

March/April 2002

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The Magazine of the American Horticultural Society

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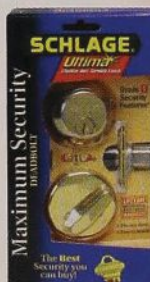
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AMERICAN HORTICULTURAL SOCIETY
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To receive an application for the Society's Intern Program, write to Janet Walker, director of horticulture, at the address above or e-mail her at jwalker@ahs.org.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

RECIPROCAL ADMISSIONS PROGRAM

The AHS Reciprocal Admissions Program offers members free and discounted admission to flower shows and botanical gardens throughout North America. A list of participating shows and gardens can be found in this year's *AHS Member Guide* and also in the Membership area of our Web site.

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

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

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An Inside Look

DURING MY undergraduate days at North Carolina State University, I befriended an elderly woman in Raleigh who invited me to paint watercolors of the diverse plants in her city garden. Her given name was Gertrude, but late in life she adopted the name "Nancy," as more admirable. I painted in her garden regularly for more than two years and she was always interested in hearing what I was learning about the newest developments in plant breeding and research.

Despite living at a time when synthetic chemical pesticides were typically the first line of defense against plant pests, Nancy liked to try out homemade preparations she concocted using soapy water, vegetable oils, baking soda and other kitchen products. She used boiling water to kill weeds in her pathways, gathered up dropped rose leaves to reduce the spread of black spot, and blasted aphids off of plants with her garden hose. In short, she was "going green" well ahead of her time.

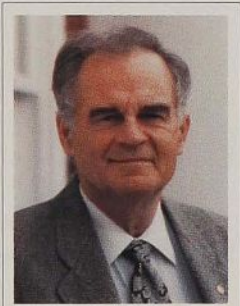
Now, as more and more pesticides are being phased out, gardeners will, like Nancy, have to seek alternative controls for the pests that plague their gardens. Fortunately, companies are stepping up research on more environmentally friendly pesticides and many new products have emerged in the last few years to fill the breach.

In this issue, Associate Editor Carole Ottesen details the emergence of the green movement in American gardening from its roots in progressive agriculture in 20th-century England to the writings of American icons such as Aldo Leopold, Jerome Rodale, and Rachel Carson, and the formation of the Environmental Protection Agency in 1970. She relates how, in the last decade, some garden supply stores, botanical gardens, and even nurseries have reduced or eliminated application of chemical pesticides by using the concept of integrated pest management (IPM), a multifaceted approach to controlling pest and disease problems.

The AHS SMARTGARDEN™ program also addresses environmentally responsible pest control by promoting easy ways to reduce the likelihood of pests and diseases. These include selecting the right plant for the right place using USDA hardiness and AHS heat zones; choosing disease-resistant cultivars whenever possible; rotating vegetable crops; and following proper planting techniques to ensure plants develop healthy root systems.

If Nancy were alive today, I suspect she would be surprised to find how long it has taken mainstream gardeners to adopt the methods she was using to control pests 50 years ago. Let AHS's publications guide you to become more environmentally responsible gardeners.

Ever in green,



H. Marc Cathey

—H. Marc Cathey, AHS President Emeritus

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Members' Forum

INVASIVE EXOTICS

Although I was initially delighted to see your magazine address the issue of invasive exotics ("When Good Plants Go Bad," November/December 2001), I am concerned that Carole Ottesen's article may have confused some readers. She uses the term "invasive" as a synonym for "weed." While gardeners do consider any plant out of place to be a weed, this usage allowed her to categorize native plants as invasive. Yes, any plant, native or exotic, may grow in the wrong place in our gardens, and if growing conditions are favorable, they may stage a takeover.

But this is not why scientists are clamoring about the dangers of invasive exotics. In our eastern forests, non-native plants such as porcelain berry, Japanese honeysuckle, and Chinese privet are permanently destroying natural ecosystems. The fire ecology of western rangelands is being altered by invasive exotic grasses. And many of Hawaii's fragile and unique ecosystems are on the verge of extinction because they have been infiltrated by exotic plants and animals.

If we hope to slow down the invasive exotic takeover, gardeners must understand that their landscape extends beyond their property lines. If your home is near a waterway, undeveloped land, or a park, invasive exotic plants in your yard have the potential to escape into those natural areas.

We must begin to ask our nurserymen and women about the invasive potential of every plant we are considering buying for our gardens. If they don't have an answer, we shouldn't buy it, and we should tell them *why* we're not buying it.

Catherine Bollinger
Pittsboro, North Carolina

EDITOR'S RESPONSE: *Thanks for your letter. We recognize, and often comment upon, the problems invasive non-native plants are causing in natural areas, but the*

main focus of this particular article was on ornamental plants—whether native or non-native—that overstep their bounds within the confines of the garden.

GLORY BOWERS GOOD

I was pleased to see the article on *Clerodendrum* in the November/December issue. The vining species may be tender here on Long Island, but the shrub *C. trichotomum* has proven quite hardy.

Before retiring, I worked at Queens College in Flushing, Queens, and would sometimes take my lunch to eat in the Queens Botanical Garden nearby. One day, I noticed a shrub blooming near where I sat. The flower was that of a glory bower, which I knew as an indoor tropical vine, but the same flower growing on a bush out of doors was unusual!

I found out the bush was *C. trichotomum*. My daughter in Boston later sent me two plants that have now been blooming in my garden for more than 10 years! One of them has grown about six feet tall and as wide; the other is easily 10 feet tall. There is a specimen in the New York Botanical Gardens more than 10 feet tall!

C. trichotomum is spectacular when in bloom. Its red calyces and white fragrant flowers—later followed by bright blue berries—make it an unusually decorative shrub. When the seeds fall to the ground, enough of them usually sprout that I dig the seedlings to share with members of the several garden societies I belong to.

Dinah L. Foglia
Huntington, New York

GLORY BOWERS BAD

How appropriate that in the November/December issue you have articles on both *Clerodendrum bungei* and "When Good Plants Go Bad." I grinned ruefully when the author of the *Clerodendrum* article, Rand B. Lee, noted that *C. bungei* "has naturalized even in rather dry ground in the Houston area," while in

the other article, Carole Ottesen cautions that the phrase "tolerates dry shade" is a code phrase for a tough survivor that can stand just about anything and may possibly go berserk in moist humus."

Five years ago in my Southern California garden I made the mistake of placing a pot with a small *C. bungei* directly on the soil. As the plant flourished, roots snuck out the pot's drainage hole, and before I realized it, new *C. bungei* plants started popping up three, six, even 10 feet away from the pot. I quickly removed the pot and dug up as many invading plants and roots as I could find. But I'm still finding new plants and doubt I'll ever be entirely rid of them. This is one plant that should be sold with a warning label!

Susi Torre-Bueno
Encinitas, California

RIVER BIRCH TAKES THE HEAT

In the article "Designing a Winter Garden" in the November/December issue, you listed 'Heritage' river birch among "Selected Plants for Winter Interest." This tree is rated AHS Heat Zone 7 on your list, but I want readers in the South to know that they can plant river birches without fear! I live in the low country of South Carolina, which is in USDA Hardiness Zone 8 and AHS Heat Zone 9. Thousands of river birches have been planted in this area, and all thrive in our heat and humidity.

I would love to see more about winter gardening in the Deep South, because here we really can garden year round. Keep up the good work!

Claudia Houck
Cameron, South Carolina

WRITE US! Letters should be addressed to Editor, *The American Gardener*, 7931 East Boulevard Drive, Alexandria, VA 22308, or you can e-mail us at editor@ahs.org. Letters we print may be edited for length and clarity.

AHS 80th Anniversary: 1922–2002

From the President

by Linda D. Hallman

AS WE REVISIT the formative years of the American Horticultural Society, it strikes me how much the reactions of the Society's members during the 1930s and 1940s, a time of great national crisis, parallel the feelings we have today in the wake of last year's terrorist attacks.



Crises have a way of bringing people together, and this feeling seems particularly strong among the already close-knit community of gardeners. Whatever their specialty—from rock gardens to roses and herbs—all gardeners share a common bond as caretakers of the soil and nurturers of plant life.

Given the prevailing national spirit of togetherness, this is a good time to seek better ways for our many gardening and horticultural groups to communicate and interact. Studies tell us gardening is the true national pastime, with more than 70 million active participants. Many belong to gardening groups, but this tremendous pool of enthusiasm, expertise, and vitality they represent is dissipated by the lack of an effective way to share knowledge and resources at a national level.

It is our hope at AHS that we can serve as a unifying force and link between plant societies, flower and garden shows, garden clubs, Master Gardeners, and gardening organizations. We will be working closely with regional gardening groups at both our Great American Gardeners Annual Conference in Seattle and the 10th Annual Children and Youth Garden Symposium in California this summer. We hope you will join AHS at one or both of those events.

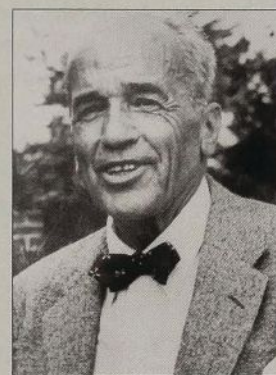
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The War Years (1938–1947)

As the world hovered on the brink of war in 1938, the indefatigable Benjamin Y. Morrison was serving as both president of AHS and editor of its acclaimed magazine. The next decade would see a lull in the Society's activities and slow steps by some members to develop a separate organization to serve as a national umbrella group for American horticulture.

"In the difficult financial times during and just after the war, it's fair to say Morrison was the society," says John L. Creech, a former AHS president and director of the U.S. National Arboretum. "In that period, the activities of the Society were closely entwined with the scientific staff at the National Arboretum and the Beltsville, Maryland, research facility." In addition to writing many articles himself, Morrison—who was director of the National Arboretum at that time—persuaded many of his co-workers to contribute articles and photographs to the magazine.

Although the main focus was on the magazine, one important development during this period was the Society's institution of a Silver Medal—a forerunner to the current National Awards program.



B.Y. Morrison, the guiding spirit of AHS during and after World War II.

United Horticulture

While the Society was going through lean times, several people active in the Society were pursuing the idea of forming a separate organization that would serve as an umbrella group for horticulture. This movement actually got its start in 1927, when rosarian and horticultural publisher J. Horace McFarland proposed a movement toward a union of all horticultural interests in this country under the name "United Horticulture." A committee was appointed to "discover some way of coordinating the decidedly overlapping activities of our many organizations."

In 1946, "United Horticulture" came to fruition under the auspices of the American Horticultural Council, which was officially formed during the First American Horticultural Congress—a precursor to AHS's current annual conference—held in Cleveland, Ohio.

The legendary Cornell University horticulturist Liberty Hyde Bailey delivered the keynote address at that first meeting in Cleveland, expressing the hope that "a great United Horticulture might have a speaker signify what is best, get people together to talk matters over, to hear a speaker who can pronounce sound opinions with authority, to bring plants and compare them, what their merits and demerits are. It is a wonderful thing to bring together this harmony of understanding."

The Council was established to "unite by friendly association leaders in the American horticultural world." From 1948 until the end of 1959, when it merged with AHS, the Council served as a forceful coordinating organization for horticulture in this country.



News

AHS Programs and Events

Lutz Bequest to Boost AHS Mission

THE AMERICAN Horticultural Society (AHS) is delighted to announce acceptance of a legacy valued at approximately \$3.4 million from the estate of Mary Elizabeth Hetherington "Heather" Lutz. "This unrestricted gift provides significant support and will have a major impact on the Society being able to further its educational programs and mission," says Linda Hallman, AHS president and chief executive officer.

AHS fulfills its mission through a variety of national, regional, and local programs administered from the Society's headquarters at George Washington's River Farm in Alexandria, Virginia. River Farm itself was a gift in 1973 from Enid Annenberg Haupt, a former member of the AHS Board of Directors. "The Lutz bequest will ensure that the Society's educational programs will advance vigorously into the future," says Hallman.

A resident of Knoxville, Tennessee, and long-time AHS member, Lutz died in 1994. "Aunt Heather believed that education is a lifelong process," says her niece,

Diana Rowland Carter Samples. "Her gift to AHS is part of her legacy of education." (For more on Heather Lutz, see "Lifelong Learning" on the opposite page.)

AHS to Update USDA Hardiness Map

AHS HAS BEEN awarded a grant from the United States Department of Agriculture (USDA) to update the cold hardiness map, a standard guide to plant cold tolerance that American gardeners have relied upon for more than 40 years. The new map is expected to become available to the public in electronic format on the Internet this fall.

"This will be the first fully digital version of the hardiness map, so there will be tremendous opportunities for electronic applications," says H. Marc Cathey, AHS president emeritus.

First published in 1960 under the supervision of Henry T. Skinner, the second director of the U.S. National Arboretum in Washington, D.C., the USDA Plant Hardiness Zone Map was revised in 1965. In 1990, Cathey—then serving as fourth director of the National Arboretum—worked with horticultural scientists throughout the United States to incorporate pertinent horticultural and meteorological information into the map.

The 1990 version of the map divides the United States, Canada, and Mexico into 11 discrete zones based on "average annual minimum temperatures"—an average of the lowest temperatures recorded at thousands of weather stations around the country for each of the years from 1974 to 1986. Each zone represents a 10 degree Fahrenheit difference in average minimum temperatures.

Junior Master Gardeners Growing

Young people around the country are getting involved with gardening through the Junior Master Gardener program.

In Mississippi, 11 schools and six after-school clubs took part in a pilot Junior Master Gardener program in the spring of 2001. Lelia Kelly, area Extension horticulturist in Verona, Mississippi, says test results from the pilot program, have some educators and youth workers enthused about the program's potential. The curriculum includes eight chapters of material covering subjects from basic botany to horticultural career opportunities for students.

Teachers from local counties have used the curriculum in a wide variety of ways including environmental club activities, landscaping around the schools, and field trips. "The activities were designed to increase academic achievement, develop leadership skills and provide community service projects for youth," says Kelly.

Kelly and other educators say the main benefit of the program is that students have fun while they are learning, which helps them retain more than usual.

In Colorado, Denver Botanic Gardens (DBG) is offering children in grades 3 through 5 a series of fun, hands-on classes, home activities, and community projects as part of a Junior Master Gardener program. Each class focuses on a different aspect of gardening and involves group, individual and community activities. For more information, contact DBG at www.botanicgardens.org.

To learn more about the Junior Master Gardener program, visit the JMG Web site at jmgkids.com, or write to Junior Master Gardener Office, 225 Horticulture/Forestry Bldg., College Station, TX 77843.



Lifelong Learning: Mary Elizabeth "Heather" Lutz

Education and gardening were central themes of Heather Lutz's life. Even after her death, in 1994, she ensured that her love of learning is passed on to others through her legacy of gifts to AHS and other educational institutions.

Born in 1917 in Bound Brook, New Jersey, Lutz attended the National Cathedral School in Washington, D.C., and graduated from Sarah Lawrence College in Bronxville, New Jersey. She was employed as a chemist for the American Cyanamid Company during World War II. In 1944, she married John Edwin Lutz II, who worked for—and eventually became president of—his family's insurance business, J.E. Lutz and Company in Knoxville. The couple settled in Knoxville and Heather became an active member of the Knoxville Garden Club.



Heather Lutz, AHS benefactor, in an undated photograph.

The Lutz's were "voracious readers and seekers of information and knowledge on many topics," says their niece, Diana Rowland Carter Samples, "but Aunt Heather was the very happiest when she was working in her dirt or planning and researching her gardens."

Lutz kept copious notes regarding her two gardens—a formal garden in Knoxville and a more naturalistic garden

at a beach home in Mantoloking, New Jersey. Her own gardening wisdom is reflected in this advice she included in a letter to a friend: "Patience is a gardener's best friend. Our yard that you admire was 25 years in the making—trial and error (lots of errors!) But we have never changed our basic plan, although we have added to it."

An environmentalist before her time, she was a firm believer in the value of growing native and adapted exotic plants. "All planting should be indigenous to our barrier island world," she wrote of her New Jersey garden. "Indeed, [they are] the only thing that survives."

She compiled a list of foolproof beach plants for the Mid-Atlantic region that included woody plants such as arrowwood viburnum (*Viburnum dentatum*), beach plum (*Prunus maritima*), and hollies, especially the cultivar 'Blue Princess.' For herbaceous perennials, she suggested asters, butterfly weed (*Asclepias tuberosa*), tickseed (*Coreopsis* spp.), and blanket flower (*Gaillardia* spp.). In lieu of a turf lawn, she recommended substituting the dwarf juniper cultivar 'Wiltonii' as a ground cover. She noted that dusty miller (*Senecio cineraria*) was, "regrettably, fast disappearing from the beach world. When I was a child, every dune was covered with it."

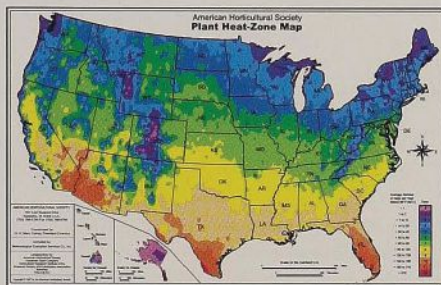
Lutz also did much of her own propagation at her beach home. "Most people don't realize that our sand and pine needles are a natural seed bed," she wrote. "Almost anything can and will germinate. The trick is to keep the seedling growing; with no humus, that is not so easy. A heavy mulch helps and also keeps down weeds."

Her education and experience notwithstanding, Lutz was always modest about her gardening successes, chalking them up in a letter to a close friend as, "Luck, old dear."

Thanks to the updated temperature records being used to create the revised USDA cold hardiness map, it will better reflect minor regional variances in temperature that have occurred in the last decade. The revised map—compiled by Meteorological Evaluation Service Company (MES) of Amityville, New York—is being expanded to include 15 plant hardiness zones—the original 11 zones plus four new zones calibrated for semi-tropical and tropical plants. It will also show details such as state, county and zip code boundaries to help gardeners identify their precise zone.

The revised map will also complement the AHS Plant Heat-Zone Map, which was introduced in 1997 to help gardeners select plants based on their tolerance for high temperatures. Cathey

coordinated the creation of the AHS heat map, which was developed by MES using data obtained from the archives of the National Climatic Data Center. When used together, the updated USDA Hardiness map and the AHS



The revised USDA hardiness map will complement the AHS heat map, above, which was created in 1997.

Heat map will allow gardeners to determine through a coding system which plants will be both cold hardy and heat tolerant in their region.

River Farm Spring Plant Sale

THE AHS SPRING Plant Sale will be held April 18 to 20 at the Society's headquarters at George Washington's River Farm in Alexandria, Virginia. The Alexandria Council of Garden Clubs and the Friends of River Farm are partnering with AHS in this annual event, which features numerous vendors offering unusual annuals, herbs, perennials, natives, and woody plants, as well as crafts.



View of the Potomac River from River Farm

take the

LONG VIEW

Whether cultivating a sense of wonder in a child, or educating gardeners of all ages to become more environmentally sensitive, AHS and its members are making a difference today. You can ensure we make a difference tomorrow as well.

To become a member of Horticultural Heritage, just notify us that you have named the American Horticultural Society in your will, or otherwise included AHS in your estate plans.

To learn more about how you can support AHS, contact Ashby Pamplin, Director of Development, at 7931 East Boulevard Drive, Alexandria, VA 22308-1300, (703) 768-5700, Ext. 128.

We urge you to consult with your legal and financial advisors to assist you in arranging the best method of contributing. The American Horticultural Society is tax-exempt under Section 501(c)(3) of the Internal Revenue Service Code. Contributions to AHS are tax-deductible to the fullest extent allowed by law. AHS is also a registered charitable organization under Section 57-49 of the Virginia Solicitation of Contributions Law; a financial statement is available upon written request from the State Division of Consumer Affairs.

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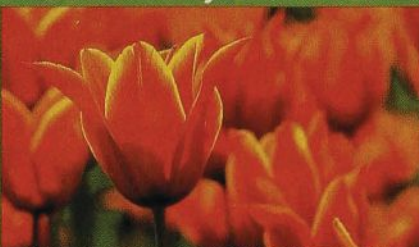
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AHS Gardening Community Listserve



WHERE YOU'LL FIND INFORMATION ON

- seeding techniques • best garden books
- seed sources • dividing perennials • plant identification
- insect control • fertilizing tips
- plant selection • regional gardening • pruning trees AND MORE!

SHARE your gardening problems and successes with American Horticultural Society members from around the country on the Society's listserve. Questions posted on the listserve are often answered within minutes by one or more of the many knowledgeable gardeners and horticulturists who participate in this online discussion group.

To join, visit www.ahs.org

AHS members can preview and purchase plants on Member Night, Thursday April 18 from 5 p.m. to 8 p.m. The sale will open to the general public on Friday and Saturday from 9 a.m. to 3 p.m. For more information and directions, check the AHS Web site at www.ahs.org or call (703) 768-5700 ext. 110.

TAG Editor Wins Writing Award

CAROLE OTTESEN, associate editor of *The American Gardener* magazine, received a writing award from the Garden Writers Association of America for an article, titled "Asters for Fall Exuberance," published in 2001 by *Fine Gardening* magazine. The award was presented to Ottesen at the GWAA 2001 Symposium, held in Orlando, Florida, last fall. Ottesen's award-winning prose can be enjoyed in each issue of *The American Gardener*.



Robert LaGasse, executive director of the Garden Writers Association of America presents the 2002 writing award to our associate editor, Carole Ottesen.

Mark the Date

To celebrate the 80th anniversary of the American Horticultural Society, a special fall gala is being planned. Plan now to join us here at River Farm on Saturday, September 28. Further details about the gala will be announced in the May/June issue of *The American Gardener*.

ahs award winner IN FOCUS

George Ware

by Sarah Schroeder

WHEN SILVER MAPLE seedlings volunteered in his sandbox, a four year-old Oklahoman boy named George H. Ware transplanted them with his mother's help, and he watched them grow.



Since that time, Ware has dedicated his life to studying trees, especially those in urban environments. His accomplishments led to his recent selection for the 2002 AHS Liberty Hyde Bailey Award, which recognizes significant contributions in at least three of the following areas of horticultural activity: teaching, research, writing, plant exploration, administration, art, business, and leadership.

"It is important we recognize George Ware because of his lifetime of work," says H. Marc Cathey, AHS president emeritus. "He and his staff at the Morton Arboretum have done important work with trees in the Midwest. If trees do well at the Morton Arboretum, then they will do well anywhere."

After graduating from the University of Wisconsin with a doctorate in plant ecology, Ware taught at the University of Okla-

homa and Northwestern State University of Louisiana. In 1968 he joined the staff of the Morton Arboretum in Lisle, Illinois. There he served as a dendrologist, researcher, and administrator until his retirement in 1995. In that time, he coordinated the planning of a new Research Center, the establishment of an Urban Vegetation Laboratory, and establishment of a student intern program. He also helped the arboretum establish the largest collection of elms in North America, with some 50 species. Although retired, he continues special research there as dendrologist emeritus.

Ware is best known for his research on elms. He says he remembers how vital elms were to the ambiance of towns in the Midwest and how devastating Dutch elm disease (DED) was to the appearance of these towns. His research led to the development of disease-resistant elm hybrids such as Accolade™.

He says that the diversity of trees used now in urban areas is helping prevent recurrence of diseases such as DED. "Trees are the largest living things in towns—and the longest living," says Ware. His challenge is educating people to select "the right tree for the right place" through his writing and by getting out into communities. "George recognized that the value of research is limited unless it is coupled with education extension," says Gary W. Watson, senior research scientist at the Morton Arboretum.

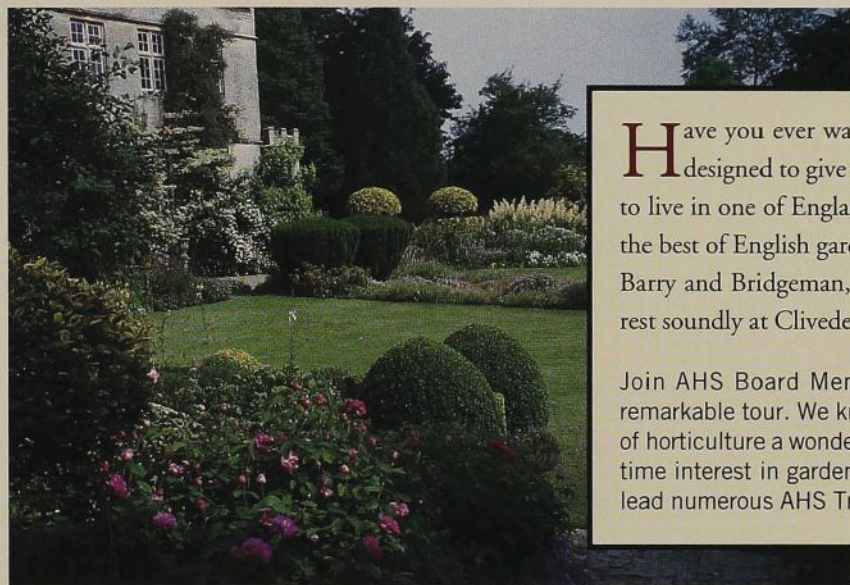
Ware has created quite a horticultural legacy, including a silver maple from his childhood sandbox that still stands today.

Sarah Schroeder is former editorial assistant for The American Gardener.



2002 American Horticultural Society TRAVEL STUDY PROGRAM

The Great Gardens of the Midlands and the Hampton Court Flower Show June 29–July 6, 2002



Have you ever wanted to be royalty for a day? This unique tour is designed to give you a first-hand experience of what it might be like to live in one of England's great palaces. Each day you will be able to see the best of English garden design in the works of Lutyens, Jekyll, Jellicoe, Barry and Bridgeman, just to name a few; however, each night you will rest soundly at Cliveden, Britain's only hotel that is also a Stately Home.

Join AHS Board Member William Pusey and his wife Patti on this remarkable tour. We know you will find their sense of adventure and love of horticulture a wonderful traveling combination. They both share a long-time interest in gardening and garden club affiliations, and have helped lead numerous AHS Travel Study Programs.

For complete details of the exciting 2002 schedule, visit the AHS Web site at www.ahs.org, or call the Leonard Haertter Travel Company at (800) 942-6666.

No member dues are used to support the Travel Study Program.



SMARTGARDEN™ —Degrees of Light

A plant's physical characteristics often offer clues to its light requirements

Why do certain plants thrive in bright, sunny locations while others wilt, scorch, or simply wither and die? How do some plants survive with no direct light? Understanding how plants have evolved with adaptations to varying light conditions and how those adaptations relate to the conditions in your garden will help you choose plants that bask in your garden's available light.

ADAPTATIONS TO SUN AND SHADE

Although most garden plants have roughly the same physical components—roots, stems, leaves, flowers—nuances in their individual morphologies equip them for a wide variety of light conditions.

Plants that grow best in shade tend to have large, flat leaves with a fairly thin epidermal layer, or skin. This allows maximum space and minimum resistance for absorbing light needed for photosynthesis and growth. In general, plants that grow in shady conditions tend to produce fewer flowers and seeds than those that grow in sun—this limited reproductive activity conserves a great deal of energy that can be directed toward vegetative growth. Thus the ornamental display of many shade gardens relies more heavily on foliage color and texture than on abundant flowers.

Plants that grow in full sun have lots of energy available for photosynthesis, but they frequently contend with high temperatures and dry conditions. Many have smaller leaves with thick cuticles, an adaptation that reduces moisture loss. Pubescence—the presence of fine hairs on leaves or stems—helps shade the plant surface from the hot sun and traps moisture lost by the leaf through transpiration, thus maintaining a higher humidity level immediately around the leaf surface.

Leaf arrangement and color also affect absorption of heat. Leaves that point upward, or are arranged vertically toward the sun—such as those of yucca and New Zealand flax—absorb less heat than those with leaves oriented at right angles to the stem. Light colors absorb less heat than dark colors, and many plants that grow in full sun where summers are hot—including several species of euphorbias and sedums—exhibit this adaptation.

A LIGHT ASSESSMENT

Light levels in a garden change with the time of day, the season, and from one year to the next. As the sun travels across the sky, a shaded morning garden may be basking in full sun by early afternoon; in summer, when deciduous trees are in full leaf, a bed that receives abundant spring sun may be densely shaded. The angle of the sun as seasons change also alters the level of light

in a garden. Furthermore, as trees mature, they cast increasingly broad shadows—beds that were originally planted in full sun may become cloaked in shade as years go by.

Assessing the light in your landscape is an ongoing project. As your garden matures, stay abreast of changing light levels and the resulting effects on your plants. To assess your garden's current level of light, examine the shade patterns several times during the course of a sunny day. Note areas that receive shade in the morning, midday, early and late afternoon.

Ideally, this examination should be conducted several times over the course of the year. But by noting the position of surrounding trees, taking into consideration whether they are deciduous or evergreen, and estimating the changing angle of the sun, you should from one day's evaluation be able to approximate the light levels in your garden for the entire year with fair accuracy.

DEFINING LIGHT LEVELS

Assessing the light levels in different parts of your garden will help you select plants appropriate to each area. Research a plant's light requirements before matching it to a site. The following explanations of frequently used terms to describe degrees of light in a garden should help you in your selection:

Full sun. Areas that receive at least six hours of direct sun during the day are considered full sun and are desirable for vegetables, fruits, roses, and a wide range of flowering plants. Some plants that thrive in full sun in cooler northern climates, however, may require some afternoon shade in warmer areas of the south.

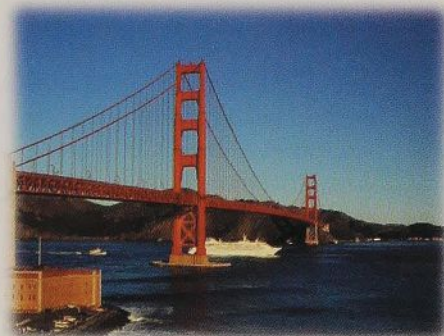
Part shade. Some gardens receive dappled shade throughout the day. If you stand in dappled shade, you should be able to glimpse portions of the sky through the leaves above. Others gardens are more densely shaded for a part of the day but receive bright sunlight for two to six hours. Both are considered partly shaded. This level of light is well suited to a wide variety of plants.

Light shade. Gardens located beneath high branching deciduous trees may receive little or no direct sun, but are bathed in reflected light throughout the day. This condition is designated as light shade.

Full shade. Areas beneath trees with a dense canopy where no direct sunlight penetrates and reflected light is reduced, or that stand in the all-day shadow of tall buildings or evergreens are considered full shade. Careful selection of plants for such minimal light levels is necessary.

Rita Pelczar, Contributing Editor

Excitement is contagious



You know that real learning occurs when you get kids excited—and excitement is contagious. So come to the AHS 2002 Children & Youth Garden Symposium and get excited about the latest programs and design ideas. This year's symposium focuses on nutrition and environmental education—two of the hottest areas in youth garden education today. There is no better place to see these disciplines at work than in California. California educators have been leaders in nutritional and environmental education programs and this year's symposium will feature tours of some of the country's most innovative school and community gardens and environmental education centers. Most of the symposium's presentations and instructional demonstrations will take place at these inspiring locations. Pre- and post-conference activities are scheduled so you can take full advantage of northern California's innovative sites.

On Thursday evening, at the Presidio's Golden Gate Club, we will honor this year's AHS Jane L. Taylor Award winner: the National Gardening Association. We will also offer a special salute to Delaine Eastin, State Superintendent of Public Instruction for the California Department of Education, for her "Garden in Every School" Initiative.

In addition to key members of the AHS Youth Garden Advisory panel, AHS's local affiliates for 2002 include a diverse array of educational and environmental organizations that have helped create a dynamic and creative symposium. They include:

- ❖ California State Department of Education
- ❖ Food, Land & People
- ❖ Life Lab Science Program
- ❖ University of California Botanical Gardens



The Holiday Inn Golden Gate is offering a special rate for symposium attendees of \$119 per night. Call the hotel at (415) 447-3008 to reserve your room.

Sponsors:

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American Horticultural Society's 2002 Children and Youth Garden Symposium

August 1-3 • San Francisco

Holiday Inn Golden Gateway

REGISTER TODAY!

For details and online registration, visit the AHS Web site at www.ahs.org, or call 1-800-777-7931.

Gardener's Notebook

Horticultural News and Research

THE HEALTH BENEFITS OF WATERCRESS

WATERCRESS (*Rorippa nasturtium-aquaticum*, formerly *Nasturtium officinale*) is the latest member of the crucifer family to be investigated for its health benefits. A highly nutritious vegetable and salad green that has been cultivated since Roman times, watercress is an excellent source of beta carotene, vitamins C, E, and A, iron, and iodine.

Throughout history, watercress has also enjoyed the reputation of a medicinal herb. It was listed as an aphrodisiac in Dioscorides' *Materia Medica* of 77 A.D. Throughout the Middle Ages it was used to treat a range of diseases from digestive, kidney, and liver ailments to eczema,



Watercress is the latest vegetable to be touted for its many health benefits.

boils, and warts. It appeared in the 16th-century herbalist Gerard's writings as a blood cleanser and a remedy for scurvy.

A high concentration of a compound called PEITC, a chemical known to inhibit various cancers, is the source of watercress's peppery taste and the origin of its more familiar botanical name, *Nasturtium*, from the Latin *nasus tortus* for "contorted nose." In addition, watercress, like broccoli, contains potent antioxidants.

A perennial herb with a creeping habit, watercress is grown as a cultivated crop more widely in its native Europe

than it is in the United States. Large-scale cultivation began in Germany in the 1750s, followed in the early 1800s by France and England.

In nature and under conventional cultivation, watercress is a cool-season crop, thriving in temperatures between 59 and 77 degrees Fahrenheit. Cultivation in running water from which the plants derive both nitrogen and mineral nutrients yields the highest quality watercress, but it can also be grown in very moist, cool soil or in containers with daily watering. Watercress remains fresh for up to four weeks if stored in plastic bags in the refrigerator.

PLANT IMPORT CRACKDOWN CONCERNS NURSERY INDUSTRY

ON JANUARY 22, the U.S. Animal and Plant Health Inspection Service (APHIS) began enforcing a longstanding regulation that all imported plant products be accompanied by a phytosanitary certificate verifying they are free of pests and diseases. The new enforcement of a regulation that has been in place for more than 20 years is causing concern among nursery owners, plant societies, botanical gardens, and private individuals who import plants and seeds. They say implementing the regulation will raise costs, possibly forcing small companies out of business and certainly raising prices for gardeners.

"Our responsibility is to try to keep foreign pests out, and we're seeing an increase in new pest outbreaks," says James Petit de Mange, plant inspection station coordinator for APHIS. "Ten years ago there were 19 new pest outbreaks each year. In 2001, there were more than 80." According to Petit de Mange, the decision to begin enforcing the regulation was influenced by an independent study that revealed most plant imports were coming in without phytosanitary certificates. "The idea is to try to push the risk offshore," says Petit de Mange, "to require foreign agencies to certify plants in order to minimize the risk."

But some in the U.S. plant industry believe other factors are at work. "I see the importance in regards to bringing in pathogens—they might be caught in the country of origin," says Dan Hinkley, co-founder of Heronswood Nursery in Kingston, Washington, "but my guess is the true intention is to slow down the process of globalization; people working with the invasive plant issue may be working with that."

Hinkley and other nursery owners point out that imported plants are already subject to inspection upon arrival in the United States. "They're being inspected, so there is no need to inspect further," says Tony Avent, owner of Plant Delights Nursery in Chapel Hill, North Carolina. "It will effectively kill seed trade from overseas and cuts off legal plant importation," adds Avent, noting that small companies in particular will have trouble absorbing the extra cost of phytosanitary certificates.

"It's expensive," agrees Petit de Mange. "It will cost about \$23 for a U.S. phytosanitary certificate." He says APHIS is sympathetic to the concerns of small businesses and seed exchanges. "I'm hoping they can coordinate somehow; maybe by consolidating shipments."

There is also concern that some countries don't have phytosanitary regulations in place and that a prohibition-type situation could develop if irresponsible individuals try to sidestep the new enforcement and related costs. "What I fear is that it's just going to increase the traffic of smuggled plants," says Hinkley. "In truth, this may increase the risk of bringing in pathogens."

"It's going to take people a little more planning to get phytosanitary certification," says Petit de Mange, "so we are asking them to apply and make advance inspection plans." He notes that plant smuggling is already a concern for APHIS, which has increased the number of its staff to address the issue. "In 2000, Congress passed the Plant Protection

Act, which increased our ability to fine people and raise the fines," he observes.

One thing is certain, says Avent. "Two issues—irradiation of mail and phytosanitation certificates—will change the face of American gardening."

NATURAL INSECT REPELLENT

CATNIP (*Nepeta cataria*) may be irresistible to cats, but apparently it has the opposite effect on insects. Researchers at Iowa State University in Ames have found that *N. cataria* yields an essential oil that has potential as an insect repellent. A member of the mint family from North Africa and the Mediterranean, this species of catnip is one of the parents of the ornamental catmint (*Nepeta ×faassenii*), commonly grown in gardens.

"We've been working on essential oils as alternative pesticides for about 15 years," says Joel Coats, professor of entomology and toxicology. "We've been trying to find those that would work on certain pests and how they work on the insects, something that is poorly understood at present."

What led Coats to catnip was the plant's long reputation as an insect repellent in folklore. "Nobody ever followed up to quantify: 'Does it or doesn't it?'" he says. Apparently it does: Trials with oil of catnip, distilled from the plants, show it surpasses the synthetic chemical DEET (dimethyl-toluamide) in repelling mosquitoes. To be equally effective, the concentration of DEET has to be 10 times the concentration of the catnip oil.



N. cataria, which is currently being evaluated for its insect-repelling properties, is one of the parents of the ornamental catnip (*N. ×faassenii*), shown here in a garden.

The essential oil of catnip also worked well in tests against American and German cockroaches and on houseflies. Nepetalactone, a compound in the essential oil, may interrupt insect enzyme products and may also affect insect reproductive activities. "Different cultivars," says Coats, "show a lot of variance in oil production."

Testing the oil's efficacy and safety on human skin is the next step before a product containing nepetalactone can be developed and marketed.

PULMONARIA STUDY

THE CHICAGO Botanic Garden has just released the results of a six-year study of 51 taxa of lungwort (*Pulmonaria* spp.). The goal of the study was to determine which species and cultivars of the shade-loving herbaceous perennial grow best in the Midwest's challenging climate. Plants were evaluated for ornamental qualities, disease and pest resistance, and cultural adaptability.

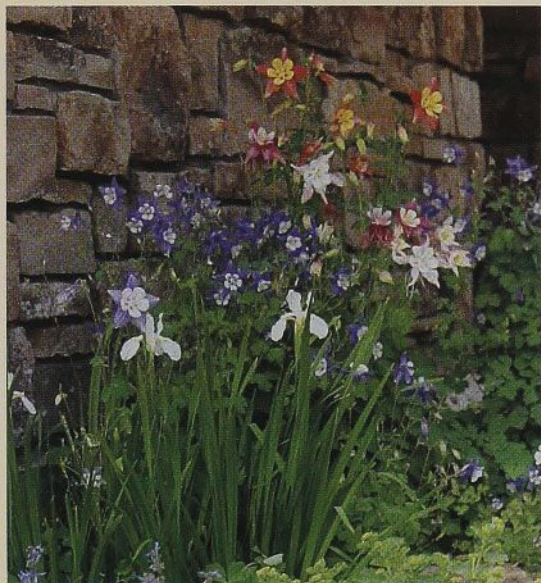
It is not surprising that this old-fashioned plant is enjoying renewed popularity.



2002 American Horticultural Society TRAVEL STUDY PROGRAM

Gardens of Jackson Hole and the Snake River Valley

July 16–21, 2002



Be the first to visit private exclusive gardens of Jackson Hole, Wyoming. This special program was conceived by one of our valued members, Mrs. Carole Hofley. The breathtaking gardens are legendary in this region. One of the days will be spent floating down the enchanting Snake River on a raft. Accommodations for this program will be provided at Spring Creek Ranch, a marvelous rustic setting just outside of Jackson, Wyoming.

The hosts for this tour will be AHS board member Kurt Bluemel and his wife, Hannah, of Baldwin, Maryland. Kurt is the owner of Kurt Bluemel, Inc., and past president of the Perennial Plant Association. Their charming grace, life experiences, and knowledge of horticulture will make this an extremely pleasurable trip you won't want to miss.

For complete details of the exciting 2002 schedule, visit the AHS Web site at www.ahs.org, or call the Leonard Haertter Travel Company at (800) 942-6666.

No member dues are used to support the Travel Study Program.

ty. Nearly half of the selections tested—21 of 51—received the highest score, “good.” New cultivars abound, with variations of the characteristic silver spotting, splotching, and speckles on dark green leaves.

Although prized for their handsome foliage and clumping, slow-spreading habit, lungworts also bear small, pinkish blue



Pulmonaria saccharata produces attractive flowers that complement its foliage.

flowers in early spring. While most are not heavily floriferous, three were rated “high” for flower coverage. These are *P.* ‘Roy Davidson,’ *P. mollis*, and *P. saccharata*.

Excellent ground covers, spreading about twice as wide as their six to 18 inch heights, lungworts have silvery green leaves that brighten sites in light to medium shade. They thrive in consistently moist, well-drained, and humus-rich soil and may go dormant in dry summer conditions.

To receive a copy of *Plant Evaluation Notes*, issue 17, “An Appraisal of Pulmonaria for the Garden,” send a check for \$3, payable to Chicago Botanic Garden, c/o Richard Hawke, 1000 Lake Cook Road, Glencoe, IL 60022.

WINNING WOODIES

ELEVEN WOODY ornamental plant selections have been named as top performers in regional trials that are a collaborative effort between the USDA’s Agricultural Research Service (ARS) and more than 30 state experiment stations in the north-central United States, New England, and Alaska. For the past 48 years, collaborators have collected and submitted data on ornamental trees,

shrubs, and vines to the North Central Regional Plant Introduction Station in Ames, Iowa. The Ames trials track the performance of each plant over a 10-year period. The top performers from the most recent cycle of trials are:

Nugget ninebark
(*Physocarpus opulifolius* ‘Nugget’)
Sakakawea buffaloberry (*Shepherdia argentea* ‘Sakakawea’)
Kentucky wisteria (*Wisteria frutescens* var. *macrostachya*)
Cardinal and Ruby red osier dogwoods (*Cornus sericea* ‘Cardinal’ and ‘Ruby’)
Indigo silky dogwood (*Cornus amomum* ‘Indigo’)
Konza fragrant sumac (*Rhus aromatica* ‘Konza’)
Tara barberry (*Berberis* ‘Tara’, trademarked Emerald Carousel)
White Knight weigela (*Weigela florida* ‘White Knight’)
Western larch (*Larix occidentalis*)
Little King river birch (*Betula nigra* ‘Little King’, trademarked Fox Valley)



2002 American Horticultural Society TRAVEL STUDY PROGRAM

Secret Gardens of Santa Fe and Taos

June 11–16, 2002



You don’t want to miss this chance to experience the breathtaking sights of America’s Southwest. Santa Fe and Taos are without question the jewels of this region. Come join us as we visit gardeners in the shadows of the Sangre de Cristo Mountains and desert plateaus who have created marvelous gardens that thrive in what is best described as arid conditions. Visit a true oasis, where an 18,000-gallon koi pond is home to a variety of waterlilies, irises, and reeds. Accommodations for this program are provided at the Inn of the Anasazi, well known for its exceptional Southwest architectural style in the heart of historic Santa Fe.

For complete details of the exciting 2002 schedule, visit the AHS Web site at www.ahs.org, or call the Leonard Haertter Travel Company at (800) 942-6666.

No member dues are used to support the Travel Study Program.

Offshoots

Not My Mother's Garden

by Alice Trapasso

MY MOTHER'S way of gardening sometimes mystified me as a child. I was about eight years old when the centerpiece of my mother's garden in our Long Island home, an old peach tree, died. She replaced it with a spindly sapling she called an apple tree, but to me, the sapling bore as much resemblance

to a tree as I did to a New York sophisticate. I would have to wait *forever*, I thought, before it grew large enough to shade our small yard (and, as it turned out, even longer for edible apples, once my mother read Rachel Carson's *Silent Spring* and refused to spray ever again).

But except for the apple tree, her garden of my childhood was a gratifying, delightful Eden. My love of roses stemmed from the intertwined pink and white ramblers that grew up a brick wall in that garden. To shade the sandbox, she planted sunflowers whose faces magically followed the sun across the sky. In the summers, she allowed my sister and me to cool our toes in the "pond," a faux marble pool she built with cement and stocked with goldfish and water lilies.

As an adult, once I had a garden of my own, I always came away from my mother's garden with her homegrown tomatoes, blueberries, trays of pass-along plants—and her infectious enthusiasm for growing things.

I also unthinkingly absorbed some of her plant prejudices. 'Hill of Snow' hydrangeas, hostas by the hundreds—I automatically ignored them as I did phlox and asters. It was years before I realized these were plants my mother disliked.

At the same time, our gardens couldn't be more different. While my mother has "no use at all" for white flowers, I have tried to coax light and mystery from the evening garden by planting 'Natchez' crape myrtles, 'Iceberg' roses, 'Casa Blanca' lilies, and moonflower vines. Where she delights in bonsai, dwarf evergreens, and other compact specimens for ease of care and to keep in scale with her small yard, I have indulged a love of drama with delphiniums (unsuccessfully), regal lilies, and *Hosta*

sieboldiana 'Elegans.' When I moved to South Carolina, I fell in love with exuberant vines such as wisteria, trumpet creeper, and mandevilla, which smother every lamppost and cascade over every wall. Before long, I planted Carolina jessamine and 'Nelly Moser' clematis and drew plans for a pergola to display climbing roses.



At first I assumed our preferences were matters of taste. But it soon became apparent to me that our gardens are defined more by temperament than taste. Her willingness to allow the young apple tree of my childhood to mature in its own time, to grow a Carolina sweetshrub she admired for its clove-scented leaves from a seed gathered on a walk, to spend three years fussing over cuttings until she had rooted a now magnificent, 10-foot Japanese cedar—these acts testified to her thriftiness as much as to her patience.

I, on the other hand, tend to go for immediate effect—as when I planted a privacy screen of 12- to 15-foot-tall crape myrtles. Frequent moves to follow my husband's jobs have served to reinforce my pursuit of instant gratification; we moved from one

house before I saw my Mother's Day gift of a saucer magnolia (*Magnolia x soulangiana*) bloom. So when it comes to cultivating patience, three years is about my limit. To plant a row of widely spaced, three-inch-tall boxwoods, as my mother did, so that a decade later they would grow into a handsome hedge, is more than I can endure.

My mother and I also differ in how we choose plants for our gardens. She allows practicality and principle as much as affection to dictate her choices. She disapproves of my fondness for variegated foliage because, she reminds me, variegated plants are sometimes less vigorous and floriferous.

Among the roses she used to grow, I remember how she prized a difficult 'Kordes Perfecta' hybrid tea and exclaimed over every fragrant bud of creamy petals blushed with pink. Yet once she gave up using chemicals, she surrendered her devotion to roses in direct proportion to the blackspot she could no longer control. The only rose in her garden now is 'Bonica,' a disease-resistant shrub rose.

I sympathize with the principle of organic gardening, but last spring, when insecticidal soap failed to wipe out the thrips devouring *my* rosebuds, I confess I turned to stronger pesticides.

My mother's way of gardening is sometimes contrary to mine, but our love of gardening is a common bond. We now cultivate soils as different as Long Island sand and South Carolina clay—and with similarly divergent sensibilities. But we can always "talk plants" happily, and no matter what our disagreements in other areas, there is no arguing the beauties and pleasures of the garden—hers and mine.

Alice Trapasso is a free-lance writer living in Greer, South Carolina.



Gardeners Information Service

CARING FOR BOXWOOD

I am currently landscaping a new house and plan to incorporate boxwood (*Buxus sempervirens* 'Suffruticosa') in the design. I would like information on planting, feeding, and light requirements, as well as suggestions for companion plants, including those that repel insect pests and resist diseases.

—M S., ROCKY MOUNT, NORTH CAROLINA

Buxus sempervirens 'Suffruticosa', commonly known as English boxwood, is a cultivar with dense, compact foliage that makes it ideal for use as edging and in borders and parterres. It grows slowly to about three feet in height and spread. Boxwoods, hardy in USDA Zones 6 to 8 and heat tolerant in AHS Zones 9 to 6, luxuriant in climates that do not have extremes of summer heat or winter cold. Everywhere, they grow best in loose, loamy soil with a pH of 6.5 or higher in a sunny situation, though they will tolerate part shade.

Other than a light topdressing with compost in spring, there is no need to fertilize unless the plant displays symptoms of nutrient deficiency. We are not aware of any companion plants that might repel boxwood pests, but boxwoods are not susceptible to many serious problems and are even somewhat deer resistant.

The choice of companion plants depends upon the setting and your overall design. Combining fine-textured boxwoods with bold-textured plants such as hollies (*Ilex* spp.), hydrangeas, or viburnums adds appealing contrast in texture and size. White-flowering plants separate masses of boxwood with special grace.

FERTILIZERS 101

I'm overwhelmed by the variety of fertilizers on the market and confused about which to use. How do slow-release fertilizers differ from others? And where do organics like fish emulsion, ashes, and dehydrated manure fit in? I would like to fertilize (non-acid-loving) shrubs, herbaceous perennials, and bulbs and I'm wondering if I can use the same product for all three.

—E M., SPOKANE, WASHINGTON

All fertilizers—a term that usually refers to

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products that have been synthetically formulated—contain the macronutrients nitrogen, phosphorus, and potassium and, possibly, some of the 13 micronutrients such as magnesium, calcium, and iron that plants require.

A complete fertilizer always contains the big three: nitrogen, phosphorus, and potassium and always lists a ratio of their percentages in the same order. Thus a label listing 5-10-5 indicates that the container holds five percent nitrogen, 10 percent phosphorus, and five percent potassium by weight. Since nitrogen leaches out of the soil quickly if not taken up by plants, the requirement for nitrogen is often the highest. Most soils, especially clay, contain enough of the micronutrients to make adding them unnecessary. While some fertilizers are especially formulated for specific plants—such as those that prefer an acidic soil—complete fertilizers generally work for most plants.

Synthetic fertilizers are generally inexpensive, easy to use, and effective, but they are often overused, contributing to environmental pollution through runoff. When they are labeled *slow release*, their compounds are bound up into a water-permeable coating that releases the nutrients over time as the coating degrades.

Organic fertilizers are waste products of living organisms, or the decomposition of their remains—such as fish emulsion, ashes, and manure. While most organic products provide some of the 16 essential elements, these are usually present in relatively small amounts, making them comparatively more expensive than synthetics.

Organics have other advantages: They are inherently slow release, don't pollute, and usually improve the soil structure—something that yields long-term benefits in the garden. Much new research into plant pests and diseases points to a rich, healthy soil, alive

with microorganisms, as the best support for all types of plants.

NO BEES, PLEASE

I need help selecting garden plants that DO NOT attract bees. Do you have suggestions?

—J.C., HARRISBURG, PENNSYLVANIA

Some of the most beautiful garden plants—ferns and ornamental grasses—do not attract bees. Tassel fern (*Polystichum polyblepharum*), autumn fern (*Dryopteris erythrosora*), and Christmas fern (*Polystichum acrostichoides*) are semi- to fully evergreen and serve as tall (to two feet high) ground cover in part to full shade. 'Morning Light' miscanthus is a variegated, four-foot-tall ornamental grass that, like other grasses, is wind pollinated.

Among flowering plants, a flower's characteristics offer clues to its pollinator. Bees are especially drawn to laterally symmetrical, yellow, blue, or purple, day-blooming flowers that may be marked with nectar guides—the kind of striped patterns seen on iris falls. These lead bees to the nectar inside the flower. Among the plants pollinated by bees are eastern dogwood (*Cornus florida*), garden phlox (*Phlox paniculata*), and goldenrods (*Solidago* spp.).

Night-blooming plants, such as the extremely fragrant, pale to white-flowered yuccas and daturas, are pollinated by moths instead of bees.

Plants with medium-sized, red or yellow tubular flowers with little scent but plenty of nectar, such as columbine (*Aquilegia formosa*) and trumpet vines (*Campsis* spp.), are typically pollinated by hummingbirds.

It is estimated that about one-third of all herbaceous plants are pollinated by ants. Frequently, the flowers they pollinate grow close to the ground. Examples of ant-pollinated plants include wild gingers (*Asarum* spp.), the spring-blooming, trout lilies (*Erythronium* spp.), and summer-flowering purslanes (*Portulaca* spp.).

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

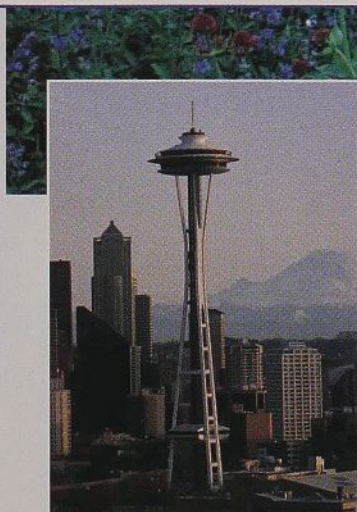


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This event is made possible through the support from The Arboretum Foundation, Friends of Seattle's Olmsted Parks, Northwest Perennial Alliance, and Northwest Horticultural Society.

A close-up, high-angle photograph of a vast field of red poppies. The flowers are in various stages of bloom, with some fully open, showing their delicate petals and dark centers. The green stems and leaves are interspersed among the red blooms, creating a textured, layered appearance. The lighting is soft, highlighting the vibrant red of the petals against the green foliage.

Poppy Love



A sweep of red corn poppy naturalized here in a meadow garden is punctuated by the delicate flower of a pink form. One of the keys to growing a healthy stand of poppies is providing them with well-drained soil.

Garden-worthy members of the genus *Papaver* include some of the most fabled plants in human history.

BY RAND B. LEE

GARDENERS USUALLY either like poppies or they don't. Those who dislike poppies often find the genus's prevalent scarlets unbearably flamboyant or don't appreciate how fleeting the poppies' beauty is: Most species flower in season for only a short period, each fragile blossom lasting only a day or two. To make matters worse, annual and biennial sorts—once you have successfully grown them—also tend to be profligate reseederers in most climates. Even the perennial poppies have minds of their own. Just try to get rid of a perennial poppy once it has made itself at home in your garden.

Still, I love poppies, and I am not alone. The ancient Egyptians grew them with daisies and waterlilies for use in bouquets, crowns, and garlands. Thomas Jefferson grew many kinds at Monticello, including a double corn poppy. And Gertrude Jekyll used the "rich apricot" flowers of *Papaver rupifragum* and *P. pilosum* to color her June garden.

The true poppies belong to the genus *Papaver*, which contains as many as 70 more or less variable perennial, biennial, and annual species that range in flower from baby egg-cups to Wassail bowl-flowered giants. Members of the genus can be found in all parts of the world, mainly in the northern hemisphere. Stems possess an often poisonous milky sap; foliage can be either smooth or hairy and varies in shape according to species. Flowers are usually solitary, each featuring a prominent capped ovary surrounded by stamens that later develops into an inflated, round to elongated seed pod.

Only five true poppies are commonly grown in North American gardens: the annual corn poppy (*P. rhoeas*), also called field

poppy and Flanders poppy; the annual breadseed or opium poppy (*P. somniferum*); the perennial oriental poppy (*P. orientale*); *P. nudicaule*, the perennial Iceland or arctic poppy; and *P. alpinum*, the miniature perennial alpine poppy.

Annuals

THE EARLIEST annual poppy to bloom in the garden is *P. rhoeas*. This is the legendary red wildflower of the European fields that has become associated with the fallen soldiers of the two World Wars. On Memorial Day, veterans groups often sell symbolic paper poppies that can be pinned to lapels.

In the wild, *P. rhoeas*, bears bright red flowers either with or without a black basal blotch. It can be found in Europe, Asia, and northern Africa. Among the many cultivars of *P. rhoeas* available are the 10-to-14-inch 'Mother of Pearl' (also sold as 'Angel Wings'), which bears delicate single to semidouble blooms in a wide range of muted colors, including peach, lilac, dusty grays, and off-whites, sometimes speckled or bicolored. 'Angels' Choir' is similar but slightly taller at 20 to 28 inches.

Another *P. rhoeas* strain is the Shirley poppy, developed in late 19th-century by the Reverend W. Wilkes of Shirley, England. The Shirleys grow two to three feet tall and bear single flowers in solid colors, each with a thin white edge and yellow stamens; 'Shirley Double Mixed' is a fully double strain growing two to four feet tall, with flowers in white, red, and pink.

P. commutatum, a bristly annual similar to *P. rhoeas*, rarely exceeds two feet. Its single red flowers are slightly smaller than those of the corn poppy, and each petal is marked with a prominent dark central blotch. 'Lady Bird' is a commonly available cultivar.

Long known to possess narcotic properties, breadseed or opium poppy (*P. somniferum*) is a storied plant in the annals of human history that has naturalized in many temperate regions of the world. Although drug enforcement authorities in the United States discourage the sale and planting of breadseed poppy, seeds of many fine cultivars are still available to intrepid gardeners.

Plants can grow to three feet tall and bear glaucous, oblong, deeply cut leaves.



Many extravagant varieties of breadseed poppy (*Papaver somniferum*) have been developed. One of these, the peony-flowered form, above, is aptly named.

The peony-flowered types—sold as *P. somniferum* var. *paeoniflorum* or 'Paeoniflorum'—are fully double and available in many colors: 'White Cloud' grows to 36 inches; 'Flemish Antique' produces two-to-three-foot plants with huge fluffy creamy heads streaked with orange-red; 'Black Paeony' is a double in deep maroon; 'Pink Paeony', a rich rose; and 'Oase' produces four-inch-wide fringed, scarlet, white-blotched blossoms. Carnation-flowered types of *P. somniferum*—sometimes sold as 'Laciniatum' or *P. somniferum* var. *laciniatum*—feature large double flowers that are highly frilled and fringed.

Some novelty strains of breadseed poppy have been developed mainly for their seed pods or seeds, 'The Giant', which yields oversize seed pods that are prized for dried arrangements. The lilac blossoms of 'Hen & Chickens' mature to a central seed pod (the "hen") surrounded by a ring of tiny ones (the "chickens"). 'Pepperbox' yields copious amounts of seeds for the cook and handsome pods for the flower arranger.

Breadseed poppy is vigorous, so plants should be thinned to at least a foot apart. Although an annual, it is a reliable self

sower and will often come back each year in the garden once established, thus making it a good plant for naturalizing. As with other poppies, seedlings tend to vary from the parent.

Another annual poppy of garden merit is the longpod poppy (*P. dubium*), a two-foot-tall native of Europe, Asia, and northern Africa that bears pinnately dissected

Poppy Bouquets

Many gardeners think poppies are too fragile for use as cut flowers, but oriental and Iceland poppies can be enchanting additions to fresh bouquets. Just be aware that many poppies exude a sticky latex from their stems when cut, so avoid contact with the sap to prevent possible skin irritation. If you cut the flowers just before they open, sear the cut ends in a flame for 10 seconds, and immediately plunge the stems into cold water, the flowers will open beautifully and last in the vase for about four days.

gray-green leaves and dark-centered red to rose blossoms two inches across.

Perennials

FOR PLANTS that stand out in the border, you can't miss with oriental poppies. These perennial poppies are listed in catalogs and sold in nurseries as *P. orientale* (Zones 4–9, 9–1), but some botanists consider this a convenient grouping for plants of three closely related Asian species, including *P. orientale*.

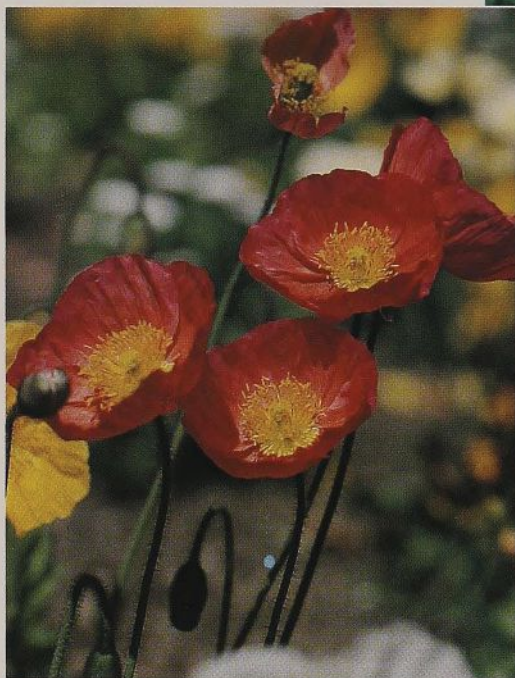
Oriental poppies are variable, sturdy, clump-forming or stoloniferous plants with bristly stems and leaves. The late spring to midsummer flowers usually feature the trademark dark blotch at the base, and, thanks to the work of plant breeders, occur single, double, and frilled in many colors. Because they may not come true from seed, Oriental poppies are best—and most easily—propagated by division. There are, however, a number of seed strains available that are said to produce robust true-to-type plants: 'Brilliant' (30 inches) comes in scarlet; 'Carneum' (48 inches) blooms salmon and pink; 'Orange Mix' yields peach-flowered plants as well;

and 'Royal Wedding' (30 inches) boasts flowers in black-centered white. 'Pizzicato', a floriferous dwarf strain that won a Fleuroselect Gold Medal, bears six- to eight-inch-wide blooms in white, pale pink, rose, salmon, or scarlet and grows 18 to 24 inches tall.

Perhaps the hardiest of all poppies is the arctic or Iceland poppy (*P. nudicaule*, Zones 2–8, 8–1), a yellow-flowered perennial native to the arctic regions in the northern hemisphere. In addition to their vivid flowers, Iceland poppy's hairy blue-green tufts of segmented foliage are particularly attractive. Plants sold in the trade

as *P. nudicaule* include several closely related species, and since this group has been highly bred, plants can be variable. Iceland poppies are available today in a wide range of colors. Several seed strains exist: 'Garden Gnome' (to 12 inches high) and 'Partyfun' (15 inches) for dwarf-lovers; 'Meadow Pastels' and 'San Remo' (24 to 28 inches) for those who prefer their Iceland poppies taller. If seeds are sown early enough, plants will bloom in the first year.

In fact, because Iceland poppies tend to succumb where winters are wet, they are often treated as annuals in such areas and sown anew each spring.



Although it is quite hardy, the Iceland poppy, above, does not tolerate wet winter conditions. Right: The striking peach-pink flowers of *P. orientale* 'Carneum' harmonize well with gray-green lamb's ears in this herbaceous border.



How to Grow Poppies from Seed

Down the street from me, in a hard-packed clay driveway crowded with cars and trucks in various states of repair, every year there flourishes the most glorious stand of self-sown corn poppies I have ever seen. While all the books insist poppies are easy to grow from seed, my real-life experience has proven otherwise. In hopes of establishing a poppy meadow in my Santa Fe backyard, I had broadcast-sown poppy seeds for years to little avail. I've also sown seeds under lights, stratified them in the refrigerator, and bought plants from the local nursery, but nothing worked to compare to that effortless stand of poppies by the neighbor's driveway.

For other poppy lovers who have had the same hard luck, I have finally figured out how to grow decent poppies from seed, and I share my findings with you here!

- ✿ Use fresh seeds whenever possible. Because poppy seeds are so small, mixing them with sand will make sowing easier.
- ✿ Direct sowing is best. Plants grown from seeds sown outdoors where they are to grow are ten times healthier than transplanted poppies grown from seeds sown indoors under lights. If you must start seeds indoors, grow them in biodegradable paper pots filled with a well-drained, porous medium and set out the plants before their roots hit the bottom of the pot—but don't be surprised if half of them die.
- ✿ Prepare the site. Poppies grow best in well-drained, rich, disturbed soils, so prepare the seedbed before you sow. Break

up clumps and dig in compost and other soil amendments if needed, then rake the surface smooth. If you garden on clay, dig in coarse sand and plenty of compost or other organic matter to the depth of a foot before sowing.

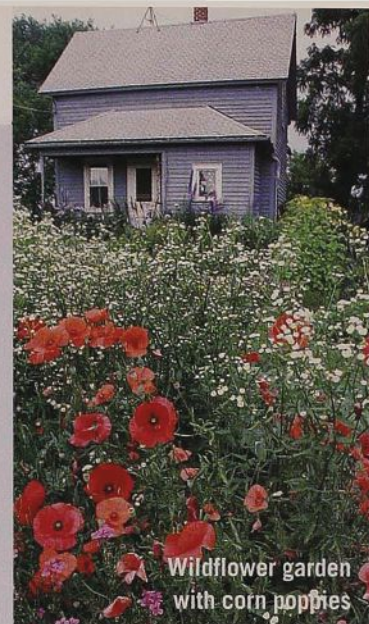
✿ Sow seeds in autumn or as early in spring as the ground can be worked. As Ken Druse notes in his book *Making More Plants*, the seeds germinate within 10 to 30 days once spring temperatures rise above 55 degrees Fahrenheit. You can also try stratifying the seeds before you sow: Mix them with a little moist vermiculite in a plastic bag and put it in the coolest part of your refrigerator for one to three months. Watch the seeds closely: If they begin to sprout in the bag, transfer seedlings to the garden or to individual paper pots at once.

✿ Sow plentifully. (Ants and birds find the seeds tasty.)

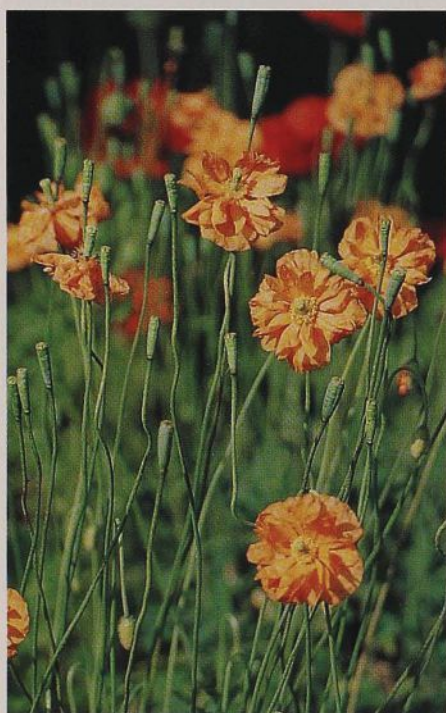
✿ Don't cover the seeds. Most poppies appear to germinate best in light.

✿ Keep the seedbed moist but not wet—or the seeds will rot.

—R.B.L.



Wildflower garden with corn poppies



Moroccan poppy develops club-shaped seed pods. This is a double-flowered form.

Rock Garden Species

FOR THE rock garden, the best poppy is probably *P. alpinum*, the dwarf perennial alpine poppy. It should be noted the *P. alpinum* commonly sold in the trade actually includes a number of related European alpine species, although they all generally bear feathery leaves and mature no taller than 10 inches. The white, yellow, and occasionally orange or red blooms are one to two inches across. *P. alpinum* is hardy in USDA Zone 5 to 8 and heat tolerant in AHS Zone 8 to 5. Although it is a perennial in its native habitat, in the garden it is best treated as a biennial.

Another poppy for the rock garden is the Atlas or Moroccan poppy (*P. atlanticum*, Zones 5–7, 7–5), a woody rhizomatous perennial from the highlands of Morocco. It grows about two feet tall and produces three-inch orange or scarlet flowers in the summer, later followed by club-shaped seed pods. This plant is

sometimes incorrectly sold as *P. rupifragum*, a close relative from Spain.

Worth Seeking

FOR THOSE bitten by the poppy bug, here are a few commendable species that are not widely available but are worth seeking out from plant society seed exchanges.

I got *P. triniifolium* (Zones 8–9, 9–8), a highly drought-tolerant native of Asia Minor, from just such a seed exchange. A biennial, it produces six-inch-wide pinwheels of lacy blue-green leaves in the first year; the second year it puts up foot-high stems divided into spreading branches dotted with sweet little one-inch-wide matted chalice. The seeds sprout readily from a surface sowing without stratification, but seedlings do not like to be transplanted.

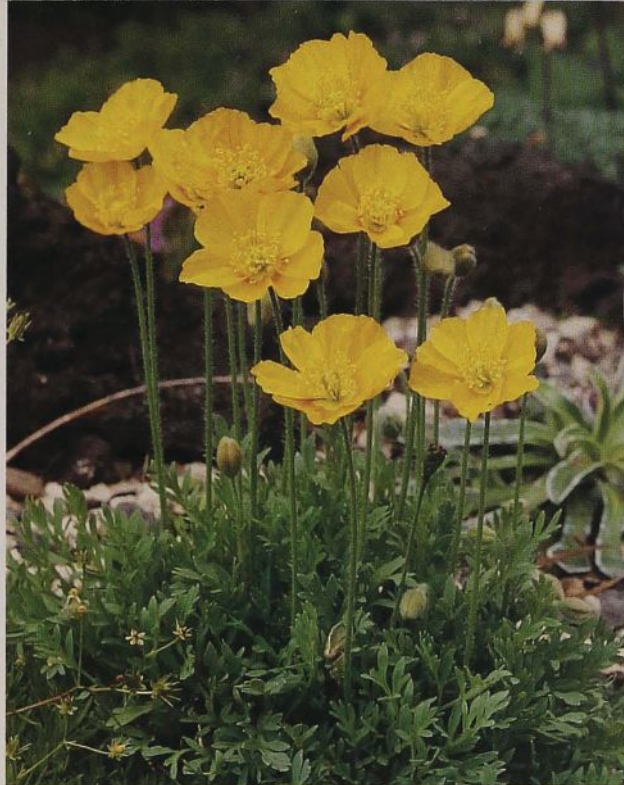
P. californicum, the true California or western poppy—not to be confused with its more well-known tender perennial relative *Eschscholzia californica*—is a native annual bearing slender, erect, branched

stems to two feet tall. The leaves are feathery and the two-inch flowers that bloom in late spring are red with pink-edged green or black basal spots. In some plants, two of the four petals are reduced to long slender threads.

P. pavoninum, a hairy feather-leaved annual from central Asia, is often confused with the peony-flowered breadseed poppies. Growing to a foot tall, it bears two-inch red flowers with purple anthers and the typical black basal blotch. The flowers give way to bristled seed pods.

Caring for Poppies

MOST POPPIES grow best in sunny locations with average, well-drained soil; wet soil is their kiss of death. Start them out cool if you can. Allan Armitage, in his marvelous book *Armitage's Manual of Annuals, Biennials, and Perennials*, states that he "would be hard pressed to find an ugly poppy among the perennial forms, except when they are in my garden." One reason Armitage gives for his *Papaver* problems—he gardens in sultry Georgia—is that many poppies grow best in cool weather: The genus is naturally found in temperate parts of the world. In my experience, low temperatures seem



This yellow-flowered alpine poppy makes a charming addition to a rock garden.

most important to the early growth of the plants and the longevity of the flowers. If you live in a very hot, sunny climate, plant your poppies where they will get some shade in the hottest part of the day.

In late winter to mid-spring, surface-sow outdoors in drifts or in containers while the soil is still cool, sprinkling a bit of soil over the seeds to hide them from birds. For best growth, when the seed-

lings are about an inch tall, thin corn poppy strains to about four inches apart; Iceland poppies to about six inches; and the more vigorous breadseed poppies to about a foot apart.

If you're growing your poppies for their flowers, deadhead each pod as soon as the petals fade to encourage longer bloom. If you're lazy, a swipe with a grass shears leaves stubbles but works fine.

Except for oriental poppies, which can be easily divided in late summer, save seeds from the best plants for propagation. Harvest seed pods when they have fully formed but before they turn brown. Gather the cut stalks with a rubber band and hang them upside down in a well-ventilated lo-

cation indoors. After the pods are dry, remove the seeds and sow them at once or store them in paper envelopes in the refrigerator until you're ready to plant.

And if you've grown breadseed poppy, you can also store the seeds in a jar to sprinkle over your next batch of homemade challah.

A frequent contributor to The American Gardener, Rand B. Lee is president of the North American Cottage Garden Society. He gardens in Santa Fe, New Mexico.

Sources for Poppies

Chiltern Seeds, Bortree Stile, Ulverston, Cumbria LA12 7PB, England. 44 1229 581137. www.chilternseeds.co.uk. Catalog free.

P. alpinum; *P. atlanticum* (single and double forms); *P. commutatum* 'Ladybird'; *P. dubium*; *P. laciniatum*; *P. nudicaule* 'Garden Gnome Mixed', 'Meadow Pastels', 'Partyfun'; *P. orientale* 'Pizzicato'; *P. pilosum*; *P. rhoeas* and cultivars 'Angels Choir Mixed', 'Mother of Pearl', 'Shirley', 'Shirley Double Choice Mixed'; *P. rupifragum*; *P. somniferum* 'Hens and Chickens', 'Oase', 'White Cloud'; *P. somniferum* var. *paeoniflorum* 'Black Peony', 'Flemish Antique'.

J.L. Hudson, Seedsman, Star Route 2, Box 337, La Honda, CA 94020. www.jlhudsonseeds.net. Catalog \$1.

P. alpinum; *P. atlanticum*; *P. dubium*; *P. nudicaule* 'San Remo'; *P. orientale* 'Brilliant', 'Carneum', 'Pizzicato' 'Royal Wedding'; *P. somniferum* 'The Giant', 'Hen and Chickens', 'Pep-perbox'; *P. somniferum* var. *paeoniflorum* 'White Cloud'.

Park Seed, Greenwood, SC. (864) 223-7333. www.parkseed.com. Catalog free.

P. nudicaule 'Partyfun Mix'; *P. orientale* 'Pizzicato'; *P. rhoeas* 'Angels Choir'; *P. somniferum* var. *paeoniflorum* 'Black Peony', 'Flemish Antique', 'Oase', 'Pink Peony'.

Seed Savers Exchange, Decorah, IA.

(319) 382-5990. www.seedsavers.org. Catalog free.

P. commutatum 'Ladybird'; *P. rhoeas* 'Angel Wings', 'Reverend Wilkes' Shirley Poppy'.

Resources

Poppies: The Poppy Family In The Wild And In Cultivation by Christopher Grey-Wilson. Timber Press, Portland, Oregon, 2000.



Begun in 1982 when the understory of indigenous salmonberry was removed and replaced with 275,000 starts of Irish moss (*Selaginella involens*), the Moss Garden has since filled in with true, verdant moss. Bloedel retained decaying alder stumps throughout and added Hercules walking-stick trees (*Aralia spinosa*) to create an extraordinary landscape.

A Natural Selection: The Bloedel Reserve

The primeval beauty of the natural landscape is carefully preserved in this Pacific Northwest garden.

TEXT AND PHOTOGRAPHS BY JEFFREY GRACZ



Before this French Renaissance-inspired building became the Visitors Center at the Bloedel Reserve, it was home to two of the Northwest's most prominent families. Designed by architect J. Lister Holmes and completed in 1932 for the prosperous Collins family of Seattle, it was built on land that was originally purchased for a summer retreat. Collinswood, as the house was called, was purchased, in 1951 by Virginia and Prentice Bloedel.

TO STAND IN THE moss garden at the Bloedel Reserve on Bainbridge Island, Washington, is to feel surrounded by nature—subtle, unpretentious, peaceful, unhurried. The entire Reserve seems a most fortuitous coincidence of natural processes, but the guidebook insists it is the result of human manipulation—a garden.

It was meant to be nature, gently molded. Prentice Bloedel, the force behind its development, wrote, "it should be an example of man working harmoniously with nature; where his power to manage is used cautiously and wisely...."

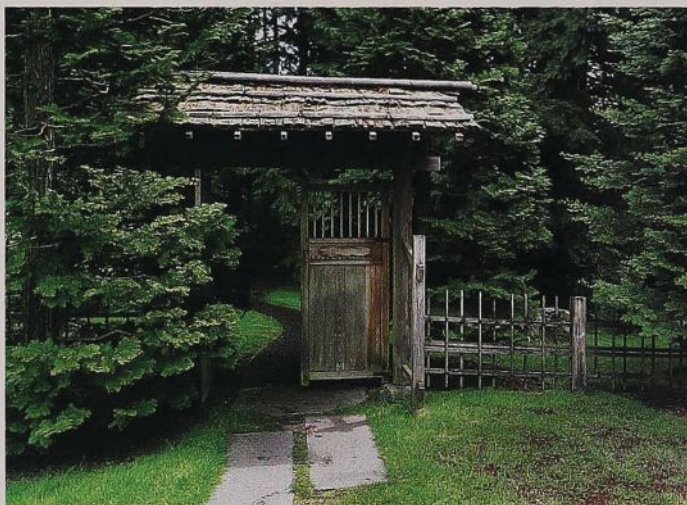
In 1951, Prentice and Virginia Bloedel purchased the 67-acre property called Agate Point on Washington's Bainbridge Island. Prentice Bloedel took an immediate and keen interest in the land. With ideas gathered from books, visits to other gardens, and his own imagination, he spent the next 30 years shaping and molding it.

Over time, the property grew to its present nearly 150 acres and Bloedel established long-term relationships with various luminary designers whose ideas, like his own, were respectful of the native environment. Landscape architect Thomas Church was responsible for the Orchid Walk. Landscape designer and constructor Fujitaro Kubota designed the Japanese Gardens. Paul

Hayden Kirk designed the Guest House overlooking the Japanese Garden. Landscape architect Richard Haag further developed the property with designs for the Bird Sanctuary, the Moss Garden, and the Reflecting Pool.

Bloedel envisioned the property eventually would become a place where the public could come to appreciate nature. To this end, the non-profit Arbor Fund was established in 1974 and an executive director, Richard Brown, was chosen to manage the Reserve. Brown worked closely with Bloedel as the Reserve transformed from private property to public garden.

POST-AHS ANNUAL CONFERENCE TOUR. The Bloedel Reserve, along with Heronswood Nursery and Linda Cochran's garden, are highlights of the Bainbridge Island Excursion, Sunday, June 9, 2002. This is an optional tour offered after the American Horticultural Society's 57th Annual Conference "Great American Gardeners," to be held June 6 to 8 at the Renaissance Madison Hotel in Seattle, Washington. For information and a registration form, please visit the AHS Web site at www.ahs.org.



In 1956, Japanese immigrant Fujitaro Kubota was hired to execute a Japanese style garden. Working without drawings or plans, Kubota created the Japanese Garden, top, by moving and placing plants, rocks, and other design elements on site. Above: The gated entrance to the Zen garden in Bloedel.

In 1985, the Arbor Fund Committee chose Planning and Design, a Pittsburgh-based landscape architecture firm, to implement a master plan to define public parking, reception facilities, and visitor circulation. Today, the main garden pathway leads the visitor through all of the Reserve's major areas, beginning with a walk through an open meadow.

THE BLOEDEL RESERVE on Bainbridge Island is reached by ferry from Seattle or via the Agate Pass Bridge from the Olympic and Kitsap Peninsulas. It is open to the public year round, Wednesdays through Sundays, except federal holidays, from 10 a.m. to 4 p.m. Admission fees are \$6 per person; \$4 for those 65 and over and ages 5 to 12. Call (206) 842-7631 for further information, or write to the garden at 7571 N.E. Dolphin Drive, Bainbridge Island, WA 98110.

The meadow path leads to the Bird Refuge where small mounds in the water provide natural nesting areas for bird life. Native red osier dogwoods (*Cornus sericea*), viburnums, spireas, and cattails support bird life and the lined and mottled trunks of alders add drama. Beyond the Refuge, a trestle bridge offers views into ecologically fragile areas.

The trail next passes through a forest clothed with the Northwest's signature ferns, towering conifers, and moss-covered rocks, before becoming a boardwalk that skims a bog filled with carnivorous plants such as cobra lilies (*Darlingtonia* spp.) and pitcher plants (*Sarracenia* spp). This culminates in a vista of the Visitor Center.

Housing the extensive library of horticultural and botanical books, the Visitor Center is the halfway mark on the walk through the Reserve. From there, the main path leads into the Rhododendron Glen—best seen during springtime when the rhododendrons, trilliums, and primroses bloom. Himalayan birch trees (*Betula utilis* var. *jacquemontii*) and more than 15,000 cyclamen are part of a careful manipulation of the Glen's natural environment.



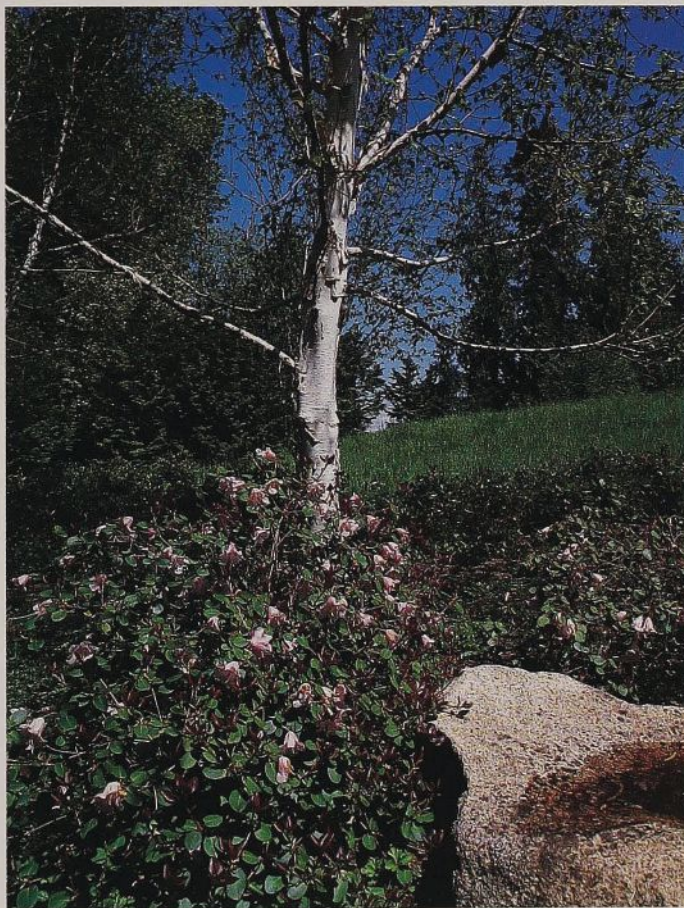
Above: Fed by a natural spring, the reflecting pool grew from landscape architect Thomas Church's idea of simply grading the bottom and adding a curb. Later, the Bloedels agreed to a yew hedge for greater definition. **Right:** Himalayan birches and rhododendrons grow in the shady Rhododendron Glen.

In springtime coralroot orchids (*Corallorhiza maculata*) dot the forest floor along the Orchid Walk. The pleasant fragrance of pine needles perfumes the air all the way to the Japanese Garden. In deference to tradition, the stone path twists and winds to ward off wicked spirits. From the guesthouse deck the garden's three harmonious elements—rock, water, and plants—come into view.

Beyond the guesthouse is the Zen garden. Ridges drawn in the sand suggest ripples of water around carefully placed rocks. A series of low mounds covered with cotoneasters and *Bolax glebaria* define the Zen garden. A large Tori gate and stone pavers mark the exit and transition to the Moss Garden, primeval and lush with verdant mosses growing over old stumps, fallen logs, and rocks. Fern fiddleheads and Hercules walking-stick trees (*Aralia spinosa*) augment the unearthliness of this landscape.

The final garden encountered before completing the circuit and returning to the wildflower meadow is the Reflecting Garden. The mirrorlike surface, precise lines of the pool, and the meticulously clipped yew hedges contrast starkly with the wildness of the surrounding woods.

Jeffrey Gracz is a photographer and frequent contributor to The American Gardener based in Portland, Oregon.



Clematis



'Duchess of Albany'

for American Gardens

The queen of climbers has a reputation for being a prima donna, but here are 10 selections that have proven successful in American gardens.

BY EDITH M. MALEK

NOT FOR nothing are clematis (*Clematis* spp.) known as the “queen of climbers.” They have delicate, finely sculpted foliage, ornate flowers in a multitude of colors and shapes, and many produce interesting and attractive seed heads to close out the year. They are among the most coveted of plants, but their reputation for having demanding cultural requirements has discouraged many American gardeners from giving them a try. Based on my experience with the “queen of climbers,” however, they can and should be far more widely grown.

Early American gardeners were probably growing some of the 35 clematis species native to North America as early as the 1700s, but it was hybrid selections brought from Europe in the late 1800s that really caught the attention of gardeners on this side of the Atlantic. Along with those hybrid clematis came detailed instructions on the conditions necessary for optimal growth derived from growers’ experiences with them in Europe.

Books on clematis today—most written by authors based in the United Kingdom—still include much of the same basic cultural information in vogue a century ago. Clematis, we are told, need to be planted in organic rich, alkaline soil that

drains freely but stays consistently moist during the growing season. They don’t tolerate heat well and should be planted so that their roots are shaded but their stems and foliage will receive part or full sun.

These instructions are useful as general guidelines, but they don’t necessarily hold true for all clematis selections and in all regions of our diverse country. For instance, I have found that many clematis can be grown quite successfully in neutral to slightly acid soil (down to a pH of 6.5).

The reason so many books stress that clematis need alkaline soil is that in Europe clematis were usually found growing in the wild in soil derived from limestone or chalk rock. Since such soils are generally alkaline, it was assumed that clematis needed an alkaline planting location. However, the high level of rainfall most of the United Kingdom experiences helps to quickly leach away the lime present in the soil. Even some British authors such as Christopher Lloyd and Raymond Evison now question the value of adding lime to the planting site for clematis.

Few areas of the United States have the temperatures and types of rainfall enjoyed in the U.K. Growing clematis in a neutral to slightly acidic site is particularly important for gardeners who live in

Clematis Flowers

Clematis flowers are somewhat unusual because what appears to be petals are actually petaloid (petal-like) tepals. Flowers, which can be anywhere from a half inch to 10 inches in diameter, consist of from four to eight tepals surrounding a central boss of stamens and pistils. If the flowers are fertilized, they form persistent heads of one-seeded fruits termed achenes. In some clematis species, the achenes sport silky or feathery styles that add interest for weeks after blooming ceases.

areas—such as the Southwest—where rainfall is seasonal and accompanied by high temperatures. In regions of low rainfall where the soil already has a high concentration of lime, gardeners may actually need to reduce the alkalinity of the soil by applications of gypsum or elemental sulfur.

EXPOSURE AND HEAT TOLERANCE

AND WHILE THE oft-heard advice for clematis is “Plant their heads in the sun and their feet in the shade,” I have found that most grow equally well where their roots are in full sunlight or in shade. Shading clematis roots with other plants that have aggressive roots can actually stunt the clematis’s growth because these plants tend to compete for water and nutrients.

The assumption that clematis are not heat tolerant has led people to believe that they cannot be grown in relatively hot locations. While I wouldn’t recommend trying to grow clematis in Death Valley, some selections can be successfully grown in warmer regions of the United States such as those that fall into AHS Plant Heat-Zone 10 and 11. For these especially hot locales I suggest trying the many different small hybrid viticellas, such as ‘Royal Velours’, ‘Venosa Violacea’, and ‘Etoile Violette’—or the large hybrids such as ‘Victoria’, ‘Star of India’, and ‘Ernest Markham’. In such warm regions, my advice is to plant these select clematis in filtered or dappled sunlight to



help protect them from excessive heat.

GROWING ZONES

ONE OF THE problems with relying on references written by British authors is that their experience is in a climate similar to our Pacific Northwest. Thus, little is really known about how clematis fare in our 11 very unique cold hardiness and 12 heat tolerance zones.

Since much of the United States is located closer to the equator than the United Kingdom, plants here are subjected to much greater light intensity. In many parts of this country, we experience far less precipitation than the United Kingdom, as well as higher average temperatures. On the other hand, our northern and mountain regions are subject to harder frosts and longer winters. All these variable environmental conditions have a major effect on how clematis will fare.

The American Clematis Society (ACS) (see "Resources" on page 35) is currently seeking funding to conduct a scientific study of where different clematis will grow in North America. In the meantime, ACS members are being provided with annual charts to help keep track of where different clematis are growing successfully.

PROVEN PERFORMERS

NEARLY 300 CLEMATIS species have been identified and another 1,000 or more cultivars have been named since Western botanists first classified the genus in the mid-16th century. Many clematis have come and gone since then, but the following 10 selections—most of them over 100 years old—have endured the test of time and are reliable performers for American gardens. Based on my experience, all these clematis can be successfully grown in USDA Plant Hardiness Zones 4 to 10 and AHS Plant Heat Zones 10 to 5.

Clematis 'Alba Luxurians'

Although its exact parentage is unknown, 'Alba Luxurians' is probably derived from *C. viticella* and is classified with the Viticella Group of small-flowered clematis. A truly lovely clematis, its three-inch-wide, nodding, creamy white bells are tipped with a touch of green. The undersides of



its slightly recurved tepals have a bluish tint with a green stripe running down the center. Flowers form on new growth from midsummer to early fall, so any major pruning should be done in late winter or very early spring. As with most viticellas, it is vigorous and disease-tolerant, growing to a height of eight to 12 feet. It does well in any light exposure and particularly shines when combined with a companion plant such as a red climbing rose.

Clematis 'Duchess of Albany'

Introduced in 1890, 'Duchess of Albany' is a beautiful tulip-shaped clematis developed by world renowned clematis hy-

bridizer George Jackman, who created it by crossing *C. 'Star of India'* with the American native *C. texensis*. 'Duchess of Albany' has upward-facing, tulip-shaped, cherry-pink flowers highlighted by a darker streak in the center of each tepal. It blooms on new growth from mid- to late summer, so any major pruning should be done in late winter or early spring. It can reach a height of eight to 12 feet, but letting it ramble over a shrub at eye-level shows off its flowers to advantage. A sunny location is a must.

Clematis 'Duchess of Edinburgh'

Introduced in 1874, 'Duchess of Edinburgh' is one the few double-flowered clematis suitable for gardens in warmer climates. The flowers—elaborately ruffled, creamy white rosettes up to four inches in diameter—form on both old wood and new growth, creating a long-lasting display from early to late summer. Little major pruning is needed beyond cutting back stems with faded flowers to encourage reblooming. This cultivar does well in full sun or part shade and is an excellent choice for small gardens because it grows to only six to eight feet.

Clematis 'Ernest Markham'

Although not a centenarian quite yet, 'Ernest Markham' deserves special mention because it is one of the strongest and easiest-to-grow clematis. Its four- to six-inch flowers are a showy, glowing magen-





ta with prominent creases running the length of each of the six tepals. This selection produces flowers on both old and new wood and bloom time can be extended from early summer through early fall if vines are lightly pruned. It grows to a height of six to 10 feet and thrives equally in sunny or shady locations.

***Clematis* 'Huldine'**

The parentage of this breathtakingly beautiful cultivar is not known, but it was developed before 1914. The three- to four-inch flowers are pearly white on the upper sides of the tepals, while the bottom sides are pale mauve with three dark bars running down the center. Bright yellow stamens provide a pleasing contrast to the tepals. 'Huldine' flowers on new growth and blooms prolifically from mid- to late summer. Pruning should be done in late winter or early spring. It can grow to a height of eight to 15 feet and blooms best in a sunny location.

***Clematis* 'Marie Boisselot'**

Developed in 1885, this elegant French introduction has six- to eight-inch-diameter flowers. The luminescent, creamy white tepals have prominent grooves down the center and are crowned by a boss of golden stamens. It flowers from early summer to early fall on both old and new wood, so light pruning of spent flower stems is usually all that is needed. It can grow to a height of 8 to 12 feet and thrives in almost any exposure.

Clematis pitcheri

Our native American clematis species are less showy than the hybrids, but they have their own subtle and delicate beauty. Introduced to cultivation in 1838, *C. pitcheri* is native to the central and southern United States from Indiana south to Mississippi and west to Nebraska and Texas. Its nodding flowers are delicate dark purple bells formed of four fused and ridged tepals that turn down—recurve—just enough at their tips to reveal



the yellow stamens inside. These inch-long flowers bloom uninterrupted for several weeks from early to late summer. Growing to eight to 10 feet, it is an excellent candidate to ramble up into a tall companion shrub or conifer. It flowers on new growth, so pruning should be done in late winter or early spring. It thrives in full sun to part shade and grows best in well-drained soil.

(For more on other American native clematis, see "Coy Climbers," by Carol Howe, published in the May/June 1996 issue of *The American Gardener*. To order a back issue with this article, send a check for \$8 payable to AHS, 7931 East Boulevard Drive, Alexandria, VA 22308 or order directly from the AHS Web site at www.ahs.org.)

Family History

Clematis are members of the buttercup or crowsfoot family (Ranunculaceae), where they rub shoulders with such prominent relatives as anemones, columbines, delphiniums, and hellebores. The genus name is derived from the Greek word "klema," which translates to "a climbing or branching vine." Most clematis are deciduous semi-woody or woody vines, although there are some evergreen species and a few that are categorized as sprawling perennials. Clematis are broadly distributed in temperate regions of both hemispheres, but the center of diversity is in Asia and more than a third of the known species are native to China.

Clematis 'Proteus'

Cold-hardy 'Proteus' is one of the loveliest pink-flowered clematis and a good choice for gardeners in colder regions. A cross between *C. 'Grandiflora'* and *C. 'Fortunei'*, it was introduced in 1876 and produces stunning double flowers on old wood in its first blooming cycle followed by single flowers on successive blooming cycles. The double flowers are borne on old wood, while the single flowers bloom later on new growth, so pruning should be minimal. 'Proteus' can grow to a height of six to eight feet. In extremely hot locations it should be sited in filtered or part sun.



Clematis thrive if provided with consistent soil moisture—a good rule of thumb is to water thoroughly and deeply at least twice a week during the hot summer months. Be sure not to overwater or plant them in waterlogged locations, because this will encourage fungal diseases. For the same reason, water at ground level and avoid splashing water on the foliage and stems.

For a clematis to reach its full flowering potential, a proper fertilizing regime is essential. The first feeding should start in spring when the ground temperature reaches 55 degrees Fahrenheit and when the clematis buds are about two inches long.

An excellent fertilizing program starts with an organic fertilizer containing moderately high ratios of phosphorus and potassium (such as a 3-12-12). Alternate feedings every four weeks using a slightly less concentrated formula higher in nitrogen (such as a 5-3-1). This balanced approach will provide the plant with the necessary nutrients needed for flowering as well as contributing to its overall vigor.

Continue this monthly alternate feeding schedule until the end of September in colder zones and the end of October in warmer zones. Make sure you schedule the feedings so that the last application is of a fertilizer higher in phosphorus and potassium. This will provide your vine with the phosphorus it needs to form new blooms for next year's flower display.

DISEASES AND PESTS

THE MOST common clematis problems are stem rot, powdery mildew, snails, and earwigs. Here are some dependable, non-toxic methods that will aid you in your battle against these enemies.

By far the most devastating malady to clematis is stem rot, a fungal disease commonly called "clematis wilt" because the foliage wilts and turns black. There are no known cures for this disease, so preventive measures are the best approach. Always buy the biggest plant possible and avoid breaking young stems. Some experts recommend planting clematis so the top of the root ball is two or three inches below the soil surface to reduce risk of stem rot.

If your clematis should get stem rot, carefully cut off all of the diseased parts

Clematis 'Star of India'

A cross between *C. lanuginosa* and *C. 'Jackmanii'* introduced in 1867, 'Star of India' is simply voluptuous. Its four- to five-inch-diameter blossoms are a stunning reddish plum color decorated with a central carmine bar and creamy white stamens. It blooms on new growth, beginning in midsummer and extending into early autumn, so pruning should be done in late winter or early spring. This is a tall clematis that can grow 12 to 20 feet. It does well in any light exposure. Combine it with the climbing *Rosa 'Gertrude Jekyll'* for a to-die-for combination.

introduced in 1867. Although not quite as stunning as many of its relatives, *C. 'Victoria'* is a reliable workhorse that rewards growers with vigorous blooming over many years. Its five- to six-inch flowers are a soft rosy purple with a quilted texture and a pinkish bar running along the center of each sepal. Flowers form on new growth from midsummer to early autumn, so any major pruning should be done in late winter or very early spring. It grows anywhere from eight to 15 feet and is an excellent choice to cover an arch. It thrives equally in sunny or shady locations.

CARE OF CLEMATIS

IN ADDITION TO ensuring clematis are planted in an appropriate site, with optimal soil and exposure, regular watering and feeding are also important.

Clematis 'Victoria'

Like 'Star of India', 'Victoria' is a cross between *C. lanuginosa* and *C. 'Jackmanii'*





'Victoria'

of the vine, disinfecting your pruners after each cut by dipping them in a broad range disinfectant and fungicide such as Physan. Dispose of all the diseased stems and foliage in a sealed plastic bag to avoid spreading any remaining fungal spores.

To reduce the susceptibility of your clematis to the fungal disease powdery mildew, select a planting site with good air circulation and full sun. If you do see signs of this disease—powdery white patches on the upper surfaces of the foliage and stems—spot treat with a product that contains neem oil.

Snails are difficult to eliminate totally, so it is best to employ numerous methods to combat these pests. Choose a bait that contains iron phosphate, which is non-toxic to pets and wildlife, or apply copper strip barriers around the base of each plant. For the less squeamish, there's no substitute for handpicking snails at night.

The simplest remedy for earwigs is a trap. You can construct your own by using a rolled-up piece of moistened newspaper, a paper towel roll, or a 12-inch piece of PVC pipe. Place any of these items at the base of your clematis in the early evening. These tubes make perfect hiding places for these nocturnal critters, and after a night of foraging they retreat to these shelters to sleep. In the morning, empty the traps into a bucket of hot soapy water.

THE FUTURE LOOKS BRIGHT

WITH THE HELP of fellow clematis

Resources

The American Clematis Society

Founded in 1996, the American Clematis Society (ACS) is a non-profit plant society formed to encourage and promote the development and improvement of clematis. Members are clematis enthusiasts who collect, record, and share information about growing clematis in North America. For more information on membership, contact Edith M. Malek at P.O. Box 17085, Irvine, CA 92623-7085, or visit the society's Web site: www.clematis.org.

International Clematis Society

American contact: Richard Huff, 2181 N. Taylor Road, Cleveland Heights, OH 44112-3052; e-mail: hopegdns@bright.net. www.clematisinternational.com. Annual membership is \$30.

Clematis: The Genus by Christopher Grey-Wilson. Timber Press, Portland, Oregon, 2000.

The Guide to Growing Clematis in the United States by Edith M. Malek. American Clematis Society, Irvine, California, 1999. (To order, write to ACS or visit its Web site, above).

An Illustrated Encyclopedia of Clematis by Mary Toomey and Everett Leeds. Timber Press, Portland, Oregon, 2001.

Sources

Completely Clematis, 217 Argilla Road, Ipswich, MA 01938-2617. (978) 356-3197. www.clematisnursery.com. Catalog online.

Clematis 'Alba Luxurians'; *C.* 'Duchess of Albany'; *C.* 'Ernest Markham'; *C.* 'Huldine'; *C.* 'Marie Boisselot'; *C.* *pitcheri*; *C.* 'Proteus'; *C.* 'Victoria'.

Forestfarm, 990 Tetherow Road, Williams, OR 97544-9599. (541) 846-7269. www.forestfarm.com. Catalog \$5. Free if ordered online.

C. 'Duchess of Edinburgh'; *C.* 'Ernest Markham'; *C.* *pitcheri*.

The Fragrant Path, Route 32, Box 156A, Omaha, NE 68122-9504. (402) 468-5782. Catalog \$2. *C.* *pitcheri* (seeds).

Joy Creek Nursery, 20300 N.W. Watson Road, Scappoose, OR 97056. (503) 543-7474. Fax (503) 543-6933. www.joycreek.com/index.htm. Catalog \$3.

C. 'Alba Luxurians'; *C.* 'Duchess of Edinburgh'; *C.* 'Duchess of Albany'; *C.* 'Ernest Markham'; *C.* 'Marie Boisselot'; *C.* 'Proteus'; *C.* 'Star of India'; *C.* 'Victoria'.

enthusiasts, it is my hope that we can give American gardeners a clear understanding of where clematis can grow. This can be accomplished through research, documentation, and experimentation. As the popularity of clematis increases, there will be more demand, and, accordingly, more selection of cultivars adapted to different parts of the

country. By changing attitudes about clematis and creating better guidelines for growing them, more American gardeners will soon come to enjoy the pleasures of clematis.

A resident of Irvine, California, Edith M. Malek is president and founder of the American Clematis Society.

Turf's Up!

You can create new garden beds from lawn without breaking your back. Here's how.

THE GREAT AMERICAN lawn. Is it soon to be a thing of the past? Not likely, although more and more gardeners are viewing their lawns in a new light these days. The high maintenance and heavy consumption of water lawns require have led many homeowners to minimize and in some cases eliminate their lawns altogether. "Reducing lawn," says Janet Walker, AHS director of horticulture at River Farm, "creates room for more diverse plantings." And what gardener would mind having space to grow more plants?

NATURAL AND EASY

WHETHER YOU'RE planning to increase the size of an existing border or establishing a new one, there are several ways to turn space occupied by turfgrass into beds for growing other plants (see "Digging and Spraying," opposite page). But if you don't want to use herbicides or risk back injury digging up tough chunks of turf, the grass-smothering technique highlighted on the opposite page is friendly to the environment and easier on your body. By depriving the grass of light, it cannot manufacture food

through photosynthesis and eventually dies. It takes more time to get results, but, Walker says, "The smother method is the best and the most labor-efficient way to create new beds from lawn space."

Carole Ottesen, associate editor of *The American Gardener*, has exclusively used the smother technique over the past 18 years to turn two acres of lawn in her Maryland garden into beds filled with a variety of herbaceous perennials, grasses, shrubs, mosses, and ferns. "When I first moved to the house," says Ottesen, "there was no garden whatsoever—only shabby lawn."

Eager to grow more plants and spend less time pushing a lawnmower, Ottesen set out to transform her outdoor space. But she wasn't eager to do any manual digging. She chose, instead, to smother the grass, "because it was both natural and

easy." And the leisurely pace of the process suited her. "I began making beds to connect groups of trees, which made mowing easier—and made for less of it," Ottesen explains. "Now there's no more lawn."

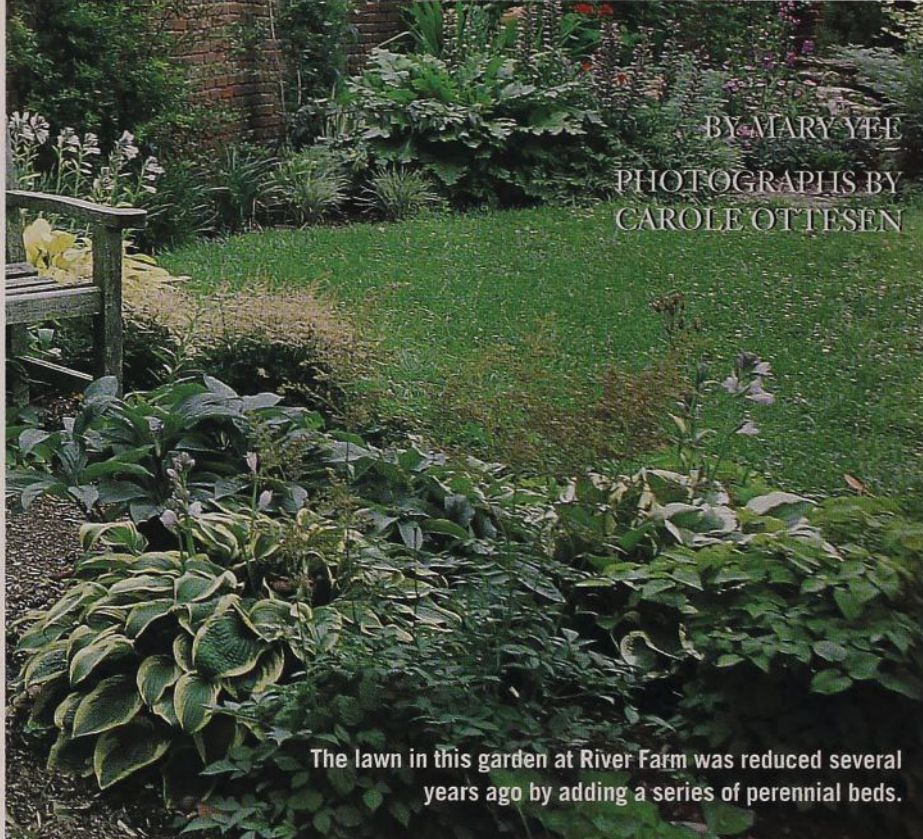
BIODEGRADEABLE IS BEST

OBSERVING THAT if fallen leaves are left on the ground they kill the grass beneath, Ottesen started simply raking autumn leaves into piles wherever she wanted to site new beds. "Sometimes I wetted the leaves to keep them in place," she says. "Then I'd cover them with mulch to make the beds look neater and, often, would dig a trench around the new bed to separate it from the remaining lawn. In the spring, I would plant directly in the mulch."

In addition to leaves, a variety of other materials can be used to smother grass. Pieces of corrugated cardboard and layers of newspaper work very well and are generally available. If you opt to use newspaper, use only the sections printed in black ink; color inks might contain chemicals harmful to the microscopic life in the soil. Because pieces of cardboard and newspapers in a garden are not very attractive,



Left: Ferns, mosses, and bugleweed now flourish where grass once grew in Carole Ottesen's Maryland garden. The ground for this attractive bed was claimed from lawn by smothering the grass over a single winter.



The lawn in this garden at River Farm was reduced several years ago by adding a series of perennial beds.

BY MARY YEH

PHOTOGRAPHS BY
CAROLE OTTESEN

HOW TO MAKE A NEW GARDEN BED FROM LAWN

Before you begin the process of smothering grass for a new bed, remove tall plants, stones, and other debris and mow the grass as low as possible. Here, River Farm's Garden Manager Barry Stahl and Horticultural Projects Assistant Trish Gibson lay out an extension for one of the beds in the herb garden in the autumn using newspaper, fallen leaves, and mulch. In the spring, the bed is ready to plant.



1. Mark out the area of the new bed with a flexible water hose, string, or stakes and string. Lay multiple-paged sections of newspaper over the marked out area, overlapping them to ensure complete coverage.



3. Apply a top layer of mulch—here, shredded bark—to make the bed more attractive. Remove the marker hose, strings, or stakes from the bed and let the bed sit over a season.



2. Cover the newspaper with a thick layer of grass clippings, shredded leaves, compost, or other organic matter. If you're using leaves, spray the layer with water to prevent it from blowing away in a breeze.



4. By the next growing season, the grass under the newspaper should be dead and the organic material on top should have decomposed. You can mix up the layers with a garden fork before planting or just plant directly into the layers.

cover them with some kind of mulch.

Black plastic will also smother grass, but because it won't decompose, you will need to remove it before planting.

NOW OR LATER

YOU CAN start the smothering process any time of year. During the growing season, you might want to make the new bed more attractive by temporarily burying

potted plants into the top layer of mulch. If you start the bed in the fall, when the garden is winding down, you can just forget about the bed over the winter and let time do its work. "All you need to do is turn it over in the spring," says Walker. "Then start planting!"

Mary Yee is managing editor and designer of The American Gardener.

Digging and Spraying

Smothering grass is a safe and effective way to create a new garden bed from lawn, but less patient gardeners who are physically healthy can always pick up a spade or shovel and dig up the grass. The removed sod can be used to patch other areas of lawn or added to the compost pile.

If you're trying to clear a sizeable area, renting a ploughlike sod-cutting tool from a lawn and garden equipment rental center might help facilitate shaving off layers of turf.

Don't be tempted to use a rotary tiller in lieu of digging, however. A tiller churns up the lawn, sending grass roots and weed seeds back into the soil to resprout in your new bed.

For small beds, some gardeners choose to use herbicides to kill the grass before raking up the resulting debris and planting. At River Farm, Janet Walker uses herbicides primarily for spot-controlling weeds in walkways and other paved areas. "For bed preparation," she says, "herbicides are not our method of choice."



Dig up turf to achieve quick results.

If you choose to use herbicides to quickly clear an area, use the least-toxic ones available; glyphosate-based herbicides are often recommended because they are highly effective and tests indicate their active ingredients break down more quickly than those of other synthetic herbicides.

Always exercise caution when applying herbicides: Follow label instructions for usage, wear gloves, boots, and a long-sleeved shirt, and keep pets and children away from the treated area. Never use herbicides to prepare a bed for planting vegetables and other edibles. —M.Y.



Edging on Perfection

Even the best planned beds often need just the right small plant to soften the edges of a border or path or knit together awkward transitions between larger plants.

BY MARTY WINGATE

PHOTOGRAPHS BY JANET LOUGHREY

In the Susan Hancock garden, a low border encloses an outdoor living area. Smoothing an edge around larger plants—hostas, hellebores, and bleeding hearts (*Dicentra* sp.)—barrenwort (*Epimedium* sp.) adds texture and a bright note of color.

NO MATTER how carefully a border is planned, there are always one or two spots along the edge of a bed or path that call for just the right small jewels to complete the picture—plants that can overlap the edge or be tucked into pockets between larger plants to give the bed a seamless, polished look. Part of the art of designing a border is selecting plants that thrive in such situations. Designers often call these “knitters” or “shoes and socks” plants because they help weave together other plants and provide finishing detail to the taller plants in a border.

Edging plants soften the hard edges of walkways and step the garden gracefully down from tall shrubs and perennials. Their gentle forms marry contrasting shapes and their

colors can contrast with or intensify the border's color scheme.

Edging plants are also useful for solving a variety of minor niggling problems in the garden. For instance, you can fill up the bare corner at the intersection of two paths with a mound of 'Pink Spice' cranesbill (*Geranium* sp.), or in shade almost any hosta will do the same trick. They can also be indispensable cover-ups or camouflage for less-than-perfect masonry or low-budget edging.

So what are the characteristics of a good edging plant? Because they are used mainly at the front of borders or along paths, edging plants are generally short in stature, adopting mounded or matlike shapes. Good edging plants are also relatively slow growing, so they don't spread too quickly and create maintenance headaches; ideally, they will be able to grow for two or three seasons before they need to be thinned or divided.

Knowing how to effectively use smallish edging plants in the garden is perhaps even more important at a time when the

trend seems to be toward "bigger is better." Large and impressive plants have a big "ooh, aah" quotient, but they can be difficult to design around. Furthermore, if you use too many large-leaf or bold plants, they begin to lose their impact. It's the arrangement of a variety of plants that creates an overall impression in our gardens, and large leaves and plants stand out better when there are smaller ones with which to contrast them.

And in the small to medium size urban and suburban gardens most of us own, edging plants are indispensable because they can be used to echo or contrast design elements such as color, form, and texture without eating up too much space. Repetition of these elements helps unify the garden by adding a comforting regularity. But beware of overuse, which can result in a bland landscape. Contrasting color, form, and texture is a more challenging design technique, but if done successfully creates an intricately patterned landscape full of visual interest.

There are edging plants suited to al-

most any garden situation, from full sun to deep shade and from soggy spots to dry rock gardens. Here are some suggestions for how to integrate them into your garden's design.

DESIGNING ON THE EDGE

TO ACHIEVE balance in the garden, it's important to blend plants of different sizes, shapes, and visual weights. As you evaluate possible edging plants, consider how they will contrast with or complement the existing plantings.

Just as trees are described as spreading, pyramidal, or upright in growth, edging plants come in a variety of distinctive forms. Some of these undergo personality changes at bloom time. The small lady's mantle (*Alchemilla erythropoda*), for example, like its larger cousin, *A. mollis*, has rounded, scalloped leaves that echo its tight, mounding habit. It is an unassuming plant—until its frosty yellow flowers open in cheerful extroversion.

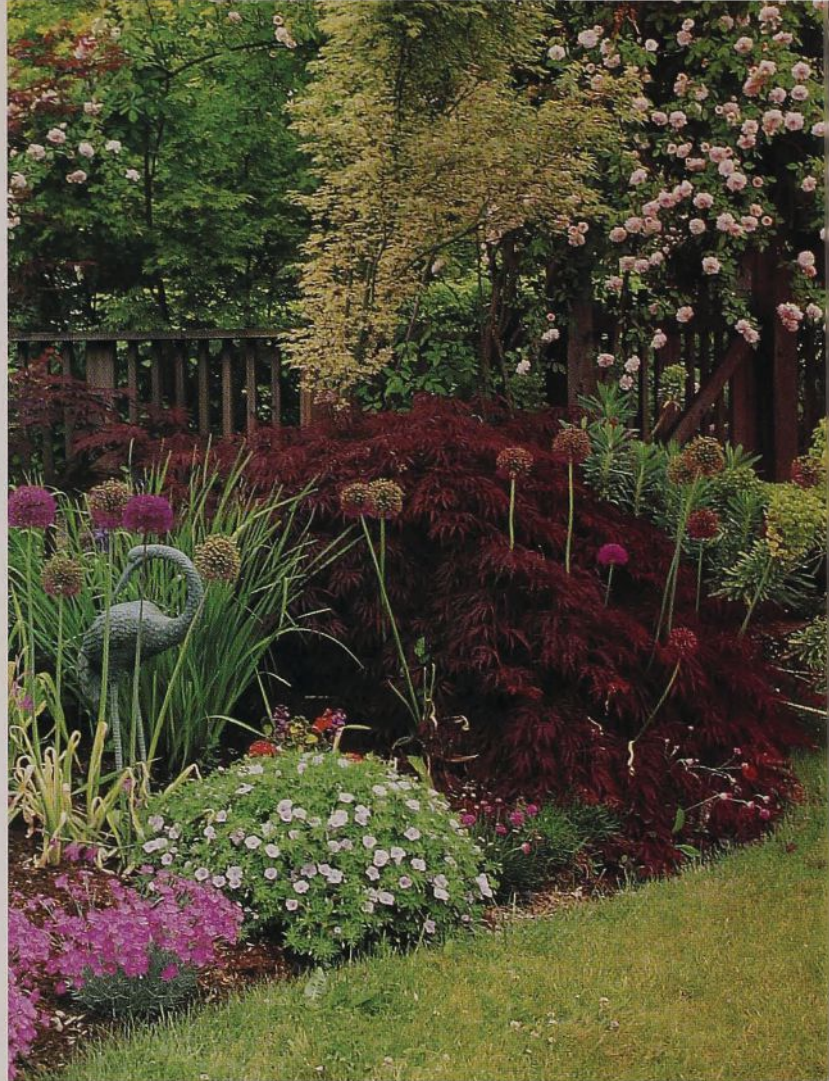
Most edgers are mounds of one shape or another, but some are just



A border located in full sun and dry soil calls for special inhabitants. Here, pinks and sun rose (*Helianthemum* sp.) nestle neatly beneath the arching stems of blue oat grass (*Helictotrichon sempervirens*) on the edge of a gravel pathway.



Above: Along the edge of this partly shaded bed, a series of low edgers—including lady's mantle (*Alchemilla mollis*), Japanese painted fern (*Athyrium nipponicum* 'Pictum'), and Hakone grass (*Hakonechloa macra* 'Aureola')—step gracefully down from shrubs and giant hostas. Right: The homogenous shapes of pinks and cranesbills create a soft edge along a sunny border in Marguerite Haas van Dorsser's garden.



sprawlers. Moss phlox (*P. subulata*), a bright apple-green evergreen, spreads endlessly. So does creeping thyme (*Thymus serpyllum*) and some of the prostrate junipers (*Juniperus* spp.). In stark contrast are the tight globe shapes of *Festuca* 'Elijah Blue'.

By contrasting plant forms, you can add visual interest to borders of any size. The airy billows of the 'Walker's Low' cultivar of catmint (*Nepeta* spp.) contrast with the upright habit of *Veronica spicata* 'Pink Damask' and its delicate but distinctive flower spikes. Small, mounded plants such as some cranesbills (*Geranium* spp.) can also be effective tucked around the base of fountainlike or drooping shrubs or grasses, such as blue oat grass (*Helictotrichon sempervirens*).

Texture is also an important consideration when choosing edging plants: Do they give the impression of softness, solidity, or airiness? Diminutive and spiky, such treasures as pinks (*Dianthus* spp.) and sea pinks (*Armeria* spp.) provide fine texture to complement or contrast with their larger companions.

Plants with a dense texture or dark color add more weight than plants with airy, filmy textures and lighter colors. For instance, the tightly compact wallflower, *Erysimum* 'Wenlock Beauty', grows to about 12 inches high and wide, has darkish leaves and flowers ranging all the way from dark rose through deep pink into pumpkin. It would be visually heavier than a see-through grass such as the orange sedge (*Carex testacea*), which grows to two feet high and wide with a multitude of thin, green-and-orange leaves.

The thick quilted leaves of some hostas provide a smooth, solid, yet layered texture that contrasts well with airy plants such as the Japanese painted fern (*Athyrium nipponicum* 'Pictum'), which has attractive pewter-patterned foliage.

In traditional border planting, sweeps of the same plant are used, blending one color into the next. In the extreme, this results in single-color gardens, but, more often, it means that one color is echoed elsewhere in the garden. Try repeating groups of edging plants with similar flower or foliage colors at intervals along

the length of a border or path to emphasize the continuity of the design.

SUNNY EDGES

PROBABLY THE hardest part of selecting edging plants for sunny borders or paths is narrowing the field of choices. In many cases, matching flower or foliage color or form with the rest of the design will dictate your choices. Pinks are classic sunny edgers because most have attractive wiry foliage all year, spectacular flowers in early summer (sometimes reblooming), and a relatively slow, spreading habit. *Dianthus gratianopolitanus* 'Bath's Pink' is a particular favorite for its glaucous blue foliage and soft pink, fringed flowers.

Cranesbills, perennial geraniums, are another popular edging choice, but they come in a variety of habits, so be sure to select one that will fulfill the role you have in mind. Some cranesbills—*Geranium renardii*, for example—have a mounded form and tight growth habit; others, such as the cultivar 'Ann Folkard', weave their way around and through other plants and

are better “knitters.” One of my favorites is *Geranium* ‘Midnight Reiter’, a newish cultivar that has smoky purple leaves, dark lilac flowers, and grows to only about a foot tall.

For a very different look and texture, try lamb’s-ears (*Stachys byzantina*) for its woolly gray foliage and prominent summer flowers.

Small clumping plants with fountain-like shapes, such as Hakone grass (*Hakonechloa macra* and *H. macra* ‘Aureola’, with yellow variegation), mop head sedge (*Carex* ‘The Beatles’), or even small daylilies (*Heemerocallis* spp.) can be used to soften the hard lines of concrete or soil along the edges of beds or paths. They can also disguise less-than-decorative edging.

DRY SUNNY EDGES

IN SUNNY, dry borders or rock gardens, plants adapted to Mediterranean-style climates thrive. Mounding or matlike herbs such as lavender, thyme, and rosemary are possible choices. Some lavenders grow too large for some edges, but *Lavandula* ‘Blue Cushion’ is a particularly nice small one. Ice plants (*Delosperma* spp.) make good edgers, but may spread too aggressively if conditions are right.

Although technically diminutive shrubs rather than herbaceous perennials, sun roses (*Helianthemum* spp.) are good choices in temperate western gardens, where they are equally suited to the edges of walls, gravel paths, and rockeries. Common sun rose (*H. nummularium*) grows one to two feet tall and spreads to two feet. Cultivars and hybrids in various colors from pale yellow (‘Buttercup’) to golden orange (‘Orange Sunrise’) and deep red (‘Red Orient’) are available.

For the hottest, driest situations in the Southwest, dwarf silver-leaf sage (*Salvia daghestanica*) and white evening primrose (*Oenothera caespitosa*) excel on the edge.

SHADY EDGES

THERE IS NO dearth of lovely edgers for shady situations. Barrenworts (*Epimedium* spp.) are excellent edging plants for shade. For instance, *E. xyoungianum* ‘Roseum’ grows to only a foot high and spreads slowly to form a gently mounded oval to round clump perfect for the edges of shady borders or paths. Spring flowers in various shades from pink through yellow,



The soft blues and pinks of lavenders along this gravel path at Joy Creek Gardens in Oregon are accented by dark red fuchsias and purple-foliaged smoke trees (*Cotinus* sp.).

GROOMING TIPS FOR KEEPING EDGERS TIDY

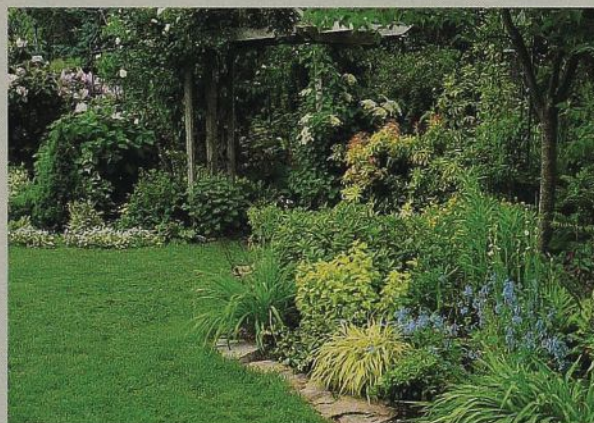
The edges of beds and paths can be a maintenance headache if grass or spreading weeds such as ground ivy grow into them. If your border edges on grass, consider setting in bricks or stones onto which the plants may overlap. This also allows grass and weeds to be easily controlled with a string trimmer or shears.

Plants with grasslike foliage such as sedges (*Carex* spp.), daylilies (*Heemerocallis* spp.), and mondo grass (*Ophiopogon* spp.) will droop over the edge of beds, hiding gaps or less decorative edging.

Although foot traffic will take care of most plants that spill into paths, some trimming may be needed if plants are excessively zealous spreaders or if the path does not get regular traffic. Simply cut back stray moss phlox (*Phlox subulata*) and Cheddar pink (*Dianthus gratianopolitanus*) to keep paths clear.

Some edging plants can take a hard pruning and come out the better for it. Lungworts (*Pulmonaria* spp.), for example, can be cut back completely after they bloom. The flush of new foliage will be less likely to get powdery mildew. Sun roses (*Helianthemum* spp.), even though they are woody plants, can also be cut back hard after flowering. This makes them less likely to appear twiggy and bare later in the season. Cut lavender back after new growth begins in spring.

—M.W.



Hakone grass and daylilies droop gracefully over stone edging.



In the lush woodland garden above, foamflowers (*Tiarella cordifolia*) and ruby-colored coral bells (*Heuchera* sp.) softly frame a path running through a shady border that includes ferns, hostas, and corydalis.

Regular foot traffic will keep the plants from growing into the path, but frequent trimming may be needed along a little-used path to maintain a well-groomed appearance.

Left: The steps and edges of an open deck in this garden, designed by Philip Thornburg, are softened by generous clumps of rosemary, lavender, cranesbills, and even a small shrub rose.

PERFECT EDGERS AT A GLANCE

BOTANICAL AND COMMON NAME	HEIGHT/WIDTH (IN.)	FLOWERS	CULTURE	USDA, AHS ZONES
FOR SUN				
<i>Alchemilla mollis</i> (lady's mantle)	6/15	yellow	moist soil	3-8, 7-1
<i>Antennaria rosea</i> (pussytoes)	2-8/15	rose-pink	well-drained soil	3-7, 7-1
<i>Campanula portenschlagiana</i> (bellflower)	6/12	blue	well-drained soil	5-7, 7-3
<i>Coreopsis verticillata</i> 'Zagreb' (tickseed)	10/15	gold	sun, moist, well-drained soil	3-9, 12-1
<i>Diascia</i> 'Blackthorn Apricot' (twinspur)	12/12	salmon	well-drained soil	7-9, 9-6
<i>Erigeron</i> 'Adria' (fleabane)	6/18	violet-blue	light, well-drained soil	3-8, 8-1
<i>Silene uniflora</i> (moss campion)	6/8	white	moist, good drainage	5-8, 8-1
FOR SHADE				
<i>Arunco aethusifolius</i> (dwarf goatsbeard)	15/24	white	moist, rich soil	3-9, 10-1
<i>Carex conica marginata</i> (sedge)	6/12	variegated foliage	moist, rich soil	7-9, 9-7
<i>Epimedium x rubrum</i> (barrenwort)	6/15	pinkish red	well-drained soil	5-8, 9-4
<i>Phlox stolonifera</i> (creeping phlox)	2/15	blue	moist, rich soil	3-9, 9-4
<i>Pulmonaria</i> 'Glacier' (lungwort)	13/26	white	moist, rich soil	3-8, 8-1
<i>Tiarella cordifolia</i> 'Seafoam' (foamflower)	12/12	white	moist, rich soil	3-8, 8-1
<i>Thalictrum minus</i> 'Adiantifolium' (meadow rue)	12/18	lavender	rich, moist soil	5-8, 8-4
FOR DRY, SUNNY SPOTS				
<i>Dianthus gratianopolitanus</i> (Cheddar pink)	6/24	pink	good drainage	5-8, 9-1
<i>Erodium reichardii</i> (alpine heronsbill)	6/12	pink	impeccable drainage	7-9, 9-7
<i>Gaillardia x grandiflora</i> 'Goblin' (blanketflower)	12/24	red-orange	good drainage	3-8, 8-1
<i>Lavandula x intermedia</i> 'Grosso' (lavender)	15/24	lavender	good drainage	5-8, 8-1
<i>Santolina chamaecyparissus</i> (lavender cotton)	24/36	yellow	good drainage	6-9, 12-1
FOR WALLS OR PATIOS				
<i>Arabis caucasica</i> (rock cress)	12/18	white	impeccable drainage	4-8, 8-1
<i>Phlox subulata</i> (moss phlox)	2/12	white, pink, blue	good drainage	3-9, 9-4
<i>Thymus serpyllum</i> (creeping thyme)	3/12	purple	good drainage	4-9, 9-1

followed by bright yellowish green foliage in summer and evergreen to ruddy brown foliage in fall. Best of all, deer don't seem attracted to barrenworts.

Smallish hostas and ferns are good choices to fill in along the edge of woodland gardens or shade borders. The dwarf form of the Japanese holly fern (*Cyrtomium falcatum* 'Eco-Jade') grows to only six inches in neutral to alkaline soil. The running Japanese beech fern (*Phegopteris decursive-pinnata*) grows just over a foot tall, filling in bare spots as it goes. The hart's tongue fern (*Asplenium scolopendrium*), with solid apple-green fronds adorns edges like the bow on a wrapped package.

Foamflowers (*Tiarella* spp.) are also wonderful edgers for woodland paths, offering tidy green foliage year round

and delightfully fluffy white flower spikes in early summer. Combine them with purple-foliaged alum roots (*Heuchera* spp.), ferns, creeping phlox (*Phlox divaricata*), and hostas to provide contrasting textures, habits, and colors.

SPECIAL SITUATIONS

EDGING PLANTS with lax forms or a tendency to droop are perfect for softening the sharp edges of walls, steps, or other hardscaping. Sea pinks, wallflowers (*Erysimum* spp.), and candytuft (*Iberis sempervirens*) are among the best candidates for such situations.

A host of others adapt happily. Lavender will billow over a wall, as will rosemary. Thyme and prostrate junipers will grow straight to the edge and there spill over like graceful draperies. And the fra-

grant, flowering branches of winter jasmine (*Jasminum nudiflorum*) will tumble over a wall in perfect arcs.

FINISHING TOUCH

THOUGH DIMINUTIVE in stature, edging plants stand tall as integral components of any garden design. Knitters, weavers, and problem solvers, edging plants fine-tune your garden's elements.

If you're developing a new border this spring or simply revising an existing bed, keep a running list of edging plants that will help put a finishing touch on your masterpiece.

Marty Wingate writes a weekly gardening feature for the Seattle Post-Intelligencer. Her first book, Small Gardens, will be available later this year from Sasquatch Books.

America's Second Green Revolution

The organic gardening movement, begun early in the 20th century, is finally coming of age.

BY CAROLE OTTESEN



THREE YEARS AGO, Mitch Baker, owner of a Maryland garden center, braced himself for the economic hit that would come with his decision “to take hard chemicals off the shelf and replace them with organics.” But when spring came, he was happy to find business went on as usual.

Baker's experience is not unique. Across North America “green” gardening products are increasingly the choice of thoughtful home gardeners. We have become mindful of our environment and open to the discoveries that come almost daily, as plant and soil scientists delve deeper into earth's mysteries.

IGNORING THE WEB OF LIFE

CURRENT RESEARCH IS exploring a largely uncharted territory of our ecosystem—the soil. Teeming with the infinitesimal organisms that biologist E.O. Wilson called “the little things that run the world,” the soil, we are learning, is the foundation of plant life, but chemicals can destroy soil life and shut down the chain of interactions that affects all life.

As scientists add newer pieces to the environmental puzzle, the picture emerging is of an endlessly complex land organism with interdependent parts—from sub-microscopic fungi in the soil to the tallest, most majestic trees, all functioning in delicate, interconnected balance. It is the same picture painted over a half century ago, by conservationist Aldo Leopold, who wrote in *A Sand County Almanac*: “The outstanding scientific discovery of the twentieth century is not television, or radio, but rather the complexity of the land organism.” He foresaw that no part of the ecosystem was too small to matter, that all worked together in one grand, symbiotic relationship. He warned against destroying any part of it: “The last word in ignorance is the man who... would discard seemingly useless parts. To keep every cog and wheel is the first precaution of intelligent thinking.”

In 1949, when Leopold's *Almanac* was published, the country wasn't ready for it. World War II had ended in an Allied victory and the future stretched out ahead, golden with the promise of “better living through chemistry.” Resources seemed limitless, faith in American can-do was absolute; there could be no insect pest that chemistry would not conquer and no disease for which a silver bullet could not be found. In the callow postwar euphoria of the 1950s, Leopold's message was out of sync and went largely unheeded.

Opposite: An Eastern tiger swallowtail sips nectar from a Joe-Pye weed (*Eupatorium purpureum*) at River Farm, AHS headquarters in Virginia, where the horticulturists are removing high-maintenance and invasive plants, replacing them with better adapted varieties.



A RUDE AWAKENING AT MID-CENTURY

PERHAPS THE FIRST blow to the hubris of the '50s was disenchantment with DDT, considered a panacea for insect pests. In 1962, Rachel Carson targeted DDT in *Silent Spring* for endangering the country's symbol, the American bald eagle. Residues of the chemical stored in the body, she wrote, interfered with birds' egg shell production, causing eggs to break during incubation. Banning DDT became a rallying cry for environmentalists. Outlawed in 1972, DDT took the rap while other pesticides proliferated. It is estimated that 75,000 toxic chemicals have been introduced into the environment in the last 50 years.

“Despite a tenfold increase in insecticide use in the United States since 1945,” wrote Howard-Yana Shapiro in *Gardening for the Future of the Earth*, “crop loss due to insects has doubled...it



is estimated that less than 0.1 percent of insecticides applied actually reaches the target pests.” Not only were insecticides not doing the job, insecticides and herbicides poisoned birds and animals, polluted lakes and rivers, depleted the ozone layer, and turned up suspicious links to disease in humans.

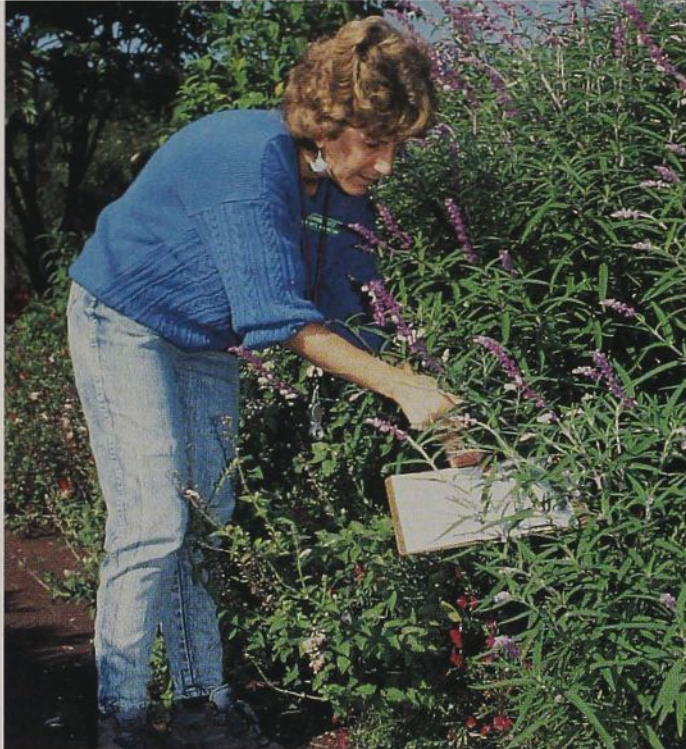
The application of chlordane, a pesticide used against termites, precipitated auto-immune and other serious illnesses in adults and children. Chlordane was banned by the Federal Environmental Protection Agency (EPA) in March 1988, but not before it had been used to treat over 30 million homes. In 1992, scientists recognized methyl

bromide, an agricultural pesticide, as an ozone-depleting substance. In the last few years, garden pesticides containing chlorpyrifos and diazinon became subject to EPA phaseout schedules.

In the late 1960s, pesticide problems elicited a search for non-toxic solutions. IPM (integrated pest management), a new way of handling insect problems, became widespread. Its premise that some insect damage was tolerable was revolutionary for the time.

“It's been promulgated by the chemical industry that if you see something spray it—get rid of it immediately,” says Mike Shoup, owner of the Antique Rose Emporium in Brenham, Texas. “We think plants have to be perfect all the time and it's wrong.”

IPM dictated that chemicals only came into play if damage were truly unacceptable. Moreover, IPM required that pests be identified, and that the least possible amount of pesticide be applied at the moment in the insect's life cycle when it would be most efficacious but, ideally, when it avoided killing beneficial in-



An IPM specialist conducts a “beat test,” gathering insect samples from a plant by tapping it vigorously over a piece of white cardboard. The samples are later examined under a magnifier in order to identify the insects—detrimental and beneficial—that inhabit the plant. This information will help determine if control methods are needed.

sects. In short, IPM dictated that agricultural and horticultural professionals understand more and work smarter.

Today, many home gardeners practice IPM. “The line between organic gardening and IPM has begun to blur,” says Scott Aker, IPM Specialist at the U.S. National Arboretum in Washington, D.C., because “many of the newest pesticides coming on the market are, strictly speaking, organic.”

One of these is neem oil, derived from the seeds of the tropical evergreen neem tree (*Azadirachta indica*). It is non-toxic to mammals, birds, and beneficial insects.

AHS PROMOTES GREENING

Responding to the growing body of scientific research supporting green gardening principles, in the late 1980s the American Horticultural Society began promoting environmentally conscious garden practices through its publications and programs. In 1998, the Society’s mission statement was revised to reflect its support of environmentally responsible gardening practices. And earth-friendly gardening is the cornerstone of the Society’s SMARTGARDEN™ program, which debuted in 2000.

At AHS Headquarters at George Washington’s River Farm, a composting demonstration park was set up in 1988 to show how gardeners could turn their yard waste into a rich organic soil amendment. Currently, under AHS Director of Horticulture Janet Walker, a regimen of soil improvement using organic matter supports plant health in the gardens. Except for spot treatments for particularly hard-to-control pests, only botanical and biological pesticides such as neem oil, horticultural oil, and Bt are employed for pest control. Plants that are invasive or are regularly plagued by pests or diseases are being replaced by less aggressive and healthier varieties.

GARDENING BECOMES CHIC

THE DEVELOPMENT OF new, environmentally safe gardening products coincided with a burgeoning of American interest and involvement in gardening in the 1980s. “In 1983, retail sales of garden products totaled \$11.9 billion,” says Nancy Flinn, former director of public relations for the National Gardening Association. “In 1987, the number had grown to \$17.5 billion.”

“By the late 1980s, gardening had become the nation’s number one outdoor leisure activity,” says Flinn, citing numbers tallied in a 1987 Gallup poll, “and was more popular than swim-

America’s Greening Revolution:



1884

French botanist Millardet creates the Bordeaux mixture (copper sulfate, lime, and water) to prevent fungal diseases in French vineyards; widespread chemical use begins.

Dwight Isley observes chemical resistant insects in sprayed fields, leading to the development of IPM

1920s

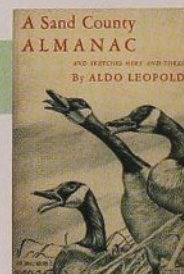
1942



Jerome Rodale, inspired by Sir Albert Howard’s theories, publishes *Organic Farming and Gardening*, which later is renamed *Organic Gardening* magazine.

Aldo Leopold’s *A Sand County Almanac* appears, espousing a land ethic

1949



ming, bicycling, or jogging.” In March, 1987, *USA Today* ran a five-day feature on gardening, calling it “The New Yuppie Sport.” “Urbanites are Finding Gardening Chic” read an April, 1988, front-page headline in *The New York Times*.

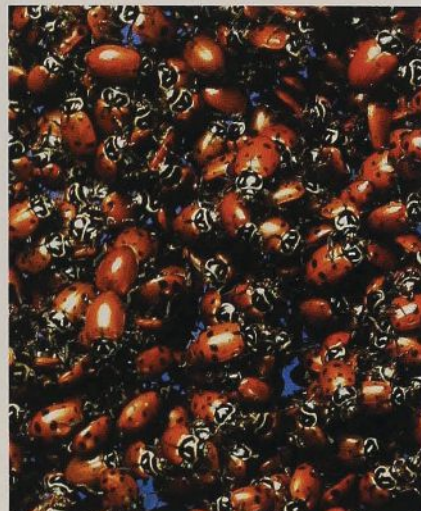
The Gallup poll also described the typical American gardener. Statistically, he or she was college educated, well read, earned more than \$40,000 a year (in 1987), and lived in the suburbs. Savvy and well informed about the potential dangers of chemical pesticides, the typical American gardener wanted to garden safely.

But the typical American gardener was also hooked on convenience. Garden centers stocked lawn fertilizers with built-in pre-emergent herbicides that came packaged in easily spreadable form; even grocery stores stocked one-shot-kills-all broad-spectrum pesticides in convenient spray bottles. Overwhelmingly the choice of the mainstream, chemical products were easy to use and quick acting.

In contrast, organic garden products, sold at first to a small, niche market on the fringe of the garden boom, were anything but. The father of organic gardening, Englishman Sir Albert Howard, had written that crops grown in soils with high organic content resisted disease and insects better than those grown with chemical fertilizers. Thus, in the 1960s and early '70s, many of the products sold—green manures, compost aids—were designed to build up the soil, a slow process.

Organic gardening also suffered by association. “Back in the '60s,” says Tony Avent, owner of Plant Delights Nursery in Chapel Hill, North Carolina, “I associated organic gardening with extremists and hippies.” Slowly, but inexorably, organic methods of gardening gained respectability.

By the mid-1980s, lady beetles and praying mantids appeared in mainstream garden catalogs. Later, more efficacious predators such as trichogramma wasps and beneficial nematodes joined them. And the plain, feed-store look of organic products underwent a metamorphosis: Companies such as Ringer Research boxed their organic products in slick color boxes with easy-to-follow instructions—just like those of their synthetic chemical counterparts.



Organic gardening gained mainstream legitimacy in the 1980s when companies manufacturing organic controls began using traditional advertising methods to sell their products. These included bright packaging, as in the insecticidal soap, above left. Lady beetles, above right, and other biocontrols became widely available in catalogs.

And thousands who had begun gardening in the '60s and '70s were still at it in the '80s and '90s. Not only had they read widely, but from years of trial and error they had a good idea of what worked—and the confidence to experiment when it didn't.

CHANGING ATTITUDES

WHEN TONY AVENT began gardening, he was “a chemical junkie like most American gardeners.” After moving to an area with sandy soil, however, he encountered ongoing disease problems because the synthetic chemical fertilizers and pesticides he was using were quickly leaching into the soil.

Avent started amending his sandy soil with compost rather than fertilizer. And, he says, “All of a sudden there were worms!”

A Movement Gains Momentum



1962

Rachel Carson publishes *Silent Spring*, decrying the effects of pesticides on wildlife

The Environmental Protection Agency (EPA) formed. The first Earth Day is celebrated.

1970



1972

EPA bans DDT.

1981

Bill Mollison develops the concept of permaculture to restore and maintain balance in nature.

1998–present

As EPA announces phase-outs of widely used chemical pesticides methyl bromide, chlorpyrifos, and diazinon, organic products (such as pyrethrin-based sprays) become widespread.



The native plant movement grew out of the organic movement. Gardeners have learned that growing plants naturally adapted to their region reduces the need to spray for pests. The bluebonnets (*Lupinus* sp.), blackfoot daisy (*Melampodium* sp.), and desert marigold (*Baileya multiradiata*) at the National Wildflower Research Center in Austin, Texas, are native to the Lone Star State.



Resources

Directory of Least-Toxic Pest Control Products. This useful listing of pest control products and suppliers is published in each November/December edition of the *IPM Practitioner*, a publication of the Bio-Integral Resource Center (BIRC). To order, send \$15 payable to BIRC, P.O. Box 7414, Berkeley, CA 94707, or call (510) 524-2567.

The Gardener's Guide to Common-Sense Pest Control by William Olkowski, Sheila Daar, and Helga Olkowski. The Taunton Press, Newtown, Connecticut. 1995.

Gardening for the Future of the Earth by Howard-Yana Shapiro and John Harrison. Bantam Books, New York, 2000.

The Organic Gardener's Handbook of Natural Insect and Disease Control edited by Barbara W. Ellis. Rodale Press, Emmaus, Pennsylvania, 1996.

Reader's Digest Organic Gardening for the 21st Century by John Fedor. Reader's Digest, Pleasantville, New York. 2001.

Rodale's All-New Encyclopedia of Organic Gardening, edited by Fern Marshall Bradley and Barbara W. Ellis. Rodale Press, Emmaus, Pennsylvania, 1992.

Straight-Ahead Organic by Shepherd Ogden. Chelsea Green, White River Junction, Vermont, 1999.

Organizations

Bio-Integral Resource Center (BIRC), P.O. Box 7414, Berkeley, CA 94707. (510) 524-2567.

Non-profit organization supporting research and education in integrated pest management. Publishes *IPM Practitioner* 10 times a year, and *Common Sense Pest Control Quarterly*.

Rodale Institute, 611 Siegfriedale Road, Kutztown, PA 19530. www.rodaleinst.org. (610) 683-1400.

Diseases and insects went down to almost nothing. When a plant is not under stress, it won't be attacked by insects or disease; now our growth rates are just unreal." The five-acre display garden at his nursery is now maintained organically.

Another high-visibility garden, at the Antique Rose Emporium, is maintained without sprays. "A little damage lets the customer know it's okay not to be perfect. You can come in and see blackspot and mildew," jokes Shoup. "We call it 'early fall color.'"

"Acceptance of insects, both in the home and in the garden, has increased dramatically in our culture," says the National Arboretum's Aker. Tolerance is so great it is not unusual for even a botanic garden to be maintained organically. The vegetable garden at the Birmingham Botanic Garden, says district horticulture supervisor Linda Emerson, is completely organic. As for the rest of the garden, "we don't use many chemicals," says Emerson. "I think that's why we don't have many problems."

"Plant selection is a big issue," says Shoup, who also credits diversity for keeping his display garden healthy and good looking. Learning to match plant to site is something veterans of a few youthful stabs at growing the likes of the Himalayan blue poppy or heat-hating delphiniums learned the hard way. With experience, gardeners sought plants that thrived on the economy—and discovered natives. As native plants gained in popularity, plant breeders responded by producing outstanding cultivars such as *Solidago* 'Fireworks', *Lobelia* 'Ruby Slippers', and a host of richly patterned heucheras. Appropriately sited indigenous plants don't need sprays to survive; they support wildlife, restoring some of the cogs and wheels of the biota. They are the ideal subjects for organic gardens.

AHS member Sally Hausken of Detroit Lakes, Minnesota, grows natives on a lakeside property "at the confluence of three ecosystems: prairie, and deciduous and coniferous forests. I have devoted my plantings to reinvigorating the native biodiversity of the region," she says. "Biodiversification of plant life makes for a healthier earth." A Master Gardener, Hausken is representative of a new breed of sophisticated gardeners who implement ecological concepts in home gardens—part of a green revolution that has gone mainstream.

The history of *Organic Gardening* magazine parallels the development of the green revolution. In May 1942, J.I. Rodale placed copies of the first *Organic Farming and Gardening* into mailboxes along the rural routes of America; each contained a subscription offer. He received one response. After 1943, when

Organic Controls and Sources

A variety of products are available for organic control of garden pests, diseases, and weeds. The generic products are listed below, together with brands. The numbers following the brands indicate the mail-order sources where the products can be purchased; many are also available at garden centers and home supply stores.

Bt: *a bacterium that controls caterpillars*
Caterpillar Clobber, 4

Food-Grade Horticultural Oil: *canola or cottonseed oil smothers insects, including scale and leaf miners*
Oil-Away, 2; Eco-oil, 2

Fungicides: *copper or sulfur ingredients for general use*
Anti-Fungal Spray, 6; Safer Garden Fungicide, 1, 6; Copper Soap Fungicide, 1; One-step Garden Dust, 3; Bordeaux Mixture, Soap-Shield Fungicidal Soap, Shield-All II™ Neem Fungicide, 4.

Insecticidal Soap: *works on soft-bodied insects up to the day of harvest*
Concern Insect Killing Soap, 1, 5; Safer Insecticidal Soap, 2, 4

Horticultural Oil: *paraffin-based oil that smothers insects, mites, and their eggs*
Sunspray Ultrafine, 1, 5, 6; Saf-t-side Spray, 4

Hot Pepper Wax: *capsaicin-laced wax that is safe on food plants for repelling a broad range of insects*
Hot Pepper Wax, 1, 3, 5

Iron Phosphate: *kills slugs but is safe for pets and wildlife*
Escar-Go!, 2; Sluggo, 1, 4, 5

Milky Spore: *bacteria that kills Japanese beetle grubs in soil*
Milky Spore Powder, 5

Neem Oil: *extract from neem tree seeds for controlling a broad range of insects*
Neem Away, 2; Safer Bio-Neem, 5; Dyna-Grow, 1, 6

Pyrethrin: *plant-derived toxin for controlling a broad range of insects*
Concern Multi-Purpose Insect Killer, 1; Eco-Zone Pyrethrin Powder, 5; Bonide Liquid Rotenone-Pyrethrin Spray, 6; Liquid Rotenone-Pyrethrin Spray, 2, 5; I-Bomb II Insecticide, 1; Bug Buster 4; Pyola-Pyrethrin + Canola, 2;

Weed Control: *corn gluten prevents seed germination; torches and fatty acids destroy plant tissue*
Weed Torches, 1, 3, 5; Corn Gluten Meal, 5; Fatty Acid Herbicides, 2, 4.

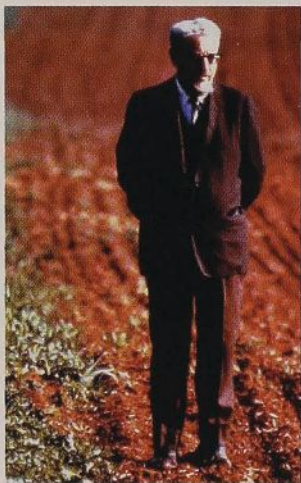
SOURCES

1. **Charley's Greenhouse & Garden**, Mount Vernon, WA. (800) 322-4707. www.charleysgreenhouse.com.
2. **Gardens Alive!**, Lawrenceburg, IN. (812) 537-8650. www.gardensalive.com.
3. **Gardener's Supply Company**, Intervale, VT. (800) 427-3363. www.gardeners.com.
4. **Monterey Lawn and Garden Products**, Fresno, CA. (559) 499-2100. www.montereylawnandgarden.com.
5. **Planet Natural**, Bozeman, MT. (800) 289-6656. www.planetnatural.com.
6. **Worm's Way**, Bloomington, IN. (800) 274-9676. www.wormsway.com.

the magazine became *Organic Gardening*, its popularity grew. Between 1960 and the present, the circulation of *Organic Gardening* increased by 50 percent.

Recently, the magazine split into two separate publications "to serve very different audiences," says editor John Grogan. "The new *OG* is focused exclusively on gardening." A second magazine, *Organic Style*, is targeted for "people who were passionate about leading an organic lifestyle but were not necessarily into gardening."

Across the country and across the board, people are seeking clean, non-toxic or least-toxic gardening practices and prod-



Inspired by the writings of Sir Albert Howard, the late J.I. Rodale, left, began publishing *Organic Gardening* in the 1940s. More than half a century later, the magazine still enjoys success.

ucts that are safe for the environment. And gardeners are eager for organic solutions to their problems—something Maryland garden center owner Mitch Baker discovered when he switched to selling solely organic products.

Now, over a half-century after the publication of *A Sand County Almanac*, Aldo Leopold's words ring with stunning clarity in an older, wiser, more seasoned country. We have, at last, begun to understand some of the cogs and wheels that keep our environment running. No longer the province of professionals, ecology's tenets have filtered down to everyman. Slow in coming, the greening of America is finally underway.

Carole Ottesen is associate editor of The American Gardener.

Rosa 'Maggie'

by Mike Shoup

AS THE OWNER of a nursery specializing in old roses, I have grown dozens of different varieties. One of my favorites is 'Maggie', an old garden rose—probably a Bourbon or a Bourbon type—with spectacular large, rich carmine-rose flowers that can darken to crimson in cool weather. The very full, very double flowers are composed of some 70 to 80 petals each. They are also extremely fragrant, featuring a true rose scent that is even headier when the cut flowers are brought indoors.

Another wonderful thing about 'Maggie' is that it is not only a great, vigorous, healthy shrub, but it can be a mannerly climber. Although I never recommend roses be grown in shade, I have seen 'Maggie' in part shade on a trellis growing eight to 10 feet tall. It doesn't have the long feminine canes you get from wild climbing roses, but it is lax enough to train onto a small pillar, to spread out on a small trellis, or to grow on a mailbox. And it can also be pruned and used as a hedge or in a foundation planting. A gardener can grow it in the style he or she wants—it is accommodating and forgiving.



We grow it as a shrub in our gardens and, elsewhere, as an accent for a Victorian rail. But our old tag line is, "We don't make rose gardens; we have gardens with roses in them." 'Maggie' and all our roses are intermixed with other plants, such as penstemons, salvias, hollyhocks, and pinks (*Dianthus* spp.).

UNKNOWN ORIGINS

'Maggie' is what is known as a "found rose"—in this case, found by William C. Welch of the Texas A & M extension service, who named it for his wife's mother. He shared cuttings with us in 1983 and we have been distributing them nationwide.

Found roses are those that have been growing along a roadside, in a cemetery, or in someone's garden for so many years that the introduction name has been forgotten. The plant has been out of commerce long enough for us, as an industry, not to recall what the original name was. A rosarian will come along, take cuttings, and give it a temporary name until the rose is properly identified. But some-

times, as is the case with 'Maggie,' that doesn't happen. Some rosarians have suggested 'Maggie' could be 'Eugene E. Marlitt' or 'Gruss an Teplitz', but without having these roses for comparison, the name 'Maggie' sticks.

There's been speculation that 'Maggie' could have developed from a seedling. The instances in which a rose seedling grows up to be a fine rose are very, very rare, however; usually, seedlings aren't as good as the mother plant. But the main reason I discount the notion that 'Maggie' is a seedling is that it has been found in so many different places. In my travels, I've seen it all over the South. It's also been found in Bermuda—where it's called 'Pacifica'—and in Puerto Rico. That kind of distribution just proves its staying power.

A PROVEN SURVIVOR

Found roses are the embodiment of what good garden roses are all about. As Charles Darwin would say, they are the cream of the crop, the survivors. With found roses, we don't have to wade through a bunch of new plants to find out which ones are good. What's wonderful about 'Maggie' and other found roses is that they were originally introduced because they were fragrant and beautiful and they have survived—without the rigors of Mother Nature—without fussy spray schedules or regular watering.

'Maggie' has probably been out of commerce for 100 years. After a century, it's truly time-tested, which is better than our hybridizers could ever do. 🌹

Mike Shoup is the owner of the Antique Rose Emporium, Route 5, Box 143, Brenham, TX 77833. (800) 441-0002. Catalog \$5.

At a Glance

Height: 4–7 feet

Spread: up to 5 feet

Form: Lax shrub or can be trained as a climber

Flowers: Carmine rose

Foliage: Medium green

Special features: Flowers are fragrant

Uses: Specimen, hedge, or pillar rose

Provenance: Unknown, but naturalized throughout the American South

USDA Hardiness and AHS Heat zones: 6–9, 9–5

The place on
earth where the
Tropical
Rainforest
is actually
growing at an
alarming
rate.



Visit the new Fuqua Orchid Center at the Atlanta Botanical Garden.
Opening March 23–24, 2002. www.atlantabotanicalgarden.org 404.876.5859



EDUCATING

Whether students attending college or adults changing careers, generations of horticulturists have benefited from American Horticultural Society internships. At George Washington's River Farm (AHS Headquarters), interns gain experience in:

- **Integrated Pest Management**—by answering questions in our Gardeners Information Service and scouting the grounds.
- **Education**—through leading activities for children in our Living Lab Program and giving tours of our public gardens.
- **Garden Management**—by maintaining our plant collections and working on our grounds.
- **Interpretation**—through developing signs and labels to explain our collections to visitors.
- **Propagation**—by germinating seeds for River Farm gardens and plant sales.

Interns gain knowledge from other horticultural professionals by visiting public gardens such as Longwood Gardens and the U.S. National Arboretum, and by attending conferences such as the Perennial Plant Conference, the Millersville Native Plant Conference, and AABGA regional meeting.

AHS internships are not supported by member dues—they are supported through the generosity of people who believe horticultural education is paramount.

the Horticulturists of Tomorrow



For more information about the AHS internship program or how you can be a supporter, contact Trish Gibson at (800) 777-7931 ext. 136 or via e-mail at tgibson@ahs.org, or visit our Web site at www.ahs.org.

Book Reviews

Landscape with Roses: Gardens, Walkways, Arbors, Containers.

Jeff Cox. Photographs by Jerry Pavia. The Taunton Press, Newtown, Connecticut, 2002. 234 pages. Publisher's price, softcover: \$27.95.

ALL RIGHT, Jeff Cox, you win. You have convinced me that roses do have a place in my rambling, overblown perennial garden, and that is no small feat.

I have always had an uncomfortable relationship with roses. They are, as a general rule, stand-offish, requiring separate accommodations from the rest of the plants. The demands they make on my time and attention are probably not unlike those made by a movie star who has arrived at a sleepy country inn. No, I feel like telling my roses, there are no manicurists on staff. No, we do not serve bottled water. You will have to drink ordinary water with the rest of us.

Still, I tolerate a few hybrid teas in my backyard out of a sense of duty. After all, I tell myself, what kind of gardener doesn't grow roses?

But since *Landscape with Roses* arrived in my mailbox, I have changed my mind about these temperamental plants. Cox, an HGTV and PBS garden host and author of *The Perennial Garden* and other books, has put together a practical and reassuring guide for those of us who demand that our roses function as a hard-working member of the landscape, pulling their weight alongside the salvia and the penstemon. He identifies roses according to their growing habit, explaining that Luther Burbank's 'Apple Blossom' will grow well in a naturalistic garden like mine, reminding us that 'Cécile Brünner' will climb into an old fruit tree, and giving practical instructions for training a rose around a window, over a mailbox, or for pegging it down to the ground for a more mounding habit.

Let vines climb into your roses, Cox suggests. Incorporate roses into a child's

garden, a silver foliage garden, or a cutting garden. By covering the basics of good garden design—color, structure, planting companions—this book allows gardeners to plan a complete landscape that integrates roses rather than holding them apart from the rest of the garden. Of course, the care and maintenance of roses is covered in good detail.

Jerry Pavia's photographs bring true magic to the book, inviting the viewer into some of the best rose landscape gardens in the country. In particular, Ruth

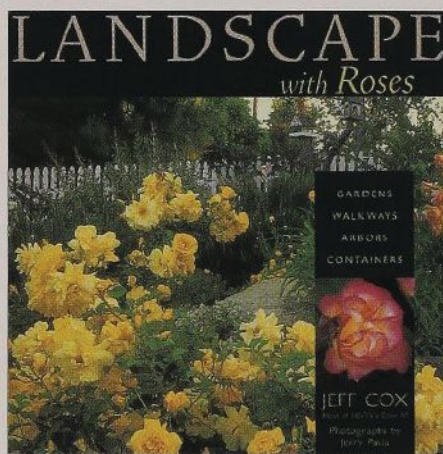
Meehl's San Diego garden is a riot of hot colors and imaginative planting schemes. The combination of gorgeous images and practical advice in this book is inspiring. I could read only a few pages before I was outside with graph paper and a pencil, redesigning my landscape so that roses can be welcomed into it.

A resident of Eureka, California, Amy Stewart is the author of From the Ground Up: The Story of a First Garden, published by Algonquin Books. She is now working on a book about earthworms.

Roberto Burle Marx: The Lyrical Landscape.

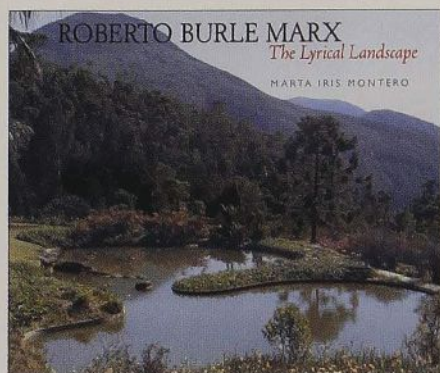
Marta Iris Montero. University of California Press, Berkeley and Los Angeles, 2001. 208 pages. Publisher's price, hardcover: \$45.

MARTA IRIS Montero's book, *Roberto Burle Marx: The Lyrical Landscape*, is itself a lyrical interpretation of the life and work of the Brazilian artist/landscape architect whose public and private garden designs are among the most influential works of the 20th century.



Roses in a Mediterranean-style garden with desert succulents? Why not! Photograph from *Landscape with Roses* by Jerry Pavia.

The majority of this beautiful book is devoted to coverage of 26 projects, a cross-section of Roberto Burle Marx's long and productive career, from the 1930s until his death in 1994 at the age of 84. The author's insightful commentary is supplemented by photographs of the projects, and full-



color plans of the gardens, some of them reproductions of Marx's own plan drawings, others re-drawn for the book. The plans by Marx are themselves works of art. The re-drawn plans, while informative, lack the warmth and exuberance of Marx's originals.

As much as I enjoyed seeing the projects, I found Montero's opening chapters even more enthralling because of her insights into Marx as a person, an artist, a botanist/plant explorer, and a world-renowned landscape architect. A landscape architect herself, Montero was a longtime friend and occasional professional colleague of Marx. She discusses the interplay between nature and art in his landscape designs, making his work truly "ecological art." His art expressed the spirit of Brazil in bold Modernist departures from the traditional landscape design in that country, which had drawn heavily from European models.

The book concludes with two lists. The first is a "Chronology of Principal Works," beginning in 1932 and ending, in 1994, with the Fortaleza Botanical Gardens. In the intervening years are projects undertaken mainly in Brazil, but also in places as far away as Israel, Europe, Japan, and the United States.

Following this chronology are pages listing the many "Awards and Honours" Marx garnered in the half century of his professional life.

I first fell under the influence of Marx in the mid-1960s after reading P.M.

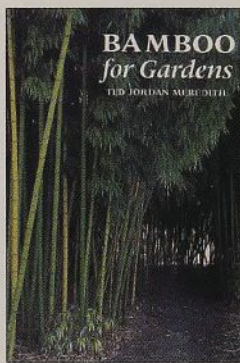
Bardi's *The Tropical Gardens of Burle Marx*, a very good introduction to his work up to that date. In 1991, Simo Eliovoson provided a comprehensive review of the extended career of Marx, with particular emphasis on the plants in his gardens, in *The Gardens of Burle Marx*. Subsequently, Rossana Vaccarino edited a valuable set of scholarly essays on Marx and on selected landscape works in *Roberto Burle Marx: Landscapes Reflected*. Each of these has made a valuable contribution to our understanding of the influences on, and the influence of, Marx. I recommend Montero's book either as an introduction to him and his work, or to expand on previous reading.

Darrel Morrison is a professor of landscape architecture in the School of Environmental Design at the University of Georgia in Athens, and a consultant on the design of several botanical gardens that emphasize native plants.

Bamboo for Gardens.

Ted Jordan Meredith. Timber Press, Portland, Oregon, 2001. 408 pages. Publisher's price, hardcover: \$39.95.

BAMBOO SUFFERS a very mixed reputation and reception. People in many parts of the world rely on bamboo to satisfy basic daily needs in one way or another. In the United States, however, bamboo has been relegated to a fairly minor ornamental status—except where it is avoided like the plague. Not surprisingly, the garden literature is just as mixed with truth and fiction. There has also been a general lack of good experience, until relatively recently, in growing a



large variety of bamboos in the United States' wide variety of climates. *Bamboo for Gardens* by Ted Jordan Meredith should do much to educate Americans about these so-called "tree grasses."

As Meredith points out in his review of the grass family, these plants range from tropical giants towering 100 feet

and more to tiny, hardy plants only a foot tall. The smoothly written text provides ample and sensible background on culture, propagation, and landscaping that is of practical use to gardeners. It also provides some background on the history of growing bamboo in the United States.

Understanding bamboos almost requires learning a second language. Meredith clarifies such terms as "pachymorph" and "leptomorph" and other arcane entries in the terminology of bamboos. Learning about bamboo's unique mode of growth is essential to understanding how to select and care for them.

Almost half the book is an encyclopedia of species and cultivars with an emphasis on those most available in the trade. Although surely not meant for precise identification, the text and numerous color pictures do provide guidelines for confirming possible identification of mature bamboos. It is also nice to see an even treatment of bamboo names, usually an area of much confusion.

The chapter "Landscaping and Maintenance" will enable gardeners to restrain these vigorous plants while the lists "Bamboo for Special Situations" will help in choosing species for specific purposes. And for the daring and curious, the chapter on their use will encourage cooking and eating edible shoots.

Some criticisms I have for the book include an index that stresses plant names but few topic entries—even some of those listed in the table of contents. And, in the encyclopedia section, one of the two pictures labeled *Phyllostachys vivax* is of another species.

Bamboos are not plants for the timid gardener, but for bold souls looking for guidance in growing them, this is surely the best all-around and certainly the most up-to-date treatment of these most curious grasses. This book is both a good introduction and a worthy reference guide to keep at hand.

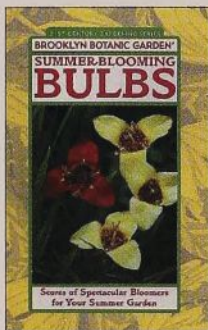
Plant hunter Jim Waddick has seen wild bamboos in their centers of diversity in Latin America and in China. He has also grown over 200 bamboo species and cultivars outdoors in his garden in the Kansas City, Missouri, area.

Gardeners' Books

There are many more new books on the market than we have time or space to review, but here are a few that recently caught our eye. Through a partnership with amazon.com, AHS members can order these and other books at a discount by linking to amazon.com through the Society's Web site at www.ahs.org.

Summer-Blooming Bulbs.

Beth Hanson, editor. Brooklyn Botanic Garden, Brooklyn, New York, 2001. 111 pages. Publisher's price, softcover: \$9.95.



ANOTHER in the 21st-Century Gardening Series, this guide focuses on a group of plants not often thoroughly treated in gardening books. Essays by bulb experts cover all the bases, from basic bulb botany to avoiding the purchase of bulbs collected in the wild, to design and propagation techniques, maintenance, and controlling pests and diseases. It includes an encyclopedia of summer-blooming bulbs, lush color photographs, and a list of sources for bulbs.

Taylor's Guide to Ground Covers.

Nan Sinton and David C. Michener. Houghton Mifflin Co., Boston, 2001. 375 pages. Publisher's price, softcover: \$23.

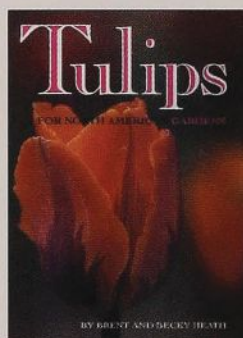


MORE than 400 flowering and foliage ground covers are featured in this addition to the newly revised and expanded Taylor's Guides series. As in all the guides, a hefty pho-

tographic gallery is followed by an all-text encyclopedia of plant descriptions and care.

Tulips for North American Gardens.

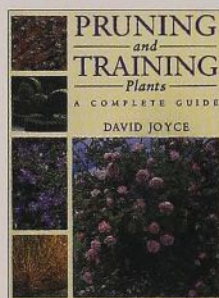
Brent and Becky Heath. Bright Sky Press, Albany, Texas, 2001. Publisher's price, hardcover: \$24.95.



history to its planting and care in the garden, to how to use tulips in flower arrangements and start your own tulip festival. A section on over 200 recommended cultivars is especially useful. Brent Heath's color photographs provide a visual feast throughout.

Pruning and Training Plants: A Complete Guide.

David Joyce. Firefly Books Inc., Buffalo, New York, 2001. 224 pages. Publisher's price, softcover: \$24.95.

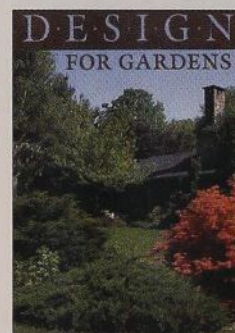


plant maintenance, special effects (such as topiary and standards), and increasing fruit and flower production. Illustrated with color photographs and line drawings.

SURE TO be welcomed by tulip lovers, this new guide-book written by the owners of a successful mail-order bulb business touches on all things tulip, from its fabled

Design for Gardens.

Joseph Hudak. Timber Press, Portland, Oregon, 2000. Publisher's price, hardcover: \$29.95.

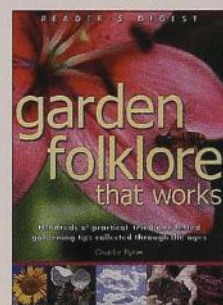


A CONCISE and easy-to-understand guide to the principles of garden design, including the use of color, texture, and scale. Color photographs of real-life home landscapes serve

to reinforce the author's discussions of how to integrate hardscape and plant material to achieve both practical and aesthetically pleasing outdoor living spaces. The last chapter sums up the lessons of the book through a study of a five-year renovation project in the author's own property in the Boston suburbs.

Garden Folklore that Works.

Charlie Ryrie. Reader's Digest Association, Inc., Pleasantville, New York, 2001. 176 pages. Publisher's price, hardcover: \$24.95.



FOR anyone who has ever wondered how much truth there is in the hundreds of gardening and garden-related tips passed down through the ages, this fully illustrat-

ed book will provide some answers. Find out why many old-time sayings and practices on everything from weather prediction to planting and personal well-being are not just based on magic and superstition. This book is packed with tidbits of information, including simple how-tos, herbal recipes, and useful plant lists.

Much more than a great magazine,

"It's hard to imagine any part of my life that hasn't been touched by my passion for plants—food, friends, work, and weekends puttering in the garden. *AHS is all about creating this passion in children and supporting it in adults.* I give to AHS because it shares my values."

—Brian E. Holley, Director, Cleveland Botanical Garden

"Members tell me that '*giving something back*' to the gardening world is just as important as receiving *The American Gardener*."

—Linda D. Hallman, President and CEO, AHS

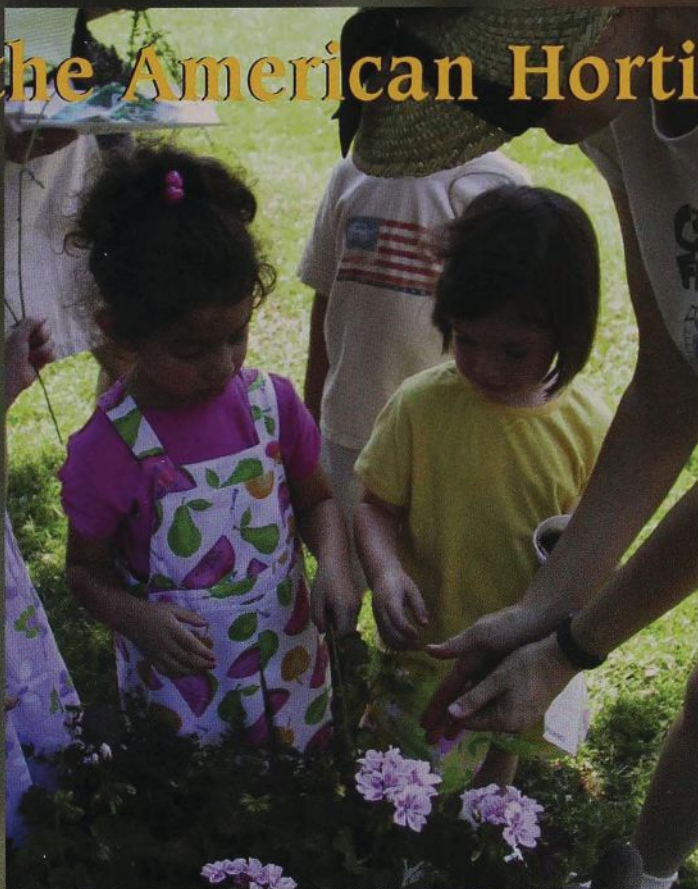


Garden Calm at River Farm

the American Horticultural Society

"I believe there is a moral dimension to horticulture: *Gardening makes us better people, and gardens make our communities better places to live.* That's why I and all gardeners should be supporting AHS."

—Duane Kelly, Producer of the Northwest and San Francisco Flower & Garden Shows



connects people to gardens.

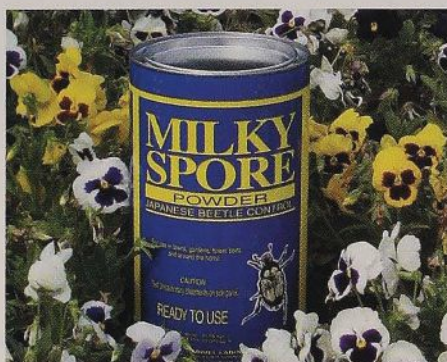


The American Horticultural Society relies on the generous gifts of donors to fulfill its mission *to educate and inspire people of all ages to become successful and environmentally responsible gardeners by advancing the art and science of horticulture.* AHS fosters the human connection with plants, the environmental value of SMARTGARDEN™ practices, and an appreciation of beauty in the environments we create.

Contact Ashby Pamplin, Director of Development, at (800) 777-7931 to find out how you can help.

Seasonal Garden Goods

The beginning of another growing season also means another year battling pests, diseases, and weeds that want to take over your garden. Here are some organic means to control them.



A host-specific bacterium, **Milky Spore** is the safest control available for Japanese beetles. It works by attacking the beetle grubs and is harmless to other animals. A 40-ounce can of milky spore powder treats 10,000 square feet of lawn and retails at \$89.95; a 10-ounce can treats 2,500 square feet and retails at \$29.95. St. Gabriel Laboratories, 14540 John Marshall Highway, Gainesville, VA 20155. (800) 801-0061. www.milkyspore.com.

Stop crabgrass and dandelions before they start in your lawn with **Weed Prevention Plus**. This nontoxic herbicide is made from corn gluten and includes fertilizer for the grass. Available in a five-pound bag that retails for \$11.95. Interior Gardens, Inc., 2817 Lyndale Avenue South, Minneapolis, MN 55408. (800) 738-4318. www.interiorgardens.com.



Use natural **Copper Soap Fungicide** on flowers, fruits, and vegetables to combat black spot, powdery and downy mildews, blights, and fruit rot. Available in a 32-ounce sprayer for \$10.50. Charley's Greenhouse & Garden, 17979 State Route 536, Mount Vernon, WA 98273. (800) 322-4707. www.charleysgreenhouse.com.



Hot Pepper Wax is an organic insect control and repellent designed to be effective against aphids, spider mites, leaf miners, whiteflies, and other soft-bodied insects. Formulated from hot cayenne pepper, natural repellents, and food-grade wax, it can be applied to indoor and outdoor ornamental and edible plants. Available in three sizes; the smallest is a 22-ounce sprayer for \$12.95. Bailey & Price, Inc., 234 Troon Way, Suite B, Lebanon, PA 17042. (888) 667-3785. www.hotpepperwax.com.

Products profiled are chosen based on qualities such as innovative design, horticultural utility, and environmental responsibility; they have not been tested by the American Horticultural Society. Send new product information to New Products, *The American Gardener*, 7931 East Boulevard Drive, Alexandria, VA 22308.

Regional Happenings

NORTHEAST

MAR. 16–24. **131st Annual New England Spring Flower Show.** Massachusetts Horticultural Society. Bayside Expo Center, Boston, Massachusetts. www.masshort.org. (617) 933-4900.

MAR. 25–JUNE 2. **Insecta Magnifica.** Art exhibition. Wave Hill, Bronx, New York. www.wavehill.org. (718) 549-3200.

APR. 18–21. **Hofstra Arboretum Flower and Garden Show.** Hofstra Arena, Hofstra University, Hempstead, New York. (516) 463-6815.

APR. 26–28. **Antique Garden Furniture Show and Sale.** New York Botanical Garden, Bronx, New York. (718) 817-8773.

APR. 27 & 28. **First International Symposium on Chinese Classical Gardens.** Staten Island Botanical Garden, Staten Island, New York. www.sibg.org. (718) 273-8200.

APR. 28. **Eighth Annual Neighborhoods of Newport House Tour.** Newport, Rhode Island. (401) 849-5970.

MID-ATLANTIC

MAR. 16–APR. 14. **Spring Flower Show: Colors of Sunlight.** Phipps Conservatory and Botanical Gardens, Pittsburgh, Pennsylvania. www.phipps.conservatory.org. (412) 622-6915.

MAR. 23. **Native Plant Sale.** U.S. National Arboretum, Washington, D.C. (202) 245-2726.

MAR. 30. **Bounty of Bulbs with Brent and Becky Heath.** Lecture. U.S. National Arboretum, Washington, D.C. (202) 245-5898.

APR. 5. **Potomac Bonsai Association Exhibition and Sale.** U.S. National Arboretum, Washington, D.C. (202) 245-2726.

APR. 6–MAY 24. **Acres of Spring.** Longwood Gardens, Kennett Square, Pennsylvania. www.longwoodgardens.org. (800) 737-5500.

APR. 10 & 11. **Daffodil Show.** Garden Club of Virginia. Carradoc Hall/Holiday Inn, Leesburg, Virginia. (540) 338-3591.

APR. 13 & 14. **Camellia Show.** Camellia Society of the Potomac Valley. U.S.

AHS Events

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

National Arboretum, Washington, D.C. (202) 245-2726.

AHS APR. 18–20. **Annual Plant Sale.** American Horticultural Society. George Washington's River Farm, Alexandria, Virginia. www.ahs.org. (703) 768-5700.

APR. 19 & 20. **Spring Plant Sale.** Lewis Ginter Botanical Garden, Richmond, Virginia. www.lewisginter.org. (804) 262-9887.

AHS APR. 20–27. **Historic Garden Week.** Sponsored by the Garden Club of Virginia. Various locations statewide. (804) 644-7776.

APR. 20–MAY 5. **Gardening Days at Mount Vernon.** George Washington's Mount Vernon Estate and Gardens, Mount Vernon, Virginia. (703) 780-2000.

AHS APR. 21–23. **Colonial Williamsburg's 56th Garden Symposium.** Williamsburg Institute, Williamsburg, Virginia. (800) 603-0948.

APR. 27. **11th Annual Friends of the National Arboretum's Celebrate Spring 2002: Garden Fair and Plant Sale.** U.S. National Arboretum, Washington, D.C. (202) 544-8733.

APR. 27. **57th Annual Tour of Homes and Gardens.** The Garden Club of the Eastern Shore. Various locations in the Eastern Shore of Virginia. (757) 442-2121.

APR. 27 & 28. **47th Annual House and Garden Tour.** Shenandoah-Potomac Garden Council. Harpers Ferry, West Virginia. (800) 498-2386.

MAY 2–5. **Birds and Blossoms: A Weekend for Birders and Naturalists.** Norfolk Botanical Garden, Norfolk, Virginia. (757) 441-5838.

SOUTHEAST

MAR. 14–APR. 13. **55th Annual Festival of**

Houses and Gardens. Historic Charleston Foundation. Charleston, South Carolina. (843) 722-3405.

MAR. 15–MAY 15. **Spring Flower Festival.** Cypress Gardens, Winter Haven, Florida. (800) 282-2123.

MAR. 21–24. **Ninth Annual Festival of Flowers.** Providence Hospital Foundation. Spring Hill College, Mobile, Alabama. (877) 777-0529.

MAR. 23 & 24. **Fuqua Orchid Center Grand Opening.** Atlanta Botanical Garden, Atlanta, Georgia. (404) 876-5859.

MAR. 28. **The Natural Gardener.** Symposium. South Carolina Midlands Master Gardeners. Riverbanks Botanical Garden, Columbia, South Carolina. (803) 438-6486.

APR. 5 & 6. **Laying the Groundwork: A Symposium Celebrating the Life and Works of Five Noted Landscape Architects.** North Carolina University College of Design and Sarah P. Duke Gardens, Raleigh and Durham, North Carolina. www.design.ncsu.edu/groundwork/index.html. (919) 515-8340.

APR. 5 & 6. **Savannah Garden Exposition.** Railroad Roundhouse Museum, Savannah, Georgia. (912) 236-8097.

APR. 6 & 7. **Daffodil Show.** Cheekwood Botanical Garden & Museum of Art, Nashville, Tennessee. (615) 356-8000.

APR. 12–14. **Wildflower Fair.** Cheekwood Botanical Garden and Museum of Art, Nashville, Tennessee. (615) 356-8000.

APR. 13. **Multiply Your Perennials by Division.** Class. Daniel Stowe Botanical Garden, Belmont, North Carolina. (704) 825-4490.

APR. 17–21. **2002 Convention American Rhododendron Society.** Azalea Society of America. Atlanta, Georgia. arsazalea.tripod.com.

APR. 18–20. **National Daffodil Show and Convention.** American Daffodil Society. Drawbridge Inn and Convention Center, Fort Mitchell, Kentucky. (513) 752-8104.

APR. 18–21. **Inaugural Foxhall Flower Show.** Douglas County, Georgia. (404) 636-8200 ext. 233.

Shining up the Glass House in D.C.

AFTER EXTENSIVE RENOVATIONS—and an unexpected delay when the site was used as an emergency command center for security related to last fall's anthrax crisis—the U.S. Botanic Garden's (USBG) conservatory reopened its doors to the public this past December.

Built in 1933, the 56,000-square-foot glass house was the oldest continuously operating botanic garden in the nation until it closed for renovations in September 1997. Located near the U.S. Capitol building in Washington, D.C., the conservatory attracted about 790,000 visitors annually before the renovation, but "we anticipate reaching a million visitors annually within a couple of years of opening the new conservatory," said Christine Flanagan, USBG public programs coordinator.



An upper-level view from the Canopy Walk of the tropical collection at the new U.S. Botanic Garden.

The problems with the old conservatory were too numerous to count: Pieces of glass were shattering to the ground, water dripped on visitors, the climate-control system was antiquated, and the building's aluminum structure was

fast deteriorating. In 1997, Alan Hantman, the Architect of the Capitol, concluded that public safety concerns required closure of the conservatory and Congress enacted the Emergency Supplemental Appropriations Act to overhaul the structure over a three-year period.

Thanks to the new zone-controlled environmental systems, there will be several individual houses or exhibits. "Every house will have a theme and each theme will be developed to the point where we will have specific communication goals and messages," says Flanagan. "Every plant in that exhibit has been carefully chosen to support those specific messages."

The east side of the conservatory will contain Plant Adaptations, the Garden Primeval, Oasis, World Desert, and the Children's Garden. The west side will feature Rare and Endangered Species, Plant Exploration, Orchid House, Medicinal Plants, and the Meditative Garden. Linking the two in the center will be the Jungle exhibit on the ground floor and the Canopy Walk on a second story mezzanine for visitors to enjoy the tree tops and epiphytes up close.

"Every plant exhibit will be completely new but visitors may see similarities," says Flanagan. For example, the old conservatory contained a Dinosaur Garden, whereas the new one will have the Garden Primeval, which will use primitive plants and living fossils to create a snapshot of the Jurassic period.

To illustrate the theme "Nature Renews Itself," the Jungle will be an abandoned plantation with remnants of formal ornamentals planted in rows in the center. On the perimeter, disorderly wild plants will appear to take over the plantation. This sense of nature reclaiming land will increase as time passes and the plants mature.

The new conservatory will have a coordinated signage program, including interactive signs to reinforce the visual message of each house. It will be handicapped accessible and visitors can enter from either Independence Avenue or Maryland Avenue. The conservatory is located at the intersection of Maryland Avenue and First Street, S.W., Washington, D.C. For more information, contact the U.S. Botanic Garden at 245 First Street, S.W., Washington, DC 20024 or call (202) 225-8333. Admission is free and hours of operation are 10 a.m. to 5 p.m., daily.

—Peggy Riccio, special to *The American Gardener* from Catonsville, Maryland

APR. 20 & 21. **Bonsai Show.** Cheekwood Botanical Garden and Museum of Art, Nashville, Tennessee. (615) 356-8000.

MAY 4 & 5. **Orchid Mini-Show.** Cheekwood Botanical Garden and Museum of Art, Nashville, Tennessee. (615) 356-8000.

MAY 10 & 11. **Community Flower Show.** Cheekwood Botanical Garden and Museum of Art, Nashville, Tennessee. (615) 356-8000.

MAY 11 & 12. **17th Annual Orchid Show and Sale.** Volusia County Orchid Society. Volusia County Fairgrounds, DeLand, Florida. (386) 228-3286.

MAY 11 & 12. **Wing Haven Gardener's Garden Tour.** Wing Haven, Charlotte, North Carolina. (704) 331-0664.

NORTH CENTRAL

MAR. 21-24. **GMC Builders Home and Garden Show.** Cobo Center, Detroit, Michigan. (248) 862-1019.

MAR. 30. **Spring Pansy and Orchid Sales.** Olbrich Botanical Gardens, Madison, Wisconsin. (608) 246-4550.

APR. 4-7. **Spring Home and Garden Show.** Novi Expo Center, Novi, Michigan. www.builders.org. (248) 862-1019.

APR. 18. **Antiques and Garden Fair.** Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440.

APR. 24-28. **13th Annual 2002 Cincinnati Flower Show: "A Tribute to Cincinnati."** Ault Park, Cincinnati, Ohio. (513) 872-9555 ext. 14 or (513) 271-7055.

MAY 4-11. **Tulip Time Festival.** Various events and locations, Holland, Michigan. (800) 746-9294.

SOUTH CENTRAL

APR. 19-21. **Bluebonnet Festival.** Ennis, Texas. (214) 252-0900.

APR. 19-21. **HERBFest 2002.** Fredericksburg Herb Farm, Fredericksburg, Texas. (800) 259-HERB.

MAY 8-11. **All Things Organic Conference and Trade Show.** Austin Convention Center, Austin, Texas. (413) 774-7511.

SOUTHWEST

THROUGH APR. 30. **Chapungu: Custom and Legend, A Culture in Stone.** Boyce Thompson Arboretum, Superior, Arizona. (520) 689-2811.

MAR 15-31. **Annual Spring Landscaping and**

Plant Sale. Boyce Thompson Arboretum, Superior, Arizona. (520) 689-2811.

MAR 20-24. **Spring Home and Patio Show.** National Western Complex, Denver, Colorado. (303) 892-6800.

APR. 13. **Herb Sale.** Boyce Thompson Arboretum, Superior, Arizona. (520) 689-2811.

APR. 24. **Plantsmen of the World.** Lecture and panel discussion on international plant collecting. Denver Botanic Gardens, Denver, Colorado. (720) 865-3500.

APR 27. **Earth Arbor Day.** Boyce Thompson Arboretum, Superior, Arizona. (520) 689-2811.

MAY 10 & 11. **53rd Annual Plant and Book Sale.** Denver Botanic Gardens, Denver, Colorado. (720) 865-3500.

NORTHWEST

APR. 6. **Annual Rhododendron Early Show and Plant Sale.** American Rhododendron Society Portland Chapter. Crystal Springs Rhododendron Garden, Portland, Oregon. www.arsportland.org.

APR. 6, APR. 20, & MAY 4. **Gardening with Native Plants Workshop series.** Mount Pisgah Arboretum, Eugene, Oregon. www.efn.org/~mtpisgah. (541) 747-3817.

APR. 20. **Annual Rhododendron Sale.** Meeker Gardens, Greenbank, Washington. www.meerkergardens.org/events.html.

APR. 21. **Spring Plant Sale.** The Berry Botanic Garden, Portland, Oregon. www.berrybot.org. (503) 636-4112.

APR. 27. **Meerkerk Magic: A Festival of Flowers.** Meerkerk Gardens, Greenbank, Washington. www.meerkergardens.org/events.html.

APR. 27 & 28. **36th Annual Glide Wildflower Show 2002.** Glide Community Building, Glide, Oregon. (541) 677-3797.

MAY 4. **25th Birthday Bash.** The Berry Botanic Garden, Portland, Oregon. www.berrybot.org. (503) 636-4112.

MAY 11 & 12. **Annual Mother's Day Show and Sale.** American Rhododendron Society Portland Chapter. Crystal Springs Garden, Portland, Oregon. www.arsportland.org.

MAY 19. **Annual Wildflower Festival.** Mount Pisgah Arboretum, Eugene, Oregon. (541) 747-3817.

WEST

MAR. 20-24. **San Francisco Flower and Garden Show.** Cow Palace, San Francisco, Cali-

Tulip Festival Blossoms in Tennessee

SPRINGTIME IN Knoxville, Tennessee, brings an array of color—with both the dogwood trees and the tulips. While the blossoming of the town's favorite tree has been celebrated for 42 years in the Dogwood Arts Festival, the vibrant reds, pinks, and yellows of tulips are making their mark with the third annual Tulip Festival.

More than 15,000 tulips welcome visitors to Crescent Bend, the historic property including the Win P. Toms Memorial Gardens and the Armstrong-Lockett Home, built in 1834. The Italian Terrace Garden was added in 1982 as part of the World's Fair. With nine terraces, five fountains, an array of magnolia blossoms, roses, and the celebrated tulips, horticulture lovers can spend hours simply strolling the grounds, which include a view of the Tennessee River.

The Tulip Festival is scheduled in conjunction with the Dogwood Arts Festival, which takes place April 5 to 28. The gardens are open Tuesday through Saturday 10 a.m. to 4 p.m. and Sunday 1 p.m. to 4 p.m. In addition to the showstopping exhibit of tulips, other events, including landscape and garden design seminars, will be held. For more information about the Tulip Festival at Crescent Bend, call (865) 637-3163. For information about the Dogwood Arts Festival, call (800) 727-8045, or visit the Web site www.knoxville.org.

—Christie Craig, special to *The American Gardener* from Spring, Texas



Tulips surround one of the five fountains overlooking the Tennessee River at Crescent Bend.

fornia. (415) 771-6909.

APR. 13. **Spring 2002 Grand Opening of the Ruth Bancroft Garden and Spring Rare Plant Sale.** Ruth Bancroft Garden, Walnut Creek, California. (925) 210-9663.

APR. 20. **Annual Open Garden.** Sacramento Historic Rose Garden, Sacramento, California. (916) 443-2146.

APR. 20. **Bamboo Sale.** Quail Botanical Gardens, Encinitas, California. www.qb-gardens.com. (760) 436-3036 ext. 204.

APR. 27 & 28. **29th Annual Green Scene Garden Show and Nishiki Club Koi Show.** Fullerton Arboretum, Fullerton, California. (714) 278-3579.

MAY 5. **The Garden Faire.** The Gardens at Heather Farm, Walnut Creek, California. (925) 947-1539.

MAY 18. **Plant Lovers Affair.** Mendocino Coast Botanical Gardens. Fort Bragg, California. (707) 964-4352 ext. 12.

CANADA

MAR. 21. **Pond and Woodland Gardening.** The Arboretum, University of Guelph, Guelph, Ontario. (519) 824-4120 ext. 2113.

MAY 2 & 4. **RBG Auxiliary Plant Sale.** Royal Botanical Gardens, Burlington, Ontario. www.rbg.ca. (905) 825-1158.

Garden Market

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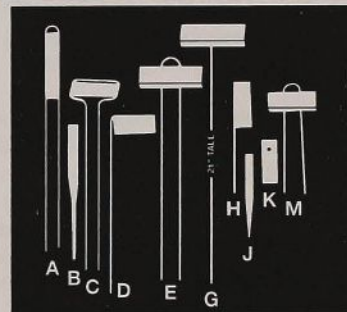
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Pronunciations and Planting Zones

Most of the cultivated plants described in this issue are listed here with their pronunciations, USDA Plant-Hardiness Zones, and AHS Plant Heat Zones. These zones suggest a range of locations where temperatures are appropriate—both in winter and summer—for growing each plant. While the zones are a good place to start in determining plant adaptability in your region, factors such as exposure, moisture, snow cover, and humidity also play an important role in plant survival. The zones tend to be conservative; plants may grow outside the ranges indicated. A USDA zone rating of 0 means that the plant is a true annual and completes its life cycle in a year or less. Many plants that are perennial in warm climates are grown as annuals in cooler zones. To purchase a two-by-three-foot glossy AHS Plant Heat-Zone Map for \$9.95, call (800) 777-7931.



A-C

- Aralia spinosa* uh-RAY-lee-uh spih-NO-suh (USDA 4-9, AHS 9-1)
Asplenium scolopendrium uh-SPLEE-nee-um sko-lo-PEN-dree-um (6-8, 8-6)
Athyrium nipponicum 'Pictum' uh-THIH-ree-um nih-PON-ih-kum (5-8, 8-5)
Betula utilis var. *jacquemontii* BET-yew-luh yew-TIL-us var. jak-MON-tee-eye (4-9, 9-3)
Bolax glebaria BO-laks gluh-BAIR-ee-uh (5-6, 6-5)
Carex testacea KAIR-eks tes-TAY-see-uh (8-9, 9-8)
C. 'The Beatles' (7-9, 9-7)
Clematis pitcheri KLEM-uh-tiss PITCH-ur-eye (4-10, 10-5)
C. texensis C. teks-SEN-sis (4-10, 10-5)
C. viticella C. vy-tih-SEL-luh (4-10, 10-5)
C. 'Alba luxurians' (4-10, 10-5)
C. 'Duchess of Albany' (4-10, 10-5)
C. 'Duchess of Edinburgh' (4-10, 10-5)
C. 'Ernest Markham' (4-10, 10-5)
C. 'Huldine' (4-10, 10-5)
C. 'Marie Boisselot' (4-10, 10-5)
C. 'Proteus' (4-10, 10-5)
C. 'Star of India' (4-10, 10-5)
C. 'Victoria' (4-10, 10-5)
Corallorhiza maculata kor-al-lor-RY-zuh mak-yew-LAY-tuh (5-8, 8-5)
Cyrtomium falcatum 'Eco-Jade' sur-TOH-mee-um fal-KAY-tum (6-10, 10-6)

D-H

- Dianthus gratianopolitanus* 'Bath's Pink' dy-AN-thus grat-see-ay-no-pol-ih-TAN-us (5-8, 9-1)
Epimedium × *youngianum* ep-ih-ME-dee-um yung-ee-AN-um (5-8, 8-5)
Erysimum 'Wenlock Beauty' ee-RISS-ih-mum (5-8, 8-5)
Festuca 'Elijah Blue' fes-TEW-kuh (4-9, 9-1)
Geranium renardii juh-RAY-nee-um ray-NAR-dee-eye (6-8, 8-4)
G. 'Midnight Reiter' juh-RAY-nee-um (5-7, 7-4)
Hakonechloa macra ha-kon-ee-KLOH-uh MAK-ruh (5-9, 9-2)

- H. macra* 'Aureola' H. MAK-ruh (5-9, 9-4)
Helianthemum nummularium hee-lee-AN-theh-mum num-yew-LAIR-ee-um (6-8, 10-3)

I-R

- Iberis sempervirens* eye-BEER-iss sem-pur-VY-renz (3-8, 8-1)
Lavandula 'Blue Cushion' lah-VAN-dyew-luh (5-8, 8-5)
Oenothera caespitosa ee-NOTH-ur-uh sez-pih-TOH-suh (4-8, 8-1)
Papaver alpinum puh-PAH-vur al-PY-num (5-8, 8-5)
P. atlanticum P. at-LAN-tih-kum (5-7, 7-5)
P. californicum P. kal-ih-FORN-ih-kum (0, 9-1)
P. commutatum P. com-yew-TAY-tum (0, 9-1)
P. dubium P. DEW-be-um (0, 9-1)
P. laciniatum P. lah-syn-ee-AY-tum (4-9, 9-1)
P. nudicaule P. new-dih-KAW-lee (2-8, 8-1)
P. orientale P. or-ee-en-TAH-lee (4-9, 9-1)
P. pavoninum P. pah-VO-nin-um (0, 9-1)
P. rhoeas P. RHO-ays (0, 9-1)
P. rupifragum P. rew-pih-FRAY-gum (2-8, 8-1)
P. somniferum P. som-NIF-ur-um (0, 7-1)
P. somniferum var. *paeoniflorum* P. som-NIF-ur-um var. pee-o-nih-FLOR-um (0, 7-1)
P. triniifolium P. trin-ih-FO-lee-um (8-9, 9-8)
Phegopteris decursive-pinnata fay-GOP-tur-iss de-KUR-sive pin-NAY-tuh (7-8, 8-7)
Phlox divaricata FLOKS dih-vair-ih-KAY-tuh (3-9, 8-1)
P. subulata P. sub-yew-LAY-tuh (3-9, 9-4)
Rhododendron augustinii ro-doh-DEN-dron aw-gus-TIN-ee-eye (6-9, 9-6)
Rosa 'Gertrude Jekyll' RO-zuh (5-9, 9-5)
R. 'Maggie' RO-zuh (6-9, 9-5)

S-Z

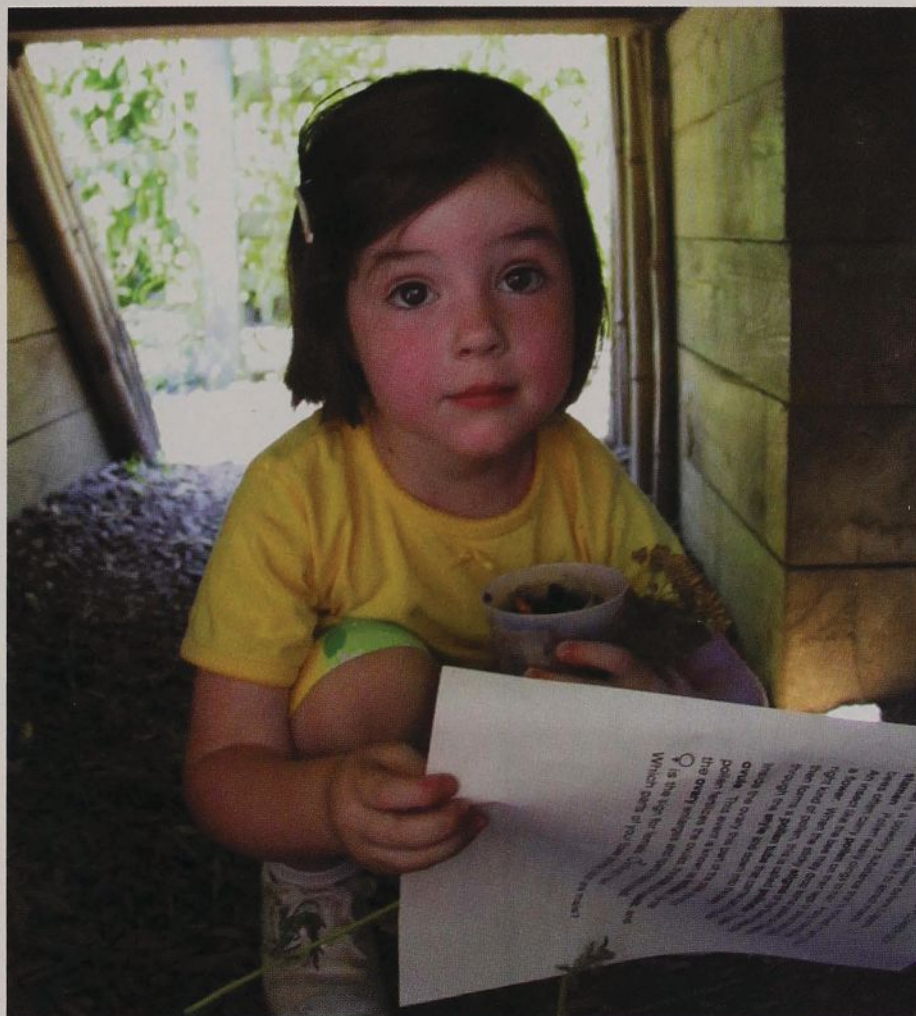
- Salvia daghestanica* SAL-vee-uh dah-ges-TAN-ih-kuh (7-9, 9-7)
Stachys byzantina STAY-kiss bih-zan-TY-nuh (7-8, 8-1)
Taxus baccata TAK-suss bak-AY-tuh (7-8, 8-7)
Thymus serpyllum TY-muss sur-PIL-lum (4-9, 9-1)
Veronica spicata vur-ON-ih-kuh spy-KAY-tuh (3-8, 8-1)

Scenes from River Farm



Japanese apricots (Prunus mume) in flower in River Farm's herb garden. Small deciduous trees native to Asia, Japanese apricots usually put forth their small, white, clove-scented blossoms in late winter or early spring. This year at River Farm a prolonged warm spell in winter encouraged some of the flowers to break bud in mid-January.

Sarah Doesn't Care that AHS has been Inspiring and Educating Gardeners for 80 Years.



Sarah isn't all that interested in our 80th Anniversary celebration. Who can blame her? She just planted her first seed and found out that it will need water and sunshine to grow. She also learned that worms are very good for the soil—and a lot of fun to play with. **Sarah is one of many children whose introduction to the joys of gardening happened because of the caring people who have supported AHS for the past 80 years.** Living Lab programs at River Farm, like the one Sarah is involved in, are just a part of our larger mission to educate and inspire gardeners of all ages. We think that's pretty special and want to thank you on behalf of Sarah for being a part of that history. Take our word for it: Your support is very important to her. She'd tell you herself, but she just spotted a butterfly on a nearby black-eyed Susan and is very busy watching it and wondering what it is doing. Thanks to you, she's about to find out.



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