publisher's price: hardcover, \$24.95. AHS member price: \$22.50.* **TIM 124**

Beverly Nichols (1898–1983) is not exactly a household name in America, even among those of us who are keen on British gardening literature. In his time, however, he was a prolific, versatile, and wildly popular author and journalist—not to mention a talented playwright and composer—both in Britain and in North America. Despite authoring 50-odd works on subjects that ranged from gardening and political commentary to religion and murder mysteries, he had all but disappeared from the public eye, especially on this side of the Atlantic, and most of his books have been out of print for some time.

I am happy to report that it appears America is on the verge of rediscovering this captivating author, thanks to Timber Press, which is returning Nichols's acclaimed Merry Hall trilogy to print. These charming classics will be released on a staggered schedule beginning this spring with *Merry Hall* (1951), followed in the fall by *Laughter on the Stairs* (1953), and in the spring of 1999 by *Sunlight on the Lawn* (1956).

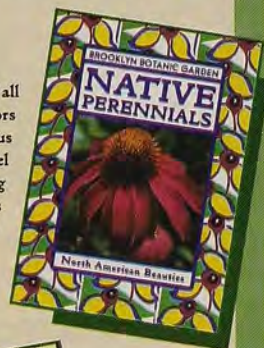
Nichols inspires by writing knowledgeably, articulately, and passionately about gardening. In *Merry Hall*, he recounts his rescue of a country estate and its derelict garden in post-war England. As he weaves his entertaining tale—filled with pleasant anecdotal diversions—he scatters insightful tidbits such as the following:

"...it seem(s) to express an important truth about the gardener's life as opposed to the lives of other people—the fact that each new year is, *ipso facto*, more startling and more rich in beauty than the one that preceded it."

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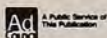
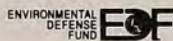
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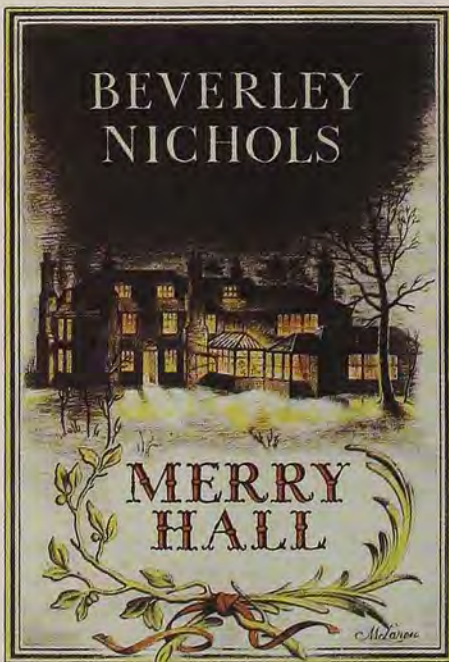
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It is impossible to avoid being enchanted by his captivating cast of characters. These include his faithful and efficient *factotum*, Gaskin, who has skill and aplomb reminiscent of P.G. Wodehouse's Jeeves; his ancient gardener, Oldfield, a wise and wizened hor-



ticulturist to the bone; and "Our Rose," the meddlesome and eccentric local florist.

Nichols' particular gift is to entertain, enlighten, and enrich his readers. At the heart of his writing is the passion of a sensitive, intelligent man who has found a creative and emotional outlet in his love of plants and the act of making a garden:

"Some fall in love with women, some fall in love with art, some fall in love with death. I fall in love with gardens, which is much the same as falling in love with all three at once. For a garden is a mistress, and gardening is a blend of all the arts, and if it is not the death of me, sooner or later, I shall be much surprised."

An introduction to Nichols will lead you to search for more of his literary treasures.

—Stephanie Feeney

A resident of Bellingham, Washington, Stephanie Feeney is author of The Northwest Gardeners' Resource Directory.

ALLAN M. ARMITAGE'S PHOTO-LIBRARY OF HERBACEOUS PLANTS

Allan M. Armitage. *PlantAmerica*, 1998. *Publisher's price: four-CD set, \$149.95. AHS member price: \$134.95.* PAM 002

The horticultural world is still buzzing over Michael A. Dirr's *Photo-Library of Woody Plants*, is-

sued last year to widespread acclaim. Hot on its heels comes this mouth-watering portrait gallery of herbaceous perennials and annuals, chosen from the photographic archives of Armitage, Dirr's horticultural cohort at the University of Georgia. This is an outstanding reference for gardeners, horticulturists, landscape architects, students, and anyone else who grows or works with herbaceous ornamental plants.

More than 2,600 different plants are featured in this collection of more than 7,000 images of herbaceous ornamentals, which includes traditional flowering perennials as well as bulbs, ferns, grasses, and annuals. Plants grown commercially for cut flowers or greenhouse crops are also pictured.

The images reflect not only species, but also hundreds of the best and newest cultivars of plants from *Acanthus* to *Zephyranthes*. The photographs illustrate the habit and flower of each plant and—where appropriate—foliage, fruit, or seasonal interest.

As with the woody plant CD-ROMs, this collection can be searched both by family and by scientific or common name. Full-screen images can be viewed or—using the preview function—two or six images can be displayed at one time. Using the pick func-



tion, customized "wish" lists of plants can be created for later viewing. You can, of course, print the images of any of the plants in the library.

Each CD-ROM set comes with operating instructions, a three-ring binder for holding printed images of plants, and a carrying case for the disks. Minimum system requirements for using the CD-ROMs are: IBM-compatible 386DX/2, 66 MHz, with at least 8MB RAM; Microsoft Windows 3.1; VGA graphics with 1MB video RAM; 256 colors; and 640x480 resolution. Double-spin CD-ROM drive.

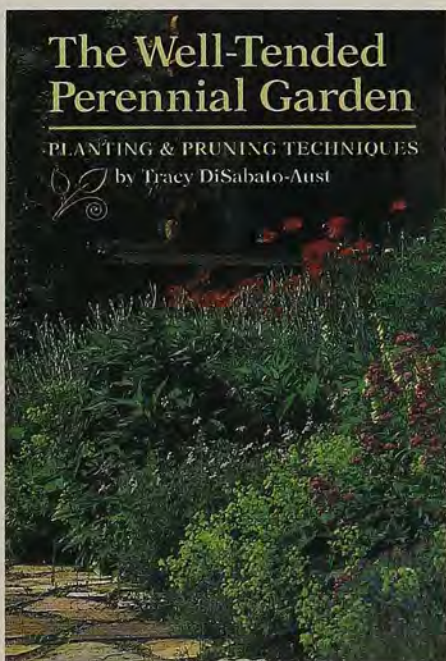
—David J. Ellis

David J. Ellis is editor of The American Gardener.

gardeners' books

Books are chosen for the AHS Horticultural Book Service based on perceived reader interest, unusual subject matter, or substantive content. The following descriptions are not intended to be critical reviews, but are written to give an overview of the books' contents. For further information about these or other gardening books—or to order books—please call (800) 777-7931 ext. 36.

GARDEN CARE



THE WELL-TENDED PERENNIAL GARDEN: PLANTING AND PRUNING TECHNIQUES

Tracy DiSabato-Aust. Timber Press, Portland, Oregon, 1998. 269 pages. Publisher's price: hardcover, \$29.95. AHS member price: \$27. **TIM 142**

After site planning and plant selection, the difference between a good garden and a great one can be the care of the perennials we plant. DiSabato-Aust, a landscape professional and popular lecturer and writer, aims to teach us how and when to prune and shape our perennials to produce more flowers, discourage pests and disease, and stagger bloom times. The end result should be a showplace requiring minimal maintenance. An extensive encyclopedia of plants is included, along with a monthly planting and maintenance

guide. More than 100 color photographs and 30 line drawings illustrate the author's tips and techniques and show how a well-tended garden should look.

KEEPING THE GARDEN IN BLOOM: WATERING, DEAD-HEADING AND OTHER SUMMER TASKS

Steven Bradley. Stewart, Tabori & Chang, New York, 1998. 112 pages. Publisher's price: hardcover, \$22.50. AHS member price: \$20. **STC 007**

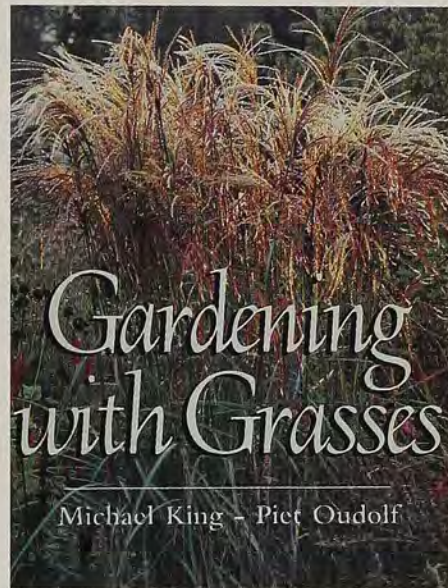
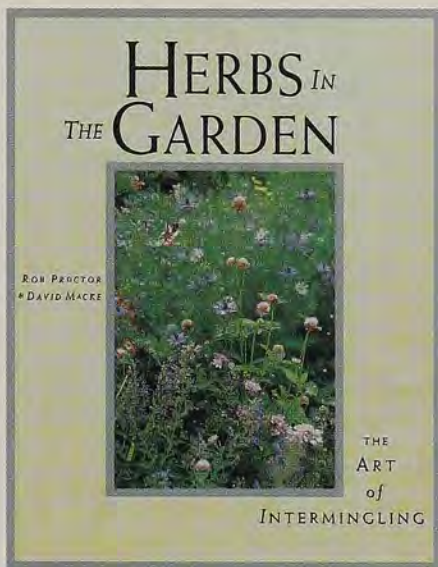
This volume, part of the Essential Garden Library series, is a workbook for the summer garden. It includes sections on the care of all kinds of plants, from trees to annuals, as well as special sections on summer lawn and pond care. It also explains propagation techniques—such as taking cuttings, layering, and collecting seeds—that can be done during these warm months. Includes more than 100 color photos and 250 illustrations.

GREAT GARDEN PLANTS

HERBS IN THE GARDEN: THE ART OF INTERMINGLING

Rob Proctor and David Macke. Interweave Press, Loveland, Colorado, 1997. 160 pages. Publisher's price: hardcover, \$29.95. AHS member price: \$27. **INT 005**

Proctor and Macke's book combines beautiful photography with practical advice on how to integrate herbs into all kinds of garden designs. The photos feature both the authors' own acclaimed garden in Colorado and other admirable ones from around the world. Both herb lovers and adventurous ornamental gardeners will find ideas and inspiration in this book. Includes more than 100 color photographs and illustrations.



GARDENING WITH GRASSES

Michael King and Piet Oudolf. Timber Press, Portland, Oregon, 1998. 152 pages. Publisher's price: hardcover, \$34.95. AHS member price: \$31.50. **TIM 128**

More and more people are using grasses in their gardens, but until now there has been a lack of comprehensive resources on the subject. In this timely book, Oudolf, a Dutch nurseryman and renowned garden designer, and King, formerly with the Royal Botanic Gardens at Kew, discuss how to use grasses with complementary plants—a style that is gaining popularity both in Europe and North America. The authors describe more than 150 species and cultivars, recommend the best for a variety of garden situations, and suggest associations with other plants and garden features. Includes 161 color photographs.

THE GARDENER'S GUIDE TO GROWING CLEMATIS

Raymond J. Evison. Timber Press, Portland, Oregon, 1998. 160 pages. Publisher's price: hardcover, \$29.95. AHS member price: \$27. **TIM 122**

THE GARDENER'S GUIDE TO GROWING PENSTEMONS

David Way and Peter James. Timber Press, Portland, Oregon, 1998. 160 pages. Publisher's price: hardcover, \$29.95. AHS member price: \$27. **TIM 123**

These two volumes are the most recent—numbers nine and 10—in the popular Gardener's Guide series. These books give beginning and intermediate gardeners a complete guide to each plant, including cultivation instructions, pests and disease problems, and an encyclopedic listing of species and cultivars. These guides are thor-

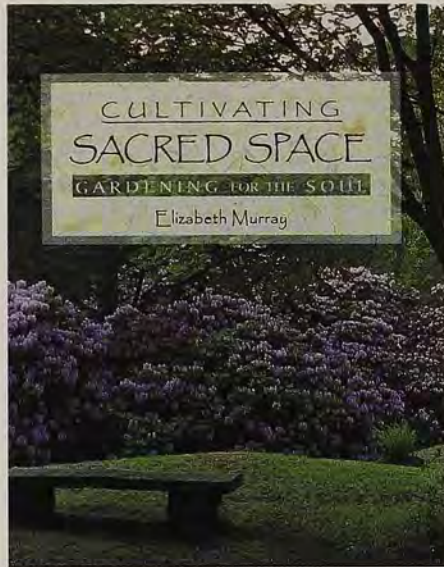
ough, but not excessively technical, and each includes 70 color photographs.

LILIES: A GUIDE FOR GROWERS AND COLLECTORS

Edward Austin McRae. Timber Press, Portland, Oregon, 1998. 392 pages. Publisher's price: hardcover, \$34.95. AHS member price: \$31.50.

TIM 133

Written by one of the world's leading experts on lilies, this book contains everything you could conceivably want to know about them. Using terms that both professional and amateur gardeners will understand, McRae details the history, cultivation, classification, propagation, hybridization, and commercial production. Illustrated with 108 spectacular color photographs and eight botanical prints.



GARDENING FOR THE SOUL

CULTIVATING SACRED SPACE: GARDENING FOR THE SOUL

Elizabeth Murray. Pomegranate, Robnert Park, California, 1997. 160 pages. Publisher's price: hardcover, \$35. AHS member price: \$31.50.

POM 002

This beautiful book, by the author of *Monet's Passion*, captures the spiritual nature of 12 exceptional gardens from around the world. Murray focuses on gardens in which she has found solace and strength. She encourages us to weave our gardens into the important moments of our lives and describes how gardens can be used to reflect spiritual or philosophical beliefs. Includes 83 color photographs.

HISTORY AND IMAGINATION

DEAR MR. JEFFERSON: LETTERS FROM A NANTUCKET GARDENER

Laura Simon. Crown Publishers, New York, 1998. 224 pages. Publisher's price: hardcover, \$23. AHS member price: \$20.50.

CRN 012

"Wouldn't Thomas Jefferson have enjoyed these?" Simon, a Nantucket gardener and writer found herself asking this question with increasing frequency as she reflected on new plant varieties, the efficiency of her soaker hose in summer, and other modern additions to gardening. This led to her research on—and the idea of correspondence with—one of America's most passionate gardeners. This unusual book is an adventure in history and

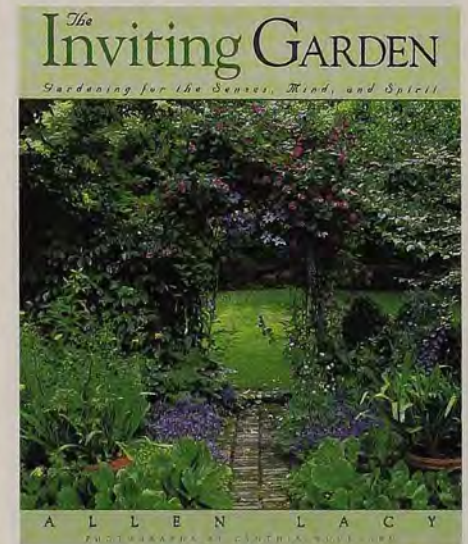
horticulture. Illustrated with line drawings throughout.

THE INVITING GARDEN: GARDENING FOR THE SENSES, MIND AND SPIRIT

Allen Lacy. Photographs by Cynthia Woodyard. Henry Holt and Company, New York, 1998. 240 pages. Publisher's price: hardcover, \$37.50. AHS member price: \$33.50.

HOL 017

Only non-gardeners look at gardening as a mere hobby, states Lacy, one of America's foremost garden writers. To committed gardeners, it is stimulation for all the senses, an intellectual pursuit with long roots, a source of friendships, and a bond with the earth. This is a thoughtful look at the rich history of plants and people that inspires our gardening today. Includes 80 color and 10 black-and-white photographs.



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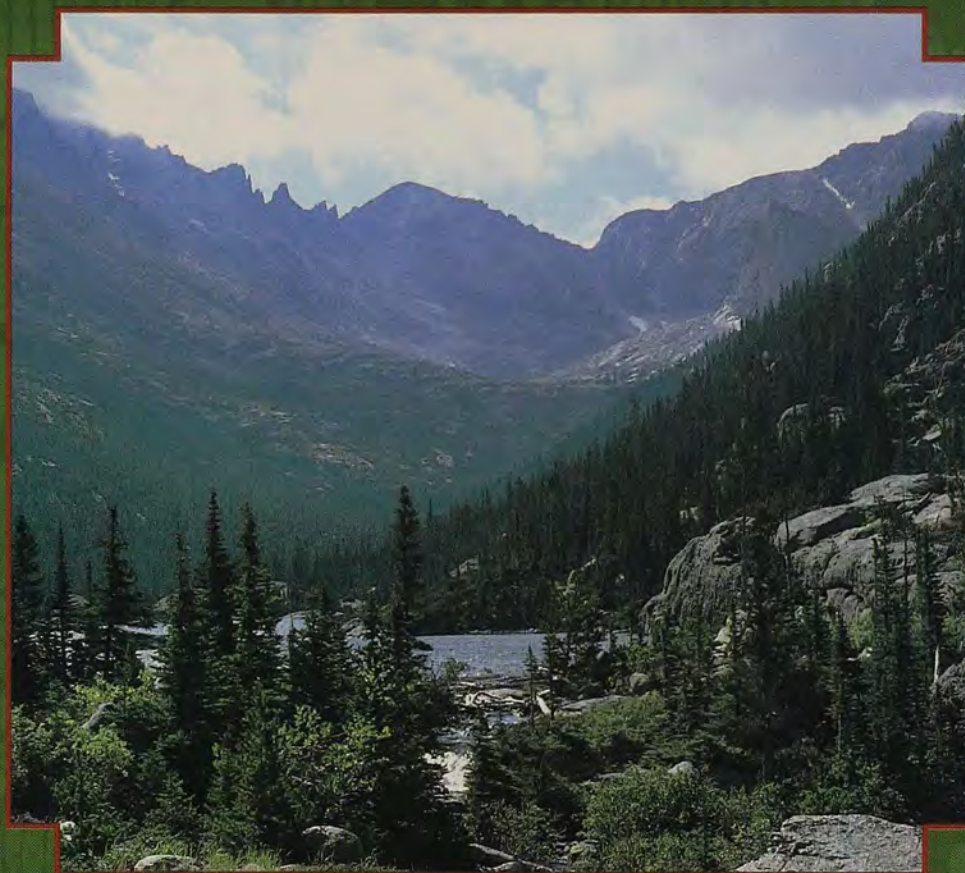
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Gardens of July 27–August 5, 1998

The Rockies and Grand Tetons



COURTESY OF ANDREW PIERCE

BEGIN WITH TOURS OF EXCEPTIONAL PRIVATE GARDENS IN DENVER, and then explore remote wilderness areas along the Rockies to Jackson, Wyoming, and Grand Tetons National Park. In July, the snow has melted in the alpine meadows, bringing forth the splendor of wildflowers for which this region is so famous. Numerous picnics and cookouts are scheduled, as well as a full-day float on the Snake River as it winds through Jackson Hole and a day-long visit to Yellowstone National Park. Leading this program for the AHS will be Board Member Robert Volk and his wife Carolyn from San Marino, California. Invited as guest horticulturist will be recognized wildflower expert Andrew Pierce, Director of Hudson Gardens in Littleton, Colorado.

Also Planned For 1998

- MAY 7-17, 1998
GARDENS OF IRELAND WITH OPTIONAL EXTENSION TO CHELSEA FLOWER SHOW
- JUNE 11-19, 1998
GARDENS OF ST. PETERSBURG, RUSSIA
- OCTOBER 6-28, 1998
AUSTRALIA AND NEW ZEALAND
- NOVEMBER 1-6, 1998
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MID-ATLANTIC

MAY 9 ■ Spring Plant Sale. William Paca Garden, Annapolis, Maryland. (410) 267-6656.

MAY 16 ■ Garden Day Plant Sale. Green Spring Gardens Park, Alexandria, Virginia. (703) 642-5173.

MAY 16 & 17 ■ 50th Annual Virginia Peninsula Rose Society Rose Show. Coliseum Mall, Hampton, Virginia. (757) 229-3285.

JUNE 14-26 ■ Historic Landscape Institute: Preserving the Landscapes and Gardens of Thomas Jefferson. Monticello, Charlottesville, Virginia. (804) 984-9684.

NORTH CENTRAL

MAY 12 ■ Lectures by Scott Kunst, Landscape Historian. Pump House, LaCrosse, Wisconsin. (608) 783-7467.

MAY 13 ■ Twilight Tour. Botanical Education Center, Klehm Arboretum and Botanic Garden, Rockford, Illinois. (815) 965-8146.

MAY 15 & 16 ■ Hyde Park-Kenwood Garden Fair. Hyde Park Shopping Center, Hyde Park, Illinois. (773) 493-8882.

MAY 18-20 ■ Storms Over the Urban

Forest. Conference. Lied Conference Center, Nebraska City, Nebraska. (402) 474-5655.

MAY 19 ■ Creative Container Gardening. Workshop. Olbrich Botanical Gardens, Madison, Wisconsin. (608) 246-4550.

MAY 30 ■ Gardening to Attract Butterflies. Class. Holden Arboretum, Kirtland, Ohio. (440) 946-4400.

MAY 30 & 31 ■ Rhododendron Show and Sale. Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440.

JUNE 13-21 ■ Boerner in Bloom. Boerner Botanical Gardens, Hales Corners, Wisconsin. (414) 529-1870.

JUNE 19-21 ■ Garden Clubs of America Show of Summer. Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440.

JUNE 20 ■ Garden Walk '98. Tour. Seven unique residential gardens in Rock Island and Moline, Illinois. (309) 794-0991.

NORTHEAST

THROUGH MAY 22 ■ Acres of Spring Display. Longwood Gardens, Kennett Square, Pennsylvania. (610) 388-1000.

MAY 7 ■ Herb Sale. Historic Yellow Springs, Chester Springs, Pennsylvania. (610) 566-6261.

MAY 9 ■ Turn on the Dark: Dazzling Bloomers for Shade. Slide presentation. Brooklyn Botanic Garden, Brooklyn, New York. (718) 622-4433 ext. 276.

MAY 9-10 ■ Wildflower, Native Plant, and Seed Sale. Brandywine River Museum, Chadds Ford, Pennsylvania. (610) 388-2700.

MAY 14-16 ■ Dig and Design: Hill-Stead's May Market. Farmington, Connecticut. (860) 677-4787

MAY 16 & 17 ■ Rare Plant Sale. Landis Arboretum, Esperance, New York. (518) 875-6935.

MAY 25 ■ Opening of the Polly Hill Arboretum. North Tisbury, Massachusetts. (508) 693-3776.

JUNE 6 ■ Spring Gardens in Bloom. Tour. Old Sturbridge Village, Sturbridge, Massachusetts. (508) 347-3362.

JUNE 11-13 ■ Native Plants in the Landscape Conference. Millersville University, Millersville, Pennsylvania. (717) 872-3030.

JUNE 13 ■ Garden in the Woods Wildflower Sale. Framingham, Massachusetts. (508) 877-7630.

JUNE 13 & 14 ■ Webster Arboretum Horticulture Fair. Webster Arboretum,

Opening of a Horticultural Wonderland

Each year, more than half a million visitors stroll through the 250 acres of the New York Botanical Garden in the Bronx. On May 2, this premier horticultural institution, founded in 1891, opens its latest garden for a crop of new visitors—kids. Billed as the only facility of its kind in the United States, the eight-acre Everett Children's Adventure Garden is designed to provide a fun and educational nature experience for children under 12. Giant topiaries of caterpillars, butterflies, and other creatures decorate the garden's grounds. Kids can wander hedge and boulder mazes, learn to use a microscope and identify plant parts at the science center, and use plant parts to build a giant bird's nest or weave a floor mat in several interactive outdoor exhibits. For more information, call (718) 817-8700.



Artist's rendering of caterpillar topiaries at Everett Children's Adventure Garden.

PHOTO COURTESY OF THE NEW YORK BOTANICAL GARDEN

Webster, New York. (716) 787-0303.

JUNE 16-21 ■ Redefining the Garden. American Association of Botanical Gardens and Arboreta 1998 Annual Conference. Wyndham Franklin Plaza Hotel. Philadelphia, Pennsylvania. (610) 925-2500.

JUNE 19 & 20 ■ Second Annual Horticulture Weekend. Woodstock Inn & Resort, Woodstock, Vermont. (802) 457-1100.

JUNE 20 & 21 ■ Marblehead Historical Society's House and Garden Tour. Marblehead, Massachusetts. (781) 631-1069.

JUNE 25 ■ Gardens of Good Taste: Ellen Shipman's Colonial Revival Garden Style. Lecture. Bowen House, Woodstock, Connecticut. (617) 227-3956.

JUNE 28 ■ Garden Walk. Wave Hill, Bronx, New York. (718) 884-8952.

JUNE 28 ■ The Greater Rochester Rose Society Rose Show. Cornell Cooperative Extension Auditorium, Rochester, New York. (716) 787-0303.

NORTHWEST

MAY 15-17 ■ 91st Annual Rhododendron Festival. Florence, Oregon. (541) 997-3128.

MAY 16 & 17 ■ Cascade Rhododendron Show. Bellevue Botanical Garden, Bellevue, Washington. (425) 452-2750.

MAY 17 ■ Boise Spring Gardens Tour. Idaho Botanical Gardens, Boise, Idaho. (208) 343-8649.

MAY 17 ■ Wildflower Festival and Plant Sale. Mount Pisgah Arboretum, Eugene, Oregon. (541) 747-3817.

MAY 28-JUNE 21 ■ Portland Rose Festival. Portland, Oregon. (503) 227-2681. <http://www.rosefestival.org>.

MAY 29 & 30 ■ Wildflower Show. Yakima Area Arboretum, Yakima, Washington. (509) 248-7337.

JUNE 6 & 7 ■ Annual Spring Plant Sale. Lakewold Gardens, Lakewood, Washington. (888) 858-4106.

JUNE 13 ■ Bonsai Pruning Basics. Lecture. Pacific Rim Bonsai Collection,

Preserving Our Native Heritage

In December, Native Seeds/SEARCH, a nonprofit organization based in Tucson, Arizona, acquired 60 acres of Arizona farmland in conjunction with the Nature Conservancy. The land will enable the group to establish a Conservation Farm dedicated to maintaining a seed bank of more than 1,800 southwestern crops that have historically sustained many Native Americans. Among the crops are desert-adapted amaranth, beans, chiles, cotton, corn, gourds, squash, and sunflowers.

In addition to increasing the capacity to preserve native crops and farming practices, the new land will allow the organization to expand its educational programs and conduct



PHOTO COURTESY OF NATIVE SEEDS/SEARCH

A collection of Hopi beans, corn, and squash.

more research. According to Native Seeds/SEARCH executive director Angelo J. Joaquin Jr., "The farm will allow us to—on a much greater basis—honor the efforts of those who have gone before. We will be able to ensure that the unique varieties they developed will not disappear in our lifetimes."

For more information about Native Seeds/SEARCH or to order a seed catalog, call (520) 622-5561. Or write the organization at 2509 North Campbell Avenue, #325, Tucson, AZ 85719.

Federal Way, Washington. (253) 924-3153.

JUNE 13 & 14 ■ 12th Annual Tour of Private Gardens. Whatcom in Bloom Horticultural Society, Bellingham, Washington. (360) 738-6833.

SOUTH CENTRAL

MAY 16 & 17 ■ Earth Day Celebration. Missouri Botanical Garden, Saint Louis, Missouri. (314) 577-9400.

MAY 23-25 ■ Wetlands Weekend. Nature Station, Land Between the Lakes National Recreation Area, Golden Pond, Kentucky. (800) 525-7077.

JUNE 6 ■ Perennial Plant Symposium. Memphis Botanic Garden, Memphis, Tennessee. (901) 685-1566 ext. 106.

SOUTHEAST

MAY 8-10 ■ Spring Orchid Show. Volusia County Fairground, Deland, Florida. (904) 734-3647.

MAY 9 ■ The Endangered Plants of North Carolina. Lecture. Tryon Palace, New Bern, North Carolina. (919) 514-4900.

MAY 12 ■ A Morning of Herbs and Spices. The State Botanical Garden of Georgia, Athens, Georgia. (706) 542-1244.

MAY 16 ■ Gardener's Garden Tour. Wing Haven, Charlotte, North Carolina. (704) 331-0664.

MAY 18 ■ Historical Perspectives and Modern Views on Landscape and the Garden. Lecture. Atlanta History Center, Atlanta, Georgia. (404) 651-0487.

MAY 22-24 ■ Cactus and Succulent Show and Sale. Fairchild Tropical Garden, Miami, Florida. (305) 667-1651.

JUNE 13 ■ Daylily Show. Riverbanks Zoo and Gardens, Columbia, South Carolina. (803) 779-8717.

JUNE 20 ■ Hemerocallis Show. Atlanta Botanical Garden, Atlanta, Georgia. (404) 876-5859.

SOUTHWEST

MAY 9 ■ Annual Herb Fair. Tucson Botanical Gardens, Tucson, Arizona. (520) 326-9686.

MAY 16 ■ 19th Annual Plant Sale. Red Butte Garden and Arboretum, Salt Lake City, Utah. (801) 581-4747.

MAY 16-19 ■ House and Garden Tour. Friends of the Rio Grande Botanical Garden, Albuquerque, New Mexico. (505) 268-9132.

Huntington Plant Sale

Gloria Butler had been standing in line since 12:30. In past years, her daughter had accompanied her to the Huntington's spring plant sale, but this year, she carried a cell phone and a wish list of plants from her daughter, who was scheduled to enter the hospital that evening to deliver her first baby. Shortly before the gates opened at 4:30, the phone rang. Her daughter was in labor, but instructed her mother to buy the plants first and only then come to the hospital.

For avid gardeners in Southern California, the plant sale that the Huntington Botanical Gardens holds the third Sunday of each May is one of the obligatory rites of spring. Since its inception more than two decades ago, it has evolved into the largest plant sale in the West, and possibly in the entire United States. It is a major fund-raiser for the botanical arm of the Huntington, which also includes a library and art galleries.

The first sales offered plants derived from the Huntington's collections of cacti and succulents, perennials, camellias, herbs, and roses, as a way of educating the public about the plants and encouraging their use in home gardens. Today the mission is the same,



Experienced plant shoppers bring their own transporting containers.

but the offerings have expanded to include cycads, vines, bamboos, azaleas, ferns, bulbs, palms, and tropicals. Shoppers will also find unusual varieties of familiar plants such as tomatoes and geraniums. "A plant has to have some kind of merit or we won't have it at the sale," says Shirley Kerins, plant sale manager. "They also have to be appropriate for Southern California gardens."

About half of the inventory is grown at the Huntington by staff and volunteers. The rest of the plants are purchased from specialty growers throughout the nation. "We try to be on the cutting edge," says Kerins. "For example, several years ago we featured 20 types of sunflowers before they became so popular. I also look for plants with unusual foliage color or texture."

The unusual plants offered—many unavailable at local nurseries—attract thousands. Many join the Friends of the

Huntington support group to gain entry to the Saturday presale, open only to members. Last year, the three-hour presale garnered \$59,000.

Gates for the Sunday sale open at 10 a.m., but passionate plant collectors are in line by 8. The activity in the first half hour resembles a swarm of locusts in a feeding frenzy.

Shoppers can seek advice from experts and helpful volunteers at each section (plants are displayed by categories, such as "small perennials" or "shade plants"), as well as a central information table well-stocked with reference books. There is also a "plant doctor" to offer a diagnosis for sick plants at home if a diseased sample is provided in a plastic bag.

There's a particularly user-friendly section where color-coded pennants alert shoppers to each plant's bloom color. Plants are labeled with color photos and botanical names; they also include information tags listing growth characteristics, sun and moisture requirements, and subtle warnings such as "for those who like a challenge" or "this is a perennial if you can keep it alive."

Plants are reasonably priced—averaging \$5 to \$6 for one-gallon sizes, but some are as low as \$1.50—so it's easy to get carried away. Anyone who expects to make major purchases is advised to bring something with wheels. Savvy shoppers pull wagons, push wheelbarrows, and drag carts. Volunteers help load purchases into cars.

The Huntington is at 1151 Oxford Road in San Marino, California. This year's public plant sale is May 17. For those who want to tour the gardens afterward, there is an \$8.50 admission charge. For more information, call (818) 405-2282.

—Karen L. Dardick, special from Los Angeles

MAY 30 ■ Plant Sale. Betty Ford Alpine Gardens, Vail, Colorado. (970) 476-0103.

JUNE–AUG. SATURDAYS ■ Tours of the Xeriscape and Western Cottage Gardens. Santa Fe Greenhouses, Santa Fe, New Mexico. (505) 473-2700.

JUNE 20–21 ■ 13th Annual Plant Sale and Horticultural Fair. The Arboretum at Flagstaff, Flagstaff, Arizona. (520) 774-1441.

WEST COAST

MAY 16 & 17 ■ Geranium Plant Show and Sale. Casa del Prado, Balboa Park, San Diego, California. (616) 469-8936.

MAY 17 ■ Plant Sale. Huntington Botanical Gardens, San Marino, California. (626) 405-2141.

MAY 30 & 31 ■ Chrysanthemum Sale. Descanso Gardens, La Cañada Flintridge, California. (818) 952-4401.

MAY 30 & 31 ■ Orchid Festival. Huntington Botanical Gardens, San Marino, California. (626) 405-2141.

JUNE 16–JULY 5 ■ Del Mar Fair Flower and Garden Show. Del Mar Fairgrounds, Del Mar, California. (619) 792-4273.

JUNE 20 ■ Huntington Culinary Series: Fraises des bois and Other Berries. Huntington Botanical Gardens, San Marino, California. (626) 405-2272.

CANADA

JUNE 5–7 ■ VanDusen Flower Show. Vancouver, British Columbia. AHS members: call (800) 777-7931 for tickets.

JUNE 12–14 ■ Victoria Flower and Garden Festival. Juan de Fuca Recreation Center, Victoria, British Columbia. (250) 920-5925.

Reminder

To list an event, please send information at least four months in advance to Regional Happenings, *The American Gardener*, 7931 East Boulevard Drive, Alexandria, VA 22308.

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a look at current offerings from the marketplace

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pronunciations

a simple speaking guide to plants found in this issue

Agastache scrophulariifolia
ah-guh-STAH-she skrof-yew-lar-ee-eye-FO-lee-uh

Alchemilla mollis
al-kem-ILL-uh MOLL-iss

Amerorchis rotundifolia
am-ur-OR-kiss ro-tun-dih-FO-lee-uh

Arethusa bulbosa forma subcaerulea
ahr-eh-THOO-suh bul-BO-suh forma sub-see-ROO-lee-uh

Aronia arbutifolia
uh-RO-nee-uh ar-byew-tih-FO-lee-uh

Asclepias tuberosa
as-KLEE-pee-us too-bur-O-suh

Calypso bulbosa var. occidentalis
kah-LIP-so bul-BO-suh var. ahk-sih-den-TAL-iss

Cephalanthera austiniiae
sef-uh-LAN-thur-uh aw-STIN-ee-ee

Chaenomeles japonica
kee-NOM-ee-leez jah-PON-ih-kuh

Claytonia virginica
clay-TOH-nee-uh vir-JIN-ih-kuh

Cleistes bifaria
KLEE-iss-teez bi-FAR-ee-uh

Corallorhiza maculata var. occidentalis
kor-al-lor-RHY-zuh mak-yew-LAY-tuh var. ahk-sih-den-TAL-iss

C. striata var. vreelandii
C. stry-AY-tuh var. vree-LAN-dee-eye

C. wisteriana
C. wis-teer-ee-AN-uh

Cypripedium acaule
sip-rih-PEE-dee-um uh-KAWL-ee

C. arietinum
C. ah-ree-eh-TIH-num

C. parviflorum var. pubescens
C. par-vih-FLOR-um var. pyew-BESS-enz

C. yatabeanum
C. yuh-tah-be-AN-um

Dactylorhiza aristata
dak-til-o-RHY-zuh

Eltroplectris calcarata
el-tro-PLEK-triss kal-kuh-RAY-tuh

Encyclia cochleata var. triandra
en-SIGH-klee-uh kok-lee-AY-tuh var. tree-AN-druh

E. tampensis
E. tam-PEN-siss

Epidendrum conopseum
eh-pih-DEN-drum ko-NOP-see-um

Epipactis gigantea
eh-pih-PAK-tis jy-GAN-tee-uh

Erythronium americanum
air-ih-THROW-nee-um uh-mair-ih-KAN-um

Gaura lindheimeri
GAW-ruh lind-HY-mur-eye

Habenaria odontopetala
hab-eh-NAIR-ree-uh o-don-toh-peh-TAL-uh

H. quinqueseta
H. kwin-kweh-SAY-tuh

Isotria medeoloides
eye-SOT-ree-uh mee-dee-o-LOY-deez

Lavandula angustifolia
lah-VAN-dyew-luh ang-gus-tih-FO-lee-uh

Lindera benzoin
lin-DAIR-uh BEN-zoh-in

Listera borealis
LIS-tur-uh bor-ee-AL-iss

Lonicera x heckrottii
lah-NISS-er-uh hek-ROT-tec-eye

L. involucreta
L. in-vol-yew-KRAY-tuh

L. sempervirens
L. sem-pur-VY-renz

L. standishii
L. stan-DISH-ee-eye

Lythrum salicaria
LITH-rum sal-ih-KAIR-ee-uh

Malaxis diphyllis
mal-AK-siss dy-FIL-oss

M. ehrenbergii
M. eh-ren-BERG-ee-eye

Philadelphus coronarius
fil-uh-DEL-fus kor-o-NAIR-ee-us

Piperia unalascensis
pih-PAIR-ee-uh oon-uh-las-CHEN-siss

P. yadonii
P. yuh-DOH-nee-eye

Platanthera blephariglottis var. conspicua
pluh-TAN-thur-uh ble-far-ih-GLOT-iss var. kon-SPIK-yew-uh

P. leucophaea
P. loo-ko-FEE-uh

P. praeclara
P. pree-KLAIR-uh

Pogonia ophioglossoides
po-GO-nee-uh o-fee-o-gloss-ee-OY-deez

Ponthieva racemosa
pon-THEE-eh-vuh ras-eh-MO-suh

Sanguisorba canadensis
san-gwi-SOR-buh kan-uh-DEN-siss

Spiranthes cernua
spy-RAN-theez SAIR-new-uh

S. magnicamporum
S. mag-nih-kam-POR-um

S. ochroleuca
S. ok-ro-LOO-kuh

Stenorrhynchos lanceolatus
steh-no-RIN-kos lan-see-o-LAY-tus

Tanacetum parthenium
tan-uh-SEE-tum par-THEE-nee-um

Taxodium distichum
taks-O-dee-um DIS-tih-kum

Thuja occidentalis
THEW-yuh ahk-sih-den-TAL-iss

Tipularia discolor
tip-yew-LAIR-ee-uh DIS-kul-ur

Zeuxine strateumatica
ZOOKS-eeen strat-yew-MAT-ih-kuh

What's in a Name: *Cypripedium acaule*

The name lady's-slipper was coined in 16th-century Europe because of the resemblance of the orchid's curiously inflated labellum—a modified third petal that serves as a landing platform for pollinators—to a shoe or slipper. Moccasin flower was the name Native Americans used for the plant.

The generic name is formed from *cypria*—a Latin name for Venus, the goddess of love and beauty—and *pedium*—Latin for foot. In mythology, Venus—known to the Greeks as Aphrodite—was reputed to have emerged from the foamy wrack of the sea around the island of Cyprus. It has been suggested that Swedish naturalist Linnaeus may have erred in translating the latter part of the generic name, which should have been derived from the Greek *pedilon*, meaning sandal or slipper.

The specific epithet means stemless. The orchid's flower stalk rises directly from between a sheathlike pair of basal leaves.

hardiness and heat zones

a guide to USDA and AHS zones for plants found in this issue

For your convenience, the cultivated plants featured in each edition of the magazine are listed here with their USDA Plant Hardiness Zones and AHS 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 require minimum temperatures warmer than 40 degrees Fahrenheit—the minimum average temperature in USDA Zone 11—will be listed by minimum average temperature rather than by zone numbers.

A-C

- Agastache scrophulariifolia* USDA 4-9, AHS 9-1
- Agave harvardiana* 9-11, 12-9
- A. neomexicana* 9-11, 12-9
- Ajuga reptans* 3-9, 8-2
- Alchemilla mollis* 'Auslese' 3-8, 7-1
- Aquilegia canadensis* 3-8, 9-3
- Aronia arbutifolia* 5-9, 9-4
- Asclepias tuberosa* 4-9, 10-2
- Calopogon tuberosus* 3-11, 12-1
- Cephalanthus occidentalis* 5-11, 12-7
- Chaenomeles japonica* 5-9, 9-3
- Claytonia virginica* 5-9, 6-1
- Cleome serrulata* 0, 12-1
- Cornus racemosa* 4-8, 8-3
- C. stolonifera* 2-8, 8-1
- Cypripedium reginae* 2-7, 7-1

D-I

- Dianthus deltoides* 3-11, 9-1
- Erythronium americanum* 3-9, 9-2
- Gaura lindheimeri* 6-9, 9-5
- Hosta sieboldiana* 'Elegans' 3-8, 8-2
- Ilex glabra* 5-9, 9-3
- I. verticillata* 5-8, 8-2

L-N

- Lavandula angustifolia* 5-8, 12-7
- Lindera benzoin* 5-9, 9-4
- Lonicera albiflora* 6-8, 8-3
- L. ×americana* 6-9, 9-3

- L. arizonica* 6-10, 10-6
- L. ×bella** 5-7, 7-4
- L. canadensis* 4-7, 7-3
- L. conjugalis* 6-8, 8-3
- L. etrusca** 7-9, 9-4
- L. fragrantissima* 5-8, 8-4
- L. ×heckrottii* 6-9, 9-3
- L. hispidula* 6-8, 8-4
- L. interrupta* 6-8, 8-3
- L. involucrata* 6-8, 8-5
- L. maackii** 5-9, 9-4
- L. morrowii** 4-9, 9-4
- L. nitida* 6-9, 9-5
- L. oblongifolia* 2-7, 7-1
- L. sempervirens* 4-9, 9-3
- L. standishii** 5-8, 8-4
- L. tatarica** 3-9, 9-3
- L. utahensis* 6-8, 8-3
- Mentha ×piperita* 3-7, 7-1
- Magnolia virginiana* 6-9, 9-4
- Malva sylvestris* 'Zebrina' 3-8, 8-3
- Myrica pensylvanica* 3-6, 6-1
- Nyssa sylvatica* 5-9, 9-4

P-R

- Penstemon palmeri* 3-11, 12-1
- Perovskia atriplicifolia* 6-9, 9-4
- Philadelphus* 'Buckley's Quill' 4-8, 8-3
- P. 'Galahad'* 5-8, 8-3
- P. 'Snowgoose'* 5-8, 8-3
- P. californicus* 5-8, 8-4
- P. coronarius* 4-9, 9-4
- P. coronarius* 'Aureus' 4-9, 9-4
- P. coronarius* 'Variegatus' 5-8, 8-3
- P. inodorus* 5-9, 9-5
- P. lewisii* 4-8, 8-3
- P. mexicanus* 9-11, 12-9
- P. microphyllus* 6-9, 9-6
- P. ×virginalis* 3-7, 7-3

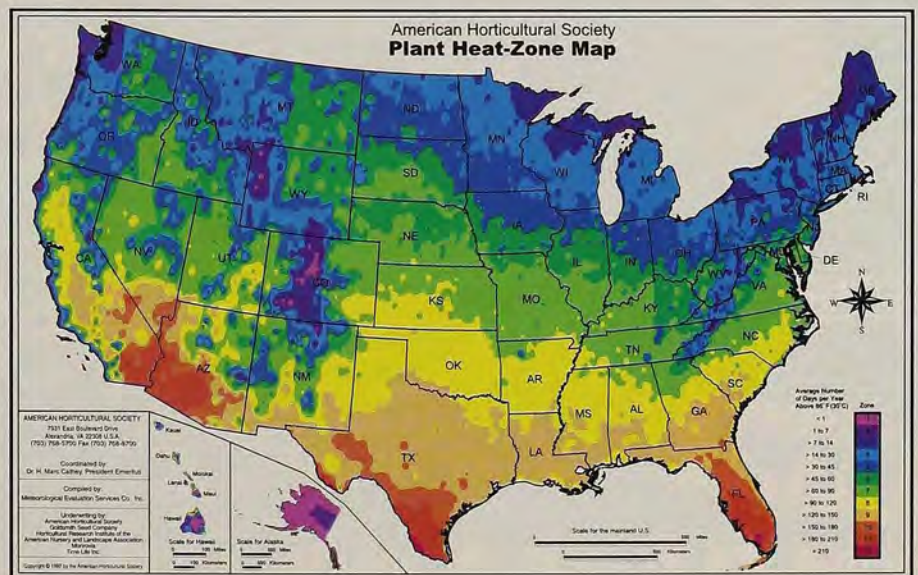
- P. ×virginalis* 'Miniature Snowflake' 3-7, 7-3
- P. ×virginalis* 'Minnesota Snowflake' 3-7, 7-3
- P. ×virginalis* 'Natchez' 4-7, 7-2
- Picea mariana* 3-6, 6-1
- Phlox pilosa* 4-9, 9-3
- Rudbeckia fulgida* 'Goldsturm' 3-9, 10-1
- Rohdea japonica* 7-9, 9-6
- Ruta graveolens* 5-9, 9-4

S-Z

- Salix alba* 4-9, 9-3
- Sambucus canadensis* 4-9, 9-3
- Sanguisorba canadensis* 3-8, 8-2
- Spiranthes cernua* 4-8, 8-4
- Tanacetum parthenium* 4-9, 9-3
- Taxodium distichum* 5-11, 12-7
- Thuja occidentalis* 2-7, 7-1
- Thymus serpyllum* 4-9, 9-3
- Viburnum dentatum* 3-8, 8-2
- Vinca minor* 4-9, 9-3

*Species marked with an asterisk are potentially invasive European bush honeysuckles that are not recommended for cultivation. For further information on these honeysuckles, refer to the article on pages 37 through 40.

The codes above are based on a number of commonly available references and are likely to be conservative. Factors such as microclimates, plant provenance, and use of mulch may affect individual gardeners' experiences. We welcome input in regard to the codes' accuracy. To purchase a durable two-by-three-foot poster of the AHS Heat-Zone Map, call (800) 777-7931 ext. 45.



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