American Horticulturist

A Publication of the American Horticultural Society

October 1990

$2.50

Formidable New Mexico
Researchers Explore Our Passion for Plants
A Nonconformist in Dallas

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AHS STUDY TOURS

A wonderful way to go!

Private homes and gardens in Natchez, Mississippi, will be opened especially for our visit as part of the program for "Gardens of the Mississippi," April 21-28, 1991. Above: Elms Court, home of Mrs. Grace McNeil. Upper right: Edgewood, home of long-time AHS member, Mrs. R. A. Campbell.

November 10-17, 1990
Gardens of the Colonial South

Board the *Nantucket Clipper* in Florida and travel north to old Southern gardens on Sea Island, private gardens in Savannah and Hilton Head, and the significant and historic gardens of Charleston. You'll view splendid marshlands while cruising the Intracoastal Waterway. Join Past AHS President Carolyn Marsh Lindsay and Bob Lindsay on board this yacht cruise.

Leonard Haertter Travel Company, 7922 Bonhomme Avenue, St. Louis, MO 63105, (800) 942-6666 (in Missouri, (314) 721-6200)

January 23-February 5, 1991
Egypt and Nile Cruise

Explore the earliest of the Western civilizations and the life-giving influence of the Nile River. The itinerary includes Cairo, Luxor, and Abu Simbel as well as a five-day cruise on the Upper Nile from Luxor to Aswan on board the *Nile Goddess*. Visit numerous historic gardens, including the Manial Palace Gardens in Cairo and the botanical garden on Lord Horatio Herbert Kitchener Island at Aswan. Program leaders are Carolyn Marsh Lindsay and Bob Lindsay. Mrs. Lindsay is a Past President of AHS.

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April 16-21, 1991
AHS Annual Meeting in Birmingham

Enjoy the beauty of Birmingham, Alabama, during the American Horticultural Society's 1991 Annual Meeting. The Meeting will focus on gardening classes and clinics held at the Birmingham Botanic Garden; horticultural tours will highlight some of Birmingham's finest public and private gardens.

April 21-28, 1991
Gardens of the Mississippi

Experience the grandeur of the Mississippi from New Orleans to Memphis on board the largest river steamboat ever built, the *Mississippi Queen*. Ports of call along the river include Houmas House, Saint Francisville, Natchez, Vicksburg, and Greenville. Experience true Southern hospitality as AHS members and friends along the river open their homes and gardens for this horticultural adventure.

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American Horticulturist

Volume 69, Number 10 October 1990

ARTICLES

DEPARTMENTS

OCTOBER'S COVER

© Photographed by Mrs. Kevin Scheibel

The red-berried cultivars of *Pyracantha koidzumii* function beautifully as a screen, hedge, espalier, or as a single specimen. The fast-growing 'Victory' boasts masses of deep red fall fruit, a rich green foliage, and an upright growth habit. Wide-spreading cultivars include 'Santa Cruz', 'Walderi', and the hybrid 'San Jose'.

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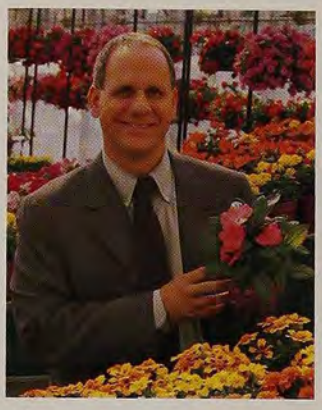
COMMENTARY



A frequent subject of my conversations with members at the American Horticultural Society's forty-fifth Annual Meeting in Seattle in June was the needs and wants of the membership. These talks naturally focused on the desires of those people who attended the meeting. Nevertheless, at least a dozen people told me that while they were enjoying very much the lectures, tours, and company of other gardeners and horticulturists, they wished we would hold more regional meetings. This encourages us at AHS headquarters. We have planned a year of activity that includes several seminars and lecture programs across the country. And in the planning stages is an outreach program whereby we hope to extend more of our services and benefits to members on a regional level. We believe that the value of horticulture should be promoted and recognized both on the national level and in one's immediate surroundings. We will do this in a way that will not duplicate the efforts of your local gardening clubs and horticultural societies, but rather, help them to grow.

This belief in the importance of a regional approach to gardening and horticulture is reflected in some of this issue's articles. "Learning from Verbena" was sent to us by Dallas AHS member Egan Gleason in response to a request for stories about members' gardens. In creating his garden, Gleason did all the right things: he looked to native plants for clues about what to plant. He rescued plants from dumpsters and alongside railroad tracks. He let the plants and his own climate guide him in their care.

Gleason has had an uphill battle against the severe climate of north Texas. You'll have to decide whether he has to work harder at gardening than Thelma Honey, who describes the unpredictable perils of gardening in New Mexico in the second in our series of gardening challenges in various regions of the United States.

This month we also focus on a frequently forgotten aspect of gardening and horticulture: people. As Charles Lewis of Morton Arboretum has so eloquently pointed out, such things as commercial horticulture and botanical names exist because of humans' need to understand and relate to plants—plants don't need people, he says, but people need plants. In this issue we look at recent behavioral research regarding why this is so, and share a touching story about how a garden became a bond between kindergartners and adults with developmental disabilities in Rock Island, Illinois.

Like gardening, AHS would not exist and can not go forward without the energy and ideas of people. Please share with us more of your ideas about how we can better serve your region, and any other thoughts you have about bettering the Society.

George C. Ball Jr.
AHS President

AMERICAN HORTICULTURAL SOCIETY 46TH ANNUAL MEETING APRIL 17-20, 1991

BIRMINGHAM

Don't miss some of the nation's best-kept horticultural secrets! Our 1991 Annual Meeting in Birmingham, Alabama, will be centered at the Birmingham Botanical Garden, with lectures and classes taking place in the gardens themselves, led by the many talented gardeners, designers, and horticulturists from Birmingham and across the state.

EXPLORE

One of the finest native plant collections in the country

A magnificent formal rose garden

Flower arranging in the Birmingham style

The Sipsy Wilderness Preserve

The spectacular new Southern Progress building, where the native flora of its woodland site are preserved within 10 feet of this massive structure.

ALL IN THE UNIQUE BEAUTY AND CHARM OF THE SOUTHEAST IN THE SPRING

This Annual Meeting will have a "hands-on" focus—an opportunity for you to work directly, in small groups, with fellow members of AHS and some of the great gardeners in the United States, with many options to allow you to pursue your own unique interests in gardening.

PRIVATE AND PUBLIC GARDEN TOURS WILL BE INCLUDED

And as always, a highlight will be honoring our annual award winners—another opportunity for you to meet and share your experiences with the horticultural leaders in America.

Our Birmingham meeting is a rare opportunity that will challenge and stimulate you—whether you are a fledgling amateur or a professional horticulturist. We look forward to your joining us and sharing a wonderful few days in Birmingham. See you there!

LETTERS

A Garden For Queensbury

Your June issue of *American Horticulturist*, was the best issue yet! I liked "Gardening Where We Live," "Gardens in America," "Ethical Gardeners, Beautiful Plants," but "The Birth of Botanica" interested me most, as I am a member of the Adirondack Horticultural Society and have proposed a large public garden for Queensbury.

Within a month after returning from a trip to the main British Isle in 1984, I had prepared a concept for the garden and now have an offer of some land and money to at least get the garden underway.

The inspiration came from a visit to Wisley, the Royal Horticultural Society's garden. A year ago in the spring I made a quick trip to talk with the curator who not only gave me advice, but the complete plans of their demonstration gardens and a list of the 1988 and 1989 courses at their school. I have since talked with the head of the horticultural department of our local Board of Cooperative Educational Services at Southern Adirondacks Vo-Tech, who was most enthusiastic about taking on the project. It will be administered by the horticultural society, which is largely made up of nurserymen. (I am a rank amateur whose only claim to fame in this field is being chairman of the Queensbury Committee for Community Beautification for the past twenty-four years.)

"The Birth of Botanica" describes most closely the ideas I have in my concept. I plan to contact the American Association of Botanical Gardens and Arboreta as suggested.

Robert L. Eddy
Queensbury, New York

Elusive Corydalis

Thanks to Patricia Taylor for her article on corydalis.

I've been reading about *Corydalis lutea*, in particular, for two years, and have spent as many years searching for it. This spring I had a catalog from one of your sources and in March I ordered twelve plants. In

June I received four plants; the catalog had said "rare."

It would appear that *Corydalis lutea* is an elusive, exclusive plant although Ms. Taylor says that of the species it is the "most readily available in the trade." However, not one grower in my area has it nor has heard of it. I have written to another one of your sources and hope they will have some available. My first source must have grown only a dozen plants.

I appreciate an article with sources. More articles should do this. Our appetites get aroused but not sated.

Lilly Cichy
Rutherford, New Jersey

Attainable Beauty

Thank you for your kind invitation in the December issue for members to share their gardens with you.

My husband and I have shared the labors of gardening for the past fifteen years; the kind of labors that demand the planting and nurturing of plants of color and character.

The magical gardens you feature, however unattainable, are always a delight to me and help my spirits soar to greater imaginings. It's the unattainability aspect that bothers me. It seems to me that gardening magazines address the grandeur of gardens that are really beyond the reach of most of us, for reasons of space, climate or economics. *(Continued)*

Self-expression within reach: the Baker patio.

We live on a typical suburban lot of 50 feet by 160 feet in a sometimes inhospitable climate, as do many thousands of your readers. And yet we have found ways to express ourselves in our garden while working within the confines of these restrictions.

Our parameters are: to plant so as to mark rather than to close off property boundaries; to use plants that mark the seasons, if possible; and to use indigenous material from local garden centers as much as possible. While we are very fussy about the trees we plant, many of our accent plantings are "bargain specials" and are dramatic rather than exotic.

An impatiens wall inspired by the Chicago Botanic Garden.

I have enclosed some pictures for you to see. It may be obvious to you that some of our ideas are taken wholesale from your pages, and we thank you for that. Our twenty-five-foot vertical wall of impatiens was adapted from the handicapped garden at the Chicago Botanic Garden.

Keep up the good work, but please do more to give hope and encouragement to the city and suburban dwellers with limited space and funds.

Carol Baker
Elmhurst, Illinois

American Horticulturist *welcomes letters concerning the magazine or activities of the American Horticultural Society. Letters may be edited for accuracy, clarity, or length. In writing to us, please include a daytime phone number.*

Delight a Friend this Holiday Season!

Select a gift that lasts all year. Give your green-thumbed gardening friends a membership in the American Horticultural Society (and receive a little something for yourself). The world of gardening opens through membership in the American Horticultural Society. As a member, your fortunate friend will receive a full year of *American Horticulturist* Magazine and News Edition, 12 issues in all, each one packed with valuable insights and beautiful images.

However, *American Horticulturist* is just one part of AHS membership. Your Society provides a Free Gardening Hot Line, Free Seed Program, Discount Garden Book Buyer Service, Symposia, and Travel Program along with many other member benefits.

Plus a Free Gift for You.

In the same spirit of giving, with your order of AHS Gift Membership(s), we'll send you a free copy of the Taylor Pocket Guide *Perennials for Shade*. A $5 retail value! This gift is yours as soon as we receive the postage paid card with the names and addresses of your gift recipients.

To announce your gifts, we'll send you beautiful holiday greeting cards to personalize and present to the lucky recipients.

Send no money with the reply card. We'll bill you later. Or include Visa/MasterCard information and we'll charge your account.

Hurry! This offer expires January 1, 1991.

AHS Gift Membership Order Form

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Gay Baumgarner: PHOTO/NATS

People Love Plants & Plants Heal People

Not only do vegetable plots cure social ills, but gazing at a grove of trees may help restore both mind and body.

By Kathleen Fisher

What draws us to the garden, despite the heartbreaks, the expense, the strained backs?

It's intuitive that gardening and other contacts with nature, from a week hiking in the Rockies to a glimpse of a few saplings struggling to survive in the inner city, are restorative to the human spirit.

This understanding has been applied in several ways with results that border on the miraculous. Horticultural therapy, only a generation old as a discipline, has been used to benefit every special population imaginable: to revitalize the elderly, educate people with mental retardation, restore a sense of reality in those with mental illnesses, and rehabilitate criminals and drug addicts. Where community gardens have been built to help beautify urban neighborhoods, their leaders find that litter disappears, faceless brick

walls sprout colorful artwork, and vandalism and other crime drops.

But intuition and anecdotal evidence don't hold much weight when Congressional budget committees are debating the relative merits of guns and buttercups; when a city council is arguing whether to build a freeway or beef up the parks department; or when an insurance company is deciding whether it can afford to reimburse clients for horticultural therapy as well as heart transplants.

A small nucleus of researchers—horticulturists, psychologists, geographers, landscape architects—are seeking some hard scientific data to support what we all know about our seemingly magical kinship with plants.

Pioneers in the study of people-plant interactions were brought together this spring at a national symposium on the Role of Horticulture in Human Well-Being and Social Development, held in Arlington, Virginia, and sponsored by Virginia Polytechnic Institute and State University. Organizers hoped to give the field increased visibility, and to encourage other researchers to begin looking at some of the fascinating questions that remain unanswered.

Roger S. Ulrich, associate dean for research in the Texas A&M University College of Architecture, is doing the kind of studies that should make the most skeptical policymakers sit up and take notice. Work by Ulrich and others shows that looking at trees, rather than manmade structures with no vegetation, affects us not only mentally but physically. Our brain waves, blood pressure, and heart rate all show a state of relaxed alertness. Patients recovering from surgery seem to do so faster and with less discomfort.

Yet he notes that most of these studies focused on large vegetation such as trees and shrubs. We still don't know what role flowers can play, for instance, when planted alongside an interstate. And what, if any, is the additional benefit of an active experience with nature, such as gardening, versus a passive experience, such as gazing out a window?

Elvin McDonald

Symposium organizer Diane Relf said that if the meeting were dedicated to any one individual, it would have been Charles Lewis. Recently named research fellow in horticulture at the Morton Arboretum, Lewis has worked closely for many years with community gardening projects. He has observed how the beauty of a garden amid the rubble of a tenement and the experience of having something to nurture in an atmosphere of frequent violence and little hope can change people's attitudes toward themselves and their interactions with each other.

On a social level, the community garden gives a face to other residents, who may otherwise spend much of their time behind locked doors. They begin to feel safer, because they can recognize whether someone who enters their building is a friend or a stranger. The gardens also establish territorial markers that say to the rest of the world, "this is ours."

In seeking to explain the profound effect gardening has on individuals, Lewis points to "the rehabilitative effects of self-esteem." Plants are living yet nonjudgmental entities that empower us, providing evidence that we have the ability to change things for the better. They reassure us that life has predictable rhythms, and that change need not be frightening.

That plants may resonate with something age-old and elemental in our biological makeup is indicated by studies showing that, with minor exceptions, people of all ages and cultures tend to prefer the same type of landscape, which evolutionary biologist Gordon Orians has called the savannah: a relatively open, slightly rolling terrain, with large, scattered trees. This is the type of setting where our ancestors fared best in their climb up the evolutionary ladder.

Casey O'Connor: PHOTO/NATS

Young children in particular prefer the shape of trees found on that savannah, which were multi-trunked and broad-canopied. This is true even for children raised in a rain forest or amid conifers.

Stephen and Rachel Kaplan, a husband-and-wife team of psychologists at the University of Michigan, have repeatedly found this pattern in two decades of studying landscape preferences. People are particularly drawn to scenes where a path, or a body of water, seems to promise easy locomotion. They find much less appeal in

Gay Baumgarner/PHOTO/NATS

scenes showing undergrowth or tall ground cover that might make movement difficult (which may help explain why ornamental grasses and wildflower meadows have not overtaken the lawn's popularity in American front yards). And the setting must give us not only a feeling of competence to move, but also safety. We want to be able to see through the vegetation. "It is far easier to avoid being surprised in an open, transparent setting than in a dark and dense one," the Kaplans note in their book, *The Experience of Nature; A Psychological Perspective.* Yet we also want trees or shrubs to provide cover should we need it, and perhaps to act as landmarks for helping us to navigate.

The Kaplans have found that people want settings to be understandable and yet to entice exploration. In particular, mystery—the belief that something intriguing lies just around a bend in a path or beyond a lattice—has been recognized as an important landscape design element since the early 1900s. For our forebears, perhaps it served an important survival function by enticing them to explore further and find more food or better shelter. At another level, new discoveries add spice to life, and we are invariably enchanted by a hint that there is more to be learned just seconds away.

Roger Ulrich says there are a number of theories about why we need periodic "nature breaks." Some relate to what behavioral scientists call overload and arousal. These theories hold that we need enough stimuli to keep us interested in what is going on around us, but that too much is, well, too much. This would account for our preference for a few scattered trees rather than a tangle of brush.

Other theories hold that we learn to like nature, or particular types of landscapes and plants, based on our experiences. We associate cities with work, traffic jams, and fear of crime, and the out-of-doors with vacations, family picnics, and baseball games. These learning theories might explain why the French are inordinately fond of topiaries and why Americans insist on their foundation plantings, which gardeners in other countries consider a bit bizarre.

Some research has found differences in preferences of those in different age or ethnic groups. It appears, for instance, that black Americans prefer natural scenes that are more orderly and well groomed than those liked best by their white counterparts. "But the cultural similarities," emphasizes Rachel Kaplan, "are at least as striking as the differences."

Frances M. Roberts

Another aspect of the important role nature plays in our lives is what Stephen Kaplan calls "the restorative experience." He bases his analysis on observations made a century ago by psychologist William James. In James' view there were two kinds of attention: involuntary attention—the sort we give to things that are fascinating in themselves; and voluntary or directed attention—the sort we give to a long speech by the boss because we want to keep our job. The focus of attention doesn't have to be unpleasant. But giving anything this kind of attention means inhibiting other thoughts—from extraneous noises to worry about the results of a medical test. And long periods of such inhibitions can result in what Kaplan calls "directed attention fatigue." We can become irritable, impatient, and less able to make sound judgments.

Stephen Kaplan makes a distinction between this type of fatigue and the usual interpretation of stress as a reaction to something that is threatening or harmful. "Between somebody who's been chased by a bear, and someone who's spent a week in business meetings, who do you think needs a vacation the most?" he asks.

We can usually recover from such fatigue by spending time in a restorative environment. Kaplan says that the outdoor experience is high in four factors that seem to be needed for such experiences: it provides a sense of "being away" from what is stressing us; a sense of "extent"—that the world is larger than we are; fascination—in this case, what Kaplan calls a "soft" fascination that allows for a more reflective mood than a drag race, for example; and compatibility with our inclinations and purposes.

Behavioral scientists are now confirming observations made more than 130 years ago by landscape architect Frederick Law Olmsted. He argued that parks benefit humankind both mentally and physically. Nature employs the mind without fatiguing it, he said, holding our attention

Elvin McDonald

Ivan Massar: PHOTO/NATS

Elvin McDonald

while blocking out distractions, both exercising and tranquilizing our faculties.

In 1978, Ulrich designed a simple experiment that eloquently illustrated Olmsted's "tranquility hypothesis." His subjects were university students who had just taken a final exam and therefore were experiencing mild stress: they were somewhat tired, and also a little fearful and angry. He showed one group slides of an unblighted urban landscape with no vegetation, and the other, slides of unspectacular natural settings dominated by trees and other plants.

After looking at the slides, the second group felt happier, and less fearful and angry. The urban scenes not only failed to reduce stress in the first group, but made them feel somewhat angrier and much sadder (see charts, below).

The study was recently repeated by Mary Honeyman, a Wichita, Kansas, landscape architect who at the time was a doctoral student at Kansas State University. Honeyman showed her subjects urban scenes with and without vegetation, and scenes of the rolling Flint Hills prairie of eastern Kansas. Interestingly, the nicely landscaped city scenes were most effective at reducing stress: even natives of the relatively treeless plains seem to prefer having some trees around.

And nature seems more restorative than other relaxing activities. Terry Hartig, Marlis Mang, and Gary Evans of the University of California at Irvine found that a group of stressed subjects felt better after taking a forty-minute walk in an area with trees than they did after walking in an area without trees or reading magazines or listening to music.

The healing power of restorative experiences has also been shown in a recent University of Michigan doctoral dissertation by Bernadine Cimprich, formerly a nurse at the Sloan Kettering Cancer Research Center. She asked a group of breast cancer patients to choose from a list of relaxing activities and faithfully participate in them three times a week. Most picked outdoor and nature-related activities; gardening was especially popular. Before they began this regimen, according to Stephen Kaplan, some of the patients were so distressed from their illness and worrying about it that their scores on attention tests fell into the range of people suffering from brain damage.

Many of those patients eventually went back to work and took on new projects, such as learning a foreign language. Of patients in a control group that didn't participate in the restorative activities, fewer went back to work and none took on new projects.

Marcia West, a graduate student at the University of Washington, found that prisoners who looked out at a brick courtyard needed more medical attention for minor ailments than those who could look at a natural scene, and Ulrich observed that patients recovering from gall bladder surgery were less likely to need strong medication for pain or to complain to their nurses.

Ulrich is now conducting a similar study in Sweden. At the foot of their beds, patients who have undergone open heart surgery see either a forest scene, a lake and some trees, a white panel, an abstract design of blues and greens, or no picture at all. So far, the research team has found

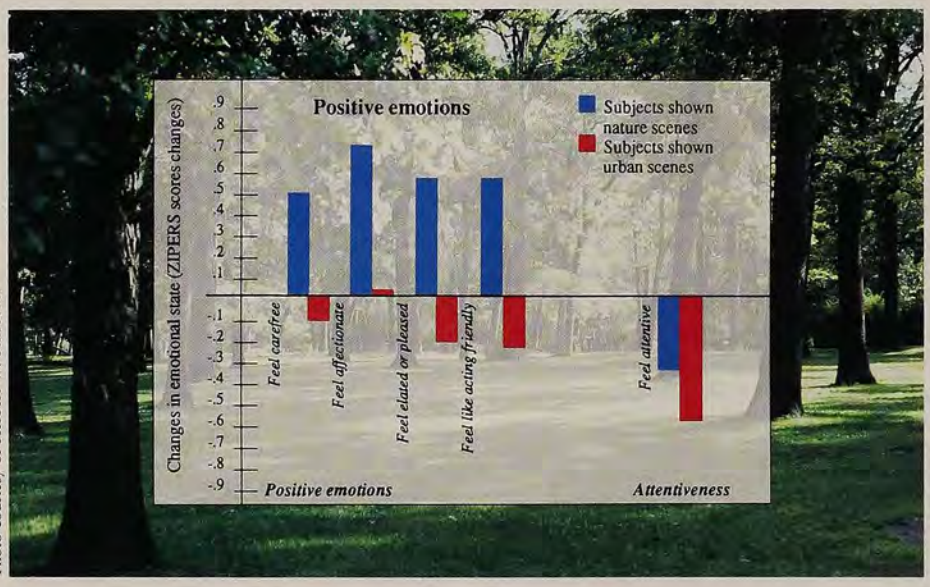

Photo courtesy of Herbert W. Schroeder

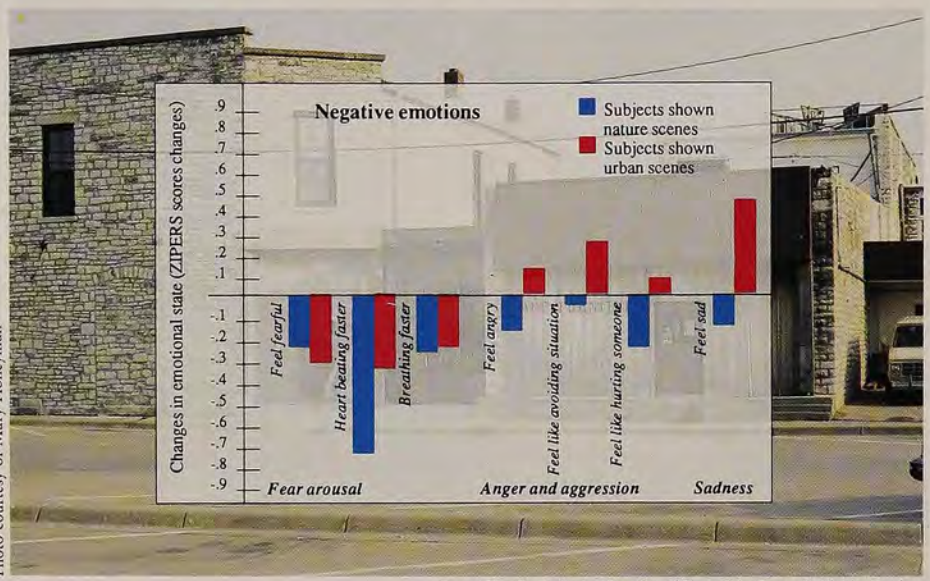

Photo courtesy of Mary Honeyman

From "The Psychological Benefits of Plants," by Roger S. Ulrich, *Garden*, Vol. 8, No. 6, November/December 1984. Reprinted by permission.

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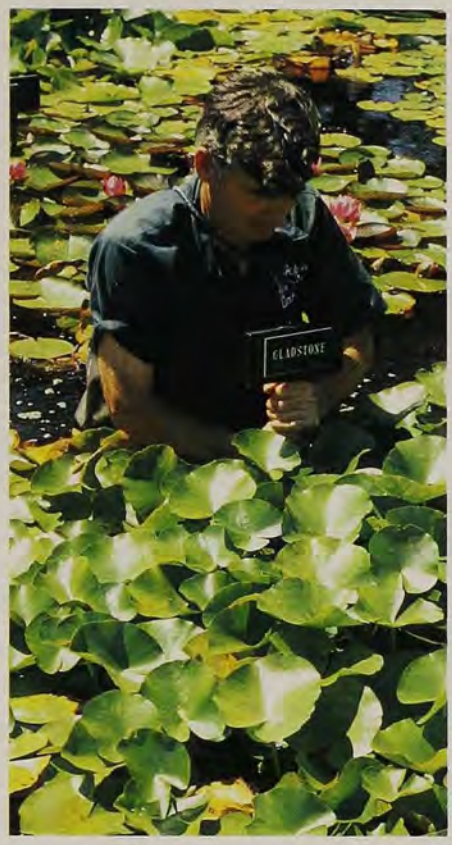


Elvin McDonald

that the abstract patterns make patients anxious, and that patients prefer the lake scene to the forest, possibly because the latter is more dark and complex than the archetypal savannah.

Ulrich has found that looking at nature scenes produces high levels of alpha brain waves, indicating that the viewer is attentive but relaxed. It also appears to slow the heart rate and lower blood pressure and muscle tension and reduce electrical conductivity in the skin—all signs of less stress. Along with Texas A&M colleague Russ Parsons, he believes that these contacts with nature might have an impact on our hormones and ultimately, might help keep us well through affecting our immune systems. Other researchers have found an apparent connection between relaxed states, such as hypnosis and meditation, and healthy changes in the human immune system.

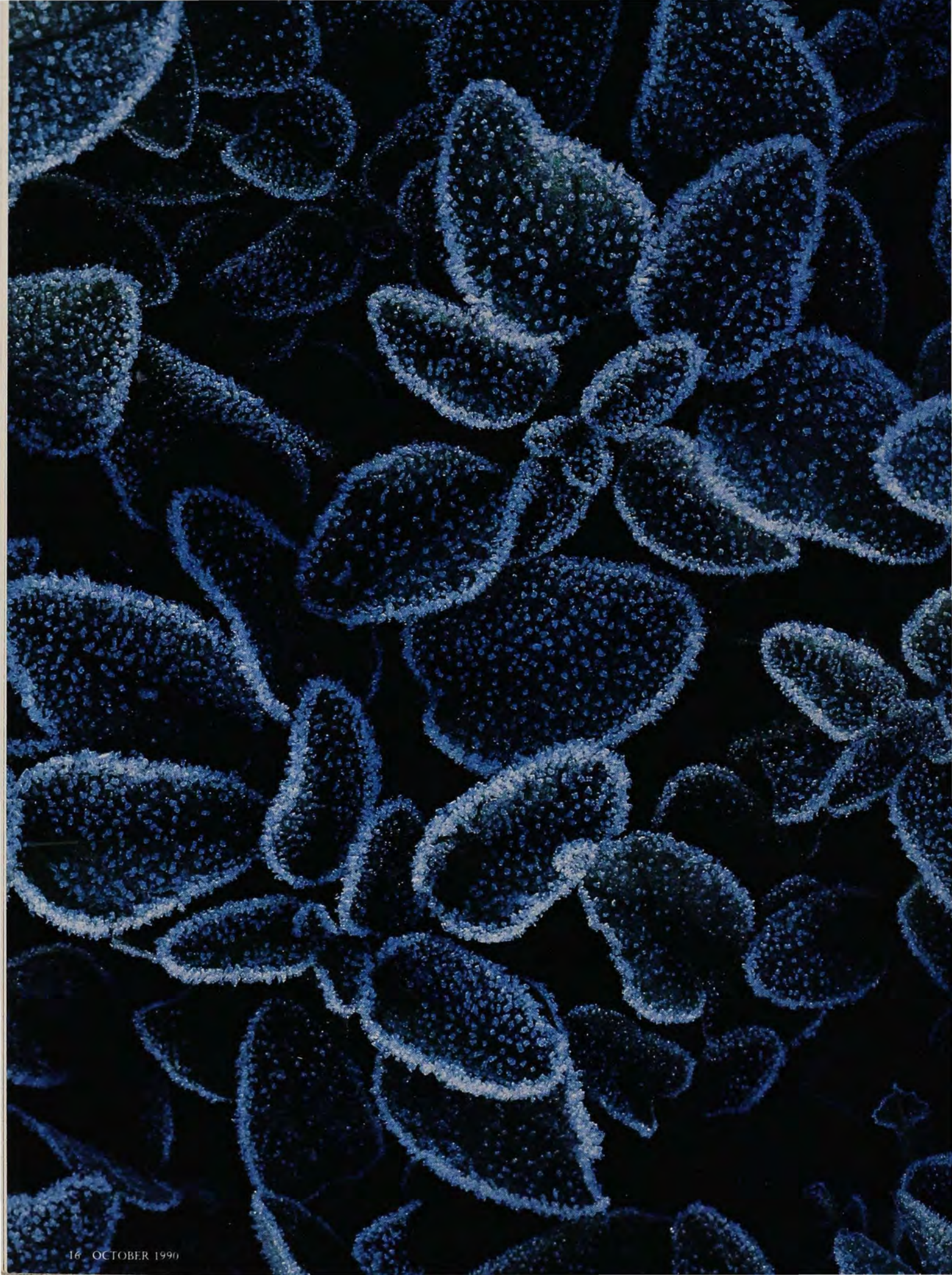
Paintings of natural scenes have been found to soothe people in other high-stress settings, such as emergency waiting rooms, dental stress clinics, and work environments. Because of the potential savings in health care costs, Ulrich believes such studies might in the future make a strong economic argument for including landscaping and real windows in public buildings and factories.

At the Arlington symposium this spring, Ulrich was asked: Don't these studies show that people don't need trees, but simply pictures of trees? He responded that new technology will answer that question by allowing physiological measures to be taken while subjects stroll around in parks and forests or gardens. The Texas A&M Architecture College recently opened a multimillion dollar computer visualization laboratory that allows people to "walk through" a landscape before it is built.

But even pictures of landscapes are making a difference. When an Illinois town council proposed removing roadside trees in order to widen a heavily traveled street, researchers at the University of Illinois used graphic illustrations of the unappealing outcome of such a step to persuade council members to seek an alternate solution.

"I think visual simulations are convincing people to value the real thing," said Ulrich, "so that we are less likely to have to buy back our natural views after they've been turned into alleys."

Kathleen Fisher is editor of American Horticulturist.



GARDENING CHALLENGES

From Freezing to Frying in NEW MEXICO

by Thelma E. Honey

Gardening in New Mexico can be a satisfaction-packed adventure if one is willing to confront its challenges: capricious weather with hot sun, drying winds, erratic frost dates, heavy rains or none at all, and destructive hail; inhospitable soil that ranges from pure sand to a hardpan called caliche; alkaline water and soil; drought-resistant weeds; and insect, bird, and animal attacks concentrated on gardens where other vegetation is often lacking.

The challenges, and the methods used to meet them, can change within a few miles. New Mexico contains six climatic zones, and the altitude varies from 3,000 feet at Carlsbad in the south to the 13,160-foot Wheeler Peak near Taos in the north. The growing seasons are short in the higher altitudes: only 79 days long in Red River in the north, compared to 219 days at Truth or Consequences in the south. Above 7,000 feet, the gardener needs to be a combination gambler-magician—or invest in a greenhouse—to triumph over wild weather extremes and bitterly cold winters.

The date of the last spring frost only begins to tell the story of the climate's ever-changing moods. For instance, in 1987 the last frost in Albuquerque was near the average April 17 date. But the days remained

Photo by Andrew Rakoczy

Wild weather extremes are the norm in New Mexico. Here the leaves of oregano are sprinkled with frost.

cloudy, rainy, and cool, mostly in the 60°s and 70°s. Nights were barely above freezing. But the second week in June, my sweet peppers, tomatoes, and cucumbers were blooming, and I had to set them out. The day was cloudy with a high of 80 degrees.

The next day's temperature was 98 degrees; the sun and 40-mile-per-hour wind sent the plants into immediate shock. Half the peppers and the cucumbers died before nightfall, despite the protection of shade cloth, heavy mulch, and deep watering. The tomatoes and remaining pepper plants neither died nor grew; the blossoms fell off. Daytime temperatures remained in the high 90°s until mid-August. Not until the days cooled did the tomato plants start to grow, bloom, and set fruit. One pepper plant finally put out two new leaves and a blossom, which had developed into an inch-long pepper by frost. I potted the seven-inch-tall plant and brought it into the greenhouse where it produced a pepper almost as large as the plant itself.

This was unusual, even for New Mexico, but in forty years, I've never experienced a "typical weather" year. Sudden, drastic changes are the norm. Weeks of blistering sun, single-digit humidity, and relentless wind may suddenly end with dark storm clouds that dump inches of rain in minutes. How can a gardener protect plants and minimize the damage of these drastic changes?

One approach to the New Mexico gardening challenge, which was in vogue when I first came to Albuquerque forty years ago, was "Southwest landscaping," touted as maintenance-free and water-conserving. Sheets of plastic were spread on the ground and covered with varying sizes and colors of rock. A yucca or two, pampas grass, or a few pine or spruce trees might be planted in holes scattered in the expanse of rocks. Plantings either died or struggled to survive as the plastic prevented water from reaching the roots. The rocks reflected the hot, glaring sun. Soon the wind blew enough sand between them to sprout weeds. Removing the weeds along with leaves and other debris was so difficult that many yards were neglected and soon became unsightly.

I'm delighted to see the advent of Xeriscaping, derived from the Greek word "xeros," meaning "dry." (See *American Horticulturist* News Edition, May 1989.) I find this a much more attractive and practical approach, which is actually accomplishing what the "Southwest landscaping" concept promised but failed to do. A well-planned Xeriscape garden lets one replicate a beautiful natural landscape requiring little water and/or time instead of creating one's own private dustbowl of gravel and yucca. Nature has returned to our yards in the form of undemanding plants such as desert willow and pink-flowering locust trees, saltbush and sage and winterfat (large, flowering shrubs), and colorful, ground-hugging penstemons, bush morning glory, and verbena planted among large rocks.

The secret to a successful Xeriscape garden, as with any garden, is a good plan. The most efficient water use is achieved by creating plant zones where those needing like amounts of water are grouped together. Terraces add visual interest and conserve water as do walls that protect plants from drying winds, provide privacy, and divide space.

But of course Xeriscaping addresses only the problem of drought. There are still other aspects of the state's wayward weather to contend with.

The wind can be broken with trees, shrubs, vines, walls, fences, and netting. While evergreens offer protection from wind, heat, and cold, deciduous trees planted on the south and west can perform the twin missions of offering cool shade in summer while maximizing the warmth of the winter sun. Outside the windows that form the west wall of my den, a grape arbor serves the same purpose: it channels cooling breezes through the shaded walkway in summer, but allows the winter sun to warm the house.

When late spring or early fall frosts threaten, quick-fix protection can come from any number of recycled household items: paper bags, newspapers, boxes, bushel baskets, light blankets, or bed sheets. There are also commercial products such as row covers, hot caps, and plastic tepees with water-filled sides that can help extend the growing season. I make temporary greenhouses of plastic supported on pipe A-frames (see "She Conquers Without Stooping" in the October 1989 *American Horticulturist*).

My three most versatile garden guardians are mulch, shade cloth, and row covers. They temper the force of pelting rain and hail that can quickly shred tender plants and hammer the best soil to the consistency of concrete. All three can help mitigate the burning rays of the sun, diminish the destruction of hot winds, and conserve moisture. Weeds can be controlled with mulch and row covers; the latter also serves as a

Top: Forty years ago "Southwest landscaping" promised to be maintenance free and water-conserving but in reality plants struggled to survive. Above: This patch of soil shows the effects of a sudden rain storm followed by intense heat.

Top photo by James Sais; bottom photo by Mrs. Kevin Scheibel

shield against insects.

My first New Mexico garden was in the eastern plains in an established community garden for employees of the United States Corps of Engineers at Conchas Lake. Silt, manure, and organic matter, added over the years to the sand and gravel that constituted the natural soil, had produced a fairly viable mixture.

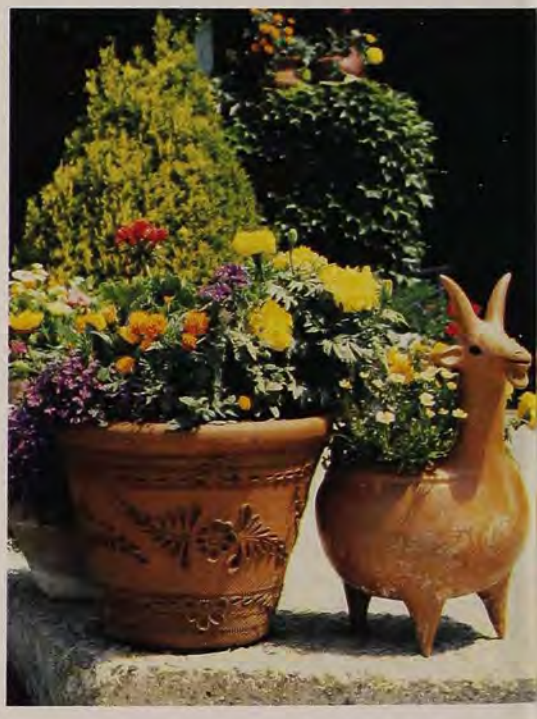
Several years later we moved to Albuquerque, 2,000 feet higher but with a comparable growing season. Beyond the back lawn of our new home was a large, barren area that had been compacted by years of children's feet and dogs' paws. Water ran off instead of penetrating. The hard surface resisted our best digging efforts. A friend broke his light-duty rototiller and barely scratched the surface. But my husband began taming the monster by building a compost pile on it. He gathered the neighbors' grass clippings to supplement ours and piled them on a ten-foot square section. Into this he mixed manure from a local packing house and added truckloads of leaves in the fall. This was covered with gunny sacks to hold moisture, and sprinkled daily. By spring, most of the leaves and clippings had rotted, and the top six inches of the compacted soil was soft enough to dig. We grew a few tomatoes and beans that year. In the fall, we dug trenches as deeply as possible and filled them with manure and organic matter, and composted on top of another ten-foot square. Eventually, we turned the entire area into a highly productive garden.

My present location—still within the city limits—is on the alluvial plain between the west face of the Sandia Mountains and the Rio Grande Valley.

The rocks in my would-be garden ranged in size from softball to barrel; I built a rock garden with some and had the rest hauled away. Of greater concern was the "soil" itself, which was essentially sand and gravel. For several years, the added compost, fertilizer, and organic matter simply disappeared. One fall, in desperation, I scrounged a mountain of cardboard boxes and flattened them out in a thick layer over the garden area. On top went a year's supply of newspaper, leaves, clippings, and all available humus. Over that, my son spread a truckload of barnyard fertilizer. Topping off the pile were foot-thick books of baled alfalfa hay. Regular watering kept it wet and by spring, most of it had rotted. This seemed to stop the sand and gravel from swallowing the organic matter; after three years of this, I had good garden soil.

In other areas of New Mexico, gardeners are plagued with adobe, which like other clays is mucky when wet and concrete-hard when dry, and caliche—soil particles cemented together by carbonates of calcium or magnesium. Found on top or under the surface in soft, thin layers or hard, thick beds, caliche interferes with water movement, hinders root penetration, causes salt accumulations on the soil surface, and

Right: Hatch, New Mexico, in the Rio Grande Valley is the chile capital of the world. Here are green chile 'Big Jim' and tomatoes. Far right: California poppies (Eschscholzia californica) *thrive in southern New Mexico. Bottom: Containers can provide the bright colors that typify Southwest gardens while making its inhospitable soil a nonconcern.*



its high pH restricts plants' ability to use many micronutrients, including iron. One solution is to dig holes large enough to accommodate the roots of the particular plant, remove the caliche, and replace it with a good soil mixture. If it isn't practical to dig through the layer, boring small outlets will improve drainage.

The pH of our soils tends to range around 7.5 to 8.5. Since more plants prefer an acid soil, we need to counterbalance the alkalinity by adding lots of gypsum (calcium sulphate), compost, barnyard manure, weeds, old hay, leaves, and kitchen scraps.

Areas receiving seven and a half inches or less rainfall annually are technically defined as deserts. Albuquerque narrowly fails to qualify—over the past forty years, the city has averaged eight inches a year. Thus we need to do a lot of watering, but water from rivers and even deep wells is hard, which further increases the soil's inherent alkalinity. Between seventy and eighty feet down, one hits brackish water, so wells must be at least 100 feet deep. (I recently learned that New Mexico State University is investigating the feasibility of shrimp farming in the salty water that plagues farmers in the southern Rio Grande Valley. Now that's salty water!)

The Indians were irrigating by flooding before the Spanish arrived here four centuries ago, and it's still an accepted practice. But inadequate drainage causes salts to leach to the top of the ground; acres of putrid-smelling alkali beds are common sights. Some have occurred naturally where rainstorms fill low areas with no outlet, and others by poor farming methods. I prefer a sprinkler or soaker hose combined with heavy mulch. This requires less water (thus, less alkali), increases humidity, and eliminates soil crusting.

While the environment is constantly threatening our vegetables and ornamentals, the weeds and indigenous plants have, through the centuries, evolved means of keeping their species alive. Many have roots that reach far below the surface to grab every available drop of moisture and trace minerals that exist only at such depths. They are a gardener's mixed blessing: they will donate their precious trace minerals to the compost, but their deep roots defy eradication. For over a decade, I've been locked in battle with a couple of bindweed plants. Each spring they burst forth, and I attack with the latest "sure cure." We are familiar adversaries fighting to a tie each year, but in the final chapter, I know the bindweed will win.

During years with adequate moisture, these weeds and native grasses produce huge quantities of seed, which are carried long distances to literally blanket the earth. Their inherent trait for self-perpetuation and the aridity keep them dormant until conditions are favorable. Weed and grass seeds have been known to sprout after several decades.

Because these pests are genetically engineered to survive drought, their nemesis is too much water. Heavy mulch will rot many of the seeds. I wage heavy-duty war before spring planting by flooding the garden and covering it with black plastic so

Top left photo by Andrew Rakoczy; top right photo by Mrs. Kevin Scheibel; bottom photo by James Sais

that the sun will cook the weed seedlings as they sprout.

For Albuquerque's insects, birds, and animals, a cultivated garden or fruiting tree or vine is an inviting oasis in a wasteland. When my peas and lettuce break ground, they may be the only green things in miles. If not protected, birds and rabbits move in and by nightfall, the crop has disappeared as though it had never been. In many rural areas, fences are a necessity for keeping out deer, raccoons, skunks, and other varmints.

In addition to the plastic that protects my early garden from birds and rabbits, as well as cold and frost, and row covers for thwarting bugs, I drag out nets to keep birds from cherries, peaches, nectarines, grapes, and berries.

The insect problem will be reduced by a prolonged cold winter and a hot, dry spring or summer. But a mild winter and cool, damp spring or summer will produce a bumper crop of bugs. I back up the row cover with dormant oil spray, diatomaceous earth, insecticidal soap, *Bacillus thuringiensis*, beetle and grasshopper spore, sticky traps, praying mantises, ladybugs, lacewings, and trichogramma wasps. An electronic bug killer eliminates vast quantities of night-flyers.

That's the downside of gardening in New Mexico. Here's the upside:

Most fruits and vegetables, except tropical and high-acid or high-humidity lovers, can be grown somewhere in the state. A wide variety can be grown everywhere except in extreme northern and high-altitude locations. Extensive pecan orchards flourish in the Mesilla Valley south of Las Cruces. Hatch, in the Rio Grande Valley north of Las Cruces, has long been the chili capital of the world, but the quality and quantity of chilies grown in Roswell, in the Pecos River Valley, are giving Hatch produce a run for its money. The middle Rio Grande Valley is fruit country, where apricots, peaches, apples, plums, pears, cherries, and grapes are abundant. With a little planning, I can grow almost any vegetable from cold weather peas and cole plants to heat-loving melons.

We garden in New Mexico for the same reasons that gardeners elsewhere do: for the incomparable taste of fresh-picked vegetables and fruits; for the oneness with the universe as our hands feel the rhythm of life in the soil and we watch the birth of a new plant as it struggles from the damp earth; for the pride we experience when the plant we have lovingly nurtured brings forth its first fruit. But if the amount of satisfaction a gardener feels is commensurate with the effort and ingenuity expended, then we who garden in the Land of Enchantment may very well attain the ultimate in fulfillment!

Thelma E. Honey is a free-lance writer who serves on the board of directors of the American Horticultural Therapy Association.

The Miracle Worker of Meaux

by George Taloumis

When one encounters garden statuary depicting a saint, it is more likely than not Saint Francis, the patron saint of birds and animals. But while Saint Francis is often considered the protector and guardian of gardens, the patron saint of gardening is the relatively little known Saint Fiacre.

Fiacre de Breuil was said to be a nobleman from Ireland—although Scotland also claims him—who lived from 700 to 777 A.D. Fiachra—to use his Celtic name—joined the Benedictine monks of that era in going forth from their native lands to spread the word of God from country to country.

Fiacre wandered to Meaux, near Paris, where he began to preach Christianity to the heathen Gauls. But he was less content with the nomadic life, and less comfortable with the company of other people, than most of his fellow missionaries. He approached the bishop of Paris, Bishop Faro, and pleaded for a piece of forest land where he could become an anchorite and settle to grow plants. Sensing his great faith, the bishop granted his request, and Fiacre began to clear the land to grow vegetables, fruits, and flowers.

Fiacre had wished only to live as a hermit, but word soon spread far and wide both of his great sanctity and his skills as a gardener. As a result, local people and pilgrims, peasants and nobles alike, flocked to him for comfort, healing, and spiritual guidance. These strangers were fed and sheltered. With his wise words he gave them comfort and peace of mind; with his herbs he eased their pain and cured their ills.

The many visitors, of course, meant a need for more food and more land on which to grow it, and once again Father Fiacre approached Bishop Faro. According to Dion Clayton Calthrop's *The Charm of Gardens,* published in 1910, the bishop offered the monk as much land as he could mark with a boundary, working alone with his spade, in one day. Fiacre went back to the woods and with some sticks, marked off an area that no human could hope to enclose in a day with simple hand tools. Then he returned to his quarters to pray.

A vicious woman who lived nearby, said in some accounts to be a witch, saw the next morning that Fiacre had indeed achieved his prayed-for results, and that the outline of all the land he had desired had been turned with a spade. Jealous—of his powers or landholdings or both—she told the bishop that Fiacre had invoked the help of the devil in completing the task set out for him.

When the bishop investigated, he concluded that no evil spirits had been involved. Rather, he pronounced the outcome a miracle. And because the neighbor woman had lied, from that day forward women were forbidden to enter Fiacre's retreat. Calthrop says that this was the decree of the bishop. Other legends hold that the vow came from Fiacre himself, and that he swore that any woman daring to violate the ban would be struck with blindness or a more vaguely described infirmity.

Following Fiacre's death, a Benedictine monastery was built on the grounds of Fiacre's former garden, and it continued to be a place of reputed miracles. In the 1600s, his remains were permanently interred in the chapel at Meaux, and people by the thousands began traveling there to pay homage to the saint of horticulture. Both farmers and gardeners brought flow-

ers to honor this hard-working monk, particularly on his feast day, August 30—although either August 18 or September 18 is thought to be his actual date of birth—and eventually adopted him as guardian and protector of the plants, both edible and ornamental, that they lovingly nurtured.

But the legendary curse on women was not quickly forgotten; as late as 1641, it has been written, Anne of Austria remained outside the grating of the shrine to Saint Fiacre for fear that entering would lead her to go mad or blind.

Gardeners do not have sole proprietorship to this miracle-working would-be hermit. Fiacre is also the patron saint of cab drivers.

Travel in the seventeenth century, when Fiacre's renown was at a peak, was primarily by horse-drawn carriage. Many of the devotees going to the saint's shrine may have rented one of these carriages at the Hotel de Saint Fiacre on the Rue Saint Martin, the central "cab stand" of Paris, where a figure of the saint was mounted over the door. Since most taxi routes began and ended at this hotel, all the carriages in the city soon came to be called "fiacres," and the drivers adopted him as their patron saint. Today, the French word "fiacre" is synonymous with "taxi."

These two symbols connected with Saint Fiacre—flowers and taxis—sometimes coincide. Even in recent years, it has not been unusual to see while traveling in France or elsewhere in Europe a single rose or carnation, a bunch of fresh or wilted flowers, plucked from a garden or purchased from a roadside stand, adorning the area in front of a cab or bus driver's seat, where those early cab drivers often placed a small figure of the saint.

Fiacre's memory is also kept alive in Scotland, which continues to claim him. Figures depict him in several ways, although he is always shown with a spade, the tool of his most famous miracle. The statue in my own garden is a copy of a fifteenth-century English statue in the Cloisters gallery of the Metropolitan Museum of Art in New York City. In it, Saint Fiacre holds the traditional spade, but his head is bowed over a book, a symbol of his wisdom and the rich heritage he has left gardeners.

George Taloumis, New England regional editor for Flower & Garden *magazine, is a free-lance garden writer who lives in Peabody, Massachusetts.*

George Taloumis

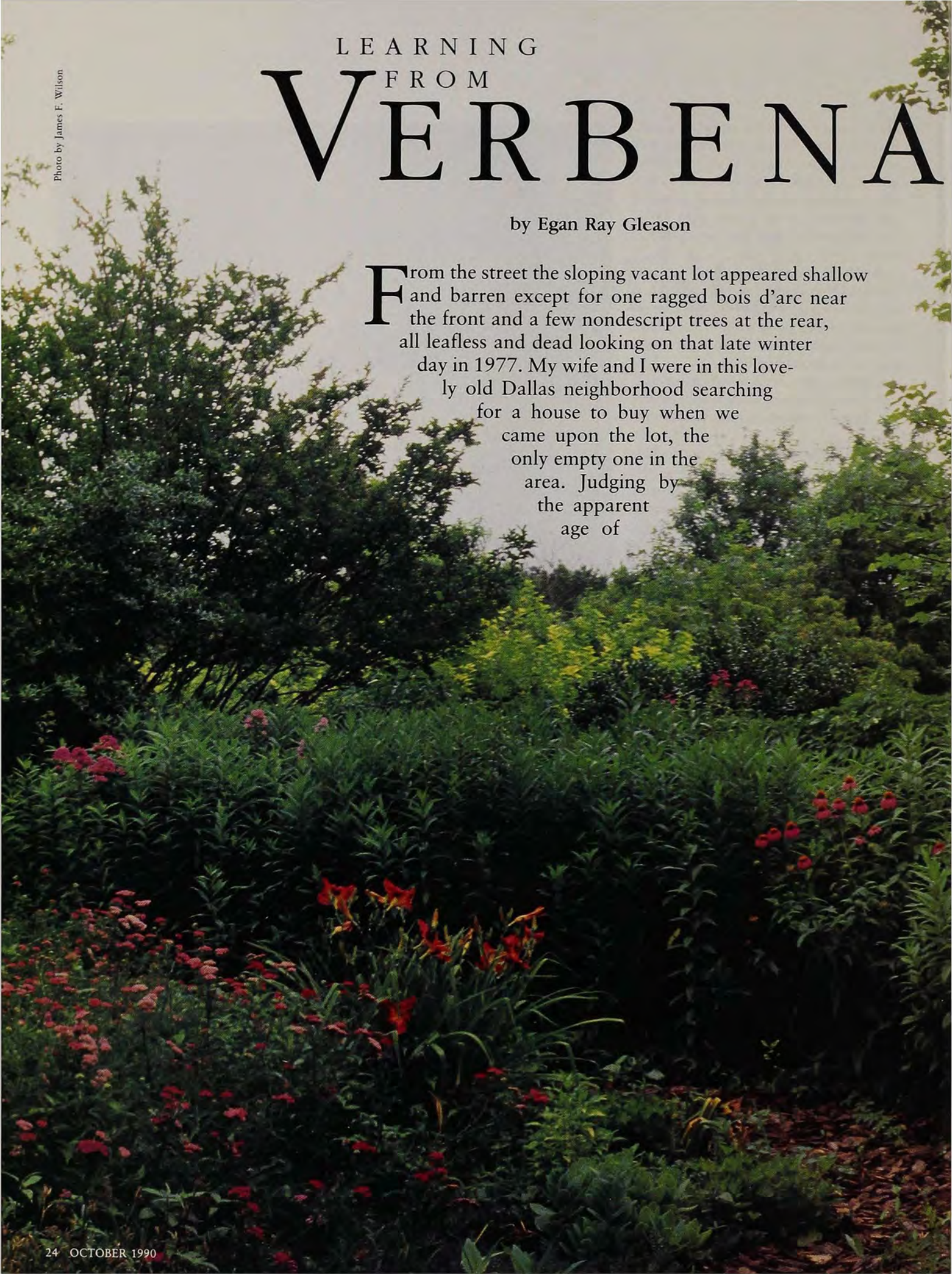


Photo by James F. Wilson

LEARNING FROM VERBENA

by Egan Ray Gleason

From the street the sloping vacant lot appeared shallow and barren except for one ragged bois d'arc near the front and a few nondescript trees at the rear, all leafless and dead looking on that late winter day in 1977. My wife and I were in this lovely old Dallas neighborhood searching for a house to buy when we came upon the lot, the only empty one in the area. Judging by the apparent age of

A mini-meadow of wildflowers flutters beside the walk to Egan Gleason's house.

Left photo by Egan Gleason; right photo by James F. Wilson

Left: Wild verbenas poke up beside Queen-Anne's-lace. Right: The small fish pond at the edge of the porch gives sparkle and sound to the walled garden.

the surrounding homes, it had been standing empty for twenty-five years or more. Our reaction definitely was not love-at-first-sight; we didn't even get out of the car.

It wasn't until a couple of months later that, mainly as an outing to enjoy the pleasant spring weather, we returned to the site. The "For Sale" sign was still there, so we drove down the alley at the back of the lot, parked the car and got out. From this high vantage point the impression was totally different. We were almost twenty feet above street level and could see over the roof of the schoolhouse in the low-lying park across the way to a view of treetops that extended for more than a mile. By most standards it was not a great view; but given the flat prairie of north Texas, any view at all is rare and this one was better than most. The "dead" trees were now leafed out and loomed larger, and the empty area at the center of the half acre was completely filled with white and yellow wildflowers wafting a heavenly odor.

Perhaps it was the intoxication of that heady perfume that warped our reasoning to such an extent that we decided, then and there, to buy the property and build a new house on it for us and, as it turned out, the new baby girl that was born a year later.

I'm an architect. Some architects never build their own homes. For others it becomes an obsession, and they build house after house. This would be my second.

The first was a duplex town house on a tiny lot close to central Dallas with only a token front lawn and a small New Orleans-like private courtyard at the rear that had become so shaded by trees that only ferns and ivy would grow there. It was delightful to look into but impossible to use because of the roar of jets taking off from the nearby airport.

We yearned to live on acreage in the country. Having grown up in southern Mississippi and northern Louisiana, our fantasy was to live in an isolated farmhouse at the end of a lane, surrounded by flower and vegetable gardens, orchards, vineyards, and ponds, all centered in a vast virgin forest. But our professions wedded us to the city, so the planning and building of the new house and garden became an exercise in metaphor and miniaturization. The task we took upon ourselves was to accomplish all our dreams, in some degree, on half an acre five and a half miles from the center of Dallas.

The house we built is a contemporary version of a Texas farmhouse: a simple hipped-roof box with a stained board-and-batten exterior and an unpainted pine interior. We look upon the house more as an enclosed portion of the landscape than as an object in the landscape. All around the house there are concrete porches, wood decks, brick terraces, and garden walls, which, combined with trellises and walks, blur the distinction between house and landscape. To open the house to the outside, we have incorporated as many windows and sliding glass walls as our budget and energy conservation allow.

We moved into the mostly completed house September 8, 1978, our daughter's six-month birthday. As we celebrated that evening, still tired from the move, we looked out on a ravaged landscape. Though the house was planned to take advantage of the slope of the site and disturb the natural lay of the land as little as possible, the foundation excavations, the concrete mixers and other heavy equipment, and nine months of general construction work had wreaked havoc. The final grading left the house sitting uncomfortably in the middle of a dry, dusty, grassless, gravelly scrape—not exactly the gentle glade we hoped for.

At this point Dallas entered one of its long rainless spells and when it finally did rain, six inches fell in one day, washing much of the dusty earth into the street and leaving deep gullies around the house. Fortunately, the spring of 1979 was without disasters and with just enough rain to enable us to relevel the yard and plant trees and shrubs. We also prepared a bed inside the walled garden where we raised both flowers and vegetables since we didn't have time or energy to start a separate vegetable garden. The combination worked beautifully: the marigolds, tomatoes, zinnias, and peppers all grew happily together and were a delight to the eye. To quickly get some vines on the trellises, we planted 'Heavenly Blue' morning glories. They soon covered most of the front of the house and bloomed so profusely that year that, to this day, when we meet neighbors and tell them where we live, they say, "Oh yes, the house with the morning glories."

But the real surprise that first year was the wild verbena (*Verbena bipinnatifida*). Evidently, disturbing the gravelly earth in

most of the yard allowed the verbena seed, its source still unknown, to germinate and grow without competition. By default, I allowed them to continue to grow as I was so busy with other garden projects that I did not have time to plant the lawn and ground covers that were in my plans.

One Saturday morning that first summer, while I was shoveling dirt close to the street, a neighbor from the next block stopped her car near the curb and called out, "Your yard is just beautiful." At first I thought she might be joking, but I stopped and looked up the hill where she was looking. The wild verbena had thickly covered the whole front yard with its dark green feathery foliage and was tipped everywhere with thousands of lavender blooms. Yes, it was beautiful—and I could say that with objectivity since I had nothing to do with it.

"Thank you," I replied, not sure that I should be taking the credit. "I'm encouraged that you like it; I've been feeling some guilt about not mowing the yard and getting the lawn started."

"Why would you want to do that?" she asked.

"I don't know; I just thought maybe we should fit in with the neighborhood more . . . you know . . . *conform.*"

"Please don't do that!" she shouted. "The wildflowers are so gorgeous, so natural; they look perfect with your house." As she pulled away from the curb to leave, she added, "And besides, too many people conform."

With that shot of encouragement we began to work toward an even more natural development of the landscape, more closely aligned with our desire to live in the country. If we were to conform, it would be with nature's plan as best as we could learn and interpret it. We would find that nature teaches in sometimes quiet, sometimes violent, ways.

Already we were learning. That first fall we had collected bags of leaves that our neighbors had raked, dumping them on our yard so that we wouldn't have to look out on the bare, rocky ground. By springtime we noticed that a thin layer of soft compost had formed. We realized that if we continued to do this we would build up some topsoil; we had learned sheet composting. After eleven years of doing this we now have a few inches of light friable soil in much of the yard, a lower pH, and the much needed nutrients that are missing in this area.

Although those wild verbenas never

The Challenges of Gardening in Texas

On page 17, Thelma Honey vividly describes the hostile and diverse gardening climate of New Mexico. But as we all know, everything *is bigger in Texas, at least according to Texans.*

Photo by Sarah Gleason

Egan Gleason inspects a tornado-damaged cedar elm.

Having already lived in Dallas for many years, we knew its realities when we moved into our new home. The climate and soil would be more conducive to Johnson grass and briars than a softly wooded glen. We were soon to find out additional truths about the specific soil at our new utopia. There wasn't any. There was only limestone: powdery limestone, gravelly limestone, and solid limestone; great for the foundation of the house but not good for the growth of plants.

Soil is only the beginning of our problems. Sometimes in Texas, nature flaunts the untamed side of her disposition so forcefully that we, as gardeners, are cowed and sickened by such a display of wanton power. On the first day of January 1979, Dallas was hit with a freezing rainstorm. The thick and heavy coat of ice it left brought huge tree limbs and power lines crashing to the ground. At that time we had no large trees in our yard and suffered no major damage.

The summer of 1980 brought three months of the hottest weather ever recorded here and less than two inches of rain. There were fifty-nine days of 100-degree-plus temperatures, several times reaching 113 degrees. Although we watered as much as we could, many new plants withered and died in the unrelenting heat.

Then in 1983 the great arctic bulge that covered most of the country gave Dallas the coldest December in almost 100 years. Temperatures hovered just above zero for days (most unusual for this area) killing all our pittosporum, yew, and other marginally hardy shrubs and freezing our four fig trees back to the ground just as they had reached bearing size.

During all of January 1988, we received not one drop of rain, the only January when this has ever happened. Then in just three months—January, February, and March of 1989—we received rain equal to our average yearly total. For three of the past five years late March has brought hard freezes that totally killed back new growth beckoned forth by unseasonably warm weather in January and February.

Contending with the fauna among our flora has been a whole story in itself, equally as complex and open ended. Suffice it to note some of our observations: 1) Pests and helpers are inherent in the garden; a balance must be struck. Poisons complicate this balance and may make it impossible. 2) A healthy plant is its own best defense. 3) Knowing when to wait patiently and when to act quickly is essential. Aphids show up at least a week before their control, the lady bugs; disposing of the first tent caterpillar nest will prevent an infestation. 4) If ultimately you are defeated, accept it and move on. We no longer try to grow squash since it is not worth the effort that must be expended to control the squash bugs.

Terrible soil, erratic extremes in temperature, unpredictable rainfall, destructive insects, and the not even mentioned specter of fungus diseases that plague us each year; are we Dallas gardeners gardening in hell?

Oh, I think not. Like gardeners the world over, we have our share of setbacks, but we have our days of splendor too: fair days when the aroma from the Carolina jessamine curling around the front porch post blends with the fragrances of honeysuckle and wild plum to bring back that first day we walked on this land. It is much changed now. It would be presumptuous to say it has changed for the better; only that it has changed. For if we had never been here, nature would have changed it, as she is ever changing the land. We only hope our dominion on the land has been congruent with what might have happend without us.

—Egan Gleason

reappeared in the profusion of that first year, we learned from them, too: there were other wonderful native or naturalized plants on the property just waiting for a chance to dazzle us. We would not have to replace them with nursery-bought stock. There were bush honeysuckle (*Lonicera maackii*), rough-leaf dogwood (*Cornus drummondii*), American beautyberry (*Callicarpa americana*), and Virginia creeper (*Parthenocissus quinquefolia*). There were garlic, dewberry, and the wildflowers: pink primrose (*Oenothera speciosa*), violet (*Viola odorata*), blue flax (*Linum perenne* subsp. *lewisii*), wild foxglove (*Penstemon cobaea*), indian blanket (*Gaillardia pulchella*), blue-eyed grass (*Sisyrinchium angustifolium*), goldenrod (*Solidago altissima*), and several other species unknown to me.

Crape myrtle (*Lagerstroemia indica*), photinia (*Photinia serrulata*), privet (*Ligustrum amurense*), and nandina (*Nandina domestica*) had all infiltrated from the surrounding yards and naturalized themselves. Native trees began to volunteer all over the yard, and where they were in good locations we kept the best of them: red oak (*Quercus shumardii*), cedar elm (*Ulmus crassifolia*), pecan (*Carya illinoinensis*), live oak (*Quercus virginiana*), and red bud (*Cercis canadensis*). To fill the vacant areas we even kept some of the "junk" trees (hackberry, chinese tallow, sycamore, and catalpa), which we remove as the better trees get bigger.

A big bonus to being a new gardener in an established neighborhood soon became apparent. Some people had lived and gardened there for more than thirty years. Many were quite willing to share their hard-gained knowledge, and often their plants, with their new neighbor. And wonderful plants they were: many so-called old-fashioned common varieties that grew, tried and true, in the area but were not generally available at the local nurseries, which tended to carry more exotic and more expensive stock. Lilac (*Syringa vulgaris*), iris, perennial phlox (*Phlox paniculata*), and lantana (*Lantana camara*) were all donated, as were long-lived, rapidly multiplying spring bulbs and loads of monkey grass.

We also were given starts of plants from our parents' homes in Louisiana and Mississippi. Some of the more water-loving varieties did not do particularly well in Dallas but others grew better in their adopted home than they had in their humid birthplace. Yarrow (*Achillea*), sweet autumn clematis (*Clematis virginiana*), coral

honeysuckle (*Lonicera sempervirens*), pinks (*Dianthus deltoides*), daylily (*Hemerocallis fulva*), strawberries, and Louisiana iris all thrived as naturalized Texans.

Three country properties in central Texas that we occasionally visit on weekends proved good sources for other native plants. May apple (*Podophyllum peltatum*) and wild sweet William (*Phlox divaricata*) from the east, wild rose (*Rosa setigera*) and indian paintbrush (*Castilleja indivisa*) from the north, and clematis (*Clematis texensis coccinea*) from the southwest. Curiously, we have never been able to grow the most familiar of all local wildflowers, the Texas bluebonnet (*Lupinus texensis*). For eight or nine years we experimented with every method we knew of to create a stand of the lovely blue lupines on our grounds, but to no avail. At one time we went so far as to transport several cubic yards of soil from our ranch to our front yard in hopes of giving the seeds the proper medium for sprouting and growing. And they did grow and bloom for one year, but made only the slightest appearance the second year and were gone by the third. Sometimes nature just isn't willing to divulge her methods or change her plans.

At the end of the day, I have rushed home to the garden and noticed that the mound of white and yellow iris I carefully planned and planted has been invaded by purple coneflowers and wine cups. Instead of the white and yellow I envisioned, everything is now pink, orange, and claret red. The effect is better than I could have hoped for, and more imaginative. I have been overruled, out-maneuvered, and given a lesson in color harmonies to boot. When I see a field of wildflowers, I find myself smiling as I recall a quote from Harland Hand in a past issue of *American Horticulturist*: "If you say colors clash, you don't understand color." Amen.

I have learned to have great respect for the plants. I marvel at their seeming intelligence, their resilience, the limitless variety, and their courage in the battle to survive. It has never been easy for me to pull up a healthy live plant—even one I know to be invasive—and toss it on the compost pile (and I have spent many hours of work paying for this passivity).

Besides the natives in my garden, there are abused and abandoned plants that I have adopted over the years. The centerpiece of the walled garden is an azalea I found on a neighbor's trash pile one day while collecting bags of leaves. It was unhealthy and wilted but I picked it up and noticed that the source of its poor state was a plastic name tag left around its trunk. It was choking to death as it tried to grow. Released from the tag and replanted it has repaid me many times for my effort. A dwarf Burford holly (*Ilex cornuta* 'Burfordii Nana'), by growing to seven feet high, has shown equal appreciation for my rescuing it from a dumpster where it had been thrown away by the landscape maintenance crew at my office building.

Above: Purple coneflowers stand guard by a dwarf Burford holly that was rescued from a dumpster. Below: Soft golden aster (Heterotheca pilosa) ***and sweet Betsy—also known as bouncing Bet—***(Saponaria officinalis) ***intermingle along a limestone retaining wall.***

By the summer of 1989, we had to a great extent achieved our vision of a retreat in a pastoral setting. It had taken almost a dozen years, and there was still much that could be done, but as Independence Day approached, I could sit back and enjoy the results of our work.

July 2 was an absolutely beautiful Sunday in Dallas. My wife and daughter were out of town so I spent the day in the garden, just observing and enjoying. Due to abundant rains, everything was lush and healthy; the trees had added much growth and provided a beautiful dappled shade; the ground covers and lawn were thick, green, and had that soft inviting look; and the perennial phlox were at their peak of bloom. The garden was tranquil and whole. Around 8 p.m., a small tornado touched ground in our neighborhood, blowing down hundreds of trees and mutilating many more. The trees in our front yard were decimated. Eleven years of growth was destroyed in less than five minutes.

Was I slowed in my enthusiasm for gardening? On the contrary. By the next spring, the dead limbs were long gone and the excitement of renewal was in the air. I was filled with anticipation and promise—watching to see when the fig trees would bud and the lettuce seeds germinate. No doubt, there would be a surprise or two along the way—maybe the wild verbena would even return.

Egan Ray Gleason is an architect/planner in Dallas and an eleven-year member of the American Horticultural Society. We would love to hear from other members throughout the country about resourceful ways they have solved their gardening challenges.

Harold and the Peter Rabbit Brigade

by Marion Lardner

At Hanson Elementary School in Rock Island, Illinois, where I teach kindergarten, we traditionally plant a springtime garden of radishes, onions, lettuce, spinach, other greens, carrots, and parsley. It is an informal planting . . . lots of digging, worm hunting, grub finding, more digging—not very straight rows but much enthusiasm. By getting the garden in early in March we are able to harvest by the last week in May for a very special Peter Rabbit lunch. The children love their garden. It is a no-fail project that provides instant gratification.

The eight-by-four-foot garden—it gets a little bigger each year as we include the edges in our digging—is in the middle of the Headstart-through-first-grade playground. Children have to walk around it to get to and from their classrooms. Soccer balls are kicked over it . . . usually. It is a garden that is noticed. As the children grow into first and second grade they watch the new gardeners with interest and wisdom: "We did that when we were little, too."

Our only enemy is the MOWER, the school district's big tractor mower, which visits to cut the grass and most anything in its way. In its impersonal fashion the mower has taught the children a good lesson about gardens. They can be ephemeral.

A cyclone fence separates our school playground from a property owned by the Association for Retarded Citizens (ARC). It houses a day care program for adults, ranging in age from 35 to 82, who have developmental disabilities. About twenty of these clients became our good friends.

In the center's back yard are some lovely shade trees and some handsome garden tables and chairs. Three springs ago while we were busy working the earth in our Peter Rabbit garden, we noticed senior citizens in this area staring across their lawn, through the chain link fence, watching our children bouncing like butterflies. There they sat and sat and stared. It seemed important at that moment to mix our enthusiasm with their sedentary boredom. Why not a jointly tended garden?

It took several months to find support for the project. Then, on a great evening in May 1988, parents, staff, and interested community people—some skilled and some less so—gathered to build a new raised garden bed, half of it on the ARC grounds and half on the school grounds, and to install a new gate between the two areas. The gate would swing both ways: for seniors to come into the playground and for children to scoot into the ARC back yard. Few kindergartners were there and no seniors, just the folks who loved them.

Our garden was ready to plant. We planted for days, both seniors and kindergartners. While they were busy investigating the earth, they forgot to be afraid of each other. The fun was in the preparation, and the planting was incidental, but we were in the business of growing friendship and respect, and it was working. Said one senior, gazing tenderly at her five-year-old partner: "These are bean seeds. I planted beans when I was your age."

Five-year-olds and developmentally disabled adults have much in common. Their skills are comparable as are their attention spans. The children are beginning, while the adults are stopped, many of them at close to age five. You can teach five- and six-year-olds to dig a hole, put in a plant, water it, and tuck it in before leaving a space, moving on to the next plant, and beginning again; we assumed that the seniors could do this, as well.

"I gotcha, teach!" said Harold, as he finished planting his pepper plant, then pulled it out, redug a hole in the same spot, and replanted it.

Some of the seniors, frozen at an early age developmentally, have spent forty or fifty years at that level. The children were not bothered as long as they were busy in the "work" of the garden. They would patiently replant with their partners as the kindergarten teachers tried in vain to explain to the seniors the rationale of further hole digging. Perhaps five-year-olds accept

Harold and friends pat in beans.

Photos by Marion Lardner

those things that can not be changed more easily than their teachers.

The kindergartners, as usual, had their own Peter Rabbit garden, but we all watched the spring garden in the raised bed. When school was over, the seniors were to tend both gardens while we were gone for the summer holidays. The last day, we gathered for a lot of goodbyes and promises: goodbyes from people who forget yesterdays, and promises made by children who live in todays. But friendship was growing—no more stares through the fence. At recess, some of our children would slip through the gate and occasionally a senior would come onto our playground. After one recess, Harold lined up with the first grade and filed with them into their classroom. The teacher was astonished. The children were delighted.

Weather and the health of participants are factors to consider in a shared garden. The summer of 1988 was hot and dry in downstate Illinois. The seniors were too fragile to care for the gardens. Things grew, got thirsty, wilted, and burned. But there were enough tomatoes, gourds, marigolds, and pumpkins to remind our kindergartners—now first graders—of their fun garden. I had a new batch of kindergartners. The seniors were the same.

To introduce my new students to our special neighbors, we held a combination harvest feast and costume party. It consisted primarily of enjoying our one pumpkin and delivering the other to our senior friends in the workshop of their building, which looked much like a kindergarten with picture books, blocks, puzzles. In turn, the seniors gave each child a handful of candy. The joy in receiving the candy—alas, jawbreakers, which terrify kindergarten teachers—and the chance to wear their Halloween costumes one more time made the children less aware of the seniors' disabilities.

This meeting was so successful that the next week we stole an hour from the school day to build scarecrowlike folk figures together. The seniors met their old friends the first graders and their new friends the kindergartners at the raised bed with a box of donated clothes. We "shopped" for pants and shirts and sweaters, then wadded up newspapers and stuffed the folk figures to fatness. Both teachers and social workers joined the merriment and sharing; there was no time to question the skills of one's partner.

When we were through, a family of folk figures in the Peter Rabbit bed complemented a second in the seniors' raised bed. The figures were treated with kindness: shored up after rain and brushed off after snow, well into early spring. The children assumed responsibility for the care of both families when the cold kept the seniors inside. The figures became a visual symbol of our friendship when we could not see each other.

Top right: Young gardeners plant . . . and wonder. Top and right: Harvest lunch from the salad garden.

With the arrival of spring, we ventured outside again to plant our Peter Rabbit garden. But there was no sign of the seniors. Phone calls to ARC were not returned. Eventually, we learned that the staff coordinator who loved our garden had left the center. Alone, we planted the raised bed on our side of the fence. On the seniors' side, we planted the showiest, and easiest, things we could imagine: raspberries, strawberries, black-eyed Susans, lilies, bee balm. Still our efforts brought no response from the ARC staff.

The week before school was to be out, we hurried outside on one of those beautiful May days. There was Harold, sitting at one of their tables with three other seniors and a young woman staff member. We waved to Harold. He got up, wandered over to the gate, and called out: "Teach! Teach! Where have you been? We got to git our pumpkins in!"

The kindergarten children were delighted to see Harold. They took his hands and literally pulled him through the gate to see their Peter Rabbit garden, their lettuce, their spinach, their onions and radishes. Of course, the other three clients followed Harold. I watched the scene from the gate transfixed, and fearful of doing anything to disrupt the moment. The young

Top: Kindergartners and two ARC clients get a barrowload of seedlings ready for planting. Right: Gathering the bountiful crop of vegetables. Left: Seeds of friendship.

social worker strode over to where I stood. "Ma'am, where are my students going?" she asked.

"The children are sharing their springtime salad garden with their friends. Look!" She looked and looked back at me. "But you have destroyed my lesson!"

"Lesson?"

"Yes, we were having our health and nutrition lesson." Patience is important, too, in a shared garden.

The last two days of school the seniors were allowed to meet us at the raised bed. At the appointed moment, we appeared, and there were our friends hovering shakily on their side of the fence. From my big bag of seeds, I gave any kindergarten child who had a senior for a partner a handful of seeds of their choice.

Harold and his partner chose cucumber seeds. Harold explained that he "loved cukes." After the two had dug a trench in the raised bed, Harold's partner watched in awe as Harold put all of the cucumber seeds in one spot and covered them with dirt, instructing his young friend to "pat them in."

The next day—the last day of school—the seniors were out again. A new ARC staff member came over to tell us that they could not stop talking about planting their garden the day before; she wished we had gotten together sooner. With great enthusiasm, we hauled our tools and our seeds to the ARC building for the summer. Soon, some new zinnias bloomed on their side of the raised bed, and a row of weak tomato plants marched through their vegetable garden.

We will keep after our neighbors so that by the time our first graders leave Hanson School, a whole school generation, from kindergartners through sixth graders, will love the earth, love to garden, and have a special place in their hearts for the senior citizens next door, who will never be promoted to junior high school.

During her fifteen years of teaching, Marion Lardner has helped create three prairie patches, a sensory garden for children with limited vision, a paved walk to give children with physical disabilities access to a woodland in their schoolyard, and a playground reading garden. This story is adapted from a paper she presented in September 1989 at the seventy-fifth anniversary celebration of the Brooklyn Botanic Garden's Children's Garden.

ROBERT DRECHSLER

Keeper of Our 'National' Bonsai

by Marilyn L. Dye

Robert Drechsler received his introduction to horticulture working the grounds of the Washington, D.C., orphanage where he grew up; his quest for a graduate degree in horticulture was cut short by grades that he describes in retrospect as "not the best."

Today, he is curator of the nation's most varied and distinctive bonsai collection—the National Bonsai and Penjing Museum of the U.S. National Arboretum. How did this local boy with the German name get such a prestigious job caring for oriental plants? "Luck—being in the right place at the right time—that's how I got here!" he says.

The museum, viewed by up to 4,000 persons a day during the arboretum's peak months of March through October, had its foundation in the gift fifteen years ago of fifty-three bonsai from the Nippon Bonsai Association. In July the Japan-based international professional organization, which rarely bestows honors of any kind, presented Drechsler with an award of appreciation for his years of caring for the living works of art.

Far right: Robert Drechsler at work. "Every species is different in when and how it should be pruned."

Peter L. Bloomer

Opposite: 'Goshin', a Chinese juniper bonsai by John Y. Naka. From top: A ponderosa pine in training for 30 years, a 29-year-old Hinoki cypress, and a mugo pine 19 years old. The two pines are part of the new North American collection. The cypress, among many outstanding American bonsai donated to the arboretum by Muriel Leeds of Bridgeport, Connecticut, will appear in special exhibits.

Photos by Peter L. Bloomer

This month, the museum took another step forward, dedicating its North American collection—fifty-six bonsai of thirty-eight species by fifty American artists.

The museum's curator was one of ten children. Orphaned at age two, Drechsler was raised at the German Orphan Home for Children in the Anacostia area of Washington, D.C. "Mom and Pop Christman [the superintendents] raised us as if we were their own," Drechsler recalls, "even though there were thirty of us." Drechsler's job was to help keep up the grounds and farm, and he worked in the formal rose garden and iris beds encircling the home. He's sure now that "all the weeding was intended to keep us kids busy and out of trouble," but it piqued his interest in flowers and gardening. A Mrs. Kolb, a member of the home's board of directors, taught him to cut and arrange flowers, so that eventually, "we had flowers on every table in the home."

Drechsler calls himself "one of the fortunate ones" because he was able to attend college. He worked his way to a bachelor's degree in floriculture from the nearby University of Maryland and earned room and board by working at Mealy and Woods Florists and then as a bus boy at the Alpha Gamma Rho fraternity house, the agricultural society to which he belonged. At the same time, he learned more about the craft of flower arranging through his job at the florist shop which was across the street from the orphan home. As a memento of those days, he keeps the first check he ever wrote, one for $80 made out to the university. It covered his entire tuition for a regular twelve-hour course.

After serving in the Army, Drechsler returned to the University of Maryland to attend graduate school—this time with an emphasis in horticulture—but not for long. "My grades really were not the best," he admits, "so one day the dean sat me down and told me, 'Your time would be better spent elsewhere.'"

Thus urged none too subtly to seek other opportunities, Drechsler opted for more on-the-job training in the field he had come to love. He decided to stay in the Washington area, but aimed high: he applied for a position at the U.S. National Arboretum. He was hired, and was fortunate enough to spend the next seventeen years working in the arboretum's shrub-breeding program under Dr. Donald Egolf, developing new viburnums, crape myrtles, and pyracantha. Egolf has been called one of the best shrub breeders in the country. (See the October 1989 *American Horticulturist*). "I couldn't have received better practical experience in working with woody plants," says Drechsler.

In 1975, in recognition of the U.S. Bicentennial celebration, the arboretum received its first bonsai collection from the Nippon Bonsai Association; the collection would need a curator. For a time, another staff member seemed to have the job sewed up, Drechsler says. "But he didn't like the idea of giving up riding the tractor around the grounds, getting his hands in the dirt, and working directly with plants, and he wasn't comfortable with a lot of public contact. He knew I'd had some bonsai classes, so he recommended me for the post. And here I am!"

The gift that would become the basis for the National Bonsai and Penjing Museum included both the fifty-three bonsai and six viewing stones. Just as the plants made into bonsai are miniatures of trees in their natural state, Drechsler explains, viewing

Courtesy U.S. National Arboretum

stones are natural stones of any type selected for shapes that resemble miniature mountains, islands, houses, animals, or other landscape features.

"I was there when they first came off the plane at Baltimore-Washington International Airport," recalls Drechsler, who immediately moved with the bonsai to the U.S. Department of Agriculture's Plant Introduction Station in Glenn Dale, Maryland, where he took charge of the valuable trees while a display area was being built. During the bonsai's one-year quarantine at Glenn Dale, he learned from Ruth Lamanna and other volunteers the special needs of different bonsai.

Although he knew bonsai basics, "every species is different in when and how it should be pruned, the same as large trees. You have to know which buds to leave for new growth, and you have to be very precise."

He had heard that the best way to learn to appreciate bonsai is to see the same species growing in their natural settings. In 1977, he traveled through Japan for thirty-five days to learn more about caring for the bonsai, and to gain a better understanding of the philosophy of tray plantings, one of the most revered art forms among the Japanese.

"The bonsai were treated with great respect by everyone, even the men who packed and loaded the trees on the planes. They worked with their shirts on, despite the heat, because to do otherwise would have been disrespectful. I don't know that you'd find that attitude here in the States."

Before the trip, he had been a bit leery of being perceived as "the big, ugly American," but everywhere he traveled his hosts treated him with high regard, presenting him with gifts and ceremonial dinners.

"In one small town, I was greeted by the mayor at the railroad station and given a lovely music box; that is a gift of great importance. Later, at dinner, they had gone to special trouble to set up a 'big' table for me, instead of the low tables the Japanese sit at, so I would be more comfortable."

It is the Japanese custom to make brief speeches before formal meals. One night, after such a presentation by an elderly gentleman, another dinner guest told Drechsler it was the first time the older man had spoken English since World War II. "I was very honored," the curator says.

The Nippon Bonsai Association arranged for Drechsler to meet with many of its members during his visit. He was able to sit and discuss horticulture and American politics with venerated bonsai masters throughout the country. In one of Kyoto's many gardens, he was greeted by the high priest and honored with a tea ceremony in the garden's temple. He also toured the Imperial Grounds in Tokyo from which one bonsai, a 180-year-old red pine (*Pinus densiflora*, or Aka-matsu) had been donated by the imperial family as part of the arboretum's first collection. It was the first from the imperial collection ever to leave Japan.

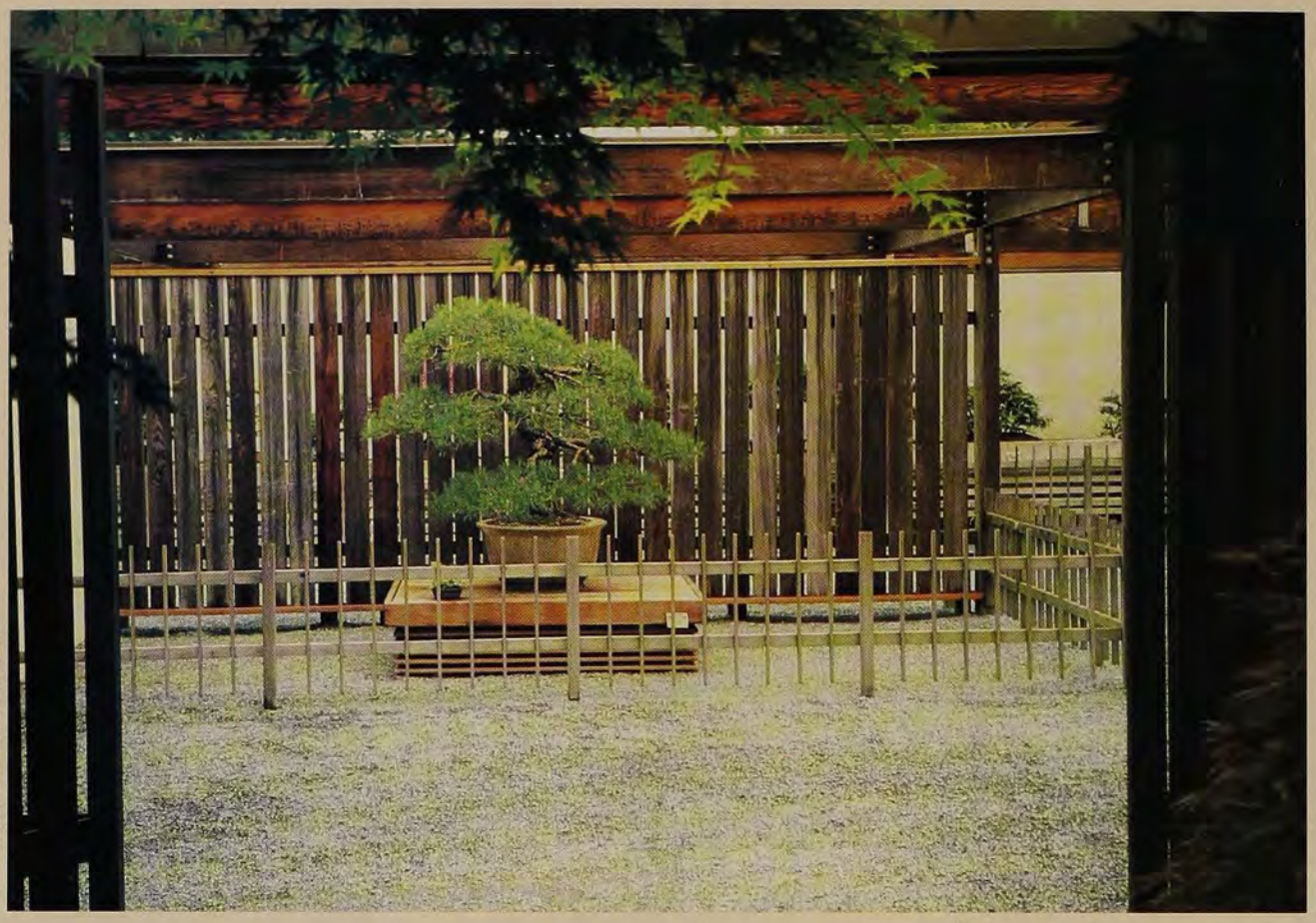
"This was a particular honor," he said, "since tours of the grounds are limited to only 600 Japanese a year. The young lady who acted as my interpreter retreated the traditional two steps behind me after we went inside. She seemed petrified just to be there. It's so unusual for ordinary citizens to view the Imperial Grounds. It's almost a holy place to them."

The next day, Drechsler took the standard tour of the city and saw the Imperial Grounds as seen by the average visitor. "We got off the bus, were shown the gates to the grounds, and were hustled right back on the bus! Treated like royalty one day, back down to earth the next."

His trip taught him a lot about not only bonsai, but also the Japanese culture. "As a people they are very tied to the land and value nature highly. Sick trees are not cut down, but cared for as a bit of life that should be kept going.

"The average Japanese doesn't travel widely, so often a bonsai brought back from a trip serves as a souvenir—a memory. The planting might sometimes be displayed in the home in a place of honor, perhaps with a favored scroll."

Tray planting was introduced to Japan



Courtesy U.S. National Arboretum

A Stroll Through the Museum

The National Bonsai and Penjing Museum sits on two and a half acres near the administration building of the U. S. National Arboretum. Its design provides a gradual introduction to concepts of traditional Japanese gardens and their use of natural materials.

The Ellen Gordon Allen Entrance Garden is landscaped with Japanese plants and includes the traditional ceremonial gate. Once inside, visitors follow the Cryptomeria Walk, a forest of Japanese cedars (*Cryptomeria japonica*) underplanted with Japanese wildflowers. The Cryptomeria Walk opens onto the Sunny Garden, where sun-loving herbaceous Japanese plants thrive. The Chinese penjing are temporarily displayed on tables adjacent to this area. It will eventually be housed in its own pavilion, as will the North American collection that opened this month.

A hairpin turn brings visitors to the Formal Walled Garden, which includes water, plants, and stone, each a symbolic material in Japanese gardens. Water signifies purity and plants represent life. Evergreens provide a life presence throughout the year, while deciduous plants accent the transition of the seasons. Carefully placed stones provide textural contrast and connote strength and stability. Like all Japanese gardens, it strives for a sense of unity that encourages the visitor to become one with the garden.

Giving an illusion of depth, the path winds around and narrows in places, forcing viewers to move slowly, even pause, and sense the harmony of the atmosphere. Japanese black pines (*Pinus thunbergiana*), crape myrtles, flowering cherries, and Japanese red maples grow within the boundary of the walls and arch over the walkway, preparing the visitor for the compact nature of the bonsai. The wall itself suggests a larger garden just beyond its confines. At the final turn, at the entrance to the pavilion where most of the Japanese bonsai are displayed, are Japanese decorative stone basins. Framed in the doorway of the pavilion entrance stands the nearly perfect Japanese red pine that was given to the arboretum by the imperial family in 1975. Nearby is another outstanding specimen: a 350-year-old Japanese white pine (*Pinus parviflora,* or Goyo-matsu), the oldest bonsai in the collection. From here, visitors will enter the area where the new American collection is displayed.

The museum project has been privately funded through the National Bonsai Foundation, which was formed in 1983 for that purpose and to educate Americans about these ancient art forms. "It's really taken flight the past two to three years," said Mary Ann Orlando, executive director of the foundation. The group is also raising funds for a reception area and a multipurpose activity center.

"Without Mr. Drechsler, I don't know where the project would be. He is so dedicated!" she says. Drechsler, in turn, credits the progress of the museum to assistant Dan Chiplis, and volunteers Janet Lanman, Ruth Lamanna, Bill Orsinger, and Martin Kahl—and to the good luck that brought the arboretum such wonderful supporters.

around the sixth century, probably by Buddhist missionaries. The art originated in China as penjing; the Japanese gave it their own stamp. Drechsler explains that bonsai are composed entirely of plant material—soil, trees, and perhaps moss—and are designed to appear as though something has been left out so that the viewer will be pulled into the scene. In penjing, on the other hand, the artist makes use of such things as rocks and figurines and paints a more fully balanced picture that is complete in itself.

The arboretum's collection became the National Bonsai and Penjing Museum in July 1986, following the gift of thirty-one penjing from Dr. Yee-sun Wu, a private collector in Hong Kong. (The penjing were not formally presented to the museum until September 1988 because they had to be quarantined for two years after their arrival in the United States. During that period, Drechsler would visit the Glenn Dale facility to care for the bonsai each morning, and his assistant curator, Daniel Chiplis, would see to any additional needs of the plants each afternoon.) The scenes represented by the penjing, which range in age from 15 to 200 years, include the forest, mother with son, and "clinging to Ying Tak Stone." Several of the containers are more than 200 years old, and many are made of marble from Shiuvan, Guangdong, or Taiwan.

The penjing will eventually be housed in their own pavilion, as will the North American exhibit that opens this month. That exhibit area will be named for American bonsai master John Naka of Seattle. Naka had already presented the museum with one stunning work: "Goshin," or Protector of the Spirit, is a planting of eleven Chinese junipers (*Juniperus chinensis* var. *foemina*). Each one of the trees represents a member of his family. Naka is among fifty artists who will be represented in the exhibit.

Some of the North American bonsai are made of such indigenous trees as California junipers, American larch, and buttonwood. But the American origin of these bonsai will be apparent more in their pruning than in their species; even the inexperienced viewer should see a difference in style, says Drechsler. "Goshin," for instance, although created from Chinese juniper, is pruned much as junipers are shaped by the wind along the California coast; the trees are proportionately tall, with short limbs and barren tops. A ponderosa pine (*Pinus ponderosa*) from the Pinchot National Forest, donated in 1989 to commemorate the seventy-fifth anniversary of the U.S. Forest Service, also has a distinctly American West look.

Peter L. Bloomer

John Y. Naka

The pavilion where the U.S. National Arboretum's North American Bonsai Collection will be displayed is named after John Y. Naka, one of the nation's foremost bonsai artists and teachers. Naka, 76, has been teaching and writing about bonsai for more than thirty years. A native of Fort Lupton, Colorado, he discovered bonsai when his grandfather took him to Japan when he was 8. He lived in that country for the next thirteen years, attending school and learning more about bonsai from his grandfather. In 1935 his grandfather, alarmed by Japan's increasing militarism, sent his grandson back to the United States. Naka spent the next ten years in Colorado, truck farming and honing his bonsai technique using native plants. In 1946 he moved to Los Angeles, where he first was a landscape gardener and then a full-time bonsai teacher. In an interview several years ago with the *Philadelphia Inquirer*, Naka related: "I tell my students that their bonsai are like pets. They need constant care. They ask me if I talk to the plants. I say 'No, I listen, and then I do whatever they tell me.'"

Bonsai was introduced into this country shortly after World War II, and has become increasingly popular in recent years. Drechsler explains the Japanese fondness for bonsai in terms of their generally living in small spaces, and he believes that its growing attraction for Americans may likewise be a function of our decreasing space for gardening and living in general. "More people live in apartments now, and the bonsai fit into confined spaces. And bonsai also give the individual total control. Their care can be worked in to someone's schedule whenever they find themselves with leisure time."

The art form is still very new here, of course, compared to its centuries of practice in the orient, and Americans are still seeking their own unique style. As is the case with their outdoor gardens, the result will likely be many different styles. Drechsler advocates artistic individuality and this year arranged to display bonsai from different communities of the East Coast from the first Sunday through the second Sunday of each month.

The shows, which will end in November, feature both fine pieces and more basic bonsai. They are intended to help dispel the notion that bonsai is difficult and mysterious by showing what the average bonsai gardener can achieve using his or her imagination.

"Bonsai hold a certain fascination for our visitors, but I've found that the very young and the very old show the greatest appreciation," says Drechsler. "The young can relate to their size, the old to their age. Sixty and seventy-year-olds are delighted to find something three or four times older than they are."

Does he have a favorite among the collection? "No," he says, "each tree needs attention at different times. We nurse the sick and then bask in their recovery, or get excited about a certain plant coming into bloom." In some ways, the individual pieces can better be appreciated when they can stand on their own, for instance, when one is taken to the arboretum's auditorium for a special lecture or presentation.

Drechsler's outlook on life—and bonsai—is reflected in a Peanuts scroll that hangs in his office. "The planting of a tree," it says, "shows faith in the future." He has been at the arboretum for thirty-two years, he notes. "I can retire if I want . . . but I love my job!"

Marilyn L. Dye is an amateur gardener who lives in Silver Spring, Maryland.

For More Information

The U.S. National Arboretum, 3501 New York Avenue N.E., Washington, DC 20002, (202) 475-4815.

The National Bonsai Foundation, P.O. Box 32377, Washington, DC 20007.

The American Bonsai Society, Inc., P.O. Box 358, Kenne, NH 03431, (603) 352-9034.

Bonsai Clubs International, 2636 W. Mission Road, #277, Tallahassee, FL 32304, (904) 575-1442.

LADY PALMS

THE SMALL WONDER

by Eliot Tozer

For centuries, *Rhapis excelsa*, an unusual bush palm native to the subtropical forests of Indochina, held a place of honor in the Western world. The ancient Greeks consecrated it to Apollo, their god of music, medicine, and poetry. In Palestine, it was used to herald Christ's entry into Jerusalem, and later, in Europe, it became a symbol of light and immortality. Then, about 300 years ago, the Japanese, taken by its rich foliage and sculptured beauty, began to cultivate dwarf varieties, producing horticultural treasures to be handed down from one generation to the next. It became almost a cult object.

Small wonder. Dwarf *R. excelsa* makes a lovely accent for shadowed corners or a quiet statement in entryways and conservatories. Its leaves are fan-shaped, not pointed. In most varieties, leaves are a dark green, but a few are variegated—uncommon in the palm family. Some are ivory green with green striping, others are a shiny green with random bands of white. The plants are valued because they rarely exceed four feet, yet can live 100 years.

There are about 3,000 known species of palms, of which nine are recognized as species of the genus *Rhapis*. Dwarf *R. excelsa,* often called 'Miniature Lady Palm', should not be confused—as it often is—with *R. humilis* 'Slender Lady Palm' or *R. subtilis* 'Thailand Lady Palm'. They are all quite different. *R. humilis* has slender canes

Below: Lynn McKamey with 30-year-old specimens of* Rhapis excelsa *'Kodaruma' at the Huntington Botanical Gardens in San Marino, California. Right: A 14-year-old* R. excelsa *'Zuikolutino'.

Photos courtesy of Rhapis Gardens

topped with large thin leaves; mature specimens may grow as tall as fifteen feet. It is not easy to raise in pots. *R. subtilis* also shows thin canes but has pointed leaf tips; its roots are brittle, so it is not easy to propagate by division. It does not thrive indoors unless pampered with frequent waterings, is very susceptible to spider mites, and is not nearly as long-lived as *R. excelsa.*

In their 300-year preoccupation with dwarf lady palms, the Japanese have developed about 100 varieties. Of the few available in the United States, the most popular and easy-to-grow green one is 'Koban' ('Gold Coin'). Another, quite different green that is available here is 'Kodaruma' ('Minor Dharma'). The easiest to grow and most popular of the forty or so variegated palms are the 'Zuikonishiki' ('Auspicious Brocade'), whose ivory leaves are striped with green, and 'Kotobuki' ('Felicitations') with white-striped leaves.

Standard *R. excelsa*—the large lady palm—was brought to this country from Europe in the nineteenth century and quickly established itself as a landscape plant in Louisiana, Florida, and California and as a low-maintenance but proper foliage plant for Victorian parlors and bank lobbies. Some of those standards have lived to be 100 years old and most have grown to an imposing fifteen feet high. But like the horsehair sofa, they went out of style. In the 1960s American collectors "discovered" the dwarf lady palm and began to import them in small numbers, sometimes paying as much as $5,000 for a rare variegated.

In 1976, Lynn McKamey, a disaffected engineering student out of Southern Methodist University who was searching for a "different tropical" for the mass market, heard about the dwarf lady palms from an old friend, nurseryman J. B. Wright. He told her these low-light subtropicals survive in dry or humid environments so they are ideal for indoor use. Their appearance makes them suitable for either traditional or modern decor. What's more, they live for decades and are easy to propagate.

Convinced, McKamey plowed through research material—there wasn't much—joined the International Palm Society (she would later become a director) and sent to Japan for 2,000 plants. Her choices: 'Tenzan', 'Koban', 'Daruma', and 'Kodaruma', among the green varieties; and two variegated cultivars, 'Zuikonishiki' and 'Chiyodazuru'. When they arrived, her challenge really began.

When she wrote to ask Japanese nurserymen how best to cultivate dwarf lady palms, they said she must use a clay pot, fill it with granite chips of three different sizes, the smallest being the size of rice, add organic fertilizer in the form of bush warbler droppings that have fermented for several weeks, and water her plants at least once a day in summer and every other day in winter—with any deviation frowned upon.

Given the shortage of granite chips in south Texas and a reluctance to collect warbler droppings—even if there were any to be had nearby—McKamey began a five-year effort to develop a more American cultivation technique. The experiment paid off; her palms flourish, and so does her business. She is now said to be the largest wholesale and retail supplier of dwarf lady palms in the country.

Like McKamey, J. L. Hollenberg of Redland, California, discovered lady palms about fourteen years ago. "A local nurseryman was growing *Chamaedoreas* from seed and said that was the way to go, so I ordered some *Rhapis* seed from Bangkok. It turned out the first ones they sent me were *Rhapis subtilis,* but I didn't know that at the time." Hollenberg says that while *R. excelsa* is easier to propagate than *R. humilis* or *R. subtilis,* it is slow to grow, so that he may have on hand only two or three of some of the rarer selections in his catalog.

Dwarf lady palms are usually seen growing in clay pots with oriental shapes or designs. While they do make a stunning display when grown that way, you may use a plastic pot if you wish as long as it's the right size and you adjust your watering regimen to suit; those potted in plastic will need watering less frequently than those potted in clay. My 'Koban', four years old and a vibrant green, has taken well to a five-inch green plastic pot.

R. excelsa likes to be slightly rootbound: choose a pot that is one size larger than the root system. If your palm arrives bare-rooted, dip the roots in water and dust with soil. Place some soil in the bottom of the pot, insert the plant, add more soil, firming around the roots, and continue adding soil until it covers the base of the canes. Water thoroughly. Azalea pots or short, wide pots are good choices because a healthy lady palm will produce a couple of "pups" or offshoots every year, quickly developing into the characteristic bushiness that is so pleasing.

R. excelsa adapts well to almost any good soil as long as it drains well and is rich in humus. African violet mix works fine, but if you like to mix your own, McKamey recommends using four parts peat, two parts perlite, one part vermiculite, and two parts coarse sand or small gravel. The best pH is between 5.0 and 7.0.

When I visited a greenhouse where lady palms are grown, I was surprised at the low light level until I remembered that these palms grow beneath a forest canopy in their native habitat. You'll get best results if you put your plant in a north or south window and protect it from exposure to direct sunlight. To be precise, ambient light should register 500 to 1,000 foot-candles. My 'Koban' is shaded by a taller *Chamaedorea elegans* and receives only filtered light.

If you elect to grow your palm in lower light levels, say, 100 to 400 foot-candles, expect little growth and few offshoots. Under these conditions the plant will need less fertilizer and it will grow one new leaf about every eight weeks. If you grow it in more light, say, 1,000 to 2,000 foot-candles, the greens may lose some of their color. If so, increase the amount of fertilizer.

The variegated ones need special treat-

Lovely 'Ladies'

The best beginner's plant among the dwarf lady palms may be 'Koban' ('Gold Coin'), a green, because it tolerates a variety of environments. With its broad, oval leaves, it is also particularly attractive.

'Kodaruma' ('Minor Dharma') is the true dwarf, very compact and slow growing. Its leaves are small and somewhat twisted. It produces more offsets than others.

'Tenzan' ('Heaven Mountain') is the fastest growing of all the miniatures available in the United States. Its long drooping leaves make it the most graceful of all.

'Gyokuho,' ('Precious Treasure'), the most recently available miniature, has small, oval leaves and a short bushy growth habit.

The most popular of the variegateds is 'Zuikonishiki' ('Auspicious Brocade'). Its leaves are ivory or yellow-green with green stripes.

A sport of 'Zuikonishiki', called 'Zuiko-lutino, (a lutino is a white bird with a touch of color), is not popular with the Japanese but is rated highly by American collectors. It has creamy white leaves with green stripes.

'Kotobuki' ('Felicitations') has broad, downward-curving, shiny green leaves with random bands of near white. It is the most graceful of the taller miniatures.

'Chiyodazuru' ('Chiyoda Crane') is very short with white-striped, medium-sized leaves that give it an antiqued appearance. It does well in a bonsai pot.

Above: The variegated* R. excelsa *'Zuikonishiki' in a pot with a scroll design. Lady palms are frequently displayed in clay pots with oriental shapes or designs. They may look less decorative in plastic pots, but will take to them well if they are not overwatered.

ment. 'Zuikonishiki', the white and green striped pixie, prefers very low light and reduced amounts of fertilizer. 'Chiyodazuru', which has green leaves with white stripes, flourishes if grown under very low light and given high amounts of fertilizer. Variegated lady palms grow at about half the rate of green varieties.

The optimum temperature range for normal growth is 50° to 90° F, but if you put your palm outdoors for the summer and get caught by a sudden hard frost before you bring it back inside in fall, note that it will survive unless the temperature drops below 22° F.

A soluble 20-20-20 fertilizer is ideal. Apply at one-quarter normal rate three times per year if your palm is growing under low light; at one-quarter rate six times per year if under medium light; and at one-half rate six times per year if under bright filtered light.

Your palm will forgive almost any dereliction except bad watering protocol. Proper watering is critical to successful growth. When the soil is slightly dry—but before the first sign of wilt—water thoroughly. To make certain that the root ball

Sources, More Information

Rhapis Palm Growers, P.O. Box 84, 31350 Alta Vista Drive, Redlands, CA 92373, (714) 794-3823, catalog $2.

Rhapis Gardens, 101 Rhapis Road, Box 287, Gregory, TX 78359, (512) 643-2061, catalog $1.

The International Palm Society, P.O. Box 368, Lawrence, KS 66044.

Miniature Palms of Japan, by Okita and Hollenberg, Capabilities Books, P.O. Box 114, Highway 46, Deer Park, WI 54007, $21.95 plus $1.25 for shipping and handling.

is saturated, place the pot in a shallow saucer and allow the water to drain through to fill the saucer, then let the plant absorb the overflow for an hour or so. 'Tenzan' tends to need more watering and 'Kodaruma' less. Treat every palm as an individual.

The only pest of serious concern is scale. It will sometimes be found on leaf stems or tender leaves of offshoots. It will attack any species or variety. McKamey has found that granules of systemic insecticides spread on the soil surface and watered in works well. Scale is also controlled with Diazinon or Malathion.

A slight brown fringe may appear on the tip of the palm's leaves. This is normal and is of no concern to most growers. If, however, you want to remove the fringe for show, trim the leaf in line with the tip edge, using a pair of pinking shears.

When a multicane specimen has grown an offshoot with roots large enough to fill a five-inch pot, you may want to divide your palm and start a new one. The best time is in spring or summer when the palm is growing.

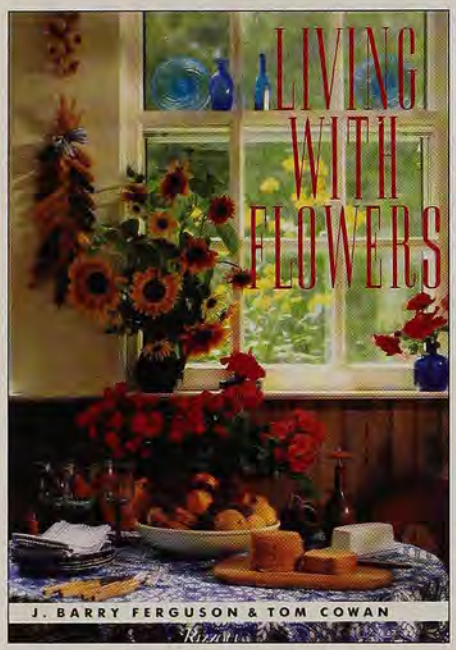
Take the palm out of its container and remove all the soil from the roots, first by loosening it with your hands then spraying with water. Sever the offshoot from the parent plant as close to the main stem of the parent as possible, then disentangle the roots of the two plants. You'll find roots tough and wiry, but flexible. Pot the offshoot and trim a few lower leaves from it. To prevent the offshoot from rising from its new pot on its springlike roots, I put flat stones on the soil surface. Eventually, the pup settles down. Grow the new division under very low light for the first few months. It will rest for a while before it begins to grow. Variegated cultivars develop new roots much more slowly than greens.

Propagation by seed is very difficult. Palms are dioecious, flowers tend to mature at different times, and seed production is low.

The foliage of *R. excelsa* is so striking you'll want to place it so that you can look down on it, perhaps on a low coffee table. If you put it in a traditional oriental pot, one with three legs and a scroll design or wave-and-bird design, be prepared—try to be humble—to accept exclamations of surprise and effusive compliments.

Eliot Tozer, who has gardened for sixty years and written about it for ten, lives in Tappan, New York.

BOOK REVIEWS



Living With Flowers

J. Barry Ferguson and Tom Cowan. Photographs by Joseph Mehling. Additional photography by Horst. Rizzoli International Publications, New York, 1990. 207 pages. Color photographs. Publisher's price, hardcover: $40. AHS member price: $34.

Inside the dust jacket of *Living With Flowers*, Barry Ferguson is quoted in a simple sentence, "A rose is a rose until it is picked and presented in an original way." At once, interest and expectation about gardening, the creative process, imagination, and flower arrangement begin to build in the mind.

Captivation is assured within the pages of the first chapter, where Tom Cowan's text offers the reader Ferguson's philosophy about plants, flowers, and the seasons of the year. He does so in such an amiable way that one feels an old friend is sharing precious experiences.

The book continues with a short section on a variety of settings where flowers can be enjoyed. It explores a number of imaginative ways to use flowers at home but also reminds us not to overlook flowers in the workplace or in public places such as museums, churches, hospitals, hotels, and shopping malls. Additional chapters suggest ideas for selecting and presenting flowers as gifts and remind us of the wide assortment of nonflowering plants, shrubs, and other foliages—what Barry Ferguson calls the "essential green"—that are available for growing and arranging. The special flower occasions in life—family celebrations for christenings, graduations, and weddings, along with holiday events—call for exuberant flower creations to match the mood, and here ideas abound.

Successful books concerning flower arrangement require images of beautifully conceived and arranged designs in glorious photographs. *Living With Flowers* does not disappoint. Full-page, three-quarter, and double-spread photographs are used generously along with numerous smaller ones scattered throughout the text. Color is vibrant and the photography reflects a sensitive eye for space and form.

It is no mere coincidence that a great many pages in this book are devoted to practical aspects of flower arrangement. Discipline and technique produce results. Ways of obtaining flowers—gardening, scouring the fields, woods, and seashore—and comments about how and where to buy flowers precede a helpful discussion about the care and conditioning of cut flowers and foliages, choosing appropriate containers, flower arranging tools, and design methods. Helpful listings for recommended reading conclude the book.

One cannot help but feel that Northeasterners, and particularly New Yorkers, must be among the more fortunate people in the world to have Mr. Ferguson residing in their midst. Now, with the appearance of this appealing book, flower lovers everywhere will enjoy and appreciate the special view of flowers seen by Barry Ferguson.

Kenn Stephens

Kenn Stephens is president of International Design Symposium, Ltd., in Westwood, Massachusetts.

The Border in Bloom: A Northwest Garden Through the Seasons

Ann Lovejoy. Paintings and illustrations by Jean Emmons and Kevin Nicolay. Sasquatch Books, Seattle, Washington, 1990. 260 pages. Color and black-and-white illustrations. Publisher's price, softcover: $14.95. AHS member price: $12.70.

Ann Lovejoy is a voice to listen to in American horticulture—she is a distinctive and knowledgeable presence in a fledgling field.

Three hundred years and assorted influences have brought a wealth of potential to American horticulture, but few leaders. Throughout most of our history, we have looked outside ourselves for direction, mostly at European gardening traditions and trends. Occasionally a voice, strong and sure, is heard from within.

The Border in Bloom: A Northwest Garden Through the Seasons is a book about only a fraction of our huge country, and one of its most ideal growing climates. Regrettably, most of us are not so lucky in our gardening locations. However, readers will recognize and relate to most of the border plants Ann Lovejoy grows in Seattle—even though they may not perform as extravagantly for us as they do for her. And the essays in this book address more than specific plants: they cover a variety of gardening topics, including style, composting, propagation, soil, and watering—all of it valuable information presented with an infusion of the author's own experience and enthusiasm.

"When we garden boldly, trusting our instincts, our gardens become distinct and individual in the process . . . As we grow secure in our knowledge of plants, sure of the rightness of our personal choices, we will be making new and lasting contributions to the regional schools of American gardening . . . " If that is the intent of this book, then the author may be well satisfied that she has defined clearly her own personal choices and ideas, and at the same time presented essays that will liberate gardeners to discover their own. Keep in mind though that this is not a gardening

book for novices looking for basic information. It would, however, make a lovely accompanying volume.

The one feature I found disturbing were the full-color illustrations of the implied results of planting diagrams for a multi-seasonal border. I doubt that tulips and peonies ever share a nodding acquaintance as pictured; I'm sure the intent of the four illustrations is to show the border through all the months of each of the seasons, but illustrations depicting everything that blooms within a four-month period can be intimidating.

Despite this, all levels of gardeners will find the delightful essays in *The Border in Bloom* fun and inspiring—no matter where they garden.

Betsy Kissam

Betsy Kissam is editor of Plants & Gardens News *published by Brooklyn Botanic Garden.*

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Rob Simpson

Castillija coccinea *(kas-til-EE-juh kock-SIN-ee-uh) is an Eastern species of the Indian paintbrush. Most of its 200 species grow in the American West.*

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