

New Ways to Build and Landscape in Harmony With Nature

THE AMERICAN GARDENER

A Publication of the American Horticultural Society

January/February 1997 \$3.95



HELP US CELEBRATE OUR DIAMOND ANNIVERSARY!

Fun Garden Events From Coast to Coast

ELLEN'S LOT Sara Stein's View of Suburbia
ANNUAL ROUNDUP OF PROVEN PERFORMERS

Arilbred Irises: Delicate But Accommodating

Succulents: Some Like it Dry



*Estancias:**March 6-19, 1997**Gardens of the Great Houses
and Ranches of Argentina*

XAVIER A. VERSTRAETEN

THIS MOST UNUSUAL PROGRAM WAS DESIGNED with the collaboration of Mercedes Villegas de Lariviere, one of the creators of the book *Estancias: The Great Houses and Ranches of Argentina*. Our route takes us from the fertile pampas of the coastal region to the open steppe and upper plateaus of Patagonia—from the gardens of architect Edmundo Tonconogy in Buenos Aires to the gardens of John and Doreen Blackburn in San Martín de los Andes. We are fortunate to have the participation of Mrs. Pinciro Pearson, former president of the Argentine Horticultural Society, who will help make this program memorable. Leading the trip will be Katy Moss Warner, director of horticulture at Walt Disney World in Florida.

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Volume 76, Number 1

January/February 1997



DEPARTMENTS

Commentary

Members' Forum

Paris memories, salute to Shadow.

Offshoots

Hope amid concrete.

Gardeners' Information Service

Memorial trees and allergies.

Mail-Order Explorer

An herb lover's delight in Canada.

Natural Connections

Learning to love lichens.

Urban Gardener

Unlock more space with keyholes.

Plants and Your Health

Science makes a case for coneflowers.

Book Reviews

Pollinators, waterlilies, Bartram.

Regional Happenings

A community garden threatened.

Pronunciations

FEATURES

The Building Envelope

by Andy Wasowski

Before the bulldozers come, tie a yellow ribbon 'round those old oak trees.



Proven Performers Succulents

by Roger T. Brown

Plants that eke out a living in arid lands are some of the most amazing on the planet.



Proven Performers Arlbred Irises

by Tom Tadfor Little

In recent years dedicated breeders have given this sulking beauty some real backbone.

Ellen's Lot

by Sara Stein

Why on earth, she wondered, had her niece built a home where nature had been given the boot?

26

6

15

17

19

20

22

24

53

60

63

34

40

45

HAPPY 75TH ANNIVERSARY, AHS!



A Nationwide Celebration

Take your pick from among these 75 wild and mild, grand and funky gardening events. Plus flower shows and plant sales around the nation.

7

On the cover, clockwise from upper left: Japanese Festival, Missouri; Cullowhee Conference, North Carolina; Wildflower Days, Texas; and Noche de Las Luminarias, Arizona (photograph courtesy of Doug Anderson). For more on these and 71 other events, see page 7.

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commentary

Seventy-five years ago commercial horticulture was relatively simple. We had no hormones to promote the rooting of cuttings. We had but one growing medium—freshly harvested topsoil from neighboring farms. Irrigation systems relied on gravity to distribute water through rubber hoses and tubes. We had no plastic for our greenhouses, only glass, and to protect plants from the heat of the summer, nothing more sophisticated than lath houses. Some fascinating research had been done on day-length response in ‘Maryland Mammoth’ tobacco, which had to be brought into a greenhouse to set seed. But no one yet understood how artificial day length might one day be manipulated to give us a broader palette of plants.

We knew nothing about DNA or the inheritance and transfer of genetic information. Fruits and vegetables were strictly seasonal, and storage of garden produce was done in root cellars or canning jars. There was not a single piece of plastic film for a row cover, nor any complex chemicals synthesized in a laboratory to control a broad range of pests and diseases. Instead, we used heavy metals or compounds derived from natural products. There was also no awareness of the impact of air pollution or the impact of our practices on groundwater and soil.

Garden books and magazines were illustrated with woodcuts or black-and-white photographs, although the best were sometimes graced with color plates of botanical art. While on the estates of our richest citizens the gardening staff might number into the hundreds, many plants were missing that are well-known today, such as impatiens and petunias. Most gardeners chose lilies, roses, irises, and peonies, and of course it seemed that every street in America was framed and shaded by American elms. For summer color, pelargoniums, cannas, and gladioli filled every bed.

We, the current crop of American gardeners, should expect even more changes as we prepare to enter the 21st century, and should reappraise some of our objectives. Consider some of the possibilities:

Food. Either directly or indirectly, plants are the source of all the nutrition on earth. We must support efforts that keep affordable, nutritious food available in quantity, improve its quality and taste, while “walking lightly on the earth” with methods such as no-till and integrated pest management.

Psychological Well-Being. Studies have shown that the presence of plants reduces stress, promotes physical healing after surgery, and may curb domestic violence and discourage vandalism. Yet more and more children are growing up where there are no plants or park lands.

Environment. Plants sustain our living space by cleaning our water and replenishing our oxygen. We must become active architects of the natural world around us.

Entertainment. Gardening is the number one hobby in America. We know the rewards of creating beauty, interacting with nature, exercising vigorously outdoors, discovering a new plant. We must broaden the range of experiences available to everyone.

Education. Career opportunities in horticulture will continue to grow as new public facilities expand and new interests develop. Many of us developed our interest in horticulture in “grandma’s garden.” Today when many children are far from grandma, we



must all help serve as surrogate grandmothers—at home, on the playground, in community green spaces—if we are to become a nation of gardeners.

The American Gardener reflects our country's range of gardening interests as we prepare to celebrate our diamond anniversary at the American Horticultural Society. To help you celebrate with us, this issue highlights 75 events from all over the country that have been selected as regional celebrations. Other issues will feature 75 of America's favorite

garden plants and 75 of our nation's favorite garden books. You'll be impressed to see the diversity within American horticulture. You contributed to these lists; we hope you'll want to share them with gardeners around you.

Many of you are becoming interested in natural gardening, but finding it hard to do because the landscape you're working with has so little left that's natural. In this issue we offer two solutions: Andy Wasowski describes the building envelope concept, in which the existing landscape is disturbed as little as possible when a new house is built, and Sara Stein tells us how she created a natural landscape using pioneer plants inspired by roadside vegetation. The latter addresses a common situation, in which the natural vegetation and soil have already been removed.

Since 1988, our first issue of each year has featured "Proven Performers" nominated by representatives of national plant societies. This year we will hear how an interest of

mine since I was a teen-ager—the exotically marked and culturally challenging aril iris—has been made more accessible through breeding, and also about many divine and diverse forms of succulents.

Learn with us as we begin our yearlong celebration.

H. Marc Cathey
H. Marc Cathey, AHS President

A Special Event in Southern California

The American Horticultural Society has been selected as the honoree of the 1997 Southern California Spring Garden Show, to take place at South Coast Plaza, Costa Mesa, California. On Thursday, April 10, there will be a Preview Party benefiting AHS educational programs. Proceeds will help fund the California Department of Education's goal of a "garden in every school" and this year's Youth Gardening Symposium in Chicago. The show will continue through Sunday, April 13. AHS will have a store front in the mall with a gift and book shop, a hospitality area, and book-signings by various authors. The mall auditorium has been made available for speakers and presentations throughout the show period.

AHS would like to invite members living in the Southern California area to help us plan and carry out this event. It is a wonderful opportunity to become involved with fellow gardeners and Society members in a project that will enhance the presence of AHS in California. If you would like to participate, or would just like to find out more about this event, please contact Mary Ann Patterson at (800) 777-7931 ext. 21 or Dr. Julia Rappaport at (714) 639-0656.

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members' forum

THE LAST TIME I SAW PARIS

Thank you very much for your article on Bernard McLaughlin's Paris, Maine, garden ("Regional Happenings—Where There's A Will," September/October). I grew up in nearby Harrison and as a teenager took a summer job in Paris. I spent many lunch hours wandering about this lovely place.

One day I came upon Mr. McLaughlin bent over a display of lilies. Hearing me approach, he called out, "You have got to smell these." I did, and they were lovely, but I had to suppress my giggles: He was covered in pollen from his nose to his chin.

I've thought back to that day many times, and to the man who obviously enjoyed his garden so much. How sad that he is gone and that Paris may soon lose his great treasure.

Jane Farr Milliman
Caledonia, New York (via e-mail)

FLYING FISH

Thank you for Peter Loewer's enlightening and enjoyable article "From Seed to Shining Seed" in your September/October issue. The photos were of course equally engaging.

Peter mentioned how some seeds are dispersed by herons and other birds by their eating fish with viable seeds in their stomachs. Some of your readers might not know that shorebirds and other waterfowl also disperse fish, tadpoles, and other animals when their eggs stick to the birds' legs or feathers. Thus the eggs are carried to other water where they hatch. Small mammals like muskrats can also contribute to this process.

I also loved the photo of Marc Cathey. But how come he's youthling when the rest of us are aging?

Bettie L. Furuta
Escondido, California

It's wonderful how frogs and fish can spontaneously appear in an unstocked pond. In fact, anyone building a natural water garden with the goal of providing a home for native frogs might want to wait for the stork to deliver, or be sure to ask some point-

ed questions of their pond supply dealer. Many of the tadpoles sold by mail are reportedly an Asian species that can outcompete smaller natives.

As to our ageless president, he credits the excellent cooking of Mary Cathey and Roy Rogers. We happen to know he has a hot date almost every night with a cross-country skiing machine.

SALUTE TO SHADOW

Congratulations on your article about Don Shadow ("Don Shadow Knows," September/October). This man's energy and vision are making a terrific contribution to the beautification and conservation of our beloved country, which is very much in need of both. I nominate him for the Grand Order of the Green Heart. Those of us with green hearts salute him! (Where can I write for his enticing 60-page catalog?)

Edna L. Cowan
Perkasie, Pennsylvania

Shadow Nursery is a wholesale nursery and as such does not sell directly to the public. If you want to receive their catalog, you can write to them at 254 Shadow Nursery Road, Winchester, TN 37398. If you see a plant you want, ask your favorite local retail nursery to order it for you.

Calling All AHS Award Winners!

THE AMERICAN HORTICULTURAL SOCIETY is celebrating its 75th anniversary in 1997. To mark this special year, we would like to honor the previous winners of our various AHS Horticultural Awards, but we need to know where you are! Please contact Catherine Pascucci at (800) 777-7931 ext. 26 to update your address. We look forward to celebrating our diamond anniversary with you!



happy 75th anniversary, AHS! a nationwide celebration



WE'RE 75 YEARS OLD, AND WE WANT YOU TO CELEBRATE WITH US!

A year ago, we asked members to nominate their favorite garden events, plants, and books, so that we could recognize them during our diamond anniversary. Throughout the year, we'll highlight many of the events that were suggested by members.

But because so many of the nominated events tended to be clustered in the same areas, we tried to branch out a bit. Our goal was to choose at least one event in each state (Nevada, we failed you. Please call home...) so that every single member of the American Horticultural Society could cele-

brate with us by making a day trip and saluting a regional institution and local garden style. We believe in gardening where you live. Now we hope you will celebrate where you live!

So many of you mentioned flower shows and sales, and yet they seemed so obvious, that we gave them separate lists. Thanks to Catherine Pascucci, our special projects coordinator, for pulling all of these together and notifying the select 75.

In many cases, she arranged for AHS members to participate at a discount. Note that some dates have not been set—call the institutions for more details. And please, join the fun!

diamond anniversary gardening events

ALABAMA

MAY 3-4 ■ Glorious Garden Tour.

Here's your chance to visit some of the most beautiful private gardens of the South! AHS members receive a five-percent discount in the botanical garden gift shop. Birmingham Botanical Gardens, Birmingham, Alabama. (205) 879-1227.

ALASKA

JULY 27 ■ Annual Garden Tour. Take advantage of a free, self-guided tour of Anchorage's private gardens. (907) 278-2814.

AUG. 2 & 3 ■ Herb Symposium and Flower Show. Free. Alaska Botanic Garden. Both events sponsored by the Anchorage Garden Club, Anchorage, Alaska. (907) 278-2814.

ARIZONA

DEC. 4-6 ■ Noches de Las Luminarias.

This fund-raiser features 7,000 glowing luminarias on the garden's paths. Visitors can enjoy up to a dozen musical groups while strolling among dramatic moonlit desert plants. Complimentary cider and cookies will be served. Desert Botanical Garden, Phoenix, Arizona. (602) 941-1225.

ARKANSAS

MAY 30-JUNE 8 ■ Garden Glory Days.

Take a leisurely walk through the gardens, or watch old-time craft work, including spinning, weaving, and metal-working. Among the many scheduled events are herb demonstrations and self-guided tours of the herb cabin. AHS members will be admitted for half price (high tea excluded). Ozark Folk Center, Mountain View, Arkansas. (501) 269-3851.

CALIFORNIA

MAR. 16 ■ Sierra Madre Wistaria Festival and Vine-Viewing.

This free festival features art, crafts, and the largest wistaria vine in existence. Downtown Sierra Madre, California. (818) 306-1150.

MAR. 22-23 ■ California Bonsai Society Show.

The 39th annual show will feature more than 100 specimens on display, as well as demonstrations throughout the weekend. The Huntington, San Marino, California. (818) 405-2141.

OCT. 22-23 ■ International Oak Society Conference.

This triennial event will bring together people from around the world who study, nurture, and admire oaks. Presentations and tours of local oak sites are included. California Oak Foundation, Oakland, California. (510) 763-0282.

NOV. 29-DEC. 6 ■ Christmas at Filoli.

Join this week-long celebration that features holiday buffets, decorations, topiary, floral arrangements, and music. The event is centered on the traditions originated by Filoli founder Lurline Matson Roth and continued by the Friends of Filoli. Filoli Center, Woodside, California. (415) 364-8300.

COLORADO

JUNE 6-JULY 13 ■ Vail Valley Festival of Flowers.

The week kicks off with a luncheon and includes a plant sale, workshops, lectures, tours, and a wildflower hike. Free. Betty Ford Alpine Gardens, Vail, Colorado. (970) 476-0103.

A WEEKEND IN SEPT. ■ Fall Gardening Fair.

Come see the beautiful sights of autumn in the West! Free admission and parking for AHS members. Denver Botanic Garden, Denver, Colorado. (303) 331-4000.

CONNECTICUT

FEB. 22-23 ■ Winterbloom Weekend.

Delight your senses at the 16th annual festival with thousands of flowering plants, forced into an early bloom by arboretum volunteers. Bartlett Arboretum, North Stamford, Connecticut. (203) 322-6971.

FLORIDA

Epcot International Flower and Garden Festival

Walt Disney World's Epcot is having an anniversary of its own this year, and its fourth annual International Flower and Garden Festival, April 18 through June 1 in Lake Buena Vista, Florida, is being billed as the world's biggest garden party.

Highlights will include the thought-provoking "Gardening for Food Around the World" display with International Agriculture Ambassadors; garden tips from Disney horticulturists; a back-yard habitat garden for attracting wildlife; a "Big Bugs" display with sculptures up to 18 feet tall; and of course, wonderful Disney topiaries.

Created especially for this year's event is a new Festival Pavilion, which includes a presentation/workshop theater, a garden marketplace, and horticultural displays.

There will also be special weekend events in honor of Earth Day, Arbor Day, and Mother's Day, and an art in the garden weekend May 2 through 4. And each Saturday and Sunday the American Horticultural Society will continue its participation in Epcot's annual festival with its Great Gardener Lecture Series, with a wide array of topics and speakers.



COURTESY OF H. MARC CATHEY

DELAWARE

MAR. 8 ■ Artistry in Flower Gardening.

This symposium is presented by Winterthur Garden Department and *Horticulture* magazine. Includes lunch, refreshments, and admission to the museum and grounds. Winterthur Museum, Winterthur, Delaware. (800) 395-1901.

MAY 3 ■ Wilmington Garden Day. A tour of approximately 20 private gardens in the greater Wilmington area including Mount Cuba Center for the Study of Piedmont Flora. (302) 368-8626 or 428-6172.

FLORIDA

APR. 18-JUNE 1 ■ Epcot International Flower and Garden Festival.

This festival, now in its fourth year, features millions of blossoms, demonstrations, lectures, and more. (See box, this page.) Walt Disney World, Lake Buena Vista, Florida. (407) 824-6987.

DEC. 6-7 ■ Ramble Garden Festival.

Join other garden lovers for demonstrations, entertainment, and a plant sale. Free. Fairchild Tropical Garden, Miami, Florida. (305) 667-1651.

GEORGIA

JAN. 24-26 ■ Southern Gardening Symposium.

Immerse yourself in this three-day educational gathering on Pine Mountain. Callaway Gardens, Pine Mountain, Georgia. (706) 633-5186.

OCT. 4 ■ Fall Garden Festival. This free autumn gardening extravaganza includes giveaways, children's activities, and a produce contest. Atlanta Botanical Garden, Atlanta, Georgia. (404) 876-5859.

HAWAII

MAY 11 ■ Mother's Day Open House.

Visit one of Hawaii's most famous beach-front garden estates at this free open house. Tours of the garden will be offered, and botanists will be on hand to answer questions about the garden's tropical research program. National Tropical Botanical Garden, Lawai, Hawaii. (808) 742-2623.

IDAHO

OCT. 27 ■ Third Annual Reef Tour. See how this nonprofit group is propagating coral reefs for beauty, enjoyment, and

IDAHO

Reef Tour in Boise

You won't have to head for tropical waters to celebrate a year that, in addition to AHS's diamond anniversary, is also the year of the reef. The Geothermal Aquaculture Research Foundation, run by Leroy Headlee and Sally Jo Peters, is doing an enormous amount of work to protect our coral reefs. Their mission is "...to provide a showcase collection of aquatic plants, fish, and reef animals...." The third annual reef tour on October 27 is intended to show off several collections in the Boise, Idaho, area as a fund-raiser for the foundation, which grows rare corals for medical research. By propagating the coral in Idaho, the foundation hopes to preserve the rapidly disappearing ocean coral, which can no longer be legally harvested in U.S. waters. Tour guests may drive themselves to the participating homes and view unique, self-sustaining reef collections. Tickets are \$5.

medical research. (See box, this page.)
Geothermal Aquaculture Research Foundation, Boise, Idaho. (208) 344-6163.

IOWA

JUNE 22 ■ Gardens of Pleasant Valley Tour. This showcase of 10 exclusive estates also includes lunch and a button reproduction of a first-in-a-series watercolor created exclusively for the Friends of Vander Veer Botanical Center. AHS members will be admitted free to the botanical center. Sponsored by the Friends of Vander Veer and Davenport Parks and Recreation, Davenport, Iowa. (319) 326-7894.

ILLINOIS

NOV. 27-JAN. 4 ■ Holiday Display. Features wreaths decorated by area garden clubs, hundreds of poinsettias, unusual holiday plants, and an array of programs. Free parking for AHS members. Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440.

INDIANA

APR. 19-20 ■ A Celebration of Gardening. Eighth annual spring open house features a series of free garden lectures, tours, and a plant sale. The greenhouse staff will be on hand to answer gardening questions. Madeline F. Elder Greenhouse at the Indianapolis Museum of Art,

Indianapolis, Indiana. (317) 923-1331.

MAY 2-4 ■ Orchard in Bloom. Highlights of this fund-raising extravaganza include Tablescapes, Boxes in Bloom, and the Gardeners Market. AHS members admitted free. Holliday Park, Indianapolis, Indiana. (317) 290-ROSE.

KANSAS

ALL YEAR ■ 10th Anniversary Celebration. This yearlong celebration will feature special programs and displays, including the Festival of Light on December 3 and 4. Nearly 10,000 luminarias will line the garden paths in a salute to the season. AHS members receive free admission to the garden and a 10-percent discount in the gift shop. Botanica, the Wichita Gardens, Wichita, Kansas. (316) 264-0448.

KENTUCKY

MAY 3-4 ■ Habitat Helpers Weekend. Learn new and creative ways to conserve and protect local and regional habitats. Various activities are planned. (See box, this page.) \$1 off admission for AHS members. TVA's Land Between the Lakes, Golden Pond, Kentucky. (800) LBL-7077.
OCT. 11-12 ■ Color Fest. Families can enjoy nature-oriented children's activities, educational events, music, and entertainment. Come celebrate fall! Free admission and parking for AHS members. Bernheim Arboretum and Research Forest, Clermont, Kentucky. (502) 543-2451.

KENTUCKY

Habitat Helpers Weekend

Hosted by the Nature Station at Land Between the Lakes in Golden Pond, Kentucky, May 3 and 4, this weekend will offer a variety of events to help participants improve habitats for native wildlife wherever they live. Representatives of local and national organizations, as well as the Nature Station staff, will be on hand to provide useful information on conservation. Educational programs on topics such as wildlife and butterfly gardening will be presented throughout both days. Visitors can also experience the great outdoors through "hands-on" activities and displays.

LOUISIANA

FEB. 27-28 ■ The Romantic Outdoors: The Influence of the English Garden. This is the seventh annual Spring Gardening Symposium. (See box, page 10.) Admission to the house and gardens is free for AHS members. Longue Vue House and Gardens, New Orleans, Louisiana. (504) 488-5488.
OCT. 18-19 ■ Fall Garden Show. Enjoy demonstrations, seminars, displays, and a plant sale. New Orleans Botanic Garden, New Orleans, Louisiana. (504) 483-9386.

MAINE

JULY 13 ■ Gardens of the Watershed and Upper Watershed of the St. George River. Tours of wonderful watershed gardens are presented by the Georges River Land Trust, Rockland, Maine. (207) 594-5166.
AUG. 9 ■ Johnny's Selected Seeds Trial Beds Open House. Tour 13 acres of vegetables and flowers, and listen to educational lectures at Johnny's Selected Seeds, Albion, Maine. (207) 437-4357.



COURTESY OF JEFF BROWN

MISSOURI

23rd Annual Japanese Festival



Experience the color, pageantry, and sounds of Japan August 30 to September 1 at one of the largest and oldest festivals of its kind in the United States. The Japanese garden at the Missouri Botanical Garden in St. Louis is called Seiwa-en, meaning "the garden of pure, clear harmony and peace" and is the largest of its type in the Western Hemisphere. A four-acre lake is complemented with waterfalls, streams, water-filled basins, four islands, and bridges linking the shorelines.

In addition to the garden, visitors will be treated to Japanese cultural activities, including taiko drumming, kabuki, bon odori festival dancing, martial arts, tea ceremonies, contemporary clay works, ikebana, karaoke, kimono fashions, and zen lectures. There will also be

demonstrations such as bonsai, cooking, and crafts. Japanese art, including calligraphy and prints, will be on display during the festival. Visitors may also take a candlelight walk through the Japanese garden. Cost for the festival has not yet been determined; AHS members are admitted to the garden without charge.

COURTESY OF JACK JENNINGS

members receive a 20-percent discount. New England Wild Flower Society, Framingham, Massachusetts. (508) 877-7630 ext. 3501.

MICHIGAN

MAY 8-17 ■ Tulip Time Festival. This festival is an opportunity to see millions of tulips planted throughout the community. Holland, Michigan. (800) 822-2770.

MINNESOTA

AUG. 14-15 ■ Herb Symposium. This 13th annual symposium features local and national speakers, authors, chefs, and teachers. Includes demonstrations, workshops, and tours of the herb garden. Free admission to the arboretum for AHS members. Minnesota Landscape Arboretum, Chanhassen, Minnesota. (612) 443-2460 ext. 180.

MISSISSIPPI

MAR. 8-APR. 12, OCT. 4-24, DEC. 13-30 ■ Natchez Pilgrimage Tours. These tours include exclusive openings of private homes as well as mansions that are open year-round. Many other events are offered. Free half-day tour for AHS members. Natchez Pilgrimage Tours, Natchez, Mississippi. (800) 647-6742.

MISSOURI

MAY 3-4 ■ May Day Festival. Thousands of spring blooms are the backdrop for this festival, which also features a plant sale and children's activities. Free admission and free parking for AHS members. Powell Gardens, Kingsville, Missouri. (816) 566-2600.

AUG. 30-SEPT. 1 ■ 23rd Annual Japanese Festival. This cultural event is billed as the largest of its kind in the Western Hemisphere. (See box, this page.) AHS members will be admitted free to the garden (festival additional) and receive a 10-percent discount at the gift shop. Missouri Botanical Garden, St. Louis, Missouri. (314) 577-5100.

MONTANA

AUG. 3 ■ Gatiss Garden Festival. Heat got you down? Come to the mountains to enjoy this late summer garden event! Gatiss Memorial Gardens, Kalispell, Montana. (406) 755-2418.

NEBRASKA

APR. 26 ■ Spring Affair. This celebration features demonstrations, free lectures, a plant sale, and more. Nebraska Statewide Arboretum, Lincoln, Nebraska. (402) 472-2971.

MARYLAND

MAY 10 ■ Market Day. Meet representatives from the Department of Natural Resources and enjoy the plant sale. Cylburn Arboretum Association, Cylburn Park, Baltimore, Maryland. (410) 367-2217.

MASSACHUSETTS

MAY 15 ■ Hidden Gardens of Beacon Hill. This tour, now in its 68th year,

features urban gardens in this historic section of Boston. Beacon Hill Garden Club. (617) 227-4392.

MAY-JUNE 7 ■ Peak Spring Bloom.

Garden in the Woods displays the largest landscaped collection of wildflowers in the Northeast. Visitors can see hundreds of these early blooms—which change nearly every two weeks—during May and early June. AHS

LOUISIANA / VIRGINIA

Celebrating the English Gardening Influence

From their prose to their perennial borders, the British have long had a huge impact on American gardening styles and attitudes. This gardening tradition will be the focus of two major symposia to be held in 1997.

The first will be the seventh annual Spring Gardening Symposium February 27 and 28 at Longue Vue in New Orleans, Louisiana, the theme of which is "The Romantic Outdoors: The Influence of the English Garden." Keynote speakers will be Rosemary Verey, one of England's foremost garden writers and a renowned plantswoman, and Guy Cooper, an internationally recognized landscape architect.

Six weeks later you can attend the Williamsburg Garden Symposium in Williamsburg, Virginia, April 13 through 16, co-sponsored for a half-century by the American Horticultural Society. The keynote speaker for "English Influences on American Gardening" will be Sarah S. Boasberg, former chairman of the AHS Board of Directors. She will address "Genius of the Place: Our English Garden Tradition." Also speaking will be Suzanne Frutig Bales, author and a former member of the AHS Board of Directors.

NEW HAMPSHIRE

MID-JULY ■ Native Rhododendron Display. See a profusion of showy color at Rhododendron State Park/Mannadnock State Park. Jaffrey, New Hampshire. (603) 532-8862.

JULY 26-27 ■ Garden Trail Tour. This unique tour includes a competition among gardens. Sponsored by WMWV Radio. Madison, New Hampshire. (603) 447-5988 or (603) 367-4764.

NEW JERSEY

JULY 26 ■ Rutgers Gardens Open

House. The educational display gardens at Cook College will be at their finest to receive company. Rutgers Display Gardens, New Brunswick, New Jersey. (908) 932-8010.

NEW MEXICO

AUG. ■ Master Gardener Educational

Fair. Master Gardeners will offer several dozen exhibits, displays, and lectures, as well as an ongoing plant clinic and children's displays. Albuquerque Garden Center, Albuquerque, New Mexico. (505) 296-6020.

NEW YORK

MAR. 1 ■ Grow Together. This free conference features various educational workshops for New York gardeners of all levels and interests. Operation Green Thumb, New York City. (212) 788-8075.

MAR. 13 ■ Woody Plants as Perennials. Expand your gardening possibilities at this symposium. Coles Springs Harbour Laboratory, Old Westbury Gardens, Old Westbury, New York. (516) 333-0048.

MAY 3 ■ Reopening of Enid A. Haupt Conservatory. New York's crystal palace is back in business and better than ever! The conservatory is named for Enid A. Haupt, whose generosity enabled AHS to establish our headquarters at River Farm. AHS members receive free admission during the week; two-for-one admission on weekends. New York Botanical Garden, Bronx, New York. (718) 817-8700.

EARLY JUNE ■ Garden Day. There will be special activities for everyone at this public medieval garden, a branch of the Metropolitan Museum of Art. The Cloisters Museum, Fort Tryon Park, New York City. (212) 923-3700.

NORTH CAROLINA

APR. 11-MAY 11 ■ Festival of Flowers. Annual spring festival showcases thousands of flowering plants and trees. This month-long celebration features music, family activities, and guided walks. Bilt-

NORTH CAROLINA

Cullowhee Conference on Native Plants

Nestled in a valley surrounded by the Blue Ridge and Great Smoky mountains, Western Carolina University, in Cullowhee, North Carolina, has for 13 consecutive years hosted what has become the signature event for lovers of regional flora of the Southeast and mid-Atlantic regions—the Cullowhee conference on landscaping with native plants.

Held in late July, the four-day conference features lectures and discussions on various topics relating to native plants, field trips to nearby sites of botanical interest, plant and book sales, and plenty of opportunities to meet professional and amateur horticulturists, gardeners, and naturalists all bound by the same passion for knowing and growing plants native to North America.

Topics of interest at last year's conference included garden-worthy native azaleas, selecting native species for difficult sites, understanding native plant communities, preserving natural areas through conservation easements, and landscape design using native species. Speakers ranged from horticulturists and ecologists to nursery owners and landscape designers.

Competition to attend the conference—currently limited to the first 430 people to register—has become so intense that many prospective attendees now return their conference application by Federal Express the day they receive it. Last year more than 300 disappointed people had to be turned away.

Originally sponsored by the Tennessee Valley Authority, the now self-sufficient conference is organized by a volunteer steering committee.

For information about this year's conference, July 23-26, write to Sue Deitz, Coordinator, Division of Continuing Education and Summer School, 440 H.F. Robinson Administration Building, WCU, Cullowhee, NC 28723, or call (704) 227-7397.



COURTESY OF DAVID J. ELLIS

more Estate, Asheville, North Carolina. (800) 543-2961.

JULY 23-26 ■ Conference on Landscaping with Native Plants. This annual conference for native plant enthusiasts is always a sell-out. (See box, this page.) Western Carolina University, Cullowhee, North Carolina. (704) 227-7397.

NORTH DAKOTA

JULY 15-AUG. 15 ■ Asiatic Lilies Display. Come see this display at the Peace

Garden, which features self-guided tours and unusual landscaping. International Peace Garden, Dunseith, North Dakota. (701) 263-4390.

OHIO

MAR. 5-9 ■ FloralScape. At this annual gardening extravaganza sponsored by the Cleveland Botanical Garden, visitors will be treated to six acres of idea-filled gardens, as well as lectures and workshops by experts. Cleveland Convention

RHODE ISLAND

Arbor Day at Blithewold Mansion and Gardens



This is the eighth annual Arbor Day celebration at Blithewold Mansion and Gardens in Bristol, Rhode Island, which goes out of its way to make the occasion, held on April 27, a celebration of both fun and learning for the whole family.

The estate boasts more than 2,000 trees and shrubs on 33 landscaped acres. Bring kites to fly from Blithewold's 10-acre Great Lawn overlooking Narragansett Bay, or enjoy children's nature activities in the Tea House. Blithewold's wooden pandas will be available for picture-taking near the Bamboo Grove, and lecturer Keith Johnson will present a positive, nonpolitical look at basic environmental issues in "Let's Talk Trash." There will be storytelling—about trees of course—and refreshments will be available for purchase.

Adult admission is \$5; for \$7.50 you can get a guided tour of the mansion and grounds. Children (ages 6-12) can get in for \$1 and can go on the guided tour for \$2.50. Children under 6 are admitted free.

Center, Cleveland, Ohio. (216) 721-1695.

APR. 20 ■ **Splash of Spring Walking**

Tour. This free tour features a wide variety of gardens. Spring Grove Cemetery and Arboretum, Cincinnati, Ohio. (513) 681-6680.

OKLAHOMA

APR. 4-27 ■ Azalea Festival. This event, now in its 30th year, features a chili cookoff, a "run for the azaleas," and a parade on April 12. Honor Heights Park, Muskogee, Oklahoma. (918) 684-6302.

NOV. 27-JAN. 1 ■ **Holiday Display.**

Enjoy the sights of the holidays at a public garden described by garden writer Art Ode as "an inverted Babylonian fantasy." AHS members receive free admission to the garden and a 10-percent discount in the gift shop. Myriad Gardens, Oklahoma City, Oklahoma. (405) 297-3995.

OREGON

MAY 29-JUNE 22 ■ **Portland Rose**

Festival. Everything's coming up roses at this annual city-wide celebration in the Pacific Northwest! Portland, Oregon. (503) 227-2681.

PENNSYLVANIA

JUNE 21, JULY 19, AUG. 16 ■ **An**

Evening in the Arboretum. Bring a picnic to enjoy on the grounds, take a tour of the arboretum, and listen to music in the amphitheater. AHS members will be admitted free. Scott Arboretum of Swarthmore College, Swarthmore, Pennsylvania. (215) 328-8025.

NOV. 27-JAN. 4 ■ **Christmas Display.**

Visitors will follow a holiday trail through a 1,050-acre horticultural showplace, viewing poinsettias, narcissi, trees, and countless other garden elements. Longwood Gardens, Kennett Square, Pennsylvania. (610) 388-1000.

RHODE ISLAND

APR. 27 ■ **Arbor Day Celebration.**

This annual event features educational programs and fun for the whole family! (See box, this page.) Blithewold Mansion and Gardens, Bristol, Rhode Island. (401) 253-2707.

SOUTH CAROLINA

JUNE 21-22 ■ **Park Seed Trial Gardens**

at the South Carolina Festival of Flowers. Take in tours of private gardens, arts and crafts, music, food, and more. Park Seed Company, Greenwood, South Carolina. (864) 223-8555.

MAR. 20-APR. 19 ■ Festival of Houses and Gardens. Spring comes early to

COURTESY OF M. ZELONIS

COURTESY OF CARL PINGRY

TEXAS

Wildflower Days

Named one of America's "Best Public Gardens" by *Garden Design* magazine, the National Wildflower Research Center in Austin, Texas, is a 42-acre native plant botanical garden containing more than 500 species of native plants found in the central Texas Hill Country. The center is at the hub of all wildflower activity in Texas. Founded in 1982 by former first lady, Lady Bird Johnson, it is dedicated to research and education that will encourage the re-establishment of native species throughout the country.

Festival attendees on April 12 and 13 can talk with gardening experts, tour the gardens, picnic in the shade, explore the Nature Trail, climb the Observation Tower, or stroll the grounds. The event will also feature nationally known speakers, authors, and storytellers. Booths will sell native plants and seeds, as well as arts and crafts with native plant themes. There will also be plenty of outdoor demonstrations.



NEW HAMPSHIRE / VERMONT

Yellow Barn Garden Tour



COURTESY OF D.M. MORELLI

Gain entry to some of the most spectacular gardens in southeastern Vermont and neighboring New Hampshire, and visit with their owners as well as professional landscape designers. This will be the 10th year for this event, which is the primary fund-raiser for the Yellow Barn Music School in Putney, Vermont, a nationally respected professional training institute for gifted young musicians. Special features of this annual festival vary from year to year and may include flower arranging demonstrations, a house tour, plant sales, music, and more. The self-guided tours are one or two days long in late June and early July and feature up to a dozen gardens. Descriptive brochures and detailed maps are provided.

South Carolina. Enjoy it by touring public and private gardens of this historic district; led by professionally trained guides. Historic Charleston Foundation, Charleston, South Carolina. (803) 723-1623.

SOUTH DAKOTA

AUG. 28-SEPT. 1 ■ South Dakota State Fair. Longing for the country life? Treat yourself to a showcase of South Dakota's best! Includes exhibits, activities, music, and food. Heron, South Dakota. (605) 353-7340.

TENNESSEE

APR. 24-26 ■ Spring Wildflower Festival. Welcome spring by visiting one of our nation's richest pockets of natural flora. Great Smoky Mountains National Park, Gatlinburg, Tennessee. (423) 436-1255.

TEXAS

APR. 12-13 ■ Wildflower Days.

Tourists and locals will enjoy the festival at this native plant botanical center. (See box, page 12.) AHS members receive free admission, free parking, and a 10-percent discount in the gift shop. National Wildflower Research Center, Austin, Texas. (512) 292-4200.

OCT. 16-19 ■ Texas Rose Festival. Come to the rose capital of the United States for this festival extraordinaire, which includes a parade, the queen's coronation, and tea. AHS members receive a discount to the Rose Show/Rose Museum, the Coronation Matinee, and the Rose Parade. Tyler Municipal Rose Garden, Tyler, Texas. (903) 597-3130.

UTAH

SEPT. 20 ■ Autumn Festival. This cele-

bration features a farmers' market, bulb sale, crafts, and activities for children. AHS members receive free admission to the garden and a 10-percent discount in the gift shop. Red Butte Garden and Arboretum, Salt Lake City, Utah. (801) 581-5322.

VERMONT

MID-JUNE ■ Natural Orchid Bloom Display. Here is an opportunity to view delicate and rare native orchids in their natural setting. Eshqua Bog, Hartland, Vermont. Co-sponsored by the Nature Conservancy, Montpelier, Vermont. (802) 229-4425.

LATE JUNE/EARLY JULY ■ Yellow Barn Garden Tour. Private garden tours will benefit young musicians. A box lunch is available for purchase. (See box, this page.) Yellow Barn Music School and Festival, Putney, Vermont. (802) 387-6637.

VIRGINIA

APR. 13-16 ■ English Influences on American Gardening. This is the 51st annual Williamsburg Garden Symposium, co-sponsored by AHS. (See box, page 10.) Colonial Williamsburg Foundation, Williamsburg, Virginia. (757) 229-1000.

APR. 19-26 ■ Historic Garden Week. This annual statewide event this year offers tours of Ashlawn-Highland in Charlottesville as well as other historic gardens. Ashlawn will admit AHS members at a reduced rate. Sponsored by the Garden Club of Virginia, Richmond, Virginia. (804) 644-7776.

NOV. 21-JAN. 4 ■ Garden of Lights. Thousands of lights show off this garden's natural beauty. From Nov. 21 to Dec. 4, AHS members receive \$1 off the admission price and a 10-percent discount in

the gift shop. Norfolk Botanical Garden, Norfolk, Virginia. (757) 441-5830.

WASHINGTON

APR. 19-JUNE 3 ■ Spring Festival of Flowers. This six-week botanical extravaganza features an annual Florabration. Lakewold Gardens, Tacoma, Washington. (206) 584-4106.

WISCONSIN

AUG. 17 ■ Sundae in the Garden. Plant societies will provide information, while entertainment, food, and children's activities complete the event. Olbrich Botanical Gardens, Madison, Wisconsin. (608) 246-4586.

WEST VIRGINIA

SPRING-FALL ■ Gardens at the Greenbrier. This 6,500-acre estate in the Allegheny Mountains has both manicured gardens and natural scenery to delight the senses throughout the growing season. The Greenbrier, White Sulphur Springs, West Virginia. (304) 536-1110.

WYOMING

FEB. ■ Garden Glass. See horticultural glass art at Wyoming's only public garden, which includes a 6,800-square-foot conservatory. Cheyenne Botanic Garden, Cheyenne, Wyoming. (307) 637-6458.

1997 flower shows

JAN. 17-19 ■ St. Louis Flower Show. Cervantes Convention Center at America's Center, St. Louis, Missouri. (314) 569-3117.

JAN. 24-26 ■ Virginia Flower and Garden Show. Virginia Beach Pavilion, Virginia Beach, Virginia. (804) 486-0220.

JAN. 29-FEB. 2 ■ Tacoma Home and Garden Show. Tacoma Dome, Tacoma, Washington. (206) 756-2121.

JAN. 30-FEB. 2 ■ Atlanta Garden and Patio Show. Galleria Centre (across from Cumberland Mall on the Cobb Parkway), Atlanta, Georgia. (770) 998-9800.

FEB. 1-3 ■ Idaho Horticultural Show. Boise Convention Center, Boise, Idaho. (800) 462-4769.

FEB. 1-9 ■ Colorado Garden and Home Show. Colorado Convention Center, Denver, Colorado. (303) 696-6100.

FEB. 5-9 ■ Northwest Flower and Garden Show. Washington State

Convention and Trade Center, Seattle, Washington. (206) 789-5333.

FEB. 6-10 ■ Miami Spring Home and Garden Show. Coconut Grove Convention Center, Miami, Florida. (305) 666-5944.

FEB. 8-16 ■ National Home and Garden Show. International Expositions Center, Cleveland, Ohio. (800) 600-0307.

FEB. 19-23 ■ Portland Home and Garden Show. Portland Expo Center, Portland, Oregon. (503) 246-8291.

FEB. 19-23 ■ Southeastern Flower Show. Atlanta City Hall East, Atlanta, Georgia. (404) 888-5638.

FEB. 20-23 ■ Maymont Flower and Garden Show. Richmond Centre, Richmond, Virginia. (888) RICHMOND.

FEB. 20-23 ■ Rhode Island Spring Flower and Garden Show. Rhode Island Convention Center, Providence, Rhode Island. (800) 766-1670.

FEB. 21-23 ■ Arkansas Flower and Garden Show. State House Convention Center, Little Rock, Arkansas. (800) 459-7469.

FEB. 21-23 ■ Palm Beach Tropical Flower Show. Waterfront of Flagler Drive, West Palm Beach, Florida. (561) 655-5522.

FEB. 21-MAR. 2 ■ New Jersey Flower and Garden Show. Garden State Exhibit Center, Somerset, New Jersey. (908) 919-7660.

FEB. 22-MAR. 2 ■ Cincinnati Home and Garden Show. Cincinnati Convention Center, Cincinnati, Ohio. (513) 281-0022.

FEB. 22-MAR. 2 ■ Southern Spring Show. Merchandise Mart, Charlotte, North Carolina. (800) 849-0248.

FEB. 26-MAR. 2 ■ Fort Wayne Home and Garden Show. Allen County War Memorial Coliseum, Fort Wayne, Indiana. (800) 678-6652.

FEB. 27-MAR. 2 ■ Nashville Lawn and Garden Show. Tennessee State Fairgrounds, Nashville, Tennessee. (615) 352-3863.

FEB. 28-MAR. 2, MAR. 7-9 ■ Spring Maryland Home and Flower Show. Maryland State Fairgrounds, Timonium, Maryland. (410) 863-1180.

MAR. 1 & 2 ■ State Garden Show of Texas. Waco Convention Center, Waco, Texas. (800) 727-9020.

MAR. 2-9 ■ Philadelphia Flower Show. Philadelphia Convention Center, Philadelphia, Pennsylvania. (215) 625-8250.

MAR. 5-9 ■ FloralScape '97. Cleveland Convention Center, Cleveland, Ohio. (216) 721-1695.

MAR. 5-9 ■ Toronto Flower and Garden Show. Toronto Congress Centre, Toronto, Ontario. (416) 239-6774.

MAR. 5-9 ■ Washington Flower and Garden Show. Washington Convention Center, Washington, D.C. (703) 569-7141.

MAR. 6-9 ■ Wichita Lawn, Flower and Garden Show. Century II, Wichita, Kansas. (316) 721-8740.

MAR. 8-16 ■ Chicago Flower and Garden Show. Navy Pier, Chicago, Illinois. (312) 321-0077.

MAR. 8-16 ■ New England Spring Flower Show. Bayside Expo Center, Boston, Massachusetts. (617) 536-9280.



"Backyard America" host Pat Simpson will speak at the Southern Spring Show in Charlotte, North Carolina.

MAR. 13-16 ■ Greater Rochester Flower and Garden Show. Dome Center, Henrietta, New York. (716) 442-7760.

MAR. 15-23 ■ Indiana Flower and Patio Show. Indiana State Fairgrounds, Indianapolis, Indiana. (317) 576-9933.

MAR. 21-23 ■ Richmond Home Show. Fairgrounds on Strawberry Hill, Richmond, Virginia. (804) 288-5653.

APR. 3-6 ■ Ann Arbor Flower and Garden Show. Washtenaw Farm Council Grounds, Ann Arbor, Michigan. (313) 998-7002.

APR. 10-12 ■ New York Flower Show. New York Coliseum, New York, New York. (212) 757-0915.

APR. 10-13 ■ Southern California Spring Garden Show. South Coast Plaza, Costa Mesa, California. (714) 376-6594.

APR. 16-20 ■ San Francisco Landscape Garden Show. The Pavilions at Fort Mason Center, San Francisco, California. (415) 750-5108.

APR. 23-27 ■ Cincinnati Flower Show. Ault Park, Cincinnati, Ohio. (513) 579-0259.

MAY 8-11 ■ Carmel Garden Show. Quail Lodge Resort and Golf Club, Carmel, California. (408) 649-7649.

JUNE 17-JULY 6 ■ Del Mar Fair Flower and Garden Show. Del Mar Fairgrounds, Del Mar, California. (619) 793-5555.

AUG. 16-24 ■ Southern California Home and Garden Show. Anaheim Convention Center, Anaheim, California. (714) 978-8888.

AUG. 22-24 ■ Farwest Show. Oregon Convention Center, Portland, Oregon. (800) 342-6401.

SEPT. 4 & 5 ■ Southwest Horticultural Trade Show. Phoenix Civic Plaza, Phoenix, Arizona. (602) 966-1610.

OCT. ■ East West Orchid Show. New Otani Hotel & Garden and Weller Court Shopping Center, Los Angeles, California. (213) 485-1177.

plant sales

MAR. 14-16 ■ Spring Plant Sale. Mobile Botanical Gardens, Mobile, Alabama. (334) 342-0555.

SPRING AND FALL ■ Plant Sales. University of California Botanical Garden at Berkeley. (510) 642-3343.

APR. 11-13 ■ Annual Spring Wildflower Sale. Cheekwood Botanical Garden, Nashville, Tennessee. (615) 353-2146.

APR. 25 & 26 ■ Annual Plant Sale. AHS Headquarters at River Farm, Alexandria, Virginia. (800) 777-7931.

MAY 9 & 10 ■ Annual Plant and Book Sale. Denver Botanic Garden, Denver, Colorado. (303) 331-4000.

MAY 18 ■ Huntington Botanical Garden Plant Sale. San Marino, California. (818) 405-2160.

JUNE 6 & 7 ■ Hosta Extravaganza. Iowa Arboretum, Madrid, Iowa. (515) 795-3216.

JUNE 7 ■ New England Wild Flower Society Plant Sale. Garden



in the Woods, Framingham, Massachusetts. (617) 877-7630.

2ND WEEK IN JUNE ■ Fiesta Plant Sale.

Birmingham Botanical Gardens, Birmingham, Alabama. (205) 879-1227.

SEPT. 12-13 ■ Scott Arboretum Plant Sale. Swarthmore, Pennsylvania. (215) 328-8025.

Plants such as Turk's-cap lily drew 2,700 people to last year's New England Wild Flower Society plant sale.

COURTESY OF DAVID IANNARELLI (FAR LEFT), COURTESY OF DOROTHY S. LONG (LEFT)



offshoots

IN THE WILDS OF BROOKLYN

by Catherine M. Brown

Here there is no poetry, no symmetry. Here the houses are shoved together in cramped rows. They lean against each other wearily, almost like people who ride the underground trains to and from work. In quiet time, you can feel the subway's rumble beneath certain streets—an urban volcano on the brink of eruption, ready to explode in sheer frustration.

Here there are front yards of cracked cement and sad little back lots. Ginkgo trees struggle to grow—and do—from squares of dirt in the sidewalk, battling the fumes of delivery trucks, cars, and ambulances that scream toward Methodist Hospital. Here perhaps more than anywhere else, it is a miracle that these trees survive, lose their delicate, fanlike leaves in the autumn, and regenerate each spring. Their smooth, strong-smelling fruits are often coaxed into soups by Asian immigrants. The prickly fallen spawn of the sycamore, dubbed “itchy balls” by local kids, are used in rough and rousing games of tag while the maple’s “polynoses” are torn in half and split open to serve as unusual facial ornamentation.

This is my wilderness. Brooklyn, the place I was born, the place I grew up.

When my grandmother was only a few months old, her family moved from the grimy tenements of lower Manhattan to “the country.” That’s what her parents told her. But in reality, they just journeyed across a granite bridge, the Brooklyn Bridge, to a neighborhood called “Borough Park.” Although there were no parks, there were farms, fresh milk warm from the cow, perfect oval eggs from the man down the road, and unpaved dirt streets. That was more than 90 years ago.

Today my grandmother is still in Brooklyn, in the very same neighborhood. When I was a child, she would tell me stories about this place where she was raised, as though it were a land of fable. My grandmother lives in an attached house in a row of attached houses. She has a concrete front yard, and a concrete back yard lined with neat rectangles of earth. There are always flowers—hardy mums, waxy hyacinths, and roses, always roses.

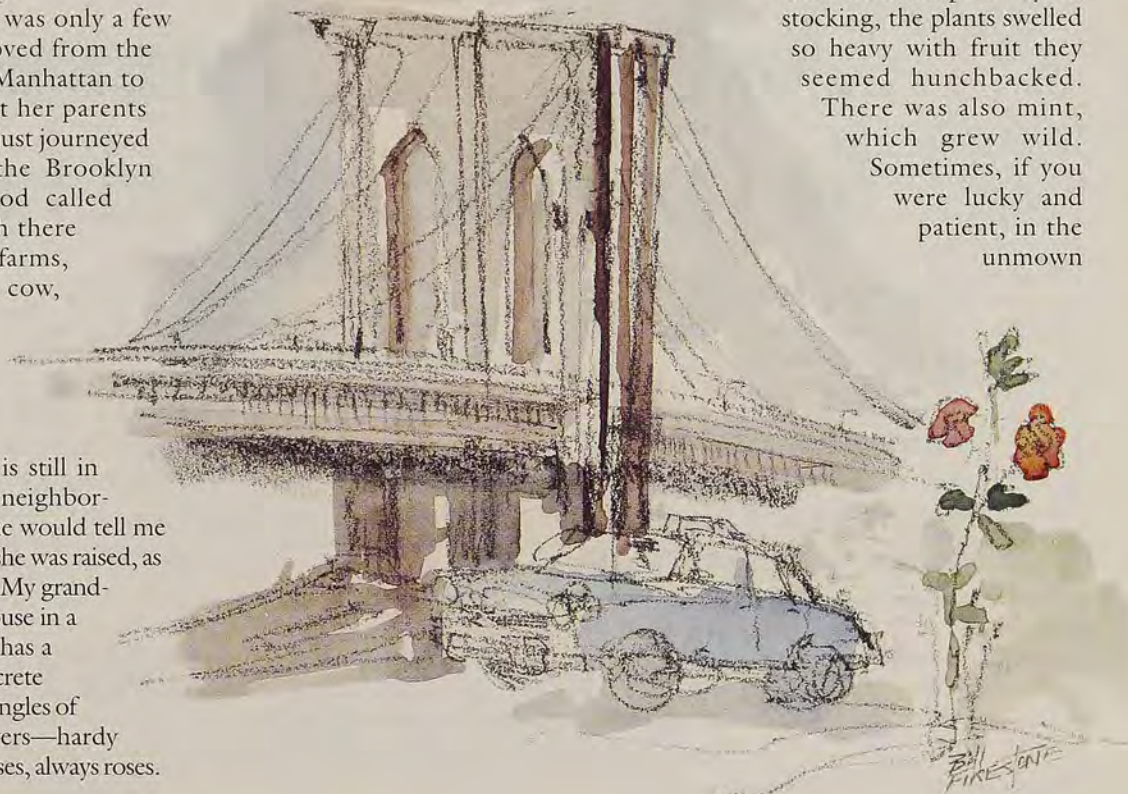
The stems are thick and woody; that’s how old they are. But the roses always come—fragrant, defiant, and as red as blood.

Yes, I too seem destined to spend my life in Brooklyn. I don’t know where else I belong. And like my grandmother, I am one of those foolish urbanites who clings to her teeny two-by-four garden with a ferocity. I grew up surrounded by two-by-four gardens just like it.

A HORTICULTURAL MELTING POT

Bay Ridge, my old neighborhood, is a smorgasbord of nationalities. Each group has its own distinct way of celebrating the earth, of growing and harvesting. Brooklyn is a kingdom of immigrants, children of immigrants, and grandchildren of immigrants. Most of them come here for a better life, for freedom. It is only after they arrive that they discover they have to give up a few things in return. Things like space, land, and soil. But oddly enough, these people adhere to the slices of what they lost in the most minute and stalwart ways. By growing things.

When I was growing up, you could easily tell a family’s nationality by what you found in their garden. Since my background was Italian, it was tomatoes we planted in a horseshoe-shaped plot bordering the patio. Tied to sticks with scraps of nylon stocking, the plants swelled so heavy with fruit they seemed hunchbacked. There was also mint, which grew wild. Sometimes, if you were lucky and patient, in the unmown



grass of Mr. Dietrich's yard next door you could pull up pungent scallions. There were zucchini and peppers. My family seemed to grow all the things that nourished Italy, all the things you could simmer into a Sunday sauce.

But the strangest part of our back yard was the fig tree. Every Italian-American garden seemed to have one, usually nurtured from a cutting from someone else's Italian-American garden. Old-timers liked to force figs upon their grandchildren, who politely accepted the pulpy fruit, tucking it into their cheeks like chipmunks, and flushed the mess down the toilet when no one was looking. Each summer was surely the last season. Each winter, the spindly, withered fig trees seemed to die. But come spring, the dry branches would sprout, and soon the fruit would be lined up on kitchen windowsills, ready to be pushed upon a new crop of unsuspecting grandkids.

Such was the cycle. Such is life. It regenerates and renews, from old world to new world, from one back yard in Bay Ridge to another in Bensonhurst. We Brooklynites are pioneers, but not of the prairie. We are settlers, but on a different frontier. Survivors from pogroms, from holocausts, from potato famines, from religious persecution, from war and strife—all find comfort here. And they also find gardens, timid little city gardens.

As the story goes, my great-grandfather on my mother's side was a farmer in southern Italy's Calabrian region. While he was off fighting a war in North Africa, his brother was to care for his farm and his family. Giuseppe returned to find ruined crops and dead livestock. He hightailed it to America where he became a laborer, pouring and mixing cement, helping to build his new country. In Brooklyn.

I come from people like this: farmers turned laborers, people

with dreams. Perhaps it explains my lowly garden and my constant amazement when basil sprouts from an envelope of pinhead-sized seeds. Or when bulbs peek out from the moist clay beyond my back door after a harsh winter. Or when I run down my aluminum steps to pinch off a sprig of parsley for my marinara sauce or serve a juicy tomato salad from my latest crop.

There's no fig tree in this garden, though. Since my husband is half-Cuban and half-Irish, it doesn't seem appropriate. Instead of a ficus out back, there is Uncle Ray's tree, a stubborn evergreen that refuses to either thrive or die. It transcends both pitiful haircuts and the family's periodic musings about hacking it down. Uncle Ray's tree has been here longer than me. It's brazen, bold, triumphant, somewhat homely, and also very, very tired. It is the epitome of an urban garden tree.

Then again, maybe we just aren't old enough for a fig—yet. Perhaps fig trees sprout spontaneously in citified back yards like lines do on our faces: suddenly and without warning. To warm up the space in case figs are in our future, I am toying with the idea of getting a Chia Herb Garden for our kitchen sill. Practical too, my husband tells me. More so than the Chia Head or ever-popular Chia Pet. Imagine bits of dill and rosemary and parsley, fresh from our wintery windowsill, courtesy of our almost unobstructed western exposure.

These plants seem too trivial to make a difference. But they do, even here. Especially here, in the wilds of Brooklyn. Nothing much happens, but then again, the whole world changes before your eyes. Concrete gardens grow and even flourish, giving us all a sense of renewal and hope.

Catherine M. Brown is a free-lance writer, still living in Brooklyn.

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gardeners' information service

A group of us would like to plant a tree as a memorial to a recently deceased friend. Is there a species that symbolizes friendship?

—B.R., New York City
Messages of Flowers, privately printed in 1917 by the author, George H. O'Neill, presents the traditional symbolism of hundreds of garden and wild plants. Acacias are said to symbolize friendship. Since most species are frost-tender in your location, you might instead wish to consider a tree that signifies remembrance or immortality.

The Japanese cedar (*Cryptomeria japonica*) symbolizes remembrance, and a symbol of immortality is the arborvitae (*Thuja occidentalis*). Japanese cedar is hardy to central Massachusetts. It has a conical shape and can attain a height of 50 feet, although there are some cultivars that will stay smaller. Its terminal cones are a half-inch to one inch wide, and the bright green needles have a bronze cast in winter.

Arborvitae is hardy to USDA Zone 2. Although some feel it has been overused, particularly in foundation plantings, there are almost 100 cultivars, including forms that are golden, variegated, dwarf, or globe-shaped.

I'm writing an article on Christmas plants and can find no information on the meaning of the name "hellebore." Can you help me?

—B.T., Cranbrook, New York
"Hellebore" is from the Greek words "helein," meaning to injure, and "bora," meaning food. These words refer to the bitter roots and leaves, which are poisonous when ingested. Even contact with bruised leaves can cause severe dermatitis in susceptible individuals. You're probably writing about *Helleborus niger*, the Christmas rose or black hellebore, an old and much-beloved garden standby. This winter bloomer can be brought indoors to enjoy if the plant is dug carefully in early fall, and can also be used as a cut flower if the stems are slit.

What can you tell me about the blue lace plant? It looks like Queen Anne's-lace, except it's sky blue. I was told that it grows wild in northern Alabama and into Tennessee, and fields of it are just mowed down.

—J.L.A., Mobile, Alabama
Blue laceflower (*Trachymene coerulesca*) is listed in older references by its former name, *Didiscus coerulens*. It is a member of the carrot family, Umbelliferae, and has finely divided leaves on slender, branching, erect stems. The small flowers are in rounded umbels two or three inches

across, held aloft on stems one to two feet high. The lacy flower does resemble that of Queen Anne's-lace, but is pale blue or lavender. The species is a native of Australia and the islands of Southeast Asia, and our references make no mention of it being naturalized in the United States. Catalogs tout it as a cut flower. It is a sun-loving annual or biennial that does best in porous, well-drained soil of moderate fertility. In greenhouses, blue laceflowers can bloom from fall to late spring. Seeds are available from several retail mail-order companies, including Burpee's, Park Seeds, and Thompson & Morgan. Two cultivars, 'Heavenly Blue' and 'Madonna', are available respectively from J.L. Hudson, Seedsman, Star Route 2, Box 337, La Honda, CA 94020, catalog \$1, and Flowery Branch, P.O. Box 1330, Flowery Branch, GA 30542, (770) 536-8380, catalog \$4.

A "low-allergy" garden was featured on a television show about the 1996 Chelsea Garden Show, but the mention was too brief for me to make note of the plants used in the garden. I'm allergic to many plants, primarily trees and grasses. I'm looking for some that I might safely grow without aggravating my allergies.

—J.Z., Harrisburg, Pennsylvania

Most plants that aggravate allergies are wind-pollinated. Pollen spread by insects—which includes that of most showy flowers, herbs, and many shrubs—is usually too heavy to be easily inhaled. The exhibit at Chelsea was sponsored by England's National Asthma Campaign, which notes some exceptions to this rule: plants in the composite (chrysanthemums and daisies) and dianthus (carnations and pinks) families, and heavily scented

flowers. Since lawn mowing and weeding aggravate allergies, they suggest ground covers such as ajuga, lamium, and periwinkle.

A list of "sneezeless" trees and shrubs developed by the California chapter of the American Lung Association includes many plants that would be hardy in your area, including such trees as tulip tree (*Liriodendron tulipifera*), pear, pine, catalpa, dogwood, fir, plum, and redbud. Among the recommended shrubs are azaleas, heavenly bamboo (*Nandina domestica*), firethorn (*Pyracantha* spp.), boxwood, hibiscus, and viburnum. Cinquefoil (*Potentilla* spp.) and sedum are suggested as ground covers.

—Neil Pelletier, Director
Gardeners' Information Service

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natural connections

LICHENS: WOODLAND WATCHDOGS

by David J. Ellis

Of all the organisms found in association with plants, lichens are perhaps the most overlooked and misunderstood. In many cases they are regarded with suspicion as possible pathogens of the trees on which they develop. In fact, lichens co-exist quite neutrally with higher plants and serve a positive role in nitrogen fixation. Their sensitivity to environmental change has led to their use as indicators of pollution and of forest diversity.

Lichens are the symbiotic association of fungi and certain forms of algae—now more commonly classified as cyanobacteria—in which the resulting organism differs markedly in form and ecology from either of the partners growing alone. The fungus gains from the chlorophyll-equipped alga's ability to photosynthesize food, while the alga appears to benefit from the buffering from climatic conditions and physical support afforded by the fungus. Together, the symbionts satisfy their needs without taking anything from the substrate to which they are attached, which can include rocks, tree trunks, shallow pockets of soil, and even the shells of tortoises and beetles. They derive mineral nutrients from dust, dew,

"Lichens are one of the few organisms that can be found on every continent in every latitude and at every altitude."

fog, or rainwater. The ability to go dormant allows lichens to survive extended periods of drought and high or low temperatures.

"Lichens are one of the few organisms that can be found on every continent in every latitude and at every altitude," says Donald Pfister, Asa Gray professor of botany and curator of the Farlow Herbarium at Harvard University. "In terms of natural distribution, there are no ecosystems without lichens." Indeed, lichens are found from the Arctic and sub-Arctic tundra, where they constitute a major part of the biomass and serve as the principal winter food for many animals, to sheltered locations in deserts, where dew or rainfall keeps them alive between long periods of inactivity.

Lichens can be divided into three general groups—crustose, foliose, and fruticose—based mainly on growth habit. Crustose lichens are little more than thin crustlike deposits clinging fast to boulders and walls. Larger and more obtrusive, foliose lichens form rosettes or leaflike structures on rocks, walls, and trees. Shield lichens, members of the genus *Parmelia* and allied groups, are typical foliose lichens. Fruticose lichens are the giants of this miniature plant world, some reaching a length of several feet. Often found in shallow pockets of soil or stony ground, they rise on hol-



low branching stalks that resemble cups or corals. Two examples are reindeer lichen (*Cladonia rangiferina*) and British soldier lichen (*C. cristatella*), named for its distinctive red fruiting tips.

Pfister says the factors important to lichen colonization vary from ecosystem to ecosystem, but include humidity, the kinds of surfaces available, and levels of exposure to, or protection from, sunlight. "A high concentration of fruticose lichens is almost always associated with areas exposed to extended periods of fairly high humidity," he says, which is why so many varieties of fruticose lichens can be seen in the forests that blanket rain-swept mountain chains such as the Appalachians and the Cascades.

Lichens are also attuned to the chemistry of their environment.

CLOCKWISE FROM TOP LEFT: DON JOHNSTON; PHOTONATS; ROB SIMPSON; DAVID CAVAGNARO; MICHAEL S. THOMPSON

A sensitivity to sulfur dioxide, a principal constituent of air pollution and acid rain, has led to their being used as an indicator of air quality. They can also say something about the geology of an area. Limestone areas tend to be richer in lichens than areas underlain by acidic rock types, Pfister notes. "Building materials tend to be basic in nature, so many buildings support lichens that do better in limestone environments. *Lichenora dispersa* is one that can be found on mortar almost anywhere in the world."

Because lichens are very slow growing, they are sensitive to environmental changes and rarely thrive in urban areas, although they can sometimes be seen in cemeteries and on undisturbed stone walls. "People are fascinated by the habitats of lichens—



Diversity in lichens: British soldier lichen, opposite top, framed by moss; two different foliose lichens on trees, opposite bottom and left; and the aptly named reindeer lichen silhouetted against the sun, below.



stone walls, statuary, gravestones, trees—but they react to finding lichens in their gardens in different ways," notes Pfister. "Some find them attractive, and others say, 'Oh my goodness, what's that yellow stuff on my wall?' The main thing I always try to emphasize is that they are not bad things."

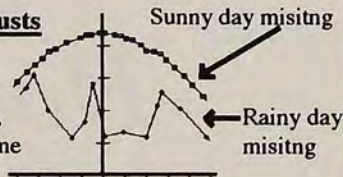
There are ways to encourage lichens to grow in the garden, but Pfister warns that lichens are not for those in search of instant gratification. "You can begin to see lichen growth within two years [of colonization], but to really see anything significant you need to give it a much longer commitment."

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

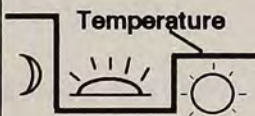
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mail-order explorer

RICHTERS: HERBAL HAVEN

The Richters catalog reminds me of those commercials for our armed services—it's not just a catalog, it's an adventure. It's an eclectic treasure trove of culinary, medicinal, and ornamental herbs, each accompanied by a colorful description that includes folklore, mythology, culinary and medicinal uses, and cultural tips. Based in Goodwood, Ontario, Richters sells seeds, plants, and even dried herbs ranging from common garden herbs such as basil and rosemary to exotic Asian herbs such as gotu kola (*Hydrocotyle asiatica*), a tropical relative of pennywort used as a skin tonic and said to have rejuvenating properties.

American classics such as horehound (*Marrubium vulgare*) and New Jersey tea (*Ceanothus americanus*) mingle with the fabled mandrake (*Mandragora officinarum*) and rampion (*Campanula rapunculus*). Its tasty roots were irresistible to the unfortunate Rapunzel's mother in the German fairy tale. There's not only breadth to Richters' offerings, but depth—pick from 50 scented pelargoniums, 29 mints, 27 types of basil, and 17 lavenders.

Sections are devoted to everlastings, gourmet vegetables, and limited offerings of organic plant foods and natural pest controls. Rounding out the 100-plus-page catalog are books on using herbs for cooking, gardening, and health, and growing herbs as a business.

Originally a bedding-plant operation, Richters was founded in the late 1960s by Otto and Waltraut Richter, a German couple who immigrated to Canada in 1953. According to Conrad Richter—who as vice president has helped his mother direct the company's activities since Otto's death in 1991—it all started because his parents grew a few herbs in the greenhouses along with the bedding plants. "Being European, my parents wanted to grow herbs for their own use. Some customers noticed the herbs and started asking to buy them," says Richter.

"It's just a really well-run company," says Karan Davis Cutler, a former editor of the American edition of *Harrowsmith Country Life* who lives in Charlotte, Vermont. "I began to call them when I had herb questions from readers, and I found the Richters to be very knowledgeable. They have a great selection of seeds, including a lot of nice ornamental herbs and a good selection of culinary ones."

"I don't know any other catalog that compares with theirs—it is such a good source of information," says Violet Baures of Fountain City, Wisconsin, who has been ordering from Richters for nearly 10 years. Bau-

res particularly likes Richters' wild tobacco (*Nicotiana rustica*) because it attracts hummingbirds and bees. She also uses a distillation made from the leaves as an insecticide.

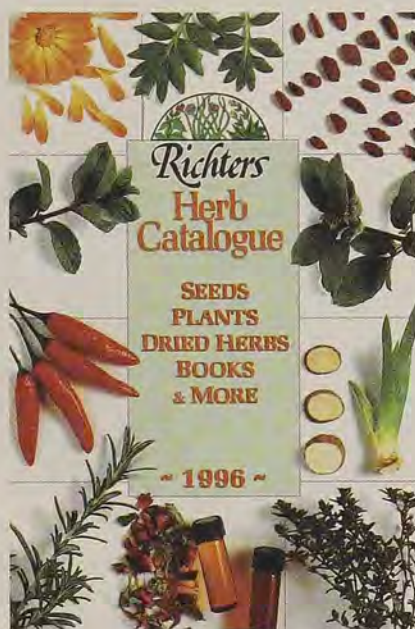
Phil Gold, who gardens in Scappoose, Oregon, says he buys every year from Richters because of the quality of the plants ("they send a really well-rooted plant"), the consistently excellent packaging ("they ship marvelously"), and the availability of the newest varieties from overseas. "They go to Europe and get the best seeds. Richters is the only source I know for 'Bodegold' chamomile [*Matricaria recutita*], which is higher in essential oils than anything you can get here."

Richters has developed a system that streamlines the process of shipping plants to its U.S. customers. Before being trucked to Buffalo, New York, for UPS shipment, all plants receive phytosanitary certificates that allow them to be sent anywhere in the United States. "It's actually easier to deal with us than with some U.S. nurseries because there are restrictions on shipping certain plants from one state to another without a phytosanitary statement, but our plants already have them," says Richter. He also points out that the exchange rate is favorable for American buyers, who currently get about 25 percent off catalog prices when paying by credit card.

Richters is reaping the benefits of the skyrocketing popularity of herbs for culinary, medicinal, and ornamental uses. Richter says people are growing more herbs because of overlapping interests and uses. "Our philosophy is that even culinary herbs have medicinal value. Plants such as rosemary and thyme have been shown to possess very powerful antioxidant properties." In putting together the catalog descriptions, Richter says, "We try to pick out what we think are the most interesting or useful characteristics for people who want to grow herbs for a particular use," but he emphasizes that the company does not offer advice on dosages or on treatment of specific medical conditions. "We are not in the business of prescribing herbs."

The nursery will be adding between 20 and 40 new offerings this year, including the Thai basil cultivar 'Siam Queen', a 1997 All-America Selections winner, and dong quai (*Angelica sinensis*), a Chinese angelica that Richter says customers in North America have been requesting for years. —D.E.

To receive a free catalog, write to Richters, Goodwood, Ontario, Canada L0C 1A0, or phone (905) 640-6677. Catalog requests can also be sent by e-mail to orderdesk@richters.com.





urban gardener

GARDENING THROUGH THE KEYHOLE

Story and illustrations by Toby Hemenway

You've slaved for many a season to bring your soil to a fine state of loamy fertility. Doesn't it rankle to turn over some of that hard-won black gold in your garden to paths? Must we give up so much plantable real estate just to make room for our feet or the occasional wheelbarrow, especially in a small yard? Paths, necessary as they are, are almost as labor-intensive as garden beds but offer none of the payoffs. They need to be weeded and edged and kept clear of tools and your kids' toys. You probably ought to mulch them, too. But will they offer up any food or flowers or foliage? No. Paths just take up space, languishing idly, empty—except for the weed seeds they collect so effectively.

A big chunk—at least half—of a single-row garden is gobbled up by paths. A raised-bed garden, though more efficient, sacrifices “only” about a third of its ground to walkways. That's a lot of land to leave unused all season while the rest of your garden swells with delicious vegetables and burgeons with tender greens. All that valuable dirt, twiddling its thumbs until the few moments you deign to favor a particular spot with the high-tech waffle print of a Reebok or the more prosaic slap of a gum boot.

Here's a way to minimize your loss of loam to paths: Bend that straight garden bed into a circle or, more accurately, into a horseshoe shape. This simple trick of topology shrinks the path to a tiny keyhole pattern, reducing it to a central place to stand and a short stretch of path for access. This space-saving garden layout is called a keyhole bed, an idea I first encountered in books on permaculture by Bill Mollison. When I built one for our local Master Gardener's chapter, the county Extension agent was so excited by its inherent possibilities he volun-

teered me to set up about six more. (Me and my big mouth!)

With a keyhole bed, all your plants are accessible from the center. Instead of lugging a weed bucket and your tools from one end of the bed to the other, you simply stand in the middle. Glorious! Just slowly turn in place and survey your botanical empire—no need to take up long-distance running as training for the gardening season.

BUILDING A KEYHOLE BED

Create a circle of soil about eight to 12 feet in diameter pierced on one side by a path to the center. There's not a lot more to it. Keyhole beds can be created by shoveling fertile topsoil into the requisite horseshoe shape. But I prefer to build them by layering up, lasagna-style, leaves or other compostable organic matter, newspapers, and soil. If you do this, let the bed mulch down for a few weeks before planting. (See the May/June 1996 “Urban Gardener” for details of the lasagna technique.) A brief plug for mulching versus tilling: Laying down thick layers of mulch mimics nature's process of building soil from the top down. It doesn't bring weed seeds up to the surface the way tilling does. Tilling also pumps a lot of oxygen

into the soil, burning up organic matter much faster than in unturned earth. You can keep untilled soil light and fluffy by adding new layers of mulch each fall.

In a keyhole bed, the plantable zone is about as wide as in a standard raised bed: three to five feet across. Remember you're doing all your picking and weeding from only one side of the bed—the inside—but as I'll explain, you can plant your veggies farther out than a comfortable arm's reach. The access path into the bed can be narrow, a foot or so wide, but the central circle of path needs to be big enough to turn around in, about 18 to 24 inches in diameter.

By wrapping a three-by-15-foot bed into a circle, you've just cut the path down from about 22 square feet (figuring an 18-inch-wide path down one side) to five square feet. My lazy bones like those num-



A design for a keyhole bed planted with cabbages, tomatoes, and pathside greens and herbs fits in a space eight to 12 feet in diameter.

bers. Only a seventh of the ground is surrendered to paths. I won't torture you with the math that would prove this to the skeptical—as any editor knows, equations in a text put half the readers to flight.

Keyhole beds have aesthetics as well as mathematics going for them. Bringing curves into a garden eliminates that “soybean field” quality that emanates from ruler-straight beds and rows. Nature abhors not just a vacuum but also a straight line. With

Bringing curves into a garden eliminates that “soybean field” quality that emanates from ruler-straight beds and rows.

occasional exceptions such as falling apples and other gravity-driven phenomena, nature never takes the shortest distance between two points. She meanders, she drifts in lazy undulations from here to there. Even crows don't really fly straight. It's humans who have become enamored of the unswerving, direct route. But in our gardens, we're meeting nature more or less on her terms. Just as a straight stretch of interstate invites narcolepsy, linear gardens are monotonous too. Curves and circles give surprise and whimsy to a garden. What a bonus that they happen to be more efficient!

PLANTING A KEYHOLE GARDEN

Here are some tips for planting a keyhole bed. Put the crops you'll pick most often closest to the center. That means herbs, greens, and other veggies you'll be nipping daily should border the central path. Behind these go plants that get picked regularly over the growing season: tomatoes, peppers, bush peas and beans, eggplants, etc. These are still easy to reach without a stretch. At the back of the bed install your long-term crops and those that are harvested only once. These include potatoes, carrots, and other root crops, plus what I call the Red Queen veggies—cauliflower, iceberg lettuce, and cabbage—because it's “off with their heads” at harvest. These back-row plants might be a bit out of reach if the bed is more than three feet deep, so what I am about to suggest will appall those gardeners who are zealous adherents of the double-dig method. To harvest these plants, step onto the bed (gasp!) and pluck. One footprint per season isn't going to totally annihilate soil porosity and structure, but I do apologize for this heresy to double-dig guru John Jeavons and his followers. If the very idea makes you break out in hives, you can keep a small “stepping” board handy to better distribute your weight.

Keyhole beds abound with creative possibilities. Dedicate a whole circle to tomatoes, with a few companion culinary herbs, such as basil or chives, at the inner margin. Or use the circular geom-

etry to balance sun and shadow: Place crops that wilt in midsummer's full blaze to the east of taller sun-lovers, sparing the tender ones from scorching afternoons. To trellis vining plants, curve a length of fencing around the bed. If you're buffeted by salty coastal gales or the desiccating winds of the plains, plant tall sturdy crops like Jerusalem artichokes or a stocky breed of sunflower on the outside of the beds as a windbreak. Of course, you can also use keyhole beds for flowers too, and stand, shears in hand, in a circle of brilliant color as you contemplate filling a vase or three.

But perhaps you see a weakness in this seemingly golden plan. Most yards are square, you say, and these beds are round. What about the margins, those little triangles of unused ground at the back corners of these supposedly marvelous beds—isn't that wasted space? Not at all. Every garden needs insect-attracting flowers, or perennial nitrogen-fixers such as Dutch clover, or a good wind-and-weed barrier at the edges to stop weed seeds blowing in from your neighbor's less-than-immaculate land. You could fill the margin with robust mulch-providers like *Crotalaria* or comfrey. It could be a perfect spot for a small fruit tree. You've saved so much space by going keyhole you can afford to be lavish. Or you can just expand the bed to fill the corners. There's no rule that says a keyhole bed can't be square rather than round; it's the central path that defines it.

You say you have room for more than one keyhole bed? Then extend them to the left and right of a central walkway. Or build a mandala garden, a set of four to eight keyhole beds arranged in a circle with one more bed in the center and a path entering the mandala from one side. With a shape suggesting the Eastern designs that symbolize the universe, a mandala garden combines beauty and efficiency to create a magical effect. You'd be hard-pressed to cram more growing space into less area, and the more mystically inclined would say a mandala garden brings a bit of spirituality to a piece of ground.

Whatever your reason—a small yard, a love of curves and non-linearity, efficiency (and its corollary, laziness), or simply a desire for a little magic in your garden—keyhole beds are an outstanding way to pack more plants, more enchantment, and less work into your growing space.



A mandala garden—several keyhole beds in a circle 24 to 30 feet in diameter—expands on this efficient use of space.

Resources

HIGH DESERT PERMACULTURE, *The American Gardener*, May/June 1996, pages 16-23.

PERMACULTURE: A DESIGNERS' MANUAL by Bill Mollison, 1988, Tagari Publications, Tyalgum, Australia. The original 576-page bible. **PERMACULTURE RESOURCES**, 56 Farmsville Road, Califon, NJ 07830, (800) 832-6285. For a catalog of their materials, call the above toll-free number. They can also put interested people in touch with local experts.

Toby Hemenway is a free-lance writer who lives in Oakland, Oregon.



plants and your health

ECHINACEA: NOTHING TO SNEEZE AT

Story and photographs by Steven Foster

Here we go again. That drippy nose, those achy bones, and that generally annoying cascade of symptoms experienced at one time or another by everyone—colds and flu. These acute viral infections of the upper respiratory tract include nasal congestion with discharge, irritation, and sore throat. If the infection persists we may develop gastrointestinal symptoms produced by various viruses that lead to influenza, commonly known as the flu. The common cold or flu may also include coughing, sneezing, sore throat, lung congestion, pressure headaches, and fevers. Left alone, colds and flu generally abate in five to seven days, though symptoms such as congestion or cough may last for up to two weeks.

Simply put, there is nothing known to cure the common cold. Yet if we look at the scientific literature on herbal treatments, coupled with what is known about plants' traditional uses, we can find numerous herbs that can help relieve or prevent symptoms. Such herbs include those defined as immunostimulants. Chief among them is *Echinacea*.

ECHINACEA IN THE COLD AND FLU SEASON

If you are one of the growing numbers of consumers in the United States who are turning to herbs for relief from minor, self-lim-

iting ailments, *Echinacea* is a word you know. Retailers and distributors of natural foods said *Echinacea* was the number one dietary supplement-herb product they sold, in poll results published in the May 1995 *Health Foods Business* magazine. In Germany, herbal medicines—often called phytomedicines—are among the drug options available to physicians, due to a more favorable regulatory climate. In 1994, German physicians prescribed *Echinacea* products more than 2.5 million times, mostly to treat or help prevent colds or flu.

Echinacea is not a single plant, of course, but rather a genus of nine species in the aster family. Three species have entered the commercial herb trade—*Echinacea angustifolia*, the narrow-leaved purple coneflower found on our Western prairies; *E. pallida*, or pale purple coneflower; and *E. purpurea*, the common garden perennial. The latter two species are both native to our Midwest. In the case of *E. angustifolia* and *E. pallida*, only the roots are used medicinally, and unfortunately, they are primarily harvested from the wild, although there is now some commercial cultivation of both.

Although *E. angustifolia* is mentioned most often in English-language herb literature, *E. purpurea* has now emerged as the most widely used coneflower. The entire world's commercial supply is cultivated, rather than wild-harvested, with both the roots and the flowering tops of the fresh and dried plants being used. *E. purpurea* was developed as a commercial medicinal species in Germany in the late 1930s, and as a result, most of the scientific literature on this species, including



Echinacea angustifolia, above, is often wild-collected for medicinal uses, but the commercial supply of *E. purpurea*, right, is cultivated.



reports of pharmacological and clinical studies, has been published in Germany.

HOW IT WORKS

About 350 scientific studies on *Echinacea* have been published in the past 60 years. When taken internally, it seems to serve as a non-specific stimulant to the immune system in several ways. For example, it appears to increase the number and activity of certain cells in the blood—macrophages and granulocytes—that “ingest” invading pathogens or particles. Researchers say it also inhibits virus production, activates cell growth factors, increases T-cells (white blood cells that can kill foreign cells), and shifts the ratio of T-cell types in favor of those best able to fight infection. In other words, through a series of stimulating mechanisms, it helps the body defend itself against minor viral infections, especially colds and flu.

Because the effects of nonspecific immunostimulants fade relatively fast, repeated doses are required.

CLINICAL STUDIES

A number of recent clinical studies in Europe have focused on using *Echinacea* to help prevent colds and flu, or to reduce their symptoms. A 1992 double-blind, placebo-controlled study in Limburg, Germany, involved 180 volunteers. The researchers found that an alcohol extract of *E. purpurea* root helped lessen the severity and duration of flulike symptoms. Volunteers who received the equivalent of a 900-milligram dose of the extract had

***Echinacea* helps the body defend itself against minor viral infections, especially colds and flu.**

statistically significant improvement compared with the placebo group. Volunteers who received half that dose didn't have any statistical improvement in symptoms compared with the placebo group, thus showing the importance of proper dosage.

Physicians looked for clinical conditions that could be objectively measured, such as nasal inflammation, swelling of the lymph glands, and tongue-coating, and found that they improved after three to four days in the group with the higher dosage. They also took note of symptoms reported by patients, such as a sense of weakness, chills, perspiration, burning or tearing eyes, congestion and nasal secretions, sore throat, ear pain, muscle aches, and head pressure.

Another German study published in 1992 looked at the influence of a fresh juice extract of *E. purpurea* on the course and severity of cold and flulike symptoms with patients whose T-cell ratio indicated a greater susceptibility to infections. Over an eight-week period, 108 patients received a dose of two to four milliliters a day. Compared with the placebo group of 54 patients, the treatment group had a decreased frequency of infections, a longer interval between infections, a reduction in the average duration of colds, and less severe symptoms.

What these clinical studies suggest is that *Echinacea* preparations can not only reduce the severity and duration of colds, but may also help prevent them in the first place.

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

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The Building Envelope

**You don't have
to destroy
the natural
landscape to
build on it.**

story and photos by Andy Wasowski


Several years ago, my wife and I had an epiphany. Like many Americans, we work out of our home, unfettered by the need to be in someone else's office between certain set hours. And that meant, we giddily realized, that we were free to live anywhere we liked. All we needed to continue earning our humble living was a computer, a phone, and a fax. We immediately began speculating on where we wanted to spend the rest of our lives.

Being a native Texan, Sally was drawn to the Hill Country west of Austin. This rolling countryside (LBJ Country) is a vibrant riot of wildflowers during much of the year and has a rugged splendor that we both find very appealing. Unfortunately, our search for a piece of land consisted of one dead-end after another. All around us, we saw tracts where native vegetation had been stripped away, natural undulations leveled, and all other distinguishing features erased. It had all been replaced by lawns and neat beds of impatiens, begonias, and pansies. The beautiful Hill Country was being turned into Anywhere, USA!

Homogenized Landscapes

This is not unique to the Hill Country. Every year, all across America, countless thousands of acres of natural landscapes—woodlands, meadows, desert habitats, coastal scrub, and savannas, on both rural acreage and suburban lots—are transformed into home sites. And in the process the unique character and beauty of these locales are destroyed.

The culprit is our traditional method of home construction. Bulldozers scrape the land clean of indigenous understory trees, shrubs, wildflowers, and grasses. Shade trees that are left standing very often die anyway within the first few years because of damage inflicted upon them during construction. When the home is completed, topsoil is



Owners of this home in Desert Highlands near Scottsdale, Arizona, replanted the transition zone with vegetation salvaged from the site, saving money and creating a seamless landscape.





During conventional construction, above, mature woodlands and rich understory are cleared away. Small saplings are now planted around the homes that displaced these woods in Virginia. When natural vegetation is left on site, opposite, trash, building supplies, and harsh chemicals, including the washout from concrete mixers, may contribute to the plants' premature demise.

trucked in, bringing with it a host of noxious weeds. Later, of course, the property is relandscaped—at great cost and usually with plants that have little or nothing to do with what had grown there originally.

The good news is that a handful of builders, architects, and homeowners are responding with the “building envelope”—a technique that preserves the integrity of the natural area. In effect, the new home looks as if it had been placed gently down in the midst of its undisturbed surroundings. A true sense of place is retained.

Setting A Good Example

Ten years ago, Gerald and Rosalie Cyrier had never heard of the building envelope, yet they understood it instinctively. When they purchased their wooded half-acre lot in Bedford, Texas, it and all the other unsold lots around them were full of indigenous plants: post oaks, American elms, Texas mulberries, blackjack oaks, and a lush ground cover of Virginia creeper. The Cyriers were determined to preserve their landscape and found a builder who shared their feelings. “We thought we were setting a good example for our future neighbors,” says Rosalie today. “But when the other lots were sold, they bull-

dozed most of the trees and put in lawns!”

There is a humorous side to this story—Gerald Cyrier was a lawn-mower salesman!

How the Envelope Works

The process is simple. First, using your plat, you place your house and driveway so they’ll make as little impact on the property as possible. The home, driveway, and all other constructions, such as patio or pool, are designated the private zone.

Now indicate a band, running anywhere from five to 15 feet wide, all around the private zone. This is the transition zone, and it’s where the workers, the equipment, and all materials are confined during construction. Later, it will be revegetated.

Enveloping the transition zone—hence the name of this building technique—is the undisturbed natural zone. It consists of all your indigenous vegetation and land features, such as washes, rock formations, etc., and it is sacrosanct.

To protect the natural zone, a fence should be erected, separating it from the transitional zone. This is the key to the success of the building envelope: No workers, equipment, or building activities are permitted outside of that fence. Often, sturdy

chain-link fencing is used, but you can use anything from snow fencing to simple rope barriers. Clearly, the more formidable the fencing, the more assurance you'll have that the envelope will be respected.

Before construction begins, record all desirable plants on the site, both inside and outside the envelope. Mark them with various colored tapes that indicate whether they will be dug up for replanting at some other site or time, left in place, or, yes, cut down. The hard truth is, you can't save everything. The cost of transplanting a good-sized tree will force you to be very selective.

From the outset, there must be a clear understanding with your contractor that the natural zone will be protected. If you think a sincere promise and a firm handshake will suffice, think again. Put everything in writing.

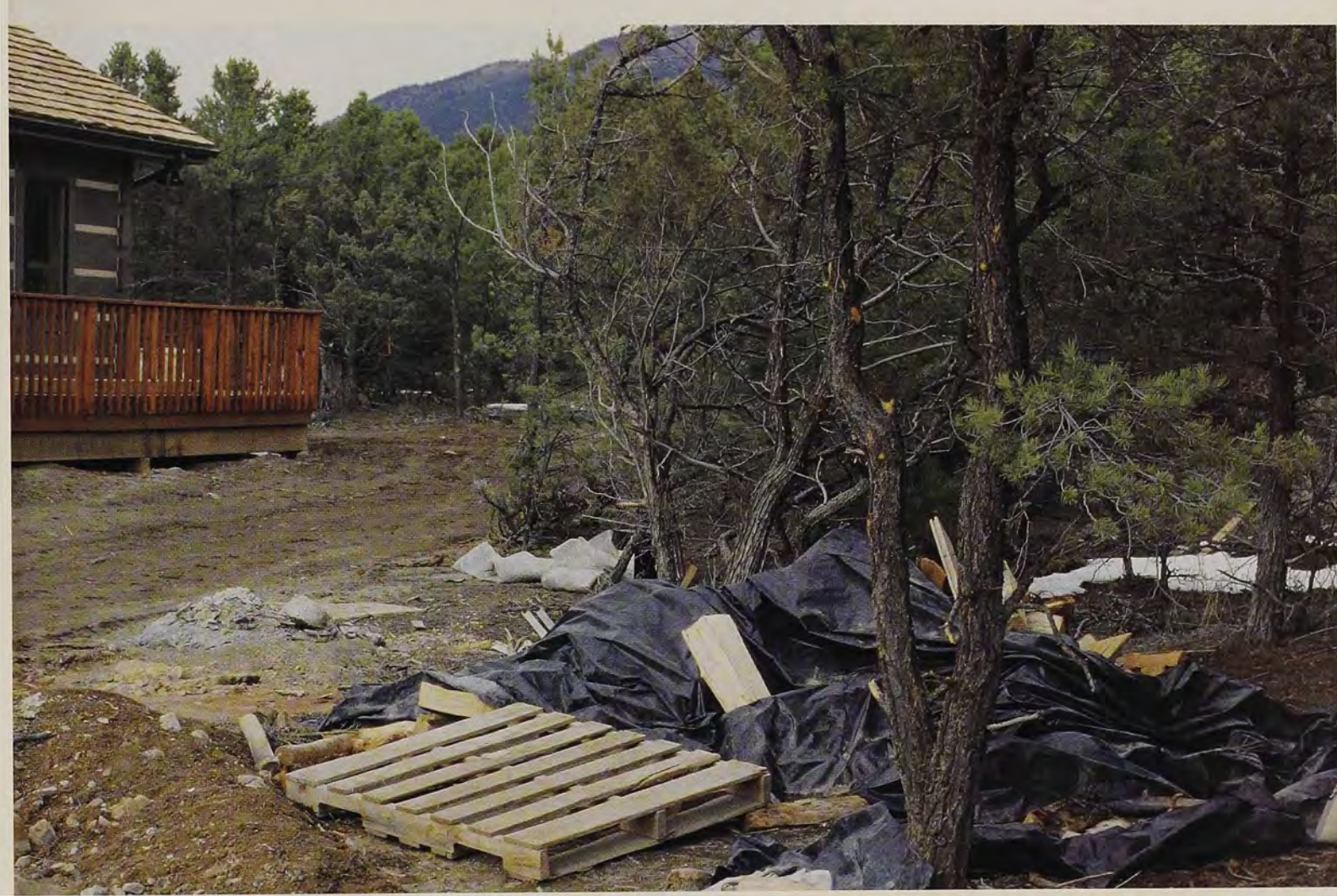
That includes specific replacement costs on your major plants—the ones that, if destroyed, would affect the financial as well as aesthetic value of your property. If the contractors' people injure or kill a plant, they deduct the cost from the bill,

or they replace the plant. And that does not mean replacing a 30-year-old shade tree with a five-gallon sapling. If the contractor refuses, interview another one.

The plants that will be saved for later replanting can be taken out of harm's way. Put them on a drip system or give them pe-

In traditional home construction, bulldozers scrape the land clean of indigenous understory trees, shrubs, wildflowers, and grasses.

riodic deep soaks with a hose to keep them healthy. Ground covers may be too numerous or too small to be efficiently transplanted. In that case, contract with a local nursery to grow them for you from seeds or cuttings taken off your land. By the time construction is completed, the





ground covers should be ready to be put in.

In many cases, even the soil within the envelope is scraped up and set aside, to be spread out around the home after construction. If this sounds too extreme, consider this: That soil is full of indige-

County Public Works, says that preserving the natural beauty in and around Aspen is so important that the building envelope has become a part of the county's building codes. "This is a major resort," says Newland, "and our natural, rural scenery is a vital part of the Aspen experience."

Nowhere is the building envelope better demonstrated than in Scottsdale, Arizona, thanks in large measure to Gage Davis. In 1981, Davis—an architect, landscape architect, and urban planner—combined his skills and introduced the envelope at Desert Highlands, an 850-acre residential community situated at the base of picturesque Pinnacle Peak. The land is a prime example of the ruggedly beautiful Sonoran Desert. The topography consists of ravines, washes, dramatic rock outcroppings, and fields of boulders. It is also alive with a wide variety of wildlife: desert tortoises, colorful chuckwalla lizards, roadrunners, and hummingbirds galore, as well as a vast palette of indigenous flora, from armies of stately saguaros and luminescent backlit chollas, to the softer, gentler palo verdes, creosotes, fairydusters, penstemons, and verbenas.

"The desert is a terribly fragile environment," says Davis, "easy to destroy and very slow to recover. It's possible to

It's not just individual homeowners who are using the envelope. Municipalities are also adopting this approach.

nous seeds, nutrients, and microorganisms that are important to the future vitality of the site. Whatever you do, do not bring in fill dirt or foreign topsoils.

Envelope Communities

It's not just individual homeowners who are using the envelope. Municipalities are also adopting this approach. In Colorado, Tom Newland, deputy director for Pitkin

go out into the desert and see clear signs of Indian encampments a hundred or more years old."

Davis's goal was a subtle blending of people, structures, and desert habitat into a harmonious and aesthetically pleasing community. The envelope is deemed so important to the preservation of this habitat that using it is a condition of property ownership. But this is no hardship; people buy at Desert Highlands because of the building envelope, not in spite of it.

The True Cost of Land-Scraping

The major criticism of the building envelope comes from builders who claim it is too expensive to execute. Tamara Calabria, who holds a masters degree in environmental studies from the University of Georgia, dismisses this argument, saying that while this method may add something like five percent to the overall construction costs, this is more than offset by the savings incurred by not having to recreate a landscape from scratch. "The type of revegetation that normally happens after conventional construction is not only

costly," she says, "but often poorly done from both an aesthetic and environmental point of view."

In 1994, Calabria did a research paper on the costs of revegetating natural lands. She used as her case study a residential community in South Carolina. Analyzing a typical 10-meter-square area (about 900 square feet), Calabria found, literally, a wealth of indigenous plant species: canopy trees, understory, ground covers, and wildflowers—more than 40 different species in all. She then determined replacement costs for each plant, factoring in both the size of the plant and installation costs. The entire 10-meter area, she found, contained plants with an estimated replacement value of \$18,000. "Clearly," she concluded, "it is far cheaper to preserve the original landscape."

Practicing What We Preach

Our own quest for a personal Eden came to an end on Thanksgiving 1994 when we went to Taos, New Mexico, to celebrate with friends. On a mountainside 30 minutes north of the picturesque town we

The home of Cindy Hollar and Kevin Tennison is tucked snugly away on this Arlington, Texas, lot, opposite. They interviewed four architects before finding one enthusiastic about the envelope concept. A neighbor glimpsing the dramatic view from their living room, below, regretted that her own lot had been cleared before she and her husband bought it.



Bringing in the Law—Thoughtfully

Whether a city or county should pass legislation to prevent destruction of the natural landscape during construction is clearly a touchy issue. How can a community balance the interests of developers—who bring in tax dollars—with the environmental benefits of trees and other plants?

Minnesota's Task Force on Community Tree Preservation wrestled with the dilemma and concluded that there is no single answer. But they have published a booklet designed to help ordinary citizens or town council members pose the right questions.

"Every community is different," observes Department of Natural Resources Urban Forester Jonathan Stiegler, "and they have to decide for themselves what is the appropriate balance. And even within a small area of Minnesota there will be a lot of variation in tree species. Some communities may be in an oak savanna, while others may have nothing but lower-value trees."

The booklet, now in its second printing, suggests who should be involved in shaping such ordinances, notes possible pitfalls, and has a resource page pointing readers to additional information. For example, the Minneapolis-St. Paul metropolitan area has several communities with ordinances that the task force considers well-written, and that have either withstood legal challenges or been carefully crafted by parties representing a balance of interests. Typically, trees of a certain size are tagged for protection or replacement. "What we wanted to avoid," emphasizes Stiegler, who helped produce the booklet, "was publishing a single, boiler-plate ordinance. Each community needs to develop its own."

To receive a free copy of the booklet, write to Jonathan Stiegler, DNR Division of Forestry, 9925 Valley View Road, Eden Prairie, MN 55344.

—Kathleen Fisher, Editor





found three acres of piñon pines, junipers, and ponderosa pines...and a picture postcard view of Taos Mountain. It took us all of three seconds to decide to grab it. A year later we began to build.

For most people, selecting the right architect is a major decision. Cindy Hollar and Kevin Tennison, in Arlington, Texas, interviewed four architects before finding one who was enthusiastic about the envelope concept. We were luckier.

Our architect was someone I'd known since we were kids in New Jersey; his mother actually introduced my parents to each other back in the old country. Now living in nearby Santa Fe, he was totally simpático with the envelope approach, and produced a knockout design for our adobe hacienda that fit comfortably onto our sloping land. He avoided the prime trees and situated the well, propane tank, and septic system where they would be least disruptive.

An equally important decision is picking the contractor. He must not only do the quality work you demand, he must do it in conjunction with the envelope. Let's face it, even the best intentioned builder will be bound by habits learned over many years of doing it the old way. Your average builder


just isn't happy unless he can clear a swath around the building site as wide as a football field. Needless to say, establishing the fence line evoked an especially passionate series of debates. "I just can't work in such a confined area," we heard time after time. "That tree is not going to be cut down," we responded.

The trick is to be firm but reasonable. You need his good will and cooperation. We all made concessions; we agreed that one tree we especially loved really had to go, while he discovered that, yes, by golly, he could work in less space. In the end, he admitted that the job had been a valuable learning experience for him and he looked forward to doing more building envelopes.

Using the building envelope takes some foresight and planning. But in the end, when you are sitting out on your patio, enjoying the arias of the songbirds and the aerobatics of the butterflies—and when you realize that you don't miss your lawn mower at all—you'll agree that preserving your natural habitat was one of the smartest things you ever did.

Andy Wasowski's latest book with his wife, Sally, is Native Gardens for Dry Climates (Clarkson Potter).

It took the author and his wife all of three seconds to decide to buy this site outside of Taos, New Mexico, opposite, because of its unspoiled beauty. They were determined to disturb it as little as possible. A transition zone five to 15 feet out from the house and driveway was fenced off and marked with a ribbon announcing in Spanish and English that the natural "envelope" was off limits, above.



*Proven
Performers*

Succulents

**Life under meager
circumstances has led
to adaptations
wonderful and bizarre.**

b y R o g e r T . B r o w n

With a bloated, potatolike
caudex surmounted by spine-
covered branches
and beautiful waxy pink
flowers, *Pachypodium
succulentum*, opposite, makes
a real conversation piece.

Nature is often amazing, but she exceeds all bounds in the machinery of plants that dwell in arid lands. Most of these plants are called succulents—which is one of the largest plant groups growing in the wild with some 200 genera—and their mechanism for survival is called crassulacean acid metabolism (CAM). CAM plants actually thrive on limited water consumption; other plants are comparative spendthrifts that use and waste water freely.

Plants, like people, have skin, and that of CAM plants is richly endowed with wax that helps prevent water loss through evaporation. Plants also “breathe,” not like us, but as air moves in and out of millions of tiny pores in this skin. Most plants open their pores in the daytime to drink in carbon dioxide-rich air, which fuels food-making processes. Because daytime temperatures are usually quite warm in the growing season, considerable water escapes through all these open pores. Plants that

don’t have CAM metabolism lose as much as 90 percent of the water captured by their roots. Their demanding environments have made succulent plants much smarter—they wait to open their pores until after sunset when temperatures are cooler and conditions are much more humid.

All night long, succulent plants drink in carbon dioxide, storing it as organic acids in fluid-filled vacuoles. This prevents carbon dioxide from escaping back into the night air as they fill their internal cupboards with these compounds, which will be consumed the next day when the temperature has risen and the plants’ pores have closed.

Living Stones

Some of the most diverse and fascinating succulents available to the container gardener are lithops, from the Greek for “stonelike.” These masters of camouflage sport an infinite variety of colors and markings. Some have streaks that match the soil,





Although *Pachypodium lamerei*, right, can grow to 25 feet outdoors, it can be domesticated as a house plant. Living stones such as *Lithops salicola*, above, are masters of camouflage in their southern African habitat.



How to Grow Succulents

Succulent plants are not difficult to maintain if you follow a few time-honored guidelines. Soil mixes need to be light and porous to provide a repository for water, fertilizer, and air. Think of soil as a sponge holding this triad of life support. Its only other function is mechanical, that of holding the plant up so it won't tip over. Container-grown plants should not receive their nutrition from potting soil. Soil-borne nutrition is only necessary under free root run conditions in the wild. You can provide everything a plant needs to grow properly by adding fertilizer and trace elements to irrigation water. In this way food can be stopped when succulent plants need to rest.

At least half of your soil mix should be coarse perlite, pumice, or hydroponic clay such as Turface. Soil should be uniform throughout the pot or there will be zones of unequal water retention. Do not tamp soil down around your plant or you might suffocate it. We all have different microclimates in which we cultivate our plants, so you must experiment to find a soil mix that works for you and stick with it.

Using fine gravel as a top dressing will reduce water loss from potting soil and improve the appearance of succulent plants. Aquarium gravels are often used because the diversity of color allows you to pick one that will showcase your plant.

Fertilizer should be provided on a constant-feed basis at one-fourth the strength recommended on the label. Many growers select a formula that already contains necessary trace

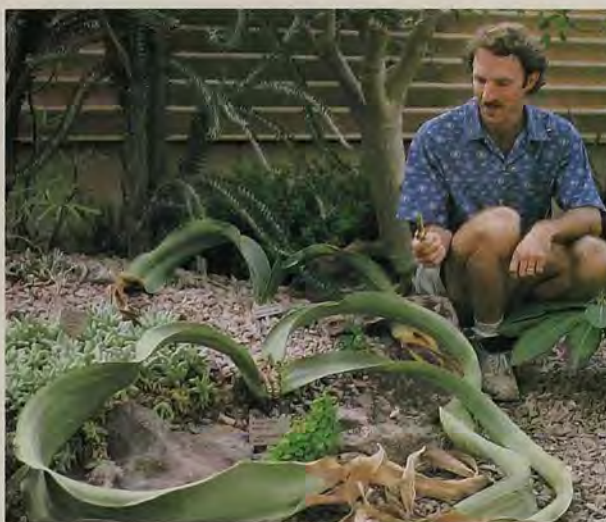
elements. Withhold food during plant resting periods, usually from November to March. Watering frequency depends on temperature, air movement, and soil mix. Generally, during the growing season water should be given every seven to 10 days, and during the resting season every three to four weeks.

The exception to this rule are lithops, which are killed by improper watering more than by any other factor. They should only be watered in the spring from March 1 until July 1, and in the fall from September 1 until they finish blooming, usually the middle of November.

Remember to schedule repotting of succulents for a time when the pot is fairly dry, and don't resume watering for at least three to five days. Moving a succulent that is in wet soil or watering immediately after repotting will invite plant loss from root infections.

Many growers give their plants a summer vacation outdoors. Most succulents do not like temperatures lower than 45 degrees, but there are exceptions to every rule. Succulents can be used as specimen or bedding plants in frost-free climates, where a free root run will produce phenomenal growth rates in many of our favorites. It is important to remember that subsoil areas should drain freely. Waterlogged soils will kill plants faster than you can replace them. In colder climates, the hardier species of the genera *Sedum* and *Sempervivum* are popular for rock gardens and walls.

—R.T.B.



Unearthly species from two succulent genera: *Pseudolithos migiurtinus*, left, noted for the intricate patterning on its rounded to elliptical stem, and *Welwitschia mirabilis*, above, under the watchful eye of John Trager, curator of desert plants at the botanical gardens of the Huntington in San Marino, California.

while others look like the stones littering the ground next to them. Their nickname among hobbyists is “living stones.”

Lithops consist of a pair of succulent leaves fused at their centers and continuing into the ground as a corky, carrot-shaped taproot. All that remains above the soil are the leaves, but they have transparent windows through which light penetrates into the body, fueling food production.

Flowers, which open at midday, are either yellow or white (with the exception of the unusual pink blooms of *Lithops verruculosa* ‘Rose of Texas’). The flowers are often larger than the plant, and some are even sweetly scented.

Bloomtime is the final hurrah in a lithops’ annual cycle. Soon its living essence will journey downward from rock-hard leaves to the roots. Each year a new leaf or sometimes even two emerges from the fissure between the old ones, which shrivel into papery shells. Under the right conditions, lithops lead long lives and develop into tight clusters. Some clusters have been estimated at 75 to 100 years old.

These unique plants are native to Africa from Zimbabwe south almost to the Cape Province of South Africa. They grow in desolate, arid sites where they are broiled by the unrelenting sun and sandblasted by

desert winds, but have also adapted to grasslands where they may be flooded for days on end during the rainy season.

The darling of lithops collectors for its delicate beauty is *L. optica* ‘Rubra’. This gem is very rare in nature, but has been produced by the thousands in some American nurseries. It often greets you late in the year with pink or ruby-tipped white flowers.

L. salicola is recommended for the collector who wants to grow a large cluster. One of the more primitive forms, it can live to a ripe old age, expanding to several hundred heads. The plants are various shades of green, yellow, and lilac-gray, and the flowers are snow white.

Another choice species is *L. aucampiae* var. *koelmanii*. Its face is a swirl of orange-brown to brick red, while dusky dots peppering its surface help mimic red-stained quartzite pebbles found in its native habitat. The flowers are medium yellow and fairly large. This species grows heads larger than most lithops, and the unique color makes it one of my favorites.

Euphorbias for Fascinating Foliage

Plant lovers often limit their selections to plants with pretty flowers, even if they bloom for just a day or two. Many succulents have no flowers worth speaking of, yet

their foliage is interesting at all times. Few plants are handsomer than *Euphorbia francoisii* with its green leaves tinged with red, pink, and white. Many have an unusual mosaic design cobwebbing their surface and, as an added bonus, interesting thick stem bases, or caudexes, that make them natural sculptures.

What strikes me most about *E. francoisii* is the perfect symmetry of the tiny cyathia, as the inflorescences of euphorbias are called. A large flower can be so exciting that we don’t pay attention to its structure. When these are in bloom I take the time to marvel at the elegance of the anthers and stigma, and the wonderful way the stamens curve to fit the flower. Between the flowers and the beauty of the leaves, *E. francoisii* definitely pays full rent.

Easy-Care Haworthias

Closely related to aloes, haworthias are wonderful house plants. They are very much at home on a windowsill that receives indirect light, and many will thrive as tiny decorator plants near windows or on plant stands bathed in artificial light. An aura of mystery, magic, and medicine surrounds them in their native southern African habitat. Natives in the Zulu tribe of South Africa plant *Haworthia limifolia* on their

rooftops as a charm to protect their homes from lightning. Other haworthias are used to treat common intestinal ailments.

H. koelmaniorum is one of my favorites. It forms a rosette of pointed leaves with upper surfaces that undulate with wavy, irregular transverse bands. Not to be outdone, the bottom leaf surface is peppered with curious, small, glossy translucent bumps, or tubercles. In generous light it will blush to a warm deep chocolate with a hint of royal purple. Beauty of shape, texture, and color make this plant an easy choice for the succulent connoisseur.

Another beautiful species is *H. emelyae* (formerly *H. picta*). Rings of textured leaves fit tightly together to form a low flat-topped rosette. Several rows of cross-hatched lateral lines lurk beneath the surface of each succulent leaf, outlining windows designed to transmit light deep into its interior. "Picta" means painted, and this is certainly a colorful species. Beneath the translucent tubercles you will discover deep green merging with red, pink, bronze, and sometimes lilac. *H. emelyae* does, however, need a fair amount of sunlight to dress up in its brightest finery.

Sources and Resources

The Cactus and Succulent Society of America is a nonprofit organization devoted to disseminating knowledge and recording previously unpublished data on these unique plants. It publishes a bimonthly journal and holds biannual conventions that attract botanical scientists, explorers, and hobbyists from around the world. Membership is \$30 per year and includes a subscription to the *Cactus and Succulent Journal*. For more information, write to Cactus and Succulent Society of America, Inc., 566 Gepke Parkway, Des Moines, IA 50320-6818.

Mail-order sources of succulents include:

ARID LANDS GREENHOUSES, 3560 West Bilby Road, Tucson, AZ 85746. List free.

LIVING STONES NURSERY, 2936 North Stone Avenue, Tucson, AZ 85705, (602) 628-8773. Catalog \$2.

MESA GARDEN, P.O. Box 72, Belen, NM 87002, (505) 864-3131. For list, send two stamps.

New Plants from Africa

Continual discoveries from the drier regions of Africa let us container gardeners quench our desire for novel plants. Southern and East Africa and Somalia have produced some of the most exciting new succulents of this century. Among these are members of the *Pachypodium* genus. Many have sculptured caudexes, emerald green foliage, and unique waxy flowers. *Pachypodium* means "thick foot," referring to the thickened base and stems that give these plants a Picasso-esque shape.

There are more than 13 species and 20 or more subspecies. *Pachypodium succulentum* is excellent for beginners. It is easy to grow from seed and tolerates a wide variety of environments. Flowers may be pure white or shaded with pink to red stripes. It forms a swollen parsnip-shaped root that can be raised above the soil line to make the specimen more interesting.

The most common *Pachypodium* in cultivation is *P. lamerei*. Young specimens exhibit astonishingly rapid growth as house plants. The single unbranched trunk is decorated with a series of spirally arranged tubercles bristling with three stiff needlelike tan spines. An umbrella of linear emerald green leaves covers the top of the stem, inspiring the nickname Madagascar palm. Flowers are snow white and scented.

If I had room for only two species they would be *P. brevicaulis* and *P. namaquanum*. *P. brevicaulis* is the ultimate in stem compression. Its caudex is only a couple of inches tall and rises from the soil like a flat, knobby cake. Each knob produces a rosette of lovely green, tailored leaves somewhat like those of privet. In the spring brilliant butter yellow flowers are borne high above the caudex on sturdy stems.

I have to vote for *P. namaquanum* as the most striking of the genus. This plant is restricted to an area on each side of the Orange River in Namaqualand, along the border between Namibia and South Africa. Its chunky stem is armored by a thick network of long V-shaped spines and topped by a wig of ruffled lime green leaves. The flowers, creamy yellow with brownish purple margins, are unremarkable, but all hobbyists need some plants that are beautiful even when not in bloom.

The Unique Avonia

Another exquisite plant that comes from Namaqualand is a dwarf named *Avonia quinaria*. A pioneer life form with no parallel anywhere in the plant world, it has a

Native to eastern and southern Africa, the desert rose (*Adenium obesum*), right, is easy to grow and bears masses of lush waxy-looking flowers over a long season.

Aloe descoingsii, far right, a dwarf aloe from Madagascar, forms clusters of spiny, succulent, blue-green leaves covered with white spots.

matted crown of tiny stems, dressed with silvery scales, sitting atop a strange potato-shaped caudex. Add to this picture large showy flowers that can be white, pink, or purple. The top of the plant is often covered with flowers having huge pollen-filled anthers that appear to be hovering in thin air. This illusion is created by the thin transparent filaments supporting them.

Most of the finest things in life have some drawbacks, and for this plant it is rot-sensitive roots. *Avonia* should be underpotted in rapidly draining soil and watered with restraint. I keep my specimens in tight pots and bottom-water them. The roots draw water through capillary action, and I do not have to risk wetting the caudex. Until recently *Avonia* was lumped into the genus *Anacampseros*, and plants may still be listed by their old name in some catalogs.

Starfish Flowers

Stapeliads are a group of succulents characterized by flowers that look like starfish. Many produce a carrionlike perfume to attract flies as pollinators. They have twin seed pods shaped like long narrow canoes. As the pods dry, they turn upward and open by the seam along the outer side. This reveals light brown seeds with thin silvery parachutes pointing toward the sky,



waiting to sail forth on the slightest breeze.

I love sphere-shaped succulents, and one of the finest is *Pseudolithos migiurtinus*. The surface of its lime green body looks as if it has been delicately etched with an intricate pattern of tiny circles and hearts. Each plant has a different pattern, and in some there is a four-sided symmetry with each side repeated as a mirror image. The tiny, deep burgundy flowers are borne in clusters, and the tips of the starfish arms have pendulous hairs that swing in the breeze, luring insect pollinators.

Pseudolithos is native mostly to Somalia, where the political situation makes it almost impossible to acquire botanical material for cultivation. One of the four known species may already be lost. *Pseudolithos* seedlings are, however, available occasionally at nurseries specializing in rare plants.

The Long-Lived Welwitschias

Plants are genetically programmed to make substances that keep them from living beyond their predetermined life span. Death is not a passive wearing out in response to the passage of time, but an active suicide caused by cellular chemistry. Yet some plants apparently lack any instructions on how to get old and die. *Welwitschia* species are some of the few nearly

immortal plants. There are welwitschias living in the Namibian desert today that were seedlings nearly 2,000 years ago.

It has been said that if plants grew on Mars, they might look like welwitschias. Imagine a plant with a turnip-shaped headless body and a relatively shallow root system. Add to this picture two strap-shaped leaves perpetuated in conveyor-belt fashion so they get longer and longer each year. Throughout the plant's incredible life span, it will produce only these two leaves, the ends tattered and frayed by the wind.

The Adaptable Aloes

Aloe is an African genus whose adaptable character allows it to colonize desert, mountain, grassland, and beach. It is superbly adapted to harsh environments with its tough spiked leaves, unpalatable juice, sunken leaf pores, winged seeds designed for wind dispersal, and brilliant flowers to attract pollinators. Aloes are popular among landscapers in frost-free climates, and their juices are used in many skin-care products because of their soothing, moisturizing, and healing properties.

My favorite aloe is a tiny clustering dwarf from Madagascar called *Aloe descoingsii*. Its blue-green leaves are one to two inches long and covered with glossy


white polka dots that look like pearls pasted on the leaf surface. Growth is rapid, and soon the pot will be filled with clusters of miniature rosettes. Lovely scarlet-orange flowers are borne on the terminal portion of a seven-to-10-inch stalk.

Desert Rose

Adenium obesum and its subspecies are spectacular flowering shrublets native to tropical Africa and parts of the Middle East. Swollen stems and roots produce graceful caudexes that could compete with some of the finest modern sculpture. Their large, waxy, brightly colored flowers are among the most striking in the succulent realm.

Nicknamed the desert rose, this plant is blessed with both beauty and ease of culture. It adapts readily to containers if kept above 48 degrees. Over a long season it bears masses of two-and-a-half-inch flowers that are pale pink to deep red on the petal margins, usually fading to white toward the throat. If kept warm and well-watered, it will grow and flower throughout the winter.

Roger T. Brown, a doctor of veterinary medicine in Omaha, Nebraska, has been growing succulents for 20 years and has a special interest in propagating rare species.



*Proven
Performers*

Arilbred Irises

**The last half-century
of breeding has
produced exquisite,
adaptable hybrids.**

b y T o m T a d f o r L i t t l e

**Crossing pure aril irises
with bearded irises has
made them easier to
grow. One of the most
popular tried-and-true of
these so-called arilbreds
is 'Sheik', opposite.**

**A fascinating group of irises
can be found**

in the hills and mountains of the Middle East and west central Asia. These are the aril irises, so named because of the white collar (or aril) found on their seeds. The arils include the spectacular oncocyclis species—noted for large, globular blooms that are richly patterned with dramatic stippling and veining—and the more delicate, graceful regelias. Solomon's "lilies of the field" may very well have been oncocyclis irises. One oncocyclis, *Iris susiana*, made its way as early as the 16th century to Europe, where it was known as the "mourning iris" for its dark gray markings. This plant is now apparently extinct, although it could still be found in cultivation in the 1960s.

Botanic work and collection of aril irises began in earnest during the latter part of the 19th century. They were loved for their striking beauty but proved difficult to maintain in European collec-

tions. They become dormant during the summer and will quickly die if exposed to wet conditions while dormant. Even when protected from summer rains, they are unpredictable garden plants at best, often dwindling and dying for no apparent reason.

Throughout this century, plant breeders with an interest in aril irises have focused their work on crossing arils with the ubiquitous and adaptable bearded irises, a long-time staple of European and American gardens. These aril/bearded hybrids are called arilbreds. The early arilbreds, although showing some of the characteristics of both parent types, were neither as beautiful as the arils nor as easily grown as the bearded irises. Breeding was hampered by the fact that most of these early arilbreds were infertile, or nearly so.

In the 1940s, a modest number of fertile arilbreds were produced by Redlands, California, amateur breeder Clarence G.



Iris aurantiaca, right, is an oncocyclus species native to Syria. The large dome-shaped standards and wide, recurved falls are typical of many of the species, which are difficult to grow outside their native habitat. The red-brown 'Tecopa', center, is more than half pure aril. 'Genetic Artist', far right, is an easy-to-grow arilbred descended from the graceful regelia species.



How to Grow Arilbreds

In most of the western United States (and other areas with similar, dry climates), arilbreds can be grown exactly the same as the common bearded irises. Arilbreds like a sunny location, good drainage, and soil that is not too rich in organic matter. The fact that arilbreds require less water in summer than virtually any other type of iris makes them ideally suited to low-water-use landscapes.

The rhizomes should be planted with their tops at or very near the soil surface. If organic matter is used in preparing the beds, it is best to use only thoroughly composted material and work it in deeply. Watering should be infrequent but deep. Do not use a summer mulch, as this prevents air and light from reaching the rhizomes and may encourage rot and other problems. In USDA Zone 5 or colder, a winter mulch is beneficial, but it should be removed before spring growth begins, around the time that crocuses bloom. Gardeners in warmer areas should not mulch in winter, when the mulch can invite rodent and insect pests.

Many growers apply a low-nitrogen fertilizer several times in spring, beginning as new growth emerges and ending as the irises bloom. Some fertilize again as fall growth begins. Organic gardeners use bone meal or mineral-based fertilizers. Top dressing with manure or compost is not recommended.

Many arilbreds form dense clumps relatively fast and may need division more often than bearded irises. Every other year is a good schedule, but annual division is probably even

better. Remove dead leaves regularly, but don't cut back green leaves at any time during the growing season.

In the eastern and southern United States, where summer rain can be abundant, the arilbreds will appreciate some extra attention. Probably most important is adequate soil preparation. Add sand or grit to improve drainage, lime the soil so it will not be excessively acid (arilbreds prefer a neutral or slightly alkaline pH), and plant above the surrounding terrain so water will not collect near the rhizomes. Raised beds or ridges make good planting sites. Withhold supplemental water in summer if the plants are receiving an inch or more weekly from rain. In extreme cases, the rhizomes can be dug and kept in a cool, dry place for a month or so to avoid heavy summer rains.

If, despite precautions, the irises become infected with soft rot during the summer, the problem can be alleviated by trimming away the affected portions of the rhizome and treating the exposed surfaces with household bleach or a bleach-containing cleanser. In many cases, this can be done without removing the iris from the ground.

Because adaptable arilbreds are a relatively recent phenomenon, some experimentation is worthwhile. Different cultivars will respond to local conditions differently. If you live in an area of summer rain, acid soil, or harsh winters, begin with a few cultivars and note which seem best suited to your garden.

—T.T.L.



White. Using this “fertile family” as a basis for selective breeding, hybridizers have been steadily improving arilbred irises for the past five decades. Many now have flowers nearly as beautiful as the pure arils and are easy to grow, especially in regions with dry climates.

Despite their beautiful blooms and improved adaptability, arilbreds have yet to achieve wide distribution in the nursery trade. This is partly because of insufficient exposure and partly because many iris growers have heard how difficult the pure arils can be to cultivate and mistakenly assume that the arilbreds have similar requirements.

Recommended Arilbreds

In spite of their low profile, there are hundreds of different arilbred cultivars currently in commerce. The most popular are the fertile, half-aril descendents of White’s breeding breakthrough. These come in an extraordinary array of colors and forms. Most have the large, domed standards (upper petals) and wide, recurving falls (lower petals) of their oncocyclis ancestors. Colors range through the whole spectrum of iris hues (except the true pink of some bearded irises): white, yellow, brown, brick red, wine red, violet, blue,

gray, and even olive. These irises often sport a large, dark signal spot on each fall—another distinctively aril trait. Some are intricately veined and dotted.

Another important category of arilbreds comes from crossing the half-aril types with bearded irises. The resulting plants will usually grow anywhere beard-

Many iris growers have heard how difficult the pure arils can be and mistakenly assume that arilbreds have similar requirements.

ed irises will grow, and they show some of the desirable features of the modern bearded irises, such as increased branching, buds, and ruffling. However, being further removed from their aril ancestry, they show fewer of the exotic aril flower traits—often just a touch of veining or a bit of recurving to the falls. Most arilbred medians (small arilbreds with dwarf bearded ancestry) are in this category.

Arilbreds are most popular in the southwestern United States, where the hot dry summers ensure that even those that are less adaptable will succeed. Still, many arilbreds perform well outside this region. A recent informal survey of arilbred enthusiasts (published in the Aril Society International *Yearbook* in 1994) resulted in a list of 10 recommended varieties for cooler (and often wetter) climates.

'Bionic Focus' has lavender standards and light red falls, with a maroon signal

can Iris Society each year vote awards to superior arilbred cultivars. The two highest awards that are exclusively for arilbreds are the C.G. White medal (for arilbreds that are at least half aril in ancestry) and the William Mohr medal (for those that are at least one-quarter—but less than half—aril).

Recent winners of the C.G. White medal are 'Syrian Princess' (with near-white standards, beige falls, and a brown-black signal), 'Persian Padishah' (a violet

Arilbreds are most popular in the southwestern United States. Still, many arilbreds perform well outside this region.

and beard. It was ranked highest by growers outside the Southwest.

Three well-tested violet-toned arilbreds are on this list. 'Bangladesh' is deep blue, with a pinkish cast to the falls. 'Desert Monarch' is medium violet with a darker area near the beard. 'Martha Mia' is violet-blue, with a dark brown signal.

Two newer arilbreds show the remarkable advances that have been made in arilbred color patterns. Both are white irises with contrasting signals. 'Zerzura' is an almost pure white with near-black signals. 'Seraph's Jewel' is a striking snow white iris with a large maroon signal. It shows to perfection the lovely globular form of the oncocyclus.

Two arilbred medians are also on this list of recommended varieties: 'Loudmouth' (a dainty mulberry violet with riotous white and black veining on the falls) and 'Omar's Torch' (a purple bitone with a bright gold beard).

The final two arilbreds on the list are varieties from the late 1930s and early 1940s that have stood the test of time. One is the delightful, delicate 'Oyez', parchment colored but completely overlaid with a network of raspberry-purple veins. The other is 'Elmohr', a large-flowered mulberry purple. 'Elmohr' is only one-quarter aril, so it shows few aril characteristics, but it is a very desirable garden plant, impressive among its tall bearded relatives.

The accredited judges of the Ameri-

bitone with a dramatic dark purple signal), 'Khyber Pass' (pale violet standards and intricately veined brown falls), and 'Syrian Jewel' (similar to 'Persian Padishah', but in lighter tones). Three of these four were created by the late Howard Shockey of Albuquerque, a long-time leader in aril and arilbred breeding.

Recent winners of the William Mohr medal are 'Solomon's Glory' (yellow with a violet-brown spot), 'Smoke With Wine' (a blend of smoky yellow and wine red), 'Omar's Torch' (described earlier), and 'Jewel of Omar' (lavender standards and greenish yellow falls with a large brownish spot). All of these are arilbred medians. Three of the four were created by Carl Boswell of Concord, California, who is known for his work with the smaller bearded irises as well as these small arilbreds.

In addition, there are quite a few popular tried-and-true arilbreds that deserve mention. 'Esther the Queen' is both beautiful and adaptable. It has light blue-violet standards and falls that are almost olive-gray, with a brown beard and signal area. 'Sheik' is a veined combination of violet and brick red. Two nice red-toned arilbreds with more than one-half aril ancestry are the brownish 'Tecopa' and the reliable and popular 'Big Black Bumblebee', medium red-violet with a huge black signal. 'Stars Over Chicago' is a delicately shaped blend of electric blue-violet and

Sources and Resources

The Aril Society International is a group of about 300 arilbred enthusiasts, most of whom live in the western United States. The society's newsletters and annual yearbook are indispensable sources of information about aril and arilbred irises, their culture, breeding, and recommended cultivars. Each summer the society conducts a members-only plant sale, which is one of the best and most extensive sources for these types of irises.

Membership dues are \$10 per year. Inquiries or dues should be sent to the membership secretary, Barbara Figge, 6805 Kentucky Court NE, Albuquerque, NM 87110.

The Aril Society International has a site on the World Wide Web that includes photographs of arils and arilbreds, cultural information, lists of recommended cultivars and award winners, and more. The address is <http://www.rt66.com/~telp/asi.htm>.

Local garden centers are likely to have only bearded irises, or perhaps some Siberians. Arilbreds are grown mostly by specialist mail-order nurseries.

In addition to the Aril Society International plant sale, the following commercial nurseries specialize in arilbred irises:

MCALLISTER'S IRIS GARDENS, P.O. Box 112, Fairacres, NM 88033. Catalog \$1.
PLEASURE IRIS GARDENS, 425 East Luna Azul Drive, Chaparral, NM 88021. Catalog \$1. (505) 824-4299.

gold, an intriguing color combination it inherits from its more pastel parent, 'Genetic Artist'. 'Onlooker' has pale lilac standards and cream falls, with a large blackish signal. 'Engraved' is only one-quarter aril, but shows an extensive pattern of violet veins on a white background. It is a rampant grower.

Tom Tadfor Little, a technical writer/editor at Los Alamos National Laboratory, has been growing irises (including arilbreds) for 20 years. He has served as yearbook editor for the Aril Society International since 1994 and as the society's president in 1995. He can be reached via e-mail at telp@Rt66.com.

Ellen's Lot

**An aunt with an agenda
tries to coax nature back to a
sterile development.**



b y S a r a S t e i n

My niece Ellen put out a feeder and no birds came. She wondered if it was because the lot was bare, but I didn't believe a lot could be as bare as she described it. She asked if I would design a landscape for it, but I didn't suppose she meant more than the usual doorway shrubs. It seemed to me she had to be exaggerating when she said the soil was too poor to support anything but crabgrass, and I was right: It supported sow thistle and mugwort, too.

I'm of the generation before suburbs. I've never lived in a condo or tract housing. Ellen has never lived anywhere else. She's used to sights that hurt my eyes: land that's dirt, landscapes that come by truck. Where Ellen lives, in a new development on endless acres of former corn field in New Jersey, the planting is installed in a day, the way living rooms are furnished. The lawn goes in last, rolled out like carpeting. That's done here sometimes, too, on model homes; I wasn't surprised by the method. Nothing, though, had prepared me for the new chic of suburban style.

The houses in Le Parc are unabashedly pretentious, faced in stone and brick, arched and pillared, extended by decks, sun rooms, and gazebos. Each is big enough for a family of 10. What is modest, compared to the houses, is the amount of land they sit on. Lots are one-half acre, and on Ellen's cul-de-sac they necessarily narrow toward the front, where the houses elbow each other uncomfortably across the driveways. The back is ringed by houses glaring at the yard. The effect is unsettling, like standing in the middle of a portrait gallery where oversized and overdressed notables stare down from every wall.

When I first stood thus scrutinized in Ellen's yard, the last of the new homes on her street was still under construction. The outer ranks of houses, though, had been built six years earlier, time enough for growth to shield or soften the intrusiveness of those large homes with all their window eyes. Yet the plantings had just the opposite effect. They displayed the houses as a setting displays a gem. Here gold shrubbery puffed up a deck, there twisting trees

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dramatized an entrance, and in front of almost every house stood a specimen making a statement on the lawn.

In fact, there weren't a lot of lawns: just one.

The entire development was seamless grass—unfenced, unhedged, unbroken by grove or thicket, and merely dotted here and there with young evergreens that, by their tentative placement, seemed to be suffering from agoraphobia as though they would have pulled together into homier groups if they hadn't been rooted to the spot.

The only discolored patches in this carpeting were the construction site, still brown dirt, and Ellen's lot. Her ground had been seeded, of course. One doesn't get a certificate of occupancy for a new home in those parts until the lawn's been planted. But for drainage purposes, the natural grade had been elevated with a foot and a half of clay so hard that even the veil of weeds it wore failed to cover it, and black mold grew over it in splotches.

There was one tree: My Tree, Ellen called it, not knowing its proper name. This sole survivor, a decrepit locust, was the only natural feature of the property unless you counted the ditch along the rear boundary.

As for manmade features, there was a concrete path from drive to door, two condensers beside the chimney, and, in the front yard, a metal postlike construction that looked vaguely electrical.

Between the obtrusiveness of the surrounding homes and the ugliness of these appurtenances—and the sad tree, the open ditch, the moldy ground—I failed to appreciate the reason Ellen had chosen this particular site. She had to point it out to me: the views.

Sure enough, across the street and beyond that rank of houses was a glimpse of remnant field. And to the rear, beyond more ranks of homes, a strip of forest formed a distant backdrop.

Ellen wanted that field, that forest in her yard.

On a recent visit to Texas, I spent a morning in the Hill Country. It's a particularly handsome landscape of short oaks and rugged junipers. The junipers, the same species Easterners call red cedar—*Juniperus virginiana*—grow larger there than they do here, and as they age develop a strong shape and muscular branching. Our junipers grow simply conical or columnar; by the time they're old enough to develop the Texas specimens' eccentric sculpture, the forest has moved into their once-open domain and shaded them out.

The Hill Country is too rocky, hot, and dry for mixed deciduous forest ever to take over. It remains studded with these trees and carpeted with short grasses and flowers. I took pictures of the hills. Studying them now, imagining them with houses, it seems crazy to truck in a landscape when one is already in place.

I've seen two examples in which the natural vegetation was left intact as homes were added to the landscape. One was a community in the Sonoran desert where the developer had carefully maintained a 20-foot "envelope" around each house as it was

built. Outside this minimal space required for construction, the desert remained untouched. Homeowners had to agree not to disturb the desert habitat and, since most had chosen to replant the envelope itself to match the background, it looked as though someone had simply painted in the homes on a Sonoran canvas. The same thing had been done in Wisconsin by the owners of a home in the woods, but to even stricter specifications: The construction envelope extended a mere 10 feet from the foundation; the house appeared to have been dropped into place among the oaks. [Editor's note: For more on the building envelope, see page 26.]



The clay the builder had used to grade the lot was nearly impermeable.

This should be the goal: houses set within the natural landscape. Then there would be a very different way to approach the design of even a bare lot with no natural features. Instead of thinking centrifugally, outward from the house, one might think centripetally, inward from the surrounding landscape toward its vacant center. Had the worn fields of Ellen's development simply been abandoned, how might the distant forest have reclaimed them over time?

They would not have recovered the vacancy by merely dropping their seed. The soil in such places is too sterile and dry to receive most forest species. The open area would have been reclaimed at its perimeter first by woodland edge species, mostly small fruiting trees and shrubs. Almost all these hedgerow sorts are dispersed by birds; the toughest of them would in this way have gradually repopulated the center. Joining them would be wind-borne herbaceous species—milkweeds, asters, goldenrods, and grasses. The fields, in fact, would for a while be reminiscent of the Texas hills, but this pioneer community differs in detail and is a transient population in our moister region. Although the junipers are the same species, the shrubs are ones that grow on acid soil, not on lime, and the grass is taller. Oaks, often the first permanent forest species to reseed the evolving woodland, grow

among the junipers in Texas. Here they eventually replace them. For 30 years or more, though, an old-field succession is among the most beautiful landscapes I know.

In a purely practical way, a pioneer community was about the only one that made sense on Ellen's lot.

If you are designing a foundation planting, you can choose greens freely from hundreds of varieties that cover the salad spectrum from dark spinach to pale endive and purple radicchio—of loose or crinkled texture, matte or glossy finish—and add a touch of flowers if you wish. Never mind that the salad bowl is made of clay. Soil can be dressed to suit—mixed with sand for better drainage, with peat to hold more moisture, or with compost to improve fertility as well as texture. “Good garden loam” is to planting what vinaigrette is to cooking: the basic sauce for greenery.

You can find the recipe for this mix in any gardening primer. Once you have mastered it, you can devote your time to presentation: thus the fancy salad that surrounded Ellen's lot. Ellen could not, however, amend the soil on a whole half-acre. And the reality of her soil turned out to be even worse than her initial evaluation of it. It was the worst dirt I have ever seen. It contained no earthworms, no organic matter that earthworms could eat. It was as pale as sand, but not crumbly like sandy soil.

We dug two holes about 20 inches deep, one in the front yard and another in the back, and filled them with water. In the “well-drained” soil demanded by most plants, the water level subsides one inch per hour. Sand drains more quickly; clay, more slowly. A week later, the water in the front hole finally reached the bottom. The water in the second hole, farther down the slope, was still 10 inches deep. The clay the builder had used to grade the lot was nearly impermeable.

We put trowel-sized lumps from various locations in labeled plastic bags—front yard, back yard, left and right—to send to Ellen's county agent for chemical analysis. The fertility report came back in two weeks: Only magnesium was present in sufficient supply to support a garden.

The county agent put us in touch with a soil conservationist in another county office who gave us information about the underlying native soil. According to his map, the soil on which the development had been built was a silty loam of fine texture, excellent drainage, and good fertility. We checked the profile

out in the deep end of the ditch, and it matched exactly.

But could plants find that buried wealth? If roots could punch through the clay above, perforating their own drainage holes and reaching the silky soil below, our options would be open. We sent one last lump of fill to a nurseryman for his opinion of its consistency for seed germination and root growth. In that respect too, the surface clay was as bad as bad can be.

Had I been better traveled at the time, I would have expected this news—or worse. In developments I saw later, the original

topsoil had been scraped off entirely to underlying clay or hardpan, and removed from the site. So the pioneering strategy I thought unique to Ellen's circumstances now seems to have a more general application, and to those of you who may possess such barren land, I refer you to the plant community from which I chose her species: the vegetation on display along Route 1.

Everyone must have a Route 1 nearby. Ours is the old Post Road, which runs from Florida to Canada. I follow that highway to Ellen's house; I also follow it up the coast of Maine to reach the island where we vacation. That August as I played with the design of Ellen's lot in



The plant community from which I chose her species was the vegetation along Route 1.

the blessed cool of a northern summer, my model was a particular strip on the way to her house where parking lots alternate with vacant lots in various stages of regrowth from farmland that only here and there still has the energy to grow corn.

The shoulder is subsoil pushed aside during excavation or embankments graded with cheap dirt. What I looked for is exactly what I would look for on a garden tour: a peaceful scene, a comely shape, a striking composition. Or an ornamental species: Even in cracked asphalt I spotted two native meadow grasses, switch-grass (*Panicum virgatum*) and little bluestem (*Schizachyrium scoparium*).

Vacant lots along Route 1 are in some places populated with wild crabapples, young oaks and birches, and the ubiquitous red cedar. In the company of the junipers grow brambles—usually blackberries—and sometimes skirts of bayberry (*Myrica pensylvanica*) or blueberry (*Vaccinium* spp.). On a newer highway farther north I saw a stunning combination of junipers and sumac. The sumac proved to be *Rhus aromatica*, a species that, with its tripartite leaves and delicate structure, is much prettier than the coarse sumacs I was used to. Although it is more trying to take road-

side inventories than to learn the names of plants on your own property, the procedure is the same: You take a sample. You identify it. Maybe you add it to your wanted list.

My list at first was made up entirely of intrepid grasses, shrubs, and trees, most of which were classed by genus only: *Quercus*, *Rubus*, *Malus*. The list became specific as I consulted books to see which species were most likely to endure not only the drought to which rugged roadside sorts are usually accustomed, but also waterlogged conditions. Sometimes I made substitutions. Wild roses and raspberries are natural companions in New Jersey; farther north, wild gooseberries join them. I substituted their close relative, red currants. In this way my list grew literally by association.

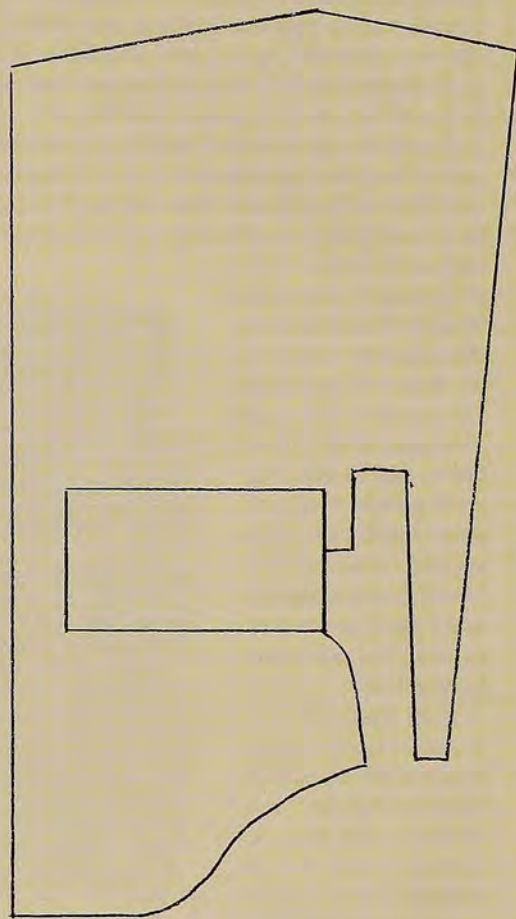
Meanwhile, as August progressed, there were developments that lengthened this short list. The ditch running along the rear of Ellen's lot to a culvert in one corner was meant to be temporary: The builder was to install drainage tiles before restoring the grade. Runoff from the yard and the cul-de-sac above was thus to be escorted off and away to some distant destination. Such underground streams are as common as lawn in the suburbs, where water is not supposed to be seen or heard, but this one would have involved granting the town an easement through the yard, and Ellen refused to do it. That's how she came to have a swale instead, the only wetland in the neighborhood.

***Each region has suites of
vegetation that can tolerate
the most difficult conditions:
drought, flood, sand, clay,
sun, wind, sterility.***

Regrading the yard to create the swale involved scooping off some clay, so the good soil there came almost to the surface. I thought it safe to add some woody wetland species to the list, but again just common sorts found in soggy roadside sumps and thickets. The excavated dirt could be used to elevate another portion of the lot, giving us at least a hump where the drainage would be good enough for oaks.

What amazed me about the completed list was that all but one species were described in gardening books as ornamentals. (The one exception, raspberries, was included in the same books for its edibility.) Yet I had gone about assembling the list backwards, not from species to enforced cohabitation, as is done when rhododendrons are plunked down in a lawn, but from the community to the species that naturally compose it.

A pioneer community of native plants would differ elsewhere in the country, but its role in moderating original conditions would not. Each region has suites of vegetation that can tolerate the most difficult conditions: drought, flood, sand, clay, sun, wind, sterility. Roots penetrate the ground, improving drainage where soil is waterlogged, increasing water retention where soil dries too quickly. Leaves convert soil minerals to organic matter—compost the ground, make it looser, richer, moister. Ultimately, species that could not have thrived in the original harsh conditions begin to grow in the protective shade of this nursery, and gradually a more permanent community replaces the pioneers. I learned in the

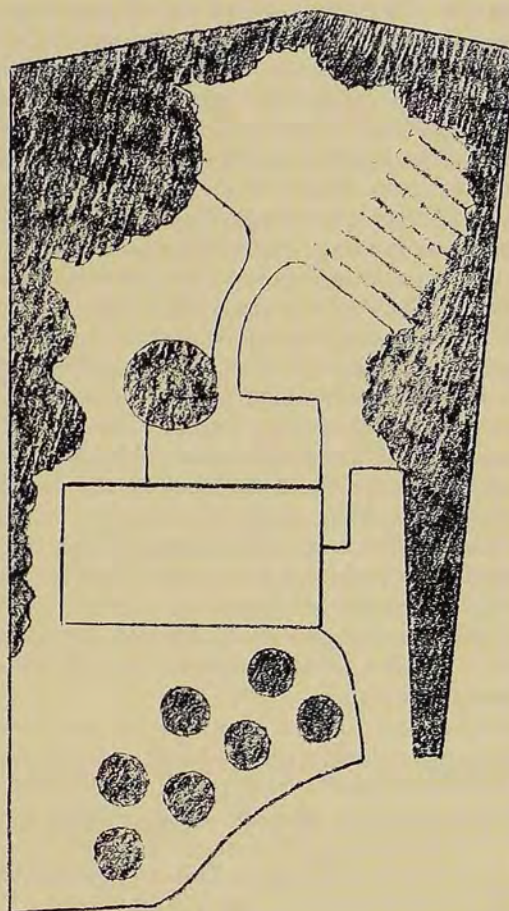
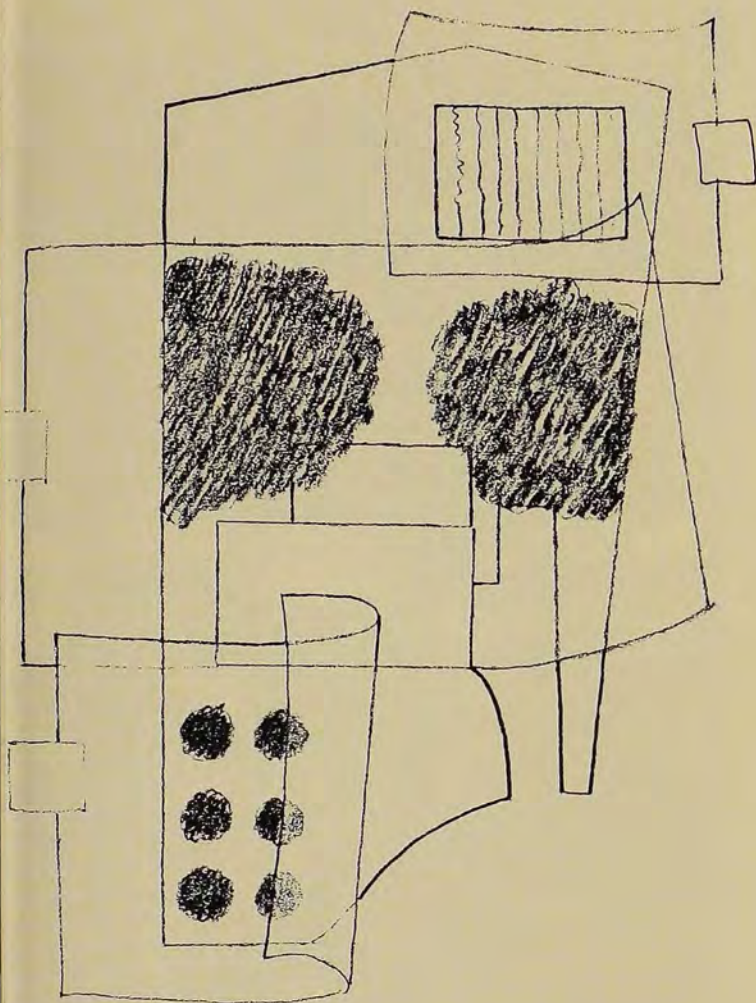


***Tips for
Landscaping***

Sara Stein had never drawn a full landscape plan before she took on Ellen's lot. "Large sheets of paper frighten me," she says. Here's her advice for other first-timers:

Begin with your plat—the survey taken when the property was purchased—and some tracing paper to make small "thumbnail" sketches. Include only major immovable features such as the house, driveway, and largest trees. The tracing paper will allow you to build up layers that you can move and remove until the overall effect pleases you.

Don't think about individual plants to be plopped into space. In nature, plants overlap and mingle. Represent a blueberry thicket



or birch grove as a mass, not as objects. Create islands of vegetation separated by paths or enveloping open space. Plant species can be determined later. Consider how your plan works from inside the house. Did you remember to consider windows where glare needs to be reduced or neighbors' views blocked?

Now you are ready for a scale drawing. Double—at least—the size of the plat. This can be done on a copy machine that will enlarge drawings, or with graph paper. Stein used 11-by-17-inch graphed tracing paper.

Use the measurements shown on the plat to determine the scale (how many feet are represented

by an inch) on your drawing. For example, in a scale of one inch = eight feet, a boundary line of 100 feet would measure $12\frac{1}{2}$ inches. Trace from the plat the angles where boundary lines meet.

Draw in existing or planned structures. Remember to include not only patio and pool, but less glamorous things such as the meter box, outdoor faucets, and trash cans that might require paths.

Now you may want to draw large circles for trees, smaller ones for shrubs. Stein drew them with non-smearing Prismacolor pencils and slipped a piece of rough-textured paper under the drawing as she colored them in to give an impression of foliage.

Tracing paper lets you build and move layers of ideas over an original tracing that shows permanent features. The middle drawing has some good ideas, but the vegetable garden floats in space, the woodland overwhelms the patio, and the fruit trees in front are lined up too formally. In the final drawing, above, open space nestles comfortably within shrubs that enclose the perimeter. Most of the woods have been moved to a corner with one large tree left to shade the patio, and the fruit trees are staggered and follow the curves at the front.

Southwest that even desert giants may need pioneer species to nurse their start in life: Saguaro cacti, the equivalent of forest trees in the Sonoran desert, can't survive their early years unless shaded and protected from predation by pioneers like palo verde trees. In time the mightier cactus kills its nurse, but the time is long. Someday beech might grow on Ellen's lot; for now a grove of birches will prepare the way.

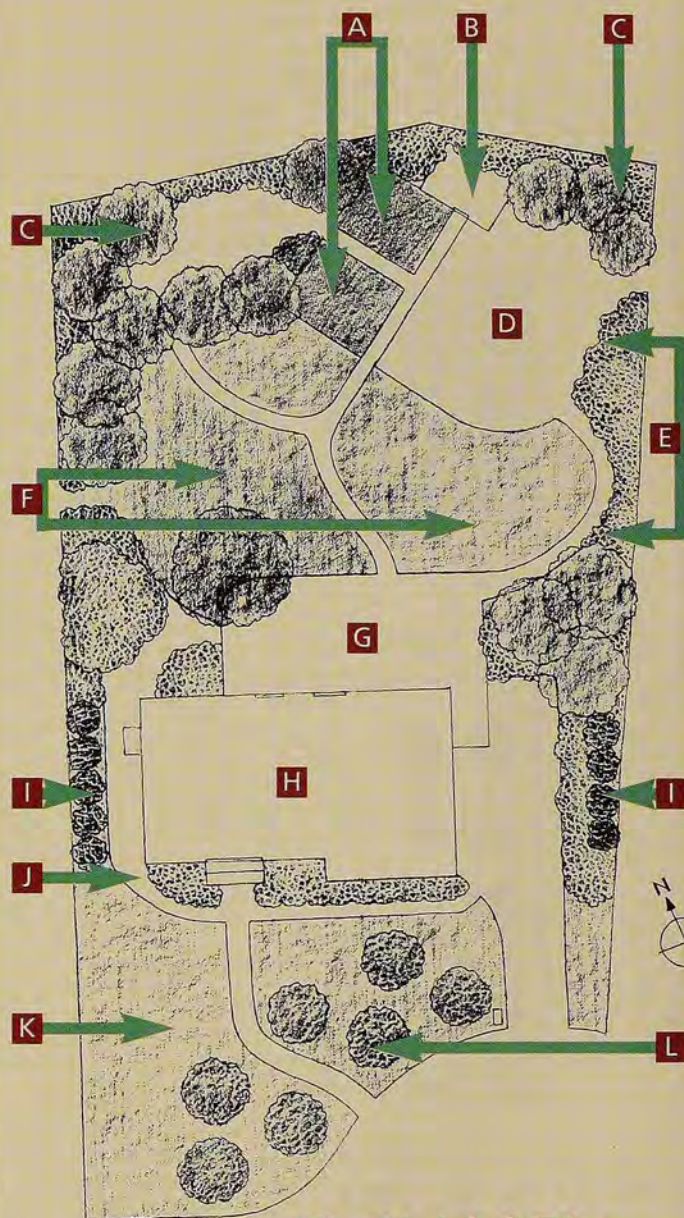
Ellen, who deals in real estate, told me that the typical young family these days moves on the average every five years. She plans to stay on her lot no more than seven. In that brief interval she won't be able to usher in the forest in the distance, but I wouldn't be surprised if by moving day the oaks have had some babies, and a tulip tree perhaps has taken root among the birches. I couldn't offer Ellen much choice of wildflowers; only a few have a flair for pioneering. Ten years from now though, the soil will be changed and the choices will be many. The wetland, rather sparse in species now, will beg elaboration. The land will mature, become more productive and rich in diversity.

This is not true of unnatural plantings. Merely decorative plants merely grow. In time they grow too big, or they die; then someone takes them out and redecorates with others. Nothing else happens. There is no evolution. There is no profit set aside for the future because, for all the money spent, there has been no investment in the land.

When our concept of land ownership was generational, it must have seemed ordinary to plant a line of sapling sugar maples that one's grandchildren would tap for maple syrup. Sugar maples planted along New England roads are well over a century old, some close to twice that age, but hardly anyone is planting young ones. I think this is deeply wrong, or at least inordinately selfish. I know my land will pass into the hands of strangers; even so, I owe them its future. In our present and difficult transition to a wiser suburban landscape, we are all pioneers, preparing the ground for its future occupancy.

So up in Maine I set to work, sitting at the old nursery table where we ate supper as children, watching the fog lower over the cormorants fishing from the rocks beyond the shore. I had snapshots from Ellen to remind me in that contradictory setting of the hard-baked reality of her lot. And I had an agenda of my own: If Ellen wanted to be reunited with the fields and forests that had been pushed so far into the distance by development, I wanted to demonstrate that some approximation of these ecosystems can be coaxed back onto subdivisions, that they can fit on a small lot, that they are affordable, practical, and suitable to fairly conventional families like hers.

The extent of Ellen's and her husband Marshall's rebellion against social norms is that they like lavender carpeting and dislike yellow trees. Their daughter Rachel, who at five preferred to carpet her own room in shocking purple, requested that the outdoor plan include a plum tree. Nothing more eccentric emerged in discussions about the future landscape. Perhaps there was a touch of romantic self-imagery in Ellen's wish for a private place where she could retreat into the shade on a summer afternoon to read a book. She had practical requests, such as for plants that wouldn't need spraying. She wanted to have trees; to pick flowers; to grow vegetables; to keep her eye on Rachel; and to keep the eyes of neighbors off herself. She used words like "tailored," "simple," and "natural." As for the details of plans and plant lists, she left the matter entirely to me.



The Finished Plan

- A.** Vegetable gardens
- B.** Future tool shed
- C.** Pioneer trees, woodland trees, and fern glade
- D.** Children's play area
- E.** Fruiting thickets, brambles, hedgerows
- F.** Tallgrass meadow
- G.** Future patio
- H.** House
- I.** Conifer screen
- J.** Service path
- K.** Shortgrass meadow
- L.** Crabapple "orchard"

PHOTOS COURTESY OF MARSHALL AND ELLEN CALMAN (TOP), LEWIS STEIN (CENTER AND BOTTOM)



Ellen refused to let the town build a culvert to drain the back of her lot, top, and instead planted water-loving shrubs and ornamental rushes and sedges, center, where nine-year-old Rachel can hide. When the birches in this grove, above, are big enough, Ellen imagines relaxing in their shade with a book.

Marshall's request was brief: "Don't offend the neighbors." As though one should not be offended by Tiffany yards that flash at our unshielded eyes every contorted and strangely colored mutant that commerce can provide! Or by the soul-crunching rules that bound these young relatives of mine!

Suburbia has come to signify not only a landscape style, but a cultural style. Front yards are considered a communal possession, even if an owner can legally plant a private forest right against the sidewalk. One can have street trees—in fact one often must—but where Ellen lives they must conform to all the others on the street by species and variety. The result on Ellen and Marshall's block is a double row of lollipops. No fences may be erected: The illusion is of no boundaries; the reality is no privacy. In their community, pets must be on leashes; their cat is kept indoors.

In designing Ellen's lot, my bow to convention had been a vegetation version of Mom and apple pie: Mom relaxing with her book in the birch grove, familiar to us all from postcards if not in the wild; and apples—not the pie type but crabapples suitable for jelly—arranged as an orchard in a street-front meadow of neatly uniform northern drop seed. Except where the windows had to be screened from prying eyes and glaring sun, I had left the perimeter somewhat transparent—not walls but drifts of shrubs, not one height but varied, not solid but with openings through

We are accustomed to stepping from our doorway with no place to go and no reason to get there. Who ever visits their blue spruce?

which to glimpse the meadow. On paper, I felt I'd done my civic duty and met Marshall's criterion. But for a community accustomed to rolled-out landscapes, what ensued was in fact a pretty messy business.

One fine October day I and my friend Camilla, a practiced gardener and designer, set out in her pickup truck loaded with stakes and hoses to lay out Ellen's lot. It took us and Ellen, too, all day. We couldn't hammer the stakes in straight to show the locations of the trees; the ground was too hard, and the stakes stood lopsided and wobbly. We ran out of stakes to mark the paths and had to use instead those plastic flags used by lawn companies to lay out irrigation lines, then we ran out of flags as well and had to spray-paint the paths on the ground. The rectilinear areas—patio, play space, vegetable garden—were indicated with stakes and strings. Day's end displayed a bare lot strewn with crooked sticks, knotted strings, red flags, white paint, and miscellaneous hoses. Even we, armed with the paper plan that made sense of it all, felt embarrassed by the trashy scene.

But in the following weeks, Ellen and Marshall filled in the makeshift lines with mulch. They raked shredded bark along the edges of areas that would be planted with trees and shrubs, then filled in the contours to the lot lines. They sprayed the paths with herbicide to delineate them clearly against the greenish, weedy ground. The effect was as though a giant, working from the paper

plan, had colored it in full size. There, in weed green, the meadow; slicing through it the pale tan path; and there, in bark brown, the bulge where thickets would billow through the grove that curved below. As on the plan, the eye could sweep the contours all around, grasp the whole, see how that bare ground would grow into a world in three dimensions.

The mulching of the back yard was almost finished when the landscaper delivered the final load of bark. He was stunned. He plied his trade maintaining grounds and putting in new plantings on this development and many others like it. He laid out borders, shaped island beds, lined walks, installed trees, and composed shrubbery along foundations. He said, simply, "I didn't know landscapes could be done like this."

So plain a statement from a man whose perceptions had been flipped!

It was not a planar lawn with objects placed on it but a solid geometry cut through by flat paths. It was not a lot with corners but a curvaceous and flowing space whose limits might be perceived from outside, but not from within. We are accustomed to stepping from our doorway into a world without direction, with no place to go and no reason to get there. Who ever visits their blue spruce? Here were routes and places, real destinations. On Ellen's lot, as time goes by, you won't be able to see everything that's there unless you walk to find it.

I saw kids come home from school the day we began to plant. We were trundling stock about, placing shrubs and getting the larger trees into the ground by backhoe. One mother was taking care of five or six young children. Small girls clustered around her on a driveway across the street, mostly talking. Two boys climbed to the top of a dirt heap in front of the unfinished house next door. The mother admonished them repeatedly to get down (it is true they were throwing clods into the street). A girl in white tights tried to join them, but turned back when warned about dirtying her clothes. Finally the boys broke a bottle against the pavement, and that was the end of their brief adventure.

I felt not just amazement at this way of life but anger. This is not childhood. It is a crime against it.

Except for swing sets and that temporary dirt heap, there was nowhere to go and nothing to do. No trees to climb, no piles of leaves to toss or roll in, no woods, no streams, no fields, no paths leading to adventure. Even a clod of dirt is precious when the

land has been raked of the treasures children hunt for: pine cones, crow feathers, snail shells, lumps of quartz or mica. No child growing up on that development can make daisy chains or build twig furniture. There's not even a blade of grass long enough to hold between the thumbs to blast a screech from it. Kids there won't search for peepers with a flashlight on spring evenings. They won't chase butterflies, follow fox tracks across the snow, tempt chipmunks with hickory nuts and acorns, or stain their lips with blackberries gathered along the road. They won't have those secret places where children go to escape the eyes of grown-ups.



Kids in Ellen's development won't chase butterflies or follow fox tracks across the snow.

Rachel was also home from school. The giant painting of how her own yard would be planted had meant nothing to her. She was too young to grasp, as the landscaper had immediately, what was to come from the mulch. But the day we were planting and the crabapple trees were dug into the front yard, Rachel literally grasped what we were up to. She visited each tree in turn, all seven of them, to touch and pluck their fruit. These were not the sweet dessert she'll one day pick along the berry path, but they were the only fruit around.

By late afternoon, five serviceberries were also in the ground at one

end of the swale, and the shrubs for that corner were arrayed beneath them. Incomplete as it was, it looked like woodland. Older children were home by then; more parents had assembled. It was getting dark. Camilla and I were packing up our gear, getting ready to go home. I was vaguely aware of pedestrian traffic through the yard, of talk down in that corner so recently and magically transformed. I didn't hear until later what had happened.

One neighbor decided on the spot to replace her weeping tree with one that would be more natural. Another wanted to replant her whole front yard.

I don't think the people in Ellen's development love their landscape. I don't think they find it comfortable or charming, exciting or beautiful. I think they had a hard time choosing the specimen on the lawn and are unsure whether their neighbor's choice wasn't perhaps better. I think most of them pretty much left the whole business up to the landscaper because they didn't know what else to do. I'm sure their children, as they discover plums and crickets and secret hiding places, will wish they lived on Ellen's lot.

In addition to My Weeds and Noah's Garden, Sara Stein has published a number of science books for children.



book reviews

- 🌱 **pollination**
- 🌱 **water gardening**
- 🌱 **natural history**

THE NATURAL HISTORY OF POLLINATION

Michael Proctor, Peter Yeo, and Andrew Lack. Timber Press, Inc., Portland, Oregon, 1996. 479 pages. 5 7/8 x 8 1/2". Publisher's price: softcover, \$24.95. AHS member price: \$22. Book code: TIM 091.

THE FORGOTTEN POLLINATORS

Stephen L. Buchmann and Gary Paul Nabhan. Island Press, Washington, D.C., 1996. 320 pages. 6 x 9". Publisher's price: hardcover, \$25. AHS member price: \$22.50. Book code: ISL 002.

Busy pollinators are not only fascinating to watch but are vital to the survival of all life. Most flowering plants, including important food and forage crops, require pollinators in order to set seed and produce fruit. Birds, bats, and especially insects are intricately linked to the plants they service.

Much has been written on this complex and wide-ranging subject, but two new books, very different in style and content, offer complementary perspectives on pollination ecology. Both are international in scope, offer historical perspective on the subject matter, and provide keen insights into the ecological processes linking plants and animals.

These books have value for professional and novice naturalists alike, drawing together botanical and zoological facts in a thorough yet understandable presentation. Both common and scientific

names are listed for the organisms discussed, and when technical terms are used they are clearly defined. The authors of both books are well versed in the topics covered and well regarded by their peers.

The Natural History of Pollination, by Proctor, Yeo, and Lack, has British origins and expands upon an earlier, highly regarded text, *The Pollination of Flowers*, published in 1973 by the first two authors. While the authors describe their comprehensive treatment as a "selective distillation," it clearly ranks with the best overviews of the subject. It is a carefully and thoughtfully compiled book building upon the earlier work. Despite examples drawn heavily from European pollination literature, the presentation of facts is

not diminished in any way for an American audience.

Numerous illustrations throughout—color and black-and-white photographs, line drawings, and scanning electron microscope micrographs—are of the highest quality and are excellent visual aids to understanding the topics presented. A list of references for further reading and an index are provided at the end of the book.

An American production, *The Forgotten Pollinators* uses a unique blend of scientific research and storytelling genius to foster a better understanding of and appreciation for pollination systems. Many will recognize co-author Nabhan—winner of the John Burroughs medal for natural history writing—from previous works such as *Gathering the Desert*, *Songbirds*, *Truffles and Wolves*, and *Desert Legends*. Nabhan and pollination biologist Buchmann deftly infuse humor into their passionate description of the ecological crisis caused by the decline of native pollinators. The authors argue the need for appropriate management strategies to combat this decline and to raise our awareness of how plants and their pollinators are threatened by pesticides, pollution, and loss of habitat. From "bee kisses" to "yellow rain," this book is an enlightening combination of science and culture that is meaty yet entertaining.

Illustrations by Paul Mirocha appeal to the imagination and further propel the reader into the stories being told. This easy read ends with a bibliography, glossary, six appendices providing additional pollination data and resources, and an index.

Criticisms of the books are minor. A glossary would have made *The Natural History of Pollination* even more handy as a ready reference. Also, since "digger bees" are no longer considered to be members of the family Anthophoridae, their new family name, Apidae, would have been more appropriate. In *The Forgotten Pollinators*, the name of the fly order Diptera was omitted from the glossary, and the names of the other pollinator orders were listed but not capitalized, as is entomologically correct. Finally, Appendix 3, listing conservation and research organizations, gives an outdated address for the Xerces Society, which is now located at 4828 Southeast Hawthorne Boulevard, Portland, OR 97215.

This feeble attempt to find fault with these texts in itself supports their strong recommendation. Both books are timely, authoritative, and explore a subject that only promises to become more significant





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in the future. Remember, the majority of pollinators are females and, like our mothers, much of their toil has gone unnoticed and underappreciated.

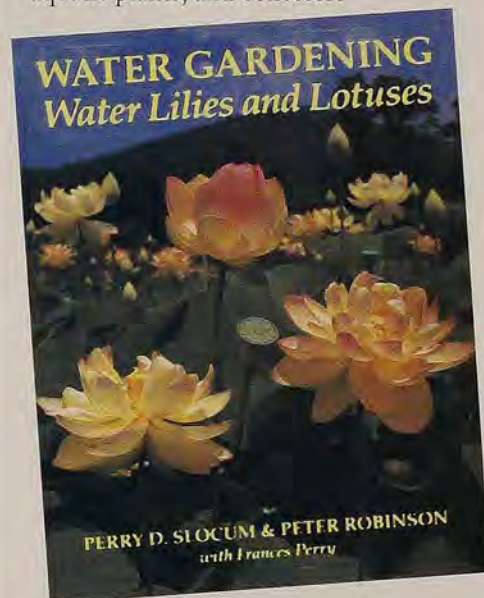
—Beth B. Norden

An entomologist with the Smithsonian's National Museum of Natural History in Washington, D.C., Beth B. Norden is author of numerous scientific articles on bees and wasps and two children's books, The Bee and Magnification.

WATER GARDENING

Perry D. Slocum and Peter Robinson with Frances Perry. Timber Press, Inc., Portland, Oregon, 1996. 322 pages. 8 3/4 x 11 1/4". Color photographs. Publisher's price, hardcover: \$59.95. AHS member price: \$54. Book code: TIM 076.

This is the volume on aquatic plants long promised by one of the all-time great hybridizers of water lilies and lotuses, America's Perry D. Slocum. This handsome book, whose English slant makes it a world book rather than a national reference work, will be welcomed by public libraries, professionals in the field of aquatic plants, and collectors



and students of water lilies everywhere.

The subject is presented in two parts. Part One, by Peter Robinson with the late British plantswoman and author Frances Perry, deals with more than 400 bog, marginal, and moisture-loving plants. Robinson, whose Suffolk garden's water features are said to be outstanding, trained at the Royal Botanic Garden in Edinburgh and was principal of Capel Manor Horticultural College in London. Perry was for many years the horticultural writer for *The Observer* of London and in 1968 became

the first woman member of the Royal Horticultural Society council.

This section includes excellent color photos of about 50 bog, marginal, and floating plants—a good selection to start from. Some of the most popular American bog plants are included. It also focuses on fish and other animals associated with water gardens, and the design and construction of water and bog gardens.

Part Two is super-hybridizer Slocum's encyclopedia of water lilies and lotuses. Slocum's credentials are formidable. Founder of Slocum Water Gardens in Winter Haven, Florida, and Perry's Water Gardens in Franklin, North Carolina, he hybridized more than half the lotuses presented in the book and many of the water lilies. In 1986 he became the first living person to be inducted into the Hall of Fame of the International Water Lily Society. Slocum's photographs of aquatics are exceptional and have won more than 150 awards. The beautiful lotuses in the lotus pond in the book's cover photo are his 'Mrs. Perry D. Slocum'.

Slocum begins Part Two with a thorough taxonomy of the water lily family, including fascinating details for which popular how-to books on water gardening lack space. He lists more than 150 named varieties of hardy water lilies, presenting photos of almost all of them. He describes the various types of rhizomes in the hardy group and gives valuable information on how each should be planted, including the size of the container.

The 78 tropical, day-blooming lilies discussed are categorized as either free-flowering, very free-flowering, or extremely free-flowering, a valuable grouping initiative: Expanded to include regional norms, it could develop into a basic model for the industry.

There are 34 lotus varieties described, which do not include some recent introductions that can be found in catalogs offering aquatic plants. Some of the most unusual photos and photo sequences illustrate the changes that take place in the shape and color of lotuses (and water lilies) on successive days.

The final chapter discusses other water lily genera that are not in general cultivation but that are of great botanical interest—*Nuphar*, the immense *Victoria*, *Euryale*, *Barclaya*, and *Ondinea*.

Appendix A includes the hardiness zone maps of Europe and the United States. Europe assigns the same temperature ranges to climate zones as does our own USDA map. Many will be surprised to see that most of Britain is in Zone 8

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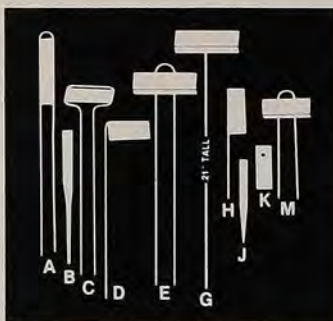
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with winter lows on a par with Georgia, while the northwest and west coasts of Scotland, Ireland, and England are classed as Zone 9—along with most of Florida, southern Spain, and Greece!

Water Gardening is oversized and loaded with history, botanical line art, and photographs, including some of world-famous gardens. It is a monumental contribution to the literature of the field, and one of those wonderfully browsable books irresistible to aficionados.

—Jacqueline Hériteau

Jacqueline Hériteau is co-author with Charles Thomas of *Water Gardens*, published by Houghton Mifflin. Her most recent book, *Glorious Gardens*, was published this fall by Stewart, Tabori & Chang.

TRAVELS AND OTHER WRITINGS

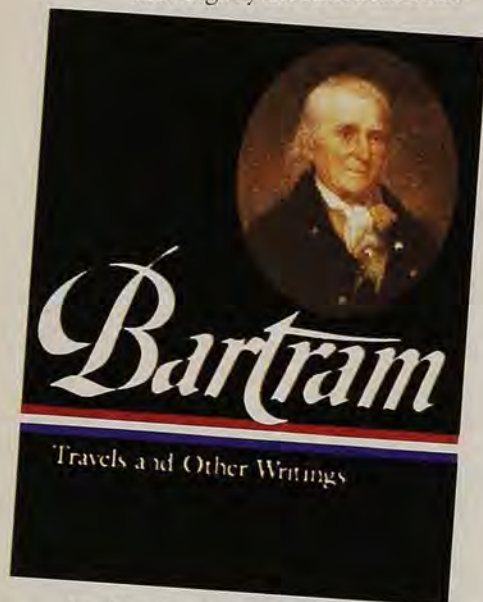
William Bartram. Edited by Thomas P. Slaughter. *The Library of America*, New York, 1996. 701 pages. 5 1/4 x 8". Color photographs and black-and-white illustrations. Publisher's price: hardcover, \$37.50. AHS member price: \$33.75. Book code: PEN 002.

This long overdue book is greatly welcomed by students and enthusiasts of American natural history. Within the covers are the never-before-complete collected works of one of America's great exploring naturalists. Until now, there were only the scarce and expensive original editions of *Travels through North and South Carolina, Georgia, East and West Florida*, first published in 1791, limited edition reprints published in 1973 and 1980, and library-held journals that are rarely found even in reproduction. The publisher has provided a great service in making these scattered writings available in one volume at an affordable price.

The largest section of the book is the original *Travels*. This is supplemented by less flowery and more scientific observations of that same journey, which Bartram sent to his English patron, John Fothergill. In addition, there are eight "essays" on subjects ranging from Bartram's descriptions of Creek and Cherokee Indians, to the American crow, comparative reflections upon American and European grapevines, and an account of Bartram's father, John. It is clear from *Travels* and the other writings of Bartram that he quickly developed an affection for the new lands through which he traveled.

The collection of 48 drawings of plants and animals, 19 in color, provides the reader with a sense of Bartram's keen observa-

tion skills and his talent as an artist. The drawings impart a sensitivity and simple awe of their plant and animal subjects. But although the publisher claims this to be the largest gathering of Bartram's drawings ever published, I find no reference to the 1968 publication of Bartram's zoological drawings by the American Philo-



sophical Society. Compiled by Joe Ewan, it contained 60 drawings in folio. Another minor flaw is that a rather incomplete list of sources for additional information about William Bartram is tucked inconspicuously into the first page of the "Notes" on page 614. When readers have finished reading Bartram's own account of his travels, they are likely to want to know more about the man and his life.

One of the great additions in this work, however, is a reader-friendly glossary that links organisms referred to in the text with their updated botanical and common names. Such a list assists those interested in knowing just what plants and animals were observed and studied on the travels and which plants returned to the family garden in Philadelphia. Those interested in native plants brought into cultivation will be impressed by the nearly 200 species Bartram introduced from the wild. A chronology and a map showing Bartram's journeys are included to supplement the text, as well as an index of places and people Bartram mentioned.

All in all, the Library of America should be commended for assembling such a wealth of information and making it available for those interested in vicariously touring an unspoiled America.

—Keith Crotz

A specialist in agricultural and horticultural history, Keith Crotz owns an antiquarian book store in Chillicothe, Illinois.

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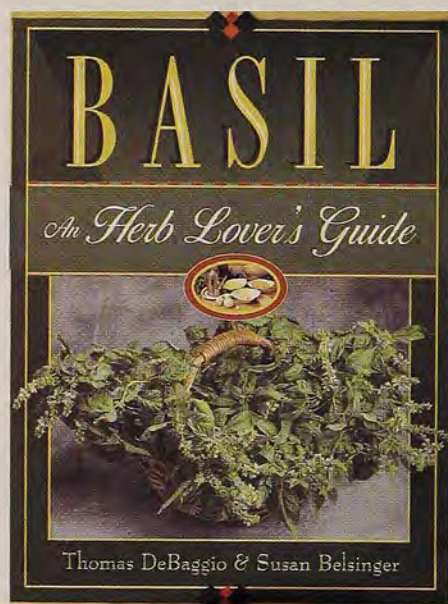
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gardeners' books

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 Barbara Catherwood at (800) 777-7931 ext. 36.

GOURMET GARDENING



BASIL: AN HERB LOVERS GUIDE

NEW

Thomas DeBaggio and Susan Belsinger. 1996. 144 pages. Publisher's price: softcover, \$19.95. AHS member price: \$17.95.

DeBaggio, a commercial herb grower, and Belsinger, a food writer and photographer, have collaborated to produce an informative and attractive book on this most popular of herbs. Great descriptions and photographs of almost 50 varieties of basil are accompanied by recipes for using basil in dishes that range from appetizers to desserts.

Book code: INT 003

LIFE AT RAVENHILL FARM

NEW

Noël Richardson. 1996. 194 pages. Publisher's price: softcover, \$14.95. AHS member price: \$13.45.

A commercial herb grower and columnist

for a food magazine on Vancouver Island, Richardson offers a warm and intelligent look at the joys of four seasons on her farm and a realistic treatment of the issues that face rural small business owners. Each chapter concludes with recipes that use fresh herbs and selected tidbits of her husband's gardening wisdom.

Book code: WTC 001

WHAT LIES AHEAD

PLANTS FOR THE FUTURE: A GARDENER'S WISHBOOK

NEW

Jerome Malitz. 1996. 224 pages. Publisher's price: hardcover, \$34.95. AHS member price: \$31.25.

A professor of mathematics at the University of Colorado and lifelong student of plants and gardening, Malitz describes research strategies that could produce new garden plants of unprecedented beauty and adaptability. Using terms accessible to gardeners, he discusses the basics of taxonomy, heredity, genetic engineering, and biotechnology as they relate to improving garden plants.

Book code: TIM 088

PLANTING NOAH'S GARDEN: FURTHER ADVENTURES IN BACKYARD ECOLOGY

NEW

Sara Stein. March 1997. 288 pages. Publisher's price: hardcover, \$30. AHS member price: \$25.

In this compelling sequel to her earlier classic, *Noah's Garden*, regarded by many as one of the most influential gardening books of the last decade, Stein colorfully describes the many ways people are re-designing their surroundings to abolish sterility and welcome back nature. Specific topics include how to learn the flora of your area, how to control invasive plants, how to start a tree island, how to plan a patio habitat, and much, much more. To read one of four excerpts appearing exclusively in *The American Gardener*, see page 45.

Book code: HOU 010

RESTORING DIVERSITY: STRATEGIES FOR REINTRODUCTION OF ENDANGERED PLANTS

NEW

Edited by Donald A. Falk, Constance I. Millar, and Margaret Orwell. 1996. 505 pages. Publisher's price: softcover, \$27.50. AHS member price: \$24.75.

United by their concern for the world's plant diversity, specialists from a broad spectrum of conservation disciplines discuss environmental, biological, regulatory, and policy considerations that underlie the

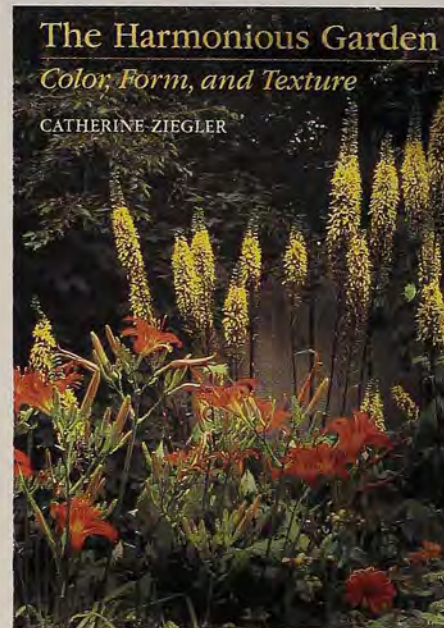
successful restoration of rare and endangered plants. Because many attempts at reintroduction fail, this book reinforces the need to combine ecology with planning and offers systematic guidelines for professionals and concerned lay people.

Book code: ISL 003

GARDEN PLANNING & DESIGN

The Harmonious Garden Color, Form, and Texture

CATHERINE ZIEGLER



THE HARMONIOUS GARDEN: COLOR, FORM, AND TEXTURE

NEW

Catherine Ziegler. 1996. 304 pages. Publisher's price: hardcover, \$44.95. AHS member price: \$39.95.

A landscape designer and instructor, Ziegler offers step-by-step advice, illustrated with color photographs, on how to compose plant arrangements that successfully incorporate color, form, and texture. Using a 16-color wheel, she encourages the development of a heightened sensitivity to hue and tint to produce dramatic, long-lasting statements in the garden.

Book code: TIM 089

A YEAR IN THE LIFE OF A ROSE: A GUIDE TO GROWING ROSES FROM COAST TO COAST

NEW

Rayford Clayton Reddell. 1996. 192 pages. Publisher's price: hardcover, \$23. AHS member price: \$20.50.

A commercial rose grower and author of a number of books, including *The Rose Bible* and *Full Bloom*, Reddell takes the reader on an informative walk down the rose garden path. This extremely readable guide explains how to care for roses throughout the year and in all areas of the country.

Book code: CRN 006



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MID-ATLANTIC

FEB. 22 ■ Prehistoric Party. Children's education. Clearwater Nature Center, Clinton, Maryland. (301) 297-4575.

FEB. 27 ■ Great Garden Inspirations. Symposium. Middleburg Community Center, Middleburg, Virginia. (540) 364-2440.

NORTH CENTRAL

JAN. 8-FEB. 2 ■ Breath of Spring.

Exhibition. Des Moines Botanical Center, Des Moines, Iowa. (515) 242-2797.

JAN. 9-12 ■ GrowerExpo '97. Industry seminar to include a birthday reception for the American Horticultural Society on January 10. Pheasant Run Resort, St. Charles, Illinois. (800) 456-5380.

JAN. 18-19 ■ Winter Woods Walk. Klehm Arboretum, Clarcor Pavilion, Rockford, Illinois. (815) 965-8146.

JAN. 29 ■ Looking Ahead to Spring Wildflowers. Class. Holden Arboretum, Kirtland, Ohio. (216) 946-4400.

NORTHEAST

JAN. 5, 12, 19, 26 ■ Plants Against Pollution! Sunday Discovery Workshops (children ages 5-12, under 7 with adult). Brooklyn Botanic Garden, Education Building, Brooklyn, New York. (718) 622-4433 ext. 216 or 276.

JAN. 18-APR. 11 ■ Welcome Spring. Display. Longwood Gardens, Kennett Square, Pennsylvania. (610) 388-1000.

FEB. 1-28 ■ Focus on Longwood.

Photography competition exhibit. Longwood Gardens, Kennett Square, Pennsylvania. (610) 388-1000.

FEB. 22 ■ Open House. Conway School of Landscape Design. Conway, Massachusetts. (413) 369-4044.

FEB. 23 ■ Perennials for Foliage Effect. Lecture. Scott Arboretum of Swarthmore College, Swarthmore, Pennsylvania. (610) 328-8025.

MAR. 8 ■ Nature Stories For Families. Kerlin Learning Center, Wave Hill, Bronx, New York. (718) 549-3200.

NORTHWEST

FEB. 27-28 ■ The Living Tree System.

Seminar led by Alex Shigo. Tree Care Educators. Portland Airport Sheraton, Portland, Oregon. (503) 254-0482.

SOUTH CENTRAL

JAN. 22 ■ Nancy Stallworth Thomas

Working Together to Save a Community Garden

For 15 years, Troy Drive Community Gardens was an integral part of its Madison, Wisconsin, neighborhood. So when the state threatened to sell it in an effort to rid itself of "surplus" property, gardeners and neighborhood groups pulled together to create an innovative plan intended not only to save the gardens, but to add unique features to adjacent land.

The gardens began as four acres on the grounds of the Mendota Mental Health Institute. More than 100 families, many of them low-income, used the area to grow some 90,000 pounds of food in 1995 alone. In November 1995, the state decided to sell 15 acres of land, including the Troy Drive Community Gardens and other land containing prairie grass, trees, and open space that the community prized for its beauty.

To prevent the gardens and green space from being sold to housing developers, a coalition of concerned community organizations asked for time to raise enough money to buy the property. Their plan was to form a land trust to manage the area and preserve it for future generations. Input from the whole community led to a plan that included community gardens, open park land, and a unusual housing arrangement that encourages interaction between neighbors and provides for some shared facilities.

Then this past summer, the state added 25 adjacent acres to the 15 already for sale. This increased the city's interest in building a high-density housing development expected to require a road through the Troy Drive gardens. The coalition again lobbied for more time and now has until July 1 to raise funds and create a plan for the entire 40 acres. One idea proposed by the coalition, now assisted by the University of Wisconsin, is an "urban agriculture education" area. Tim Carlisle, who is the facilitator of the Northside Planning Council, the leading community organization within the coalition, says this feature "would allow a full range of food and ornamental horticulture to be demonstrated and passed on to neighborhood residents, schoolchildren, and others, from growing to processing and preserving, to selling, which would include community-supported agriculture."

The coalition hopes to obtain funds to help buy the land from such sources as the city's Community Development Block Grant program, the Wisconsin Stewardship Fund, and the Madison Parks Department.

Horticulture Lecture by Sir Ghilleen T. Prance, director of the Royal Botanic Gardens. Museum of Natural Science, Houston, Texas. (713) 639-4729.

SOUTHEAST

JAN.-MAR. ■ Splendor Under Glass.

Winter display of tropical orchids. Atlanta Botanical Garden, Atlanta, Georgia. (404) 876-5859.

FEB. 1-5 ■ Southern Region American Society for Horticultural Science Meeting. Birmingham, Alabama. (540) 552-4085.

FEB. 5 ■ New Plant Introductions at the Memphis Botanic Garden.

Lecture. Memphis Botanic Garden, Memphis, Tennessee. (901) 685-1566 ext. 106.

FEB. 6-10 ■ Herb Business Winter Getaway Conference. Baton Rouge Hilton, Baton Rouge, Louisiana. (717) 393-3295.

FEB. 8 ■ Proper Pruning. Workshop.

Tightening Up on Loosestrife

Tennessee has become the 14th state to ban importation of purple loosestrife. The Tennessee Department of Agriculture has quarantined *Lythrum salicaria*, *L. virgatum*, and their hybrids. Both species are native to Europe, and *L. virgatum* also occurs in Asia.

In their natural habitat, they are the favored food of beetles that keep them under control. But in the United States, purple loosestrife has come to be known as the "purple plague" due to its ability to spread quickly in wetlands and outcompete other species, eliminating food sources for birds and other animals. Purple loosestrife produces millions of seeds that are carried by wind and water, and is also able to propagate vegetatively by root or stem segments. Naturalists struggle to control it with an arsenal of tactics, including hand removal, biological controls, herbicides, and efforts to reduce human disturbance in wetland areas.



The invasive purple loosestrife.

To date, purple loosestrife has been restricted or banned in Arkansas, Idaho, Illinois, Indiana, Iowa, Minnesota, Montana, North Carolina, North Dakota, Ohio, Oregon, South Dakota, and Wisconsin. In other states its striking, long-lasting color has kept it a popular landscape plant.

A Better Flytrap

The Atlanta Botanical Garden's curator of tropicals, Ron Gagliardo, has introduced a new, all-red cultivar of Venus's-flytrap (*Dionaea muscipula*), named 'Akai Ryu', Japanese for "red dragon." Most forms of Venus's-flytrap are either solid green or green with red interiors.

The plant will be propagated for sale by commercial nurseries by Agristarts III, a nursery in Apopka, Florida. The Atlanta Botanical Garden will soon offer 'Akai Ryu' for sale in its Museum Shop.

Daniel Stowe Botanical Garden, Belmont, North Carolina. (704) 935-4490.

FEB. 21-22 ■ Camellia Show. Atlanta Botanical Garden, Atlanta, Georgia. (404) 876-5859.

FEB. 27-MAR. 2 ■ The Cloister Garden Series. Garden festival with hands-on sessions and presentations. Co-sponsored by the American Horticultural Society. The Cloister, Sea Island, Georgia. (800) 732-4752.

MAR. 4-5 ■ Gardens by Design. Horticultural Symposium. Davidson College, Davidson, North Carolina. (704) 892-8285.

MAR. 7-8 ■ Tampa Spring Expo. Auction, demonstrations, and sales. Florida State Fairgrounds, Tampa, Florida. (813) 960-1457.

SOUTHWEST

FEB. 13-15 ■ High on the Desert. Gardening and landscaping conference. Windemere Hotel and Conference

Center, Sierra Vista, Arizona. (520) 458-1104 ext. 141.

WEST COAST

JAN. 18-19, FEB. 22-23 ■ Camellia Show. Descanso Gardens, Los Angeles, California. (213) 344-8805.

JAN. 21-MAR. 11 (Tuesdays) ■ Green Side Up. Basic horticultural class. The Arboretum of Los Angeles County, Arcadia, California. (818) 447-8207.

JAN. 22-25 ■ Ecological Farming Conference. Workshops, speakers, tours, and an organic wine tasting. Asilomar Conference Center, Pacific Grove, California. (408) 778-7366.

FEB. 22-23 ■ Pacific Orchid Exposition. Show and sale. Fort Mason Center, Festival Pavilion, San Francisco, California. (415) 546-9608.

MAR. 7-9 ■ Santa Barbara International Orchid Show. Earl Warren Showgrounds, Santa Barbara, California. (805) 684-3344.

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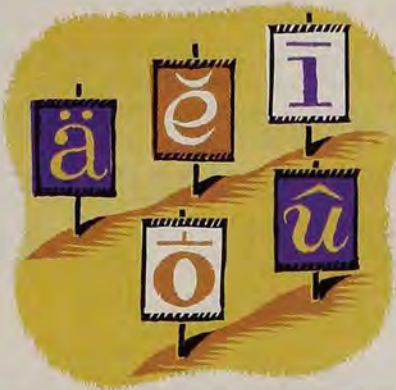
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Aloe descoingsii

AL-o des-KOING-zee-eye

Avonia quinaria

uh-VO-nec-uh kwi-NAIR-ee-uh

Cryptomeria japonica

krip-toh-MAIR-ee-uh jah-PON-ih-kuh

Didiscus coerules

dih-DIS-kus see-ROO-lee-us

Echinacea angustifolia

ek-ih-NAY-see-uh
ang-gus-tih-FO-lee-uh

Euphorbia francoisii

yew-FOR-bee-uh fran-SWAZ-ee-eye

Haworthia emelyae

ha-WORTH-ee-uh eh-MEL-ih-ee

H. koelmaniorum

H. kul-man-ee-OR-um

H. limifolia

H. lih-mih-FO-lee-uh

Iris aurantiaca

EYE-ris aw-ran-tee-AH-kuh

I. susiana

I. soo-see-AN-uh

Juniperus virginiana

joo-NIP-er-iss vir-jin-ee-AN-uh

Liriodendron tulipifera

leer-ee-o-DEN-dron too-lih-PIF-ur-uh

Lithops aucampiae var. *koelmanii*

LY-thops aw-KAM-pee-ee
var. kul-uh-MAN-ee-eye

L. salicola

L. suh-LIK-o-luh

L. verruculosa

L. veh-rew-kew-LO-suh

Myrica pensylvanica

my-RIH-kuh pen-sil-VAN-ih-kuh

Pachypodium brevicaule

pak-ih-PO-dee-um brev-ih-KAW-lee

P. lamerei

P. lam-ur-AY-eye

P. namaquanum

P. nuh-MAK-wuh-num

P. succulentum

P. suk-yew-LEN-tum

Panicum virgatum

PAN-ih-kum vur-GAY-tum

Pseudolithos migiurtinus

soo-doh-LITH-oss
mih-gee-ur-TY-nus

Rhus aromatica

RUS ah-ro-MAT-ih-kuh

Schizachyrium scoparium

skits-ah-KEER-ee-um sko-PAR-ee-um

Thuja occidentalis

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

Trachymene coerulea

tra-KIM-uh-nee see-ROO-lee-uh

Welwitschia mirabilis

wel-WHICH-ee-uh mih-RAB-ih-liss

What's in a Name: *Euphorbia francoisii*

Part of Euphorbiaceae, the spurge family, *Euphorbia* is a diverse, cosmopolitan, and taxonomically challenging genus of some 2,000 species that run the gamut from annuals and perennials to shrubs and even trees. The genus is distinguished by highly specialized flowers—usually contained within an inflorescence surrounded by petal-like bracts—and by the milky sap found in all parts of the plant. The common name, spurge, is derived from Latin and French words meaning “to purge out,” a reference to the strongly purgative and often highly toxic nature of the resinous sap.

The first documented reference to *Euphorbia* was by Roman writer Pliny the Elder (AD 23-79), who claimed that the genus was named by King Juba II of Mauritania for his personal physician, Euphorbus. According to Pliny, Juba wrote a treatise on a *Euphorbia* plant he found in the Atlas Mountains of North Africa.

Native to southeastern Madagascar, *E. francoisii* is a dwarf succulent with leaves up to three inches long drooping off a stubby, columnar stem covered with hairlike bristles. Yellowish green flowers bloom in an inflorescence that forms on a short stalk.

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