

American Horticulturist

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News Edition

'Made Wild by Pompous Catalogs'

If you just can't resist those mouth-watering photographs of the Biggest and Reddest and Earliest Yet! tomato...If you find yourself sending away for three hundred lily bulbs when you have no idea where you'll plant them...When you hear your mate demanding, "What! Another check to Wayward Gardens?"...you're in fine company with a long history.

In May 1850, the Rev. Henry Ward Beecher inveighed in *The Horticulturist* against the proliferation of posters, seed boxes, trade cards, and catalogs with lavish illustrations and outlandish promises: "We protest against floral spendthrifts," he wrote. "They will be entrapped by [impressive-sounding] names in seed stores, and made wild by pompous catalogs from florists and seedsman."

Histories are a bit vague about who issued the first American seed catalog and when. The United States had a commercial nursery—that of William Prince, in Flushing, New York, by about 1730—and the National Agricultural Library has a 1771 list of Prince plants.

Seeds, however, were obtained from abroad or through personal swaps until the 1780s, when the first commercial seed companies were established by Philadelphian David Landreth and New Yorker Grant Thornburn. By 1790, the Shakers had begun to make high-quality seeds available to merchants; they developed the small seed packet, which made the purchase of fresh seed practical for the home gardener with only a small plot.

Judith Ho, curator of manuscripts and rare books at the National Agricultural Library, says English nurseryman Thomas Furer was producing a commercial, color-illustrated seed catalog prior to 1824. Other growers quickly followed suit. Robert Becker, of the New York State Agricultural Experiment Station in Geneva, says the first, very plain, American mail-order catalogs probably appeared between 1825 and 1830.



1991 Seed Program Catalog Enclosed!

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1991 Annual Meeting Program Enclosed!

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An alternative to the mail-order catalog, beginning in the 1840s, was the nurseryman's sample book. The University of Delaware Library has nursery sample books dating from the mid-19th century to the first decade of the 20th. They contain watercolor and stencil paintings, hand-colored lithographs, chromolithographs, and photographic plates illustrating fruits, flowers, shrubs, and trees. Many of the plates were created by lithographers and publishers in Rochester, New York, which was an early center of horticultural publishing and illustration because so many nurseries were located there. The work of Hoosier John Prestele was also in great demand, according to Ho. From a catalog of these prints, nurserymen would choose those that best represented their stock, bind them in leather, stamp their name on the cover, and send them out into the world with their traveling salesmen.

But catalogs were certainly cheaper to produce in quantity, and they began to catch up with the sample books as works of art. Before 1870, a catalog might have only one drawing, says Ho. "Soon after the Civil War," says Patricia M. Tice in *Gardening in America, 1830-1910*, "chromolithographed images were regular features of the seed catalog, and many customers cheered a winter's day by leafing through its brightly colored pages."

Today's catalog copywriters and photographers are the very soul of restraint compared to some of the horticultural hucksters of a century ago. Becker describes drawings from *Maule's Catalogue* of the 1880s that show an onion six inches in diameter and a head of cauliflower filling a chair. Another shows several men harvesting



onions the size of bowling balls. Much as today, many of them touted "new" and "novelty" items.

By the 1880s, says Ho, "there had been an explosion" of elaborate, brightly colored illustrations. Becker calls the period from 1890 into the early years of the 20th century the golden age of seed catalog art. "For rural Americans living isolated lives in the days before the telephone, radio, and television," he says, "the annual arrival of seed catalogs with their tempting illustrations of the newest cultivars was awaited eagerly each year."

Color had become so expected, writes Tice, that when the D. M. Ferry Co. issued an all black-and-white catalog in 1886, they felt compelled to offer an explanation. "...if it seems lacking in brilliantly colored plates of impossible vegetables and glowing descriptions of the superlative excellence of new sorts which are meant to revolutionize garden practice, it is because our aim has been to give in its pages information which will enable our readers to have a good garden rather than to tempt them to purchase at exorbitant prices a few seeds of some untried novelty liable at least to result in failure and disappointment."

You will find no "brilliantly colored plates" in the enclosed AHS Seed Catalog. We do hope that you will find some novelty and a minimum of disappointment.



Catalog illustrations courtesy of the National Agricultural Library, Special Collections, Seed Trade Catalog Collection; Judith J. Ho, curator of manuscripts and rare books. The collection contains more than 150,000 catalogs.

New! Improved! Colorful! Small!

The magic word in the catalogs of yesteryear seemed to be "big." Today, while we may want clematis the size of dinner plates and pumpkins big enough to transport Cinderella, "dwarfer" plants are in demand by city dwellers who lack room for sprawling annuals or squash vines. But otherwise, little has changed. Ornamentals are still getting harder, vegetables are still getting earlier, and both are becoming more colorful. Growers are still seeking a true blue rose or daylily. In the meantime, orange geraniums, white lavenders, purple peppers, and red "greens" will have to do.

If you haven't succumbed yet this winter to Catalog Offering Fever, here's a sampling of the press releases that crossed our desks this fall:



Klehm's 'Pink Parasol Surprise'.

Ornamentals

Park Seed is selling a yellow amaryllis, 'Yellow Pioneer', said to offer, in addition to its unusual color, a small size that keeps it from flopping over when grown in a pot, and a tendency to produce numerous side shoots if left undisturbed in a Southern garden. Yellow seems to be Park's color this year: it is also touting a yellow gaillardia—*Gaillardia pulchella* 'Yellow Sun'—a dwarf said to tolerate heat, drought, and poor soil.

Stokes Seeds is claiming new color twists to several annual standbys: a white ageratum ('Hawaiian White'); alyssums called 'Red Basket' and 'Creamy Yellow Basket'; and 'Orange Appeal', a "true orange" pelargonium that can be grown from seed.

White lavender may seem like an oxymoron, but White Flower Farm says it has an exclusive this year on *Lavandula angustifolia* 'Alba', a pure white form of English lavender. They also have eleven new brightly colored Asiatic lilies from Holland, including

Before You Buy

An 1888 Burpee catalog described what it called a 'Faultless Early' tomato thusly: "After two years' impartial trials we cannot recommend this new variety. It is very early, but far from faultless,—nearly all the fruits being rough; in color it is bright red. Per. pkt. 5 cts.; oz. 20 cts.; ¼ lb. 60 cts.; per lb. \$2.00."

Refreshing honesty? Clever gimic? Whichever, you're not likely to see such a description in most catalogs. For one thing, there are too many wonderful plants available to offer anything substandard. Nevertheless, as you wade through the adjectives, a bit of *caveat emptor* is in order. A plant may be "new" to a particular company, but it may not be new to the market, and it may not be exclusive to that catalog. Shop around. (Comparison shopping is difficult when catalogs don't use botanical names; ask for them!) Compare the catalog's descriptions with those of more dispassionate garden references. Don't be bowled over by gloss; some of the best catalogs for unusual plants, or a wide selection of one type of plant, can be scruffy little brochures with nary a single scrumptious photo.

You may find such unknown gems among our classified and display advertisers. Local botanical gardens or gardening clubs will know of regional sources—with plants likely to feel at home in your garden—and the specialty plant societies can tell you where to find the best selection of irises, for example, or orchids. A great reference for finding plant sources is *Gardening by Mail* by Barbara J. Barton (available to AHS members for \$16.90 including postage, order code #HOU505). And of course, you can always call the AHS Gardeners' Information Service toll-free at (800) 777-7931, between 11 a.m. and 3 p.m. EST. Finding plant sources for members is one of the things we do best.

Read guarantees carefully. Most nurseries stand firmly behind their products; some will replace them with no questions asked up to a year later if you're not satisfied. Not every nursery can afford to be quite so generous, but expect some type of guarantee, and use it.

'Fair', an orange; 'Montreux', a pink; and 'Symphony', a golden yellow; and a daphne, 'Eximea', a dwarf with deep pink, fragrant flowers.

New to Klehm Nursery's "Estate Peonies"—those introduced by the Klehm family—are the pink and cream 'Pink Parasol Surprise', whose center petals pop out of the middle of the flower like an umbrella, and 'Cheddar Charm', whose cheese-colored center is more prominent than its petals. They are also offering "the only hosta with a valid plant patent," 'Solar Flare', bred by Henry Ross of Cleveland. Its mint green foliage changes to chartreuse gold in summer.

Monrovia Nursery, through local nurseries and other distributors, will offer golden Japanese forest grass (*Hakonechloa macra* 'Aureola'), an



White Flower's 'Montreux' lily.

18-inch-tall ornamental grass that becomes more intensely colored in light shade; and 'Island Sunset' fuchsia, which has multicolored foliage and is hardy to 0° F.

Wayside Gardens offers two new clematis: 'Pink Champagne', a hybrid related to the Manchurian native *Clematis patens*, and 'Polish Spirit', which is purple blue with large red centers; both were introduced by Englishman Raymond Evison. Also from Wayside, a bright pink, "neat" spreading geranium hybrid, named 'John Elsley' by Alan Bloom to honor Wayside's director of horticulture; and an "extremely hardy" crimson rugosa rose, 'Linda Campbell', named by California breeder Ralph Moore for a Denver, Colorado, rosarian.

Vegetables

Among lettuces, even icebergs have taken on color this year. Johnny's Selected Seeds offers 'Cerise', with "medium green outer leaves heavily



Stokes's Earlibird peppers.

and 'Marketmore 86' is a later-maturing, open-pollinated variety.

It's no longer enough for your corn to be super sweet. Now the rage is bicolor corn, and you can get both in 'Pilot' from Johnny's and 'Lancelot', 'Sweetheart', or 'Polar Super Sweet' from Stokes.

If all that color isn't enough for you, try Shepherd's "pinky orange" 'Honeybunch' mini-butternut squash; Petoseed's 'Gallicum' melon, whose rind signals its ripeness by turning greenish yellow; or from Pinetree, a purple kohlrabi ('Kolibri'), a white asparagus ('Larac'), or a stringless French green bean with purple stripes ('Coktel'). (Petoseed, like Monrovia, is a wholesaler, so look for its cultivars in other catalogs.)

overladen with red"; Stokes offers a "red head" called 'Etna' and a leaf lettuce, 'Red Fire', that it says is even more eye-popping than the popular 'Red Sails'. Pinetree Garden Seeds has a "dynamic" red Batavia lettuce, 'Sierra', and a bronze red cos, or romaine, lettuce called 'Cimmaron' that reportedly dates back to the 18th century; the seeds were recently rediscovered in a warehouse.

Color is hot in peppers, too. Petoseed has 'Purple Beauty', with thick walls and a shape like that of other bell peppers. Stokes lists bell peppers in cream ('Dove'), blue ('Blue Jay'), and black ('Black Bird') in its Earlibird series. Johnny's Selected Seeds has 'Secret' with purple skin and green flesh. Tomato Growers Supply offers ornamental chili peppers in two new colors developed by New Mexico State University: 'Numex Sunrise' is bright yellow and 'Numex Sunset' is orange.

No purple tomatoes, but 'Yellow Pear' describes the color and shape of an offering from Johnny's Selected Seeds, and Park has container-size, cherry tomatoes in two colors, 'Red Robin' and 'Yellow Canary'. It's small that's really big in tomatoes, and Shepherd's Garden Seeds has a new Chinese hybrid, 'Ruby Pearl', that produces ruby red fruit described as the size of a grape. Tomato Growers Supply offers a lot of tomatoes, of course, including the new 'Micro Tom Tomato', said to be the world's smallest, capable of growing in a three-inch pot and producing tomatoes the size of a salad crouton.

Cucumbers are remaining green, perhaps greener. Stokes has two new introductions, developed by Dr. Henry Munger of Cornell University, which contain a uniform green gene that eliminates "yellow belly"—a discoloration that occurs where cucumbers touch the ground. 'Comet II' is an early hybrid



Park's 'Yellow Canary' tomato.

FloraStar Judges Pick Six Winners

Most gardeners are familiar with All-America Selections, a nearly 60-year-old competition among new cultivars grown from seed.

A newcomer to the plant competition world is FloraStar, a trialing competition for container plants propagated vegetatively. Its first trials were held in the spring of 1989. As with the AAS trials, new introductions are compared to an already available variety over which the breeder claims his or her cultivar is an improvement.

The trials are conducted at 18 sites across the United States. Here are the most recent winners:

◆ *Eustoma* 'Blue Lisa' from PanAmerican Seed is said to bloom significantly earlier than its competition and not require pinching. It grows up to a foot tall and eight inches wide with deep blue, bowl-shaped flowers and gray green lanceolate leaves. 'Blue Lisa' was bred for PanAmerican by Claude Hope of Linda Vista in Cartago, Costa Rica.



Eustoma 'Blue Lisa'.



Streptocarpus 'Thalia'.

◆ *Kalanchoe* 'Majestic' impressed judges with its abundant, bright red flowers; compact, basal branching; and disease-free foliage. It grows to seven inches tall and spreads to 10 inches. 'Majestic' was bred for Mikkelsen's, Inc., by Lyndon Drewlow.

◆ *Streptocarpus* 'Thalia'. Mikkelsen's and Drewlow had another winner in this *Streptocarpus*, which judges said was covered almost continuously with its ruffled white flowers with a red-streaked throat. It is a compact grower that performs well in low light and high temperatures, and should do well in shady gardens or bright windows.

FloraStar will hold two competitions annually, one for fall nursery crops and one for those produced in spring. Its very first winners, chosen from the spring 1989 trials, were three geraniums bred by Bodger Seeds, Ltd., which calls these pelargoniums "floribunda" geraniums. They are interspecific crosses between zonal geraniums and other species, and are said to combine a bushy habit, showy blooms, and heat tolerance. 'Marilyn' is bright pink, 'Judy' is coral, and 'Grace' is pale pink.

Shuck Those Shards, Pitch Those 'Peanuts'

If there is anything at the bottom of your plant pots besides the growing medium and perhaps a piece of screen covering the drainage hole—look out for the Potshardbusters.

That's what Bonnie Appleton, extension nursery specialist with the Virginia Cooperative Extension Service, calls her campaign to give container plants some breathing space. In a recent issue of *Quill and Trowel*, the newsletter of the Garden Writers Association of America, Appleton called on fellow gardening communicators to spread the word that pieces of broken clay pots, pebbles, or Styrofoam peanuts in the bottom of plant pots do not prevent plants from becoming waterlogged, but just the opposite. "I guess I'd gotten complacent and decided that we'd finally gotten the word out," Appleton wrote. "But I guess not when I see their use described and illustrated in a brand new book from one of our major home horticulture publishers. Or when I'm sent samples of what look like giant Brillo pads with instructions that say these pads should be put in the bottom instead of shards to 'help protect against overwatering' and 'keep your plant's roots from drowning.'"

Gypsum Lowdown

Some gardeners routinely add gypsum to clay soils in an effort to improve drainage, but they may be doing more harm than good if their soil is high in calcium.

Nevada Cooperative Extension Horticulture Specialist Linn Mills, writing in *Southwest Lawn and Landscape*, says that gypsum, or calcium sulfate, can indeed work wonders. When used on clay soils low in calcium, it not only improves tilth, but helps to remove sodium that is toxic to plants. The calcium in the gypsum "bumps" sodium off the clay particles, giving them the capacity to form aggregates with other particles. She compares the resulting aggregates to popcorn balls, with large spaces between particles that allow the movement of air and water. The sodium, now a free agent, is picked up by the sulfate and forms water-soluble sodium sulfate, which water will carry where it can do no harm, down below the plants' root zone.

However, if salty soil is high in calcium, no such reaction can occur, and the soil will just become saltier. If you want to reduce the sodium in such soil, add straight sulfur instead, she advises.

Nursery professionals don't use these things in their containers, she notes, for good reason. When you plant directly in the ground, unless you have

And Outdoors...

When two different soils are brought together in the garden, it creates a situation very similar to the shallow plant container. If a tree or shrub grown in a lightweight mix is planted in a heavy clay soil, or sod in heavy soil is placed on a lighter soil, it creates a soil interface where water builds up, notes Linn Mills, a horticultural specialist for Nevada Cooperative Extension. The plant looks thirsty so the gardener waters it more. The soil sours and the plant starves from lack of oxygen. The solution is vertical mulching: around trees and shrubs, several two- to three-inch-diameter holes drilled through the soil layers and filled with organic matter or soil mix will create a porous channel where water can move through these impermeable layers.

If you are using gypsum just to reduce your soil's sodium content, it should be added to the top two inches of soil, where most of the sodium is.

If your problem is heavy clay soil that does not contain excess sodium, the best solution is to forget gypsum and add a lot of organic matter.

Year Round Hibiscus

The hibiscus that is usually associated with Hawaii and other tropical areas can adapt to house plant conditions with a little extra care, says Dr. Ray Rothenberger, chairman of the University of Missouri-Columbia's horticulture department.

The hibiscus seen in Hawaii are usually *Hibiscus rosa-sinensis*, a native of China, or a hybrid of the Chinese species and a Hawaiian native.

When these tropical plants are potted in well-drained soil and placed in a bright, sunny window, they can produce flowers throughout much of the winter. They'll need a lot of moisture, Rothenberger says, but you should also take care that they don't become waterlogged.

hardpan, the column of drainage for your plants is continuous and water eventually drains away from their roots. In a container, the column of soil or other medium ends at the bottom of the pot, and any excess water will form a perched or standing water table in the bottom. The shallower the pot, the shallower the column of well-drained medium for roots. Putting pebbles or shards in the pot makes the container just that much shallower. You can demonstrate this with a kitchen sponge, says Appleton. Soak the sponge and set it on edge horizontally in a shallow tray, letting the water drain out. When it stops draining, the level of the water in the tray is the perched water level. Now stand the sponge on edge vertically, so that it forms a taller column. More water will drain out, but the perched line will form at the same height as before. (Container diameter has no effect on drainage.)

Overwatering a containerized plant decreases the amount of oxygen diffusing into the root system. The amount of carbon dioxide, which is produced by the living roots and bacteria and fungi in the mix, increases and can eventually cause roots to deteriorate. If you must use a shallow pot, some compensation can be made by using a soil mix with large spaces or pores between particles.

Appleton concedes that exceptions to this no-shards rule can be made when a pot has no drainage holes. Otherwise, she writes, "Leave the clay pots in one piece, the pebbles on the beach, the Styrofoam peanuts for packing Christmas presents, and your money in your wallet when you pass the root protector cushions in the garden center."

Water them about three times a week and don't let them stand in water for more than half an hour at any time. When the tropical hibiscus are moved outdoors in late spring, they will need to be pruned to keep them in the bounds of the container. If oversized, they can be pruned again in late summer before being brought back inside.

Container-grown hibiscus will need more fertilizer than those growing in the garden. Soluble house plant fertilizers will work well; during rapid growth and flowering in summer, apply fertilizer every two weeks; in winter, during less vigorous growth, apply every three to four weeks.

Making A Difference

'Staying Broke' for History

One rainy day in 1974, Elizabeth (Lib) Kerr took a stroll through historic Alexandria, Virginia, looking for a new project for the Garden Club of Alexandria, of which she was civic chairman. Her walk took her by the Lee-Fendall House, home to generations of Virginia's famous Lees from 1785 to 1903. It had recently been opened to the public by the Virginia Trust for Historic Preservation as a shrine to Light-Horse Harry Lee, father of Robert E. Lee. The house had been vacant for four years and its grounds, recalls Kerr, "were the biggest mess I had ever seen," clogged with underbrush, weeds, overgrown shrubs, and debris.

Turning this wretched site into a garden would be too much for any one club, Kerr decided. She and fellow club member Gloria Houser called together the Alexandria Council of Garden Clubs, a consortium of 17 clubs formed in the early 1960s. Members agreed to restore the half-acre site and to establish an endowment fund to maintain it. It would be a living classroom to teach visitors about historic gardens.

Records showed there had been no formal garden—just a barn, rabbit hutch, and privy. Three students in a landscape architecture class at George Washington University drafted a plan. Letters and speeches brought labor and materials from the city, local Boy Scouts—who helped haul off five truckloads of debris and tear down an old garage—and nearby nurseries. Money came in from annual garden tours: then-First Lady Betty Ford was honorary chairman and opened her Alexandria garden for the first one in 1976. Kerr and other members dug and sold plants from their back yards. From donations of \$1 per brick, a wall was erected. Walks were built; herbs, old roses, perennials, and shade-loving shrubs planted; and the privy restored.

Preservation rules prevented the privy from being altered. The resourceful group made it a storage shed. The space where the garage formerly stood became lucrative parking spaces. Kerr advises others who want to create a public garden from nothing to start with a good, clear plan, then to write funding sources annually describing what has been done and what will be done with the next



Above: The crumbling privy before restoration. Below: The Lee-Fendall garden today.



donations. "Stay broke," she adds. "Never have a nickel because no one will give money to you if you have any."

This fall, when an endowment of \$28,000 to maintain the garden was presented to the Virginia Trust for Historic Preservation, a pink dogwood was planted in the garden to honor Lib Kerr, now 84. In October, she received the Zone 7 Horticultural Award of the Garden Club of America for "combining dedication, intelligence, and charm with her deep devotion to plants that has embellished her environment and the lives of her friends."

In Tamara's Name

The tragic death three years ago of Joseph H. Mondello's sister-in-law and her infant daughter, Tamara, were the inspiration for a program that today is bringing the twin joys of nature and culture to terminally ill New Yorkers.

The mother and daughter died of AIDS after a transfusion during Tamara's birth. Mondello and his friend Bruce Detrick started the Tamarand Foundation to establish pocket gardens in or adjacent to medical facilities for children, adults, or families affected by AIDS. Mobile patients come outside to the garden, where singers, dancers, clowns, or puppeteers may perform. Volunteers bring plants, music, and laughter inside to those who are bedridden.

"We were struck by seeing what a closed-in environment hospitals are," recalled Mondello. "We wanted to give people a chance to be outdoors or at least to plant something. That's very powerful—having the chance to nurture a new life."

Seven gardens have been or are being built on rooftops or in back yards that were before only concrete, or in former green spaces that had become neglected. The foundation puts the medical facilities in touch with sources of material and talent and financial support. Landscape designers and architects, horticulturists, and performers of all types donate their time; nurseries donate plants.

One volunteer and board member, Kevin Shank, wrote in the Tamarand Foundation newsletter of Felix, an AIDS patient who fought severe infections for more than a year. When Shank helped Felix plant paper-white narcissus, Felix was suddenly animated, asking when the onionlike bulbs would produce flowers and what they would look and smell like. After showing off his garden to nurses and doctors, Felix got back into bed and died peacefully a few hours later. "His last act on earth had been simple and positive," Shank wrote. "I realize now that I gave Felix the greatest gift—that of loving himself at the very moment of his death." Shank himself died of AIDS last April.

Contact the Tamarand Foundation, Inc., C 1990, 202 Riverside Drive 7D, New York, NY 10025, (212) 864-4245.

'Prodding' for Trees and Birds

M. F. DeMott's calling card reads "Plant a tree today—Breathe tomorrow." The octogenarian has been living this motto most of his life. DeMott is a native of Clinton, New Jersey, which through his efforts was named a Tree City by the National Arbor Day Foundation. The Tree City program helps communities plant, protect, and manage urban forests.

After retiring in 1972, DeMott moved his environmental efforts to Mount Dora, Florida. "It took several years to just get recognized, but after a few years and no longer being considered a 'damn Yankee' things began to fall into place." He recently helped add Mount Dora to the Tree City list.

To qualify as a Tree City, towns must comply with four regulations set by the National Arbor Day Foundation: establish a tree board to plan and monitor a community forestry program; pass laws relating to the care of public trees; spend a minimum of \$2 per capita on public tree care; and observe Arbor Day. Currently there are 1,222 Tree Cities in 47 states plus the District of Columbia.

DeMott was also instrumental in having Tangerine, Florida, declared a bird sanctuary in the late 1970s. Tangerine, encompassing nine square miles in northwest Florida, is an unincorporated platted township. According to Gordon Colley, past president of the Tangerine Improvement Society, DeMott "kept prodding" until the farming community received its designation.

The National Council of State Garden Clubs sponsors the bird sanctuary program and has put together a packet of information for those wanting to declare their town a sanctuary. Basic requirements include the availability of clean water for birds to bathe in and drink, suitable feeding trays or stations, nesting spaces, and adequate protection from enemies.

DeMott is modest about his environmental achievements. "I hope I have done my little bit while being here."

For more information about the Tree City program contact your state forestry office or the National Arbor Day Foundation, 100 Arbor Avenue, Nebraska City, NE 68410, Attn: Tree City Information.

To learn more about the bird sanctuary program of the National Council of State Garden Clubs write the council at 4401 Magnolia Avenue, Saint Louis, MO 63110, Attn: National Bird Chairman.

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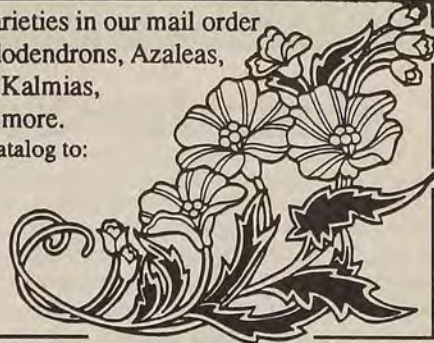
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Join long-time AHS member Claude Hope on board the *Yorktown Clipper* on an extraordinary exploration voyage beginning in Panama City, Panama, and concluding in San Jose, Costa Rica. Explore the Caribbean coast of Panama, including the San Blas Islands. A daylight transit of the Panama Canal brings us to the Pacific coast of Costa Rica with its horticultural treasures coveted by botanists the world over. Explore quiet tropical rivers, major archaeological sites, cloud forests, volcanoes, and rain forest canopies brimming with orchids. Mr. Hope invites us for a special visit to Linda Vista, a 200-acre flower seed farm that he established at Cartago, Costa Rica. If you have ever planted petunias or impatiens in your garden, they were most likely from seed originated at Linda Vista.

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

APRIL 21-28, 1991

GARDENS OF THE MISSISSIPPI

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

Leonard Haertter Travel Company

MAY 12-23, 1991

ENGLISH COUNTRYSIDE GARDENS AND THE CHELSEA FLOWER SHOW

AHS members will have the unique opportunity to meet noted horticultural author, Rosemary Verey, and visit her home and garden—Barnsley House—during this visit to the rolling hills of the Cotswolds and Kent. The program visits include the gardens of Hidcote Manor, Sudeley Castle, Oxford, Denmans near Arundel, Nymans Gardens, Wakehurst Place, Great Dixter, Sissinghurst Place, and Isabella Plantation before transferring to London to enjoy the Chelsea Flower Show. Guest lecturer for this program is David Wilson, popular panelist on the BBC's series, "Gardener's Corner." The tour will be led by Elvin McDonald, noted lecturer and author and an AHS Board Member.

Leonard Haertter Travel Company

JUNE 10-20, 1991

GARDENS OF THE SOUTHWEST: COLORADO ROCKIES AND CANYONLANDS

Explore the diverse contrasts of plants from the alpine meadows of the Colorado Rockies to the desert plains of the Southwest. Explore unique, out-of-the-way parks like Arches National Park, the Goosenecks of the San Juan River and Canyon De Chelly National Monument. See firsthand the varied use of native plants as AHS members and friends open their gardens and homes for our special visit.

Leonard Haertter Travel Company

AHS TOURS

Regional Notes

Smoother Sailing Now for AmeriFlora '92

Ever since it was announced several years ago that Columbus, Ohio, would be the site of the first internationally sanctioned floral and garden extravaganza to be held in the United States, cynics have had a field day predicting that it couldn't possibly succeed.

AmeriFlora '92, to be held in conjunction with the 500th anniversary of Columbus's discovery of the New World, has admittedly faced its share of problems. Residents of the gentrifying neighborhood criticized the two-year closing of Franklin Park, where most of the festivities will take place. Columbus taxpayers feared they would foot the bill for any shortfall in the \$93 million cost of the event, which will run from April 3 through October 12.

"With any event of this kind the initial enthusiasm is very high," says AmeriFlora Communications Manager John Lumpe. "Then as people consider the costs and complexity involved, that enthusiasm drops low. After that drop the excitement begins to slowly rise. We're on the rise now."

Shutting down Franklin Park last year meant that residents lost the use of the only large, open green space in the urban area. It forced the closing of the Franklin Park Conservatory—currently under expansion—and the local soccer fields, athletic complex, and a children's performing arts complex housed on the grounds. Tensions



Photos courtesy of AmeriFlora '92

Franklin Park Conservatory will be expanded by 30,000 square feet.

continued to build when groundbreaking ceremonies were delayed and, although engineers were at work surveying the site, no construction activity could be seen.

But by last fall, construction in the 100-acre park was proceeding at a furious pace. Crews were working seven days a week to get a jump on cold weather.

Bumpy relations with the community seemed smoothed over. In an agreement with the city of Columbus, AmeriFlora built a new, \$2.2 million athletic complex at adjacent Academy Park to replace the one closed during construction. With all new equipment, the new

facility has seen greater use than the former building. AmeriFlora also placed lights on the baseball field at nearby Driving Park and graded an existing soccer field in Nelson Park. And a local resident recommended by the community has been named to a subcommittee of the AmeriFlora management committee.

Residents had also been concerned

about original plans calling for a tunnel to be built connecting Franklin Park with nearby Wolfe and Academy Parks. They feared that after the event ends, the tunnel would create an unsafe area for neighborhood children and a harbor for drug dealers. The proposed tunnel's price tag—\$4 million—was also a deterrent. Now there will be no tunnel, only an above-ground shuttle bus service.

Taxpayers were reassured by an agreement between AmeriFlora and city, county, state, and federal governments that organizers cannot ask governments for more than the \$33.7 million that has already been allocated. And many of the features being built for the event will remain for area citizens to enjoy when AmeriFlora closes its gates.

An existing lake has been expanded and linked with a new lake by a waterway and cascade constructed with Wisconsin limestone. New pedestrian bridges have also been added.

Construction has begun on the Discovery Pavilion, which will feature hands-on exhibits on the technology and science of horticulture. Exhibits will be developed by the city's Center of Science and Industry (COSI) and the Ohio State University. When AmeriFlora ends in October 1992, the exhibits will be added to the COSI museum collection downtown and the Discovery Pavilion will be moved to OSU's Chadwick Arboretum.



The Discovery Pavilion will feature hands-on horticultural exhibits.

A nearly finished amphitheater to the west of the old athletic complex, with seats for 2,000 and grass seating for another 1,000, will be used for ongoing performances of music, dance, and magic. The athletic complex will be revamped to house the food court. After AmeriFlora, the building will be used for park programs.

A house built for the park caretaker in the 1920s had been leased as a residence by the city and was essentially abandoned in recent months. Now it will be renovated and landscaped as an idea garden for homeowners. Three additional full-size houses of different styles will be built in the area and landscaped appropriately. The caretaker's house will remain on the property; the other houses will be moved and either sold or donated to charity.

Whether the event will be a hit horticulturally is still anyone's guess at this point. However, eight nations have already committed to creating garden spaces within the park. Japan plans to create the only authentic Japanese garden in the United States outside the Pacific Northwest. Plans for the Monaco exhibit call for re-creating the historic district surrounding the prince's palace, complete with gardens, walkways, and a wishing well. In

addition, multilevel buildings will house an exhibit hall with historic pictures and a boutique.

American gardening will be represented in a number of ways. Various environments—from a New England bog to a Midwestern prairie—will be recreated in the American Enchantment Garden. Display space will be provided for individual plant societies. Many national organizations—including the American Horticultural Society—plan to hold their 1992 annual meetings in Columbus. Promoters are expecting anywhere between 2.6 million and 4.6 million visitors, and residents of Columbus as well as the surrounding communities of Bexley, Dublin, Gahanna, Grove City, Lancaster, and Westerville are developing "host community gardens" to draw visitors to their own parks and community spaces. These plans range from window boxes planted in commercial areas to formal gardens. In the Bexley area, just east of Franklin Park, officials planted a city bridge with boxes of flowers last summer in preparation for the 1992 event.

In addition to the \$33.7 million in government funding, AmeriFlora expects to raise \$21.2 million through private donations: corporate sponsorships; individual and business donations of

dollars, time, and materials; and sponsorship of official wares that may range from lawn and garden equipment, plants, seeds, and grass to beverages and cars. Without recruiting, AmeriFlora has already lined up more than 1,000 volunteers.

Operating revenues—ticket sales, concession operations, food courts, garden marketplace sales, and sales of the official AmeriFlora magazine and T-shirts and sweatshirts—are expected to bring in another \$38.1 million toward the projected \$93 million cost. This is a relatively low budget for such a project; the 1986 World's Fair in Vancouver, British Columbia, amassed expenses over \$1 billion. Since weather conditions are the unpredictable factor here, officials have based their projected operating income on the lowest attendance figures. Any remaining profits will be placed in an endowment fund for future maintenance of Franklin Park.

The event will encompass the United States' first internationally sanctioned floriculture and garden design competition, April 3 through April 19, 1992, at the Ohio Center in downtown Columbus. The outdoor garden exposition begins April 20.

—Mary Beth Wiesner

Bat News from Toledo

The Toledo Botanical Garden has gone to bat for that much maligned flying mammal. This summer, they installed five bat houses in the garden, and in November, offered classes in constructing such shelters. Why would anyone want bats in their garden?

For one thing, they provide a great biological control: a single gray bat can consume as many as 3,000 insects in one night. A brown bat, one of North America's most common species, can devour 600 mosquitoes in an hour.

They are also fascinating creatures, according to Bat Conservation International, headquartered in Austin, Texas, and much of what we believe about them is false. They are not blind, but navigate using echoes, just as dolphins do. If you toss a rock into the air when they are flying by on a summer night, they may swoop down to inspect it. They are not dirty, have no interest in peoples' hair, are not aggressive, and only one-half of one percent contract rabies: only 10 persons in the United States and Canada are believed to have gotten rabies from bats in the past four decades.

BCI literature notes that bats play a crucial role in the ecosystem. Not only



A pallid bat in flight with a katydid. In the American West, they even eat scorpions.

do they control mosquitoes and crop pests, but fruit-eating bats help disperse seeds, and bats are essential for the pollination of many tropical, subtropical, and night-blooming plants. Many rain forest plants rely on bats for pollination and dispersal. East Africa's giant baobab, called "the tree of life" because so many other plants and animals depend on it for survival, depends on bats for its own, because its showy white flowers are open only at night. In the Sonoran Desert of the American Southwest, bats are crucial to the century plant and the giant

cactus (*Carnegiea gigantea*).

But in many cases, the bats are also endangered. "Bats are virtually defenseless, and large colonies make easy targets," says BCI. "Many bats require large numbers for successful rearing of young, and most produce only one pup per year." BCI, established in 1982 by ecologist Dr. Merlin D. Tuttle, now has 10,000 members.

Halle Bruening, director of development and community relations for the Toledo garden, said the bat house classes were well attended and no one has shown any negative reaction to the idea of bats inhabiting the garden. Of course, there are no

bats as yet: it usually takes 18 months to two years before bats move into a newly built house. "The houses are pretty unobtrusive," said Bruening. "Most people probably don't even notice them."

To obtain bat house plans or inquire about membership, contact Bat Conservation International at P.O. Box 162603, Austin, TX 78716, or call (512) 327-9721.

Regional Notes continued on page 10

Precious Prairie

The Chicago Botanic Garden has given a new twist to rescuing plant life from developers. They have saved not flowers, but 80 cubic yards of prairie soil that they hope will contain microorganisms, seeds, and roots not found in the disturbed soil of the botanical garden itself.

David Sollenberger, the garden's naturalist, said he had hoped to halt the entire upper-income, residential development, being built in Chicago's Highland Park suburb on prairie land that had gone undisturbed for hundreds of years. Although that did not occur, 30 acres will remain a preserve, and the developers, Red Seal Development Corp. and Jacobs Homes, Inc., donated topsoil to the botanical garden and transported four truckloads of it at their own expense.

Garden personnel prepared the soil's new home in a day so that any roots in it would not dry out. They spread the top six inches of soil from the development three inches deep in an area where all existing plant life had been killed by herbicides. Then they destroyed buckthorn, a non-native that invades unmanaged prairies, carefully tilled and smoothed the soil, and spread two inches of leaf mulch on top of it.

After only a month, they are seeing sprouts of prairie dock, golden Alexanders, big bluestem grass, nodding wild onion, and a plant they believe to be glaucous white lettuce.

Sollenberger said wild species unable to grow in the heavily worked soil of the botanical garden may also colonize the site. "This restoration technique is unique," he said, "and will undoubtedly be of interest to other institutions involved in prairie restoration."

Mendocino Garden Quadruples

The Mendocino Coast Botanical Gardens has increased in size from twelve to 47 acres with the agreement of the California State Coastal Conservancy to spend \$2 million to purchase an additional 35-acre parcel.

This will restore the gardens to their original size. They were founded in 1961 by Ernest and Betty Schoefer, but sold to private investors in 1976. The coastal conservancy purchased only 12 acres in



Delmar Watson Photography

On January 28, Descanso Gardens in LaCanada Flintridge, California, will dedicate a \$390,000 lake project. To create the one-and-a-half-acre lake and environs, which will be landscaped to offer sanctuary to birds and other wildlife, two existing ponds were joined and 120 tons of granite boulders installed to form a waterfall. Landscaping will include two large willows overhanging the water and native plants and Australian shrubs that will regrow quickly if visiting birds damage them. Almost all of the funding for the project, except for a \$70,000 matching grant from Los Angeles County, came from the Descanso Gardens Guild. Above, project cochairs Bill Beggs and Nancy Dunn discuss the lake project while it is still under construction.

1982, and a large resort and condominium development was proposed for the remaining land. That plan was withdrawn in the face of local opposition, and the gardens' directors, staff, and supporters have spent the past four years working to make the gardens whole again. They have now completed a \$50,000 restoration plan with a grant from the coastal conservancy.

Urban Hort in Virginia

A six-acre Urban Horticulture Center is being established at Virginia Polytechnic Institute and State University in Blacksburg. The center will provide space for a wide range of research and educational activities for several university departments. One section will be a production nursery where students will learn to grow and harvest plants and replant them as part of the university's arboretum, and another will be used to evaluate new cultivars of landscape plants.

Other projects will relate to cost-effective planting and maintenance of landscape plants; the safe use of pesticides; reuse of yard wastes; and benefits of the interactions between people and plants.

Wildflower Center in Minnesota

The National Wildflower Research Center has opened its first regional office. The office, at the University of Minnesota Landscape Arboretum near Minneapolis, will serve Minnesota, Iowa, Illinois, Indiana, Michigan, Ohio, Wisconsin, Missouri, Oklahoma, Kansas, Nebraska, North Dakota, and South Dakota. Plans for the first year include establishing a slide and book library, developing landscaping fact sheets for the public, establishing relationships with native plant societies, and holding a regional conference.

The National Wildflower Research Center was established in 1982 in Austin, Texas, by former first lady, Lady Bird Johnson, to conduct research on native plants and promote their use in the landscape.

The address of the new office is National Wildflower Research Center, Midwest Regional Office, Minnesota Landscape Arboretum, 3675 Arboretum Drive, Chanhassen, MN 55317.



1991 AHS

Seed Program Catalog

About our cover: An electron microscope photo of umbrella-shaped hairs, or scale, on the surface of a Rhododendron zollingeri ovary, 210 X. Photo courtesy of Dr. Barbara F. Palser, Department of Biological Sciences, Rutgers University. Our inside electron microscope photos, of seed or parts of seed in our catalog, are courtesy of William P. Wergin of the Electron Microscope Laboratory of the Agricultural Research Service of the U.S. Department of Agriculture.

General Seed Germination Instructions

The successful germination of seed requires three conditions. First, the seed must be viable; second, the seed must not be dormant; and third, the appropriate environmental conditions must be provided.

Seed viability depends on a number of factors, including growing conditions and storage conditions. Growing conditions are often beyond your control, but you can take simple steps to assure storage conditions that will maintain viability for a reasonable length of time: seed should be stored in reasonably airtight containers and kept in a place where neither temperature nor humidity varies much. Some seed will need your coaxing to overcome dormancy. The procedures usually used to do this are scarification (breaking the seed coat) and stratification (temperature control)—sometimes both. As you read the catalog, you will find at the end of each seed description a code indicating whether germination will require scarification and/or stratification. Those codes are explained by a chart that appears on page 3.

There are four environmental conditions that need to be controlled:

♦ **Water.** Once a seed takes up water, it must not be allowed to dry out or the seed is lost.

♦ **Temperature.** Most seed will germinate readily at about 70° F. It is best if the temperature is provided by bottom heat from a heating cable (a small heating cable is relatively inexpensive). There is some seed that may germinate best at a lower temperature—about 55° or 60° F—while other seed requires a warmer temperature of about 80° F. This will also be indicated in our chart. Never, however, expose any seed to excessively hot or cold temperatures (below 50° F or above 85° F) after the seed has taken up water.

Maintaining the optimum temperature will help assure that germination occurs as rapidly as possible; unnecessary delay of germination increases the likelihood of disease that will kill young seedlings or prevent their germination altogether.

♦ **A well-aerated growing medium.** For indoor planting, use a mixture of equal parts milled sphagnum moss, perlite, and vermiculite. Good results can also be obtained for many types of seeds with milled sphagnum or vermiculite alone. Do not use ordinary garden soil to germinate seed indoors; no matter how good its quality, it is very unlikely that it will provide adequate aeration when placed in a seed flat. Also,

it is highly likely that garden soil is contaminated with organisms that can cause damage to seed and seedlings. Whatever medium is chosen, it should be thoroughly moistened before being placed in the germinating flats. Make sure that flats have drainage holes.

♦ **The appropriate light level.** Some seed require light for germination and others are inhibited by light. These needs are also indicated in our chart.

Sowing the Seed

The seed of many plants, particularly annuals, can be sown safely outdoors where the plant is to grow once the date of the last expected frost in your area has passed. But with all other plants, or to get an early start with these, you will want to sow seed indoors in seed flats. Those that will eventually be grown outdoors should be started about six to eight weeks before the last frost-date.

After the moistened germination medium is put into the seed flat, mark the rows where the seed is to be sown. Most seed should be covered about one and one-half to two times its diameter. However, if the seed you are sowing is very small, there is no need to cover it with the medium; it is sufficient to press it lightly so that it makes contact with the soil. It will help to disperse such seed evenly in the row if you first mix the seed with about three or four times its volume of fine horticultural vermiculite (grade 2).

Avoid sowing seed with different germination times in the same flat. Otherwise, you may find it impossible to transplant the earlier seedlings without disturbing those that germinate later. For the same reason, you should avoid planting seed too close together. Close spacing also encourages disease.

Be sure to label the seed flats with the date and name of the seed sown. It's frustrating to watch something sprout and not know what it is. And you'll find that gathering information on the performance of your plants enhances the fun of gardening.

If you have used a well-soaked growing medium, there is no need to water the seed from the top at this time. If you prefer to water your flats from the top, use a fine mist spray to avoid flooding and shifting the carefully spaced seed. Glass works well for covering the tray; it's inexpensive, lets you see when the seed have germinated, and a gentle tap will serve to "rewater" the seed. But plastic or even damp newspaper (for seed that do not require light) will serve the purpose. Put the flat on a heating cable,

or in any location of suitable temperature. *Do not place the flat in the sun or under any strong light source, especially if you have covered it with glass.* Excessive heat build-up will kill the embryos.

As soon as the young seedlings break the soil surface, remove the glass pane and place the seed flat in indirect lighting or in a well-lit location until ready for transplanting. If you are depending on bulbs to provide light, use fluorescent lighting.

About one week after germination you may begin fertilizing the seedlings with one-quarter strength soluble fertilizer. You may apply it with every watering. When the seedlings are three weeks old, the fertilizer can be increased to one-half strength.

Do not allow seedlings to become excessively dry, but don't overwater either. The seedlings must be kept reasonably moist without being soaked. Too much water encourages disease; too little water causes poor growth.

Transplanting

Transplant the seedlings to individual pots as soon as two true leaves develop. The smaller the seedlings are at transplanting the better they tolerate the shock of transplanting. If you allow the seedlings to become too large before transplanting this may contribute to the failure of the transplant.

Transplant into a potting mixture composed of equal parts commercial potting soil, sphagnum moss, and perlite. Immediately before transplanting, thoroughly water the seed flat and let it drain for about an hour. This will help you remove the seedlings from the flat more easily and will aid in reducing root injury.

An ordinary kitchen fork makes a good transplanting tool. The tines of the fork will lift the seedlings easily from the flat without contributing to excessive root damage.

After transplanting, water the transplant thoroughly and place it in a shaded location for about 24 hours. Following this, the transplants may be placed in normal growing conditions.

If the transplants are to grow outdoors they must first be hardened to the new environment. Hardening involves a gradual adjustment to outdoor temperature and light and is accomplished over a period of about three to four days. Beginning a week or 10 days before the hardening process is to be started, gradually reduce watering (but not to the point of allowing the plants to wilt) and

stop fertilizing. Then begin the hardening process by moving the young transplants outdoors where they will not be exposed to direct sunlight. On the first day of hardening, the plants should be left outside for about four hours during the morning. Over the next two or three days the plants are left out for longer periods, gradually introducing them to more light until hardening is completed. After this treatment the transplants should be sufficiently acclimated so that they can adapt to permanent placement in the garden.

The seed of trees and shrubs can be handled the same as any other seed, following all the procedures for sowing the seed as outlined, but the young tree or shrub seedlings should be planted out-

doors in a protected location for a year or two prior to setting them in their permanent location.

Breaking Dormancy

♦ **Cold stratification.** Seed that require cold stratification before they are able to germinate should be sealed in a plastic bag with a small amount of moist (but not wet) sphagnum moss or peat moss. Tie the bag closed and place in a refrigerator at 38° to 40° F for the appropriate time, which may be from one to four months. It is important that the sphagnum or peat not be too wet, otherwise the seed may rot.

♦ **Warm stratification.** Some seed requires exposure to a period of warm

temperatures before the cold stratification treatment begins. The seed is treated exactly as for cold stratification except that it is stored at a warm temperature of 70° to 80° F for some period of time. Simply bringing seed indoors for the specified time is often sufficient.

♦ **Scarification.** Some seed will not germinate because of a hard seed coat and softening or breaking the seed coat is necessary to effect germination. A hard seed coat may be rubbed with sandpaper or a small file to alter it enough so that it can take up water. For some seed, a hot water soak can accomplish this. Soak the seed in five times its volume of hot water (180° to 212° F) for 24 hours. The hot water is poured over the seed and allowed to cool.

The letters in the following table provide germination information and requirements. For some seed, more than one germination technique may be used. For example, A,B indicates that the seed may be sown indoors or outdoors. Some seed require more than one treatment before germination can occur. Db, Eb indicates that a three-month warm stratification treatment must precede a 60-day cold stratification treatment.

Unless otherwise stated, it should be assumed that all plants grown from the seed in this catalog do best in full sun. L, which indicates that the seed is easy to germinate, does not necessarily mean that it is also easy to grow once it has germinated. If you are unfamiliar with a particular species, you may want to consult a horticultural reference book. We've discussed seed books on page 10 of this catalog. You may also call Gardeners' Information Service at (800) 777-7931 for help between the hours of 11 a.m. and 3 p.m. EST.

- A May be sown indoors in flats.
- B May be sown outdoors where they are to grow.
- C Sow indoors into peat pots to minimize transplant shock.
- Da Warm stratification of 2 months.
- Db Warm stratification of 3 months.
- Dc Warm stratification of 4 months.
- Dd Warm stratification of 5 months.
- De Warm stratification of 6 months.
- Ea Cold stratification of 30 days.
- Eb Cold stratification of 60 days.
- Ec Cold stratification of 90 days.
- Ed Cold stratification of 120 days.
- F Scarification.
- G Hot-water soak.
- H Light recommended for germination.
- I Dark recommended for germination.
- J Cool temperature required for germination (55° to 60° F).
- K Warm temperature required for germination (80° F).
- L Easy to germinate.
- M Difficult to germinate.
- N No reliable germination information.
- O Sow in fall.

Annuals

1. *Agrostemma githago* 'Milas Rosea'. Corn cockle. Height: 3 feet. Lilac pink flowers with 5 petals, 3 inches across. Grasslike, gray green foliage. Blooms spring through early summer. Will self-sow. A,B,L.

2. *Anchusa capensis*. Bugloss. Height: 18 inches. Bright blue flowers. Lance-shaped, hairy leaves about 2½ inches long. Plant in full sun. A,B,L.

3. *Cleome hasslerana*. Spider flower. Height: 4-5 feet. Flowers 2-3 inches long and wide, rose, purple, pink, or white. Half-hardy annual. Plant in full sun in a warm, dry location. Reseeds very readily. A,B,L.

4. *Dolichos lablab*. Hyacinth bean. Height: 6-10 feet. Tender perennial vine grown as an annual. Flowers pinkish purple, about 1 inch long. Fruit is a purple, flat pod, 2 inches long; seeds black or white. This ornamental member of the pea family is edible. A,B,L.

5. *Dyssodia tenuiloba*. Dahlberg daisy. Height: 1 foot. Yellow flowers. Needs full sun and light to germinate. Grows in sand and gravelly soil. B,L.

6. *Eschscholzia californica*. California poppy. Height: 2 feet. Flowers range from deep orange to pale yellow, 2 inches across. Plant in full sun. Blooms the first year and will reseed. B,L.

7. *Gaillardia x grandiflora*. Blanket flower. Height: 2-5 feet. Showy solitary flower heads with dark discs and yellow, red, or orange banded rays. Plant in full sun in a sandy, well-drained soil. Cut back in late summer to encourage fall bloom. B,L.

8. *Ipomoea x multifida*. Morning glory. Height: 8-10 feet. Flowers to 2 inches long, corolla crimson or scarlet, with a white-to cream-colored eye. Tender annual. Sow seed in any garden soil. Soak seed in tepid water for 24 hours before planting. A,B,L.

An interesting annual to try this year is *Dolichos lablab* (hyacinth bean) (4). *D. lablab* is a vigorous climber—it can reach a height of 30 feet, but more typically grows to 10 feet—and is perfect for trellises, fence posts, or wires.

9. *Lagenaria siceraria*. White-field gourd. Large, 30-foot vine producing small, brightly colored ornamental gourds. Plant in full sun. A,G.

10. *Myosotis sylvatica*. Forget-me-not. Height: 9-24 inches. Small, 5-petaled, blue flowers with white or yellow eyes. Blooms spring through early summer. Plant in light shade in rich, moist, well-drained soil. A,B,L.

11. *Nigella damascena*. Love-in-a-mist. Height: 1½ feet. Easy annual with ferny foliage, beautiful blue flowers. Interesting seed pods that are lovely in dried arrangements. Plant in full sun. Harvest seed pods when they are still greenish. Self-seeds vigorously but easy to control. A,B,L.

12. *Rudbeckia hirta* 'Gloriosa Pinwheel'. Height: 3 feet. Single daisylike flowers with mahogany and gold stripes. Plant in full sun or part shade in well-drained soil. A,B,K.

13. *Sabatia angularis*. Rose pink. Height: 3 feet. Leaves are ovate, 1½ inches long. Flowers are rose pink with greenish eye. B,L.

14. *Trifolium aruense*. Rabbit's-foot clover. Pinkish gray, elongated heads. Leaves are palmate, narrow, and alternate. Hang for drying when pinkish gray. Excellent ground cover. Plant in a dry, sandy area or wildflower area. Full sun. B,L.

15. *Zinnia burpeeana* 'Red Man'. Height: 2 feet. Cactus-flowering zinnia, producing giant 5-5½ inch blooms. Eye-catching deep scarlet flowers. Will flower all summer. Plant in rich, well-drained soil. A,B,L.

Perennials

16. *Adlumia fungosa*. Allegheny vine. Height: 12 feet. Biennial vine. White to pink flowers resembling bleeding heart, blooms from June-October. Blooms in its second year. Does well in many different types of soil. Blooms well with an eastern or western exposure. Zone 5. B.

17. *Alcea rosea*. Hollyhock. Height: 10 feet. Spikes of white, pink, or purple flowers about 2-4 inches across. Requires staking. Plant in rich soil in full sun. Zone 2-3. A,B,J,L.

18. *Alcea rosea* 'Nigra'. Same as above but with dark maroon, almost black flowers.

19. *Allium giganteum*. Height: 18 inches. This bulbous plant is grown mainly for its decorative flower head, which stands well above other herbaceous plants. Flowers in midsummer are deep lilac. When flowers die, cut the heads off but leave stalks to feed bulb for next year. Seeds can be sown in spring or fall. Plant in full sun. Zone 3. B,L.

20. *Anaphalis margaritacea*. Pearly everlasting. Height: 1-3 feet. White papery bracts with woolly stems and leaves. Very drought resistant. Prefers full sun; an excellent dried flower. Zone 3-9. B,L.

21. *Anemone narcissiflora* and *A. nemorosa*. Windflower. Height: 1-1½ feet. A mixture of two *Anemone* species. Compact plant has long stalks, rounded leaves. Umbel-like clusters of flowers are white to pale yellow, turning apricot as they start to fade. A very nice plant for the rock garden. Likes sun to partial sun. Zone 3-9. A,B.

22. *Anemone sylvestris*. Height: 1-1½ feet. Fragrant, nodding, white 1½ inch flowers with 5 sepals. May rebloom periodically throughout the summer and again in the fall. This plant has running roots and rapidly colonizes open woodlands in well-drained, humusy soils. Plant in partial shade. Zone 3-9. B.

23. *Aquilegia flabellata* 'Nana Alba'. Fan columbine. Height: 1-1½ feet. Leaves are blue-green; flowers are white with short inward curving spurs. Blooms late spring. Good for rock garden. Takes 1-3 months to germinate; reducing night temperature is beneficial for germination. Plant in sun to partial shade. Zone 3-10. A,Ea.

24. *Aquilegia x hybrida*. Garden columbine. Height: 2-3 feet. An old-fashioned favorite, some have been in cultivation for hundreds of years. Fernlike leaves are 1-3 times ternately divided. In mild climates, columbines can be grown in full sun; elsewhere most prefer partial shade. Zone 5-10. B,L.

25. *Arisaema triphyllum*. Jack-in-the-pulpit. Height: 1 foot. Rounded tuberous root usually produces 2, 3-lobed leaves on 1-inch petioles. A modified leaf or spathe, varying in color from purple stripe with light green to solid pale green, forms a hood over a flower spike, or spadix. Best in woodland or native

plant gardens. Plant in partial shade to full shade. Zone 4-9. B. We have a very limited quantity of these seeds.

26. *Astilbe x arendsii*. Height: 2-3 feet. Leaves are divided several times into toothed leaflets. Plumes are composed of a multitude of tiny white flowers, usually with 4-5 petals and twice as many stamens. Likes deep rich, moist and well-drained soils, especially in winter. All thrive in semishade. Sow outdoors in early spring. Zone 4-8. B,L.

27. *Belamcanda chinensis*. Blackberry lily. Height: 2-3 feet. Sword-shaped leaves are similar to those of related *Iris* spp. The blooms are 2 inches across on wiry, forked stems. Showy perianth segments are brightly splashed with yellow and crimson. Fruit capsules split to expose shiny black seeds, which can be used for dried arrangements. Full to partial sun. Zone 5-10. A,B,L.

28. *Camassia quamash*. Quamash. Height: 2½ feet. Hardy bulb, native to moist meadows of the West. Slightly asymmetrical flowers with one petal curved downward and the others upward. Likes wet boggy areas in spring and summer, but prefers dry conditions in late summer and fall. A.

29. *Campsis radicans*. Trumpet vine. Height: Climbing to 30 feet. Flowers are bright orange, trumpet shaped, and 3 inches long. Blooms in late summer. Zone 5. A,Eb (germinates in 30 days).

30. *Cardiospermum halicacabum*. Love-in-a-puff. Height: 10 feet. Vigorous, self-clinging vine for fences and trellises. Dense, feathery, light green foliage smothered with large, ornamental inflated fruit, and petite snow white flowers. Seed pods look like green balloons, not quite as large as golf balls. In warmer climates plant self-seeds quite freely. Zone 5-9. A,B,L.

31. *Castilleja chromosa* and *C. linariaefolia*. Paintbrush. Height: 16 inches. A mix of *Castilleja* species that are partly



Belamcanda chinensis (27), 150 X.

parasitic on roots of other plants. Flowers are mostly greenish, in scarlet bracted, spikelike racemes. Excellent companion to lupine. B.

32. *Chrysopsis villosa*. Golden aster. Height: 1-5 feet. Bright yellow asterlike natives are valuable for their extremely long period of bloom at the end of the season. Very tolerant of dry, sandy soil and exposed positions. Pinch to induce branching. May need staking. Zone 4-10. B.

33. *Clematis recta*. Ground clematis. Height: 5 feet. Upright, with pinnately divided leaves. Innumerable fragrant, white, starry, 1 inch flowers are borne in large clusters. Requires support. Used as a filler plant in borders. Sun to partial shade. Plant this spring for next spring germination. Zone 3-9. B,J.

34. *Clematis tangutica*. Golden clematis. Height: Climbing to 10 feet. Flowers early with small golden bells, followed by silvery seed pods. Plant in sun to partial shade, in rich, limey, well-drained soil. Zone 3-9. B,J.

35. *Coreopsis grandiflora* 'Early Sunrise'. Coreopsis. Height: 26 inches. Golden yellow, semidouble flowers. Blooms from early summer to fall. Very showy. Plant in full sun in light, sandy, well-drained soil. Zone 3-10. B,L.

36. *Dianthus deltoides*. Maiden pink. Height: 4-15 inches. Low growing with grasslike leaves. Flowers are red or pink with crimson eyes. Plant in full sun in light, sandy, well-drained soil. Zone 2-3. B,L.

37. *Diets vegeta*. African iris. Height: 2 feet. Leaves spread out in a fan shape. Flowers are 2½ inches across, white with yellow or brown spots. Likes a humus-rich soil; allow to dry between waterings. Germination takes 20-40 days. Zone 5-9. B.

38. *Digitalis grandiflora* and *D. lutea*. Foxglove. Height: 3 feet. A mix of *Digitalis* species with small yellow flowers loved by hummingbirds. Very hardy perennial, very prolific. Likes part shade and a rich, well-drained soil. Zone 5-9. A,B.

39. *Digitalis purpurea*. Common foxglove. Height: 2-3 feet. Purplish pink, tubular flowers. Blooms early June to mid-July. Self-sows. Likes part shade and a rich, well-drained soil. Zone 4. A,L.

40. *Echinacea purpurea*. Purple cone-flower. Height: 2-5 feet. A sturdy, coarse, hairy plant with leafy, branching stems. Its solitary, daisylike flowers may reach 6 inches across. Their showy, drooping petals vary from purplish pink to almost white. Easy low-maintenance plant for perennial or mixed beds. Full sun. Zone 3-10. B,L.

41. *Echinops* spp. Globe thistle. Height: 3-6 feet. Erect stands of sturdy stems, branched and leafy. The thistlelike leaves are alternate and pinnately cut, often woolly beneath. The flower heads are tightly grouped into large,

spherical, compound heads. Easy, undemanding plant for a sunny location. Excellent for cutting and drying. Zone 3-10. B,L.

42. *Eupatorium maculatum*. Joe-Pye weed. Height: 4-6 feet. Eventually forms a massive clump of robust canelike stems. Sharp-toothed, lanceolate leaves are 1 inch long in whorls of 3-5 inches. Rose pink to purplish flower heads. An effective plant for naturalizing or the back of wide borders. Purple, hollow stems. Full to partial sun. Zone 3-10. B.

43. *Frasera speciosa*. Green gentian. Height: 2-4 feet. Basal leaves to 1 foot long. Flowers in narrow panicles to 2 feet long, corolla greenish white, spotted with purple. Likes rich soil. Tolerates some shade. Zone 3-8. B.

44. *Gaillardia pulchella*. Blanket flower. Height: 2-3 feet. Erect or spreading plants, with soft, hairy, dark green foliage. Large 3-4 inch flower heads. In late summer, cut back untidy growth to encourage fall bloom. Prefers full sun. Zone 3-10. A,B,L.

45. *Galium odoratum*. Sweet woodruff. Height: 6 inches. Ground cover with whorled leaves and small white flowers. Leaves are used in making May wine. Blooms May-June. Likes partial shade. Zone 4-5. A.

46. *Gaura lindheimeri*. Height: 4 feet. Leaves are lanceolate, 1-3 inches long. Flowers are in open panicles, petals are whitish pink. Drought tolerant. Zone 7-10. A,B.

Save this Catalog!

Seed packets are marked by catalog number only, so it will be your only means of identifying the seed you have selected.

47. *Hesperis matronalis*. Sweet rocket. Height: 3-4 feet. Narrow, toothed leaves. White or purple fragrant flowers produced in loose terminal racemes. Blooms all summer. Self-seeds prolifically. Plant in full sun or part shade. Zone 2-3. L.

48. *Hibiscus coccineus*. Rose mallow. Height: 6-8 feet. Deep red funnel-shaped flowers are 5-6 inches wide. Narrow upright growth habit. Blooms from mid- to late summer. It is native to wetlands but will tolerate drier soils. Full sun or light shade. Zone 6-9. B.

49. *Hibiscus coccineus*. Rose mallow. Same as above, except flowers are pink with dark rose center and white with rose center.

50. *Hosta ventricosa*. Blue plantain lily. Height: 3 feet. Grown primarily for its dark green foliage. Leaves are up to 9 inches long and 5 inches wide. Flowers are dark violet. Plant in shade. Zone 3. A,B,L.

51. *Iris pseudacorus*. Yellow flag. Height: 5 feet. Yellow-flowered iris with blue-green foliage. Can be grown in moist areas, bogs, and streams. Blooms in late spring. Zone 6. O.

52. *Iris spuria*. Butterfly iris. Height: 2 feet. Leaves are linear to 1 foot long, stiff, and

glaucous. Flowers are blue-purple or lilac. Full sun to partial shade. Zone 4-9. B,L.

53. *Kosteletzkya virginica*. Seashore mallow. Height: 4½ feet. Lower leaves are 3-5 lobed up to 6 inches long. Flowers are solitary or in leafy panicles. Pink petals are 1½ inches long. Plant in full to filtered sun. A,B.

54. *Leontopodium alpinum*. Edelweiss. Height: 6-12 inches. Foliage is silvery white due to short woolly hairs. Flowers are yellow over silvery woolly bracts and bloom in mid-summer. Plant in full sun in dry, alkaline, sandy, well-drained soil. Zone 5. A,B,Ea,H,J.

55. *Liatris scariosa*. Blazing star. Height: 4-6 feet. Native American wildflower, excellent for border and meadow. Unbranched leafy stems end in a dense, long-lasting spike of small flower heads. Excellent cut flower, fresh or dried. Prefers moderately fertile, sandy soil. Zone 3-10. A,B.

56. *Liatris scariosa*. White liatris. Same as above except this plant needs very good winter drainage.

57. *Liatris spicata*. Gay-feather. Height: 2-5 feet. Spikes to 2½ feet long on smooth stems; sessile flower heads of 5-14 rosy purple florets. Drought resistant. Winter mulching is recommended in cold climates. Prefers full sun. Zone 3-10. B.

58. *Lilium pensylvanicum*. Candlestick lily. Height: 3 feet. Stem is ribbed, somewhat cobwebby. Leaves linear to oblong, to 6 inches long. From 1 to several flowers on each stem, 4 inches across, red to scarlet, yellow spotted with purplish black at base. Sow outdoors in early spring or indoors, maintaining a temperature of 70° F in the medium. Prefers full sun. Zone 5-9. A,B,L.

59. *Linariagenistifolia* subsp. *dalmatica*. Dalmatian toadflax. Height: 3 feet. Toadflaxes have asymmetrical, 2-lipped flowers with a long basal spur. Many erect, branching stems, with gray green, ovate-lanceolate, 1½ inch leaves. Racemes of yellow, 1-2 inch flowers with orange throats. Long flowering. Easy to grow, prefers full sun. Zone 4-10. A,B,L.

60. *Lobelia cardinalis*. Cardinal flower. Height: 3-4 feet. Dark green unbranched leafy stems rise above a deep green basal rosette. Leaves are lanceolate, pointed, and toothed. Brilliant scarlet flowers in slender, erect racemes. Sun to partial shade. Zone 2-9. B.

61. *Lunaria annua*. Money plant. Height: 3 feet. Biennial that will reseed. Flowers are purple or white and fragrant. Fruit is silvery, papery, and coin-shaped. Useful for dried ar-

Shade and woodland gardeners have several excellent plants to choose from this year. Old-fashioned garden columbine (24), the white-blooming fan columbine (23), and the spice-scented sweet woodruff (45) make great additions to shady gardens. Other favorites are Jack-in-the-pulpit (25), astilbe (26), blue hosta (50), and foamflower (81).



Lilium pensylvanicum (58), 300 X.

rangements. Plant in full sun or light shade. Zone 6-9. B,L.

62. *Mahonia aquifolium*. Oregon grape. Height: 3-6 feet. Fruit is black with blue bloom. Beautiful ornamental plant, used also as habitat and food for birds. Soak seed 3-4 minutes in warm water with dishwasher soap, 1 tablespoon/pint water. Sow directly in ground in early to mid-fall. Zone 5. B,O.

63. *Malva moschata*. Musk mallow. Height: 2-3 feet. Bushy with numerous branched stems. Dark green, palmately lobed, 2-4 inch lower leaves. Satiny, bright rose pink, 2 inch flowers. Full sun. Zone 3-10. A,B,L.

64. *Malva sylvestris* var. *mauritanica*. High mallow. Height: 2-3 feet. Makes sturdy bushes, covered with dark green, palmately lobed foliage. Long-stalked, rose purple, 2 inch flowers cluster thickly in the upper leaf axils. Very long-blooming, even after a light frost. Prefers full sun. Zone 3-9. A,B,L.

65. *Nicotiana sylvestris*. Flowering tobacco. Height: 4 feet. Flowers are trumpet shaped, white inside, and greenish white outside. Blooms summer to frost. A tender perennial grown as an annual in the North. Will reseed itself. Plant in full sun or partial shade. Zone 9-10. B,L.

66. *Oenothera biennis*. Evening primrose. Height: 1-6 feet. Biennial bearing spikes of 2 inch, yellow gold flowers that open in early evening throughout the summer. Roots may be eaten as a vegetable, and the shoots in salad. May be invasive. Full sun; well-drained soil. Tolerates dry conditions. Zone 4. B.

67. *Oenothera erythrosepala*. Evening primrose. Height: 6 feet. Evening-flowering perennial. By midmorning the yellow blossoms begin to wilt, but more burst open each evening. Sow seed in spring; plant will not bloom until the following year. Plant in full sun or light shade. Zone 5. B,L.

68. *Oenothera fruticosa*. Sundrops. Height: 1-2 feet. Day-flowering perennial. Yellow flowers 3-4 inches wide with shallow-toothed petals and a mild fragrance. Fruit 2-3 inches long. Full sun or light shade. Tolerant of poor soils and drought conditions. Zone 4-10. A,B.

69. *Onopordum acanthium*. Scotch thistle. Height: 9 feet. Biennial. Leaves oblong, lobed, and toothed. Flowers are reddish purple, sometimes white. Statuesque border plant; very spiny, handle with care. Plant in full sun; does fine in poor soil. B.

70. *Onopordum nervosum*. Scotch thistle. Height: 9 feet. Biennial. Same as above but leaves are silver.

71. *Pardancanda norrisii*. Candy lily. Height: 1-2 feet. Cross between blackberry lily and an irislike plant. Colors include yellow, blue, red, purple, pink, white, and orange, plus polka dot combinations. Cold hardy and drought tolerant, blooms from July to frost. If seed is started inside in January and planted after danger of frost, will flower the first year. B,L.

72. *Penstemon cyananthus*. Wasatch penstemon. Height: 3 feet. Flowers are bright blue, about 1 inch long, appearing in dense spikes. Plant in full sun in light, acid, well-drained soil. Zone 3-4. A,B,L.

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73. *Penstemon pseudospectabilis*. Beard-tongue. Height: 3 feet. Flowers are fuchsia-colored, borne on long 3 foot wands. Plants form rosettes of attractive blue-green leaves. Plants will self-seed on sandy or gravelly soil. Drought resistant. Hardy in the deserts of California and Arizona. A,B.

74. *Penstemon smallii*. Beard-tongue. Height: 2-3½ feet. Leaves are 2-4 inches long. Flowers are tubular, 1-2 inches long, and scarlet pink in color. Blooms from late spring through midsummer. Plant in full sun. Seed germinated indoors should have a temperature of 60-65° F for 2 weeks. Zone 5. A,B.

75. *Phacelia bipinnatifida*. Scorpion weed. Height: 2 feet. Compound leaves with 3-5 sets

of leaflets. Flowers are violet or blue. Grown for spring and summer bloom in the flower garden. The individual flowers are not showy but produce a bold effect in mass. Plant in shady area with little direct sunlight. Zone 5-9. B.

76. *Phacelia sericea*. Scorpion weed. Height: 5 feet. Leaves oblong in outline, to 4 inches long. Flowers are lavender or purple. Zone 5-9. B.

77. *Platycodon grandiflorus*. Balloon flower. Height: 3 feet. Mix of blue- and white-flowered cultivars. Balloonlike buds open into star-shaped, 2-inch-wide flowers. Blooms June-August. Plant in full sun or light shade. Zone 4. A,B,L.

78. *Rudbeckia triloba*. Thin-leaved cone-flower. Height: 4½ feet. Distinguished from black-eyed Susan by smaller, more numerous flowers with shorter rays. Somewhat invasive. Plant in full sun. Zone 3-9. B,L.

79. *Solidago odora*. Sweet goldenrod. Height: 5 feet. Stout root crown. Basal leaves and lowest leaves reduced and deciduous. Leaves are 4 inches long and produce the odor of anise when brushed. Heads in large panicles. Plant in average, well-drained soil in full sun. Easily grown from seed, blooming the second year. Zone 3-10. A,B.

80. *Stokesia laevis*. Stokes' aster. Height: 12 inches and 18 inches. Mix of pink and blue cultivars. Blue are 18 inches tall and pink are 12 inches tall. Flowers are 3-4 inches across, and bloom over a long season. Plant in average, well-drained soil, in full sun to light shade. Zone 5-10. A,H.

81. *Tiarella cordifolia* var. *collina*. Foamflower. Height: 6-12 inches. Foamflower makes an excellent ground cover. Small, white, star-shaped flowers, in compact, showy racemes 6 inches or taller, begin blooming in mid-April and continue for nearly a month. Prefers a well-drained soil high in organic matter. A shaded site protected from direct sunlight is recommended. Zone 3-9. B,L.

82. *Verbascum bombyciferum*. Mullein. Height: 3 feet. Vertical stems bear woolly, gray green leaves to 6 inches or longer. Narrow spikes of crowded, yellow, 1 inch flowers. Biennial, sending up flower spikes the second year. Plant in ordinary, well-drained soil. Prefers full sun. Zone 5-10. A,B.

83. *Verbascum chaixii* 'Album'. Mullein. Height: 3 feet. Same as above except with white flowers.

Grasses

84. *Festuca ovina* var. *glauca*. Dwarf blue fescue. Height: 1 foot. Densely tufted perennial with numerous vegetative shoots. Probably one of the bluest foliages of all garden plants. Flowers May-July. Grows best in light soils and full sun. Needs regular grooming to remove dead leaves and flower stalks. Sow grasses in small pots. Zone 4-9. A.

85. *Sorghum bicolor*. Broomcorn. Height: 6-10 feet. Partial sun. Rapidly growing, coarse-textured annual used for making brooms. Easily grown from seed. Plant in partial sun. Particularly well suited for the Great Plains. B,L.

86. *Xerophyllum tenax*. Bear grass. Height: 2-6 feet. Tall, stately flowers are creamy white. Both flowers and foliage (which is grasslike) make excellent floral designs. Blooms July-August. Prefers deep to partial shade. Zone 3. B.

For a hard-to-find garden color, try dwarf blue fescue (84), the bluest plant in this year's Seed Program. This tufted, low-growing grass works well in front of perennial beds or as a border along a sunny path.

Trees and Shrubs

87. *Aronia melanocarpa*. Black chokeberry. Height: 3-5 feet. Low shrub; branches smooth; leaves elliptic or oval. Bright green and smooth underneath. Striking red in fall. Fruits are ¼-½ inches across, shiny black, in August and September. Flowers are showy and fruits are readily eaten by birds. Cold stratify for 90 days with temperature between 32° and 41° F, then for 30 days in a mix of soil, sand, and peat at 68-70° F. Sow seed ⅜ inch deep. Zone 2. A, Ec.

88. *Berberis koreana*. Korean barberry. Height: 3-6 feet. Deciduous, suckering shrub; branches grooved, reddish, and spiny, with flat, 3-lobed spines; leaves oval, 1-3 inches long. Flowers in racemes 3-4 inches long, in late May or early June, very showy; fruits bright red, retaining their color well into winter. Use in shrub borders. Zone 3. B, Ea or O.

89. *Brachychiton populneus*. Bottle tree. Height: 50 feet. Named for the bottle-like swelling of their trunks. Bell-shaped flowers bloom in midsummer; fruit is woody. Bottle trees are not particular about soil but should be shaded by larger trees. Tolerant of drought. Zone 8-10. B.

90. *Buddleia davidii*. Butterfly bush. Height: 15 feet. This shrub does well in almost any soil and prefers full sun. Flowering period from July-September. Fragrant blue-purple

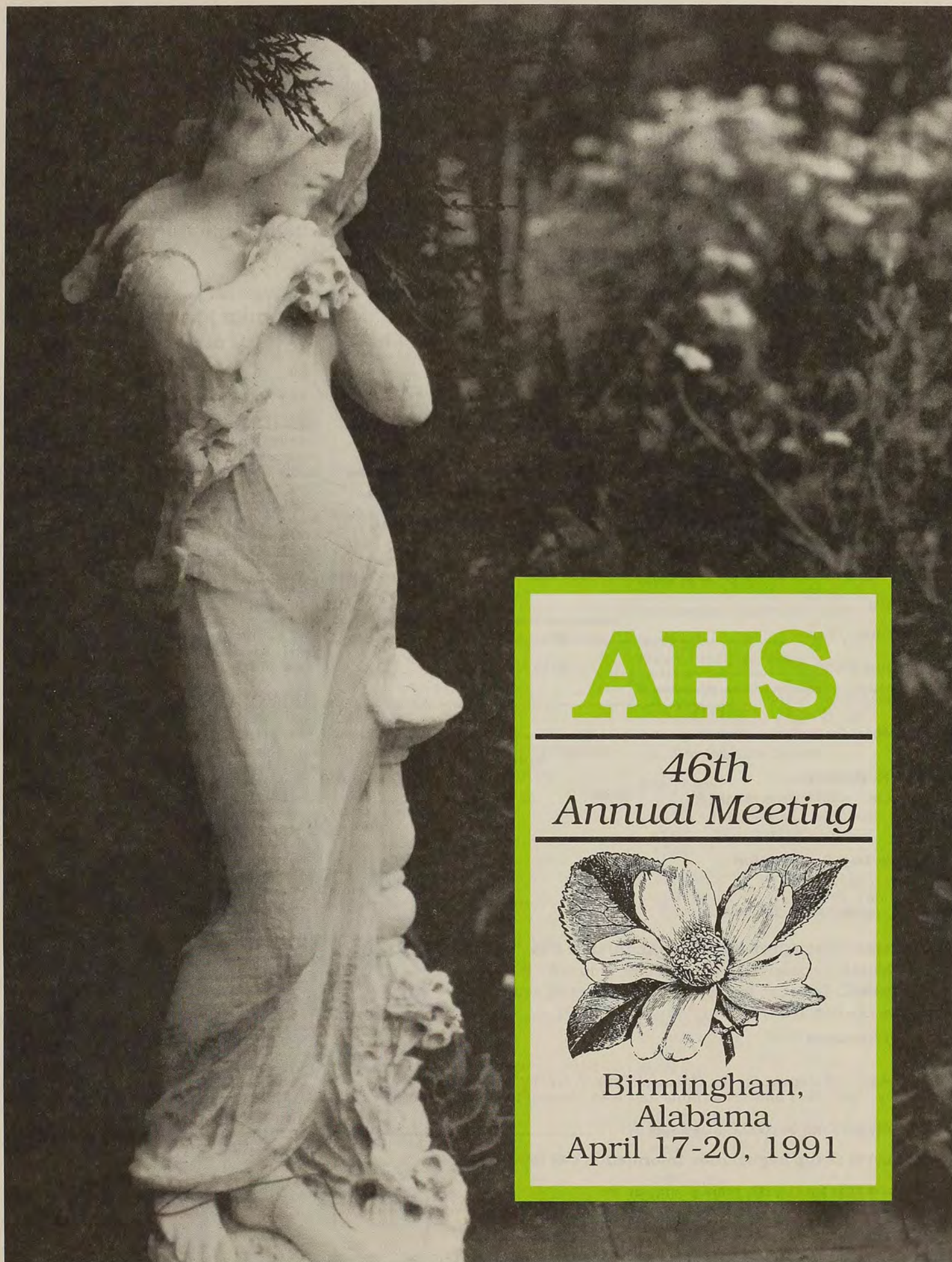
flowers are very attractive to butterflies. Gives best results when hard pruned in March. Sow outdoors in late spring. Germinates in 20-25 days. Zone 5-9. B.

91. *Celastrus scandens*. American bittersweet. Deciduous, climbing or twining shrub that will grow up to 25 feet with support. Bright orange-red fruit in fall; used for fall arrangements. Both female and male plants needed for fruit production. Zone 2. B, Ed.

92. *Chilopsis linearis*. Desert willow. Height: 20 feet. Large deciduous shrub, native to desert areas. Fast grower, easily grown from seed. Flowers trumpet shaped, pink to lavender, and attractive to hummingbirds. Zone 8. B.

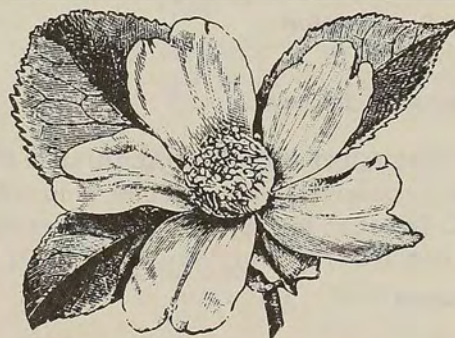
93. *Cornus capitata*. Evergreen dogwood. Height: 40 feet. A Chinese native, this tree has semi-evergreen to evergreen leaves that turn

Start a butterfly garden with the beautiful *Buddleia davidii* (90). This honey-smelling shrub stays in flower for 3 months and the slender, nodding, 5-12 inch-long flower spikes drive butterflies mad. A hardy, deciduous shrub, *B. davidii* can be relied upon as far north as southern New England.



AHS

46th
Annual Meeting



Birmingham,
Alabama
April 17-20, 1991

Welcome to Birmingham!

You can't miss our 46th Annual Meeting! Every major horticultural center and the best gardeners in the city are prepared to greet you. It will be an exhilarating week of gardening experiences and education amid forests of dogwood, azaleas, and native woodland wildflowers at peak bloom—the finest gardens open for view—the leading experts in the Southeast to instruct and guide you—the hospitality only the South can offer—the gentle, refreshing spring of the Southern Piedmont.

Young, old, experienced gardener or novice, you are welcome to join us in our annual highlight of American Horticultural Society membership. This Annual Meeting will be a lifetime memory of friendship, fun, and learning—all in the city of Birmingham and its many wonders. We'll see you there.

On the cover: A statue in one of the many private gardens to be visited by AHS members during the Annual Meeting, and a camellia, Alabama's state flower.

Registration Form

AHS 46th Annual Meeting, April 17-20, 1991, Birmingham, Alabama

Register Early! 10% Discount for Registrations Postmarked Before February 15, 1991.

Name _____

Address _____

City/State/Zip _____

Daytime Phone # _____ AHS Member # _____

Spouse/Guest Name _____

Address _____

Full Registration

includes all events April 18-20 \$350 _____ \$ _____

OR

Single Day Registration

Thursday, April 18	\$150	_____	\$ _____
Friday, April 19	\$150	_____	\$ _____
Saturday, April 20	\$150	_____	\$ _____

NONMEMBERS MUST ADD ANNUAL DUES @ \$35

OPTIONAL: President's Council membership @ \$1,000

OPTIONAL: Donation to support Annual Meeting activities

Minus Discount (10%) Prior to February 15, 1991

Total Enclosed

☐ Please register me for the Optional Tour to Sipsey Wilderness on Friday, April 19. I understand this tour is in place of the Friday lectures.

Special Services Needed (please specify) _____

For Local Group Registration Information call (800) 777-7931.

Return this form with your payment to:

AHS Annual Meeting, 7931 East Boulevard Drive, Alexandria, VA 22308.
For more information call (800) 777-7931.

REGISTRATION FEE

Full registration fee covers all daily programs as listed, registration materials, box lunches, entrance fees, ground transportation, and 1991 President's Reception and Awards Banquet. Not included are hotel, airfare, personal items, and meals not specified.

CANCELLATIONS

A full refund, less \$50 for booking expenses, will be made if written cancellation is received by April 3, 1991. No refunds will be made after April 3, 1991.

OFFICIAL AIRLINE

Delta Airlines is the official carrier for the 1991 Annual Meeting in Birmingham. By special agreement, AHS members receive 40% off Delta's unrestricted day coach rates, or 5% off Delta's published discounted fares for travel to/from the Annual Meeting. Make your reservations by calling Delta at (800) 221-1212 (8 a.m. to 8 p.m. EST). You must mention the AHS reference code T11691 to obtain the discounts. (Some restrictions apply.)

HOTEL

Our headquarters hotel is the Embassy Suites Hotel, 2300 Woodcrest Place, Birmingham, AL 35209. Rates for AHS members are \$81/night, single or double, plus 7% room tax. Make your reservation by calling (800) 321-0090 or (205) 879-7400. **Be sure** to mention that you are with the American Horticultural Society, and make your reservation by **March 26, 1991**, to guarantee the special meeting rate.



The Program

Wednesday, April 17

2:00 - 8:00 p.m.

Meeting Registration
Camellia Room at the Embassy
Suites Hotel

9:00 a.m. - 4:00 p.m.

Board of Directors meeting
(Birmingham Botanical Gardens)

5:30 - 7:30 p.m.

Cocktails for registered guests at the
Embassy Suites Hotel

5:30 p.m.

Bus departs for
President's Council dinner
(President's Council members only)

Thursday, April 18

7:00 a.m.

Meeting Registration
Camellia Room at the Embassy
Suites Hotel

8:15 a.m.

Buses depart hotel for
Birmingham Botanical Gardens

8:30 - 9:15 a.m.

Plenary session

9:15 - 9:30 a.m.

Welcome to Birmingham
—Karen Chapman

9:30 - 9:40 a.m.

Welcome to the Birmingham
Botanical Gardens and Introduction
of Horticulturists and Plant Society
Directors
—Gary Gerlach

9:40 - 10:10 a.m.

Introduction to Birmingham
—John Alex Floyd

10:10 - 10:30 a.m.

Coffee Break

10:30 - 11:00 a.m.

Introduction to the Birmingham
Botanical Gardens and its History
—Robert Marvin

A Day in the Botanical Gardens with Head Gardeners and Plant Societies

Presentations will be held at these
garden locations on a rotating
schedule:

Wildflower, Fern, Iris, Daylily,
Southern Living, Rose, Japanese,

Water, Herb, Vegetable,
Rhododendron, Hosta, and Bonsai
Gardens, and the Conservatory

11:00 - 12:00 p.m.

Garden Presentations

12:00 - 1:30 p.m.

Lunch at the Botanical Gardens
Optional: Members' Forum

1:30 - 4:30 p.m.

Garden Presentations

4:30 p.m.

Buses return to hotel

5:45 p.m.

Buses depart hotel for Southern
Progress corporate headquarters

6:00 - 7:30 p.m.

Reception at the Southern Progress
corporate headquarters

7:30 p.m.

Buses return to hotel
Dinner on your own

Friday, April 19

Lectures at the Botanical Gardens

9:00 a.m.

Buses depart hotel for
Botanical Gardens

9:30 - 10:30 a.m.

Flower Arranging in the Birmingham
Style
—Lula Rose Blackwell

10:30 - 11:00 a.m.

Coffee

11:00 - 11:45 a.m.

Landscape Design: Southern Style
—Norman Kent Johnson

11:45 - 12:30 p.m.

Using Native Shrubs and Azaleas
in the Landscape
—Dr. William E. Barrick

12:30 - 1:30 p.m.

Lunch at the Botanical Gardens

1:30 - 2:15 p.m.

Landscape Design: Discovering the
Essence of the Garden
—Duncan Callicott

2:15 - 3:00 p.m.

Horticultural Photography
—Sylvia Martin

3:00 - 3:30 p.m.

Tea

3:30 - 4:15 p.m.

Horticultural Painting
—Arthur Stewart

4:15 p.m.

Buses return to hotel

OPTIONAL TOUR

Visit to Sipsey Wilderness

You may choose this all-day tour in
place of Friday's lectures.

8:00 a.m.

Buses depart hotel for Sipsey Wilder-
ness for all-day tour and lunch. Tour
involves much rugged walking.
—Weesie Smith, tour leader

4:00 p.m.

Buses return to hotel

6:00 p.m.

Buses depart hotel for
Birmingham Museum of Art

6:30 to 9:00 p.m.

Cocktails and buffet dinner at the
Birmingham Museum of Art

9:00 p.m.

Buses return to hotel

Saturday, April 20

All-Day Garden Tours

9:00 a.m.

Buses depart hotel to visit
private townhouse, wildflower,
ravine, and vegetable/flower
gardens

1:00 p.m.

Lunch and tour of gardens
at Ebsco corporate headquarters

2:00 p.m.

Buses depart Ebsco to visit
Shoal Creek residential gardens;
tea at Shoal Creek Golf Clubhouse

4:00 p.m.

Buses return to hotel

6:45 p.m.

Buses depart hotel for The Club

7:00 p.m.

President's Reception and Awards
Banquet at The Club

10:00 p.m.

Buses return to hotel

Meeting Highlights

Birmingham Botanical Gardens

Founded in 1962, the Birmingham Botanical Gardens cover 67½ beautifully landscaped acres on the southern slope of Red Mountain. There are 20 gardens of various characters and plant concentrations, organized as a series of "rooms" under the Master Plan designed by Robert Marvin and funded through the efforts of the Birmingham Botanical Society. The Conservatory is the largest clearspan greenhouse in the Southeast, and the new Garden Center building houses a horticultural library and classes. These facilities have been generously opened to us for our meetings.

The Southern Progress Corporate Headquarters

Labeled by site planner Robert Marvin as a "nonbuilding," the Southern Progress corporate headquarters is designed to be one with the forest of hardwoods and pines that surround it. The building's materials (stone and glass) and colors echo those of the land, and a woodland path connects the building to the parking decks hidden beneath it. This naturalistic setting will be the site of a reception for AHS members.

The Birmingham Museum of Art

Founded just 35 years ago as a small gallery in City Hall, the Birmingham Museum of Art is now the largest municipally supported art museum in the Southeast. The museum houses permanent collections featuring West European Renaissance art, American art, and decorative arts, and will be the backdrop for a private reception for AHS members.

Sipsey Wilderness

The 12,726-acre Sipsey Wilderness lies in northwest Alabama at the juncture of three separate geologic areas: the Appalachian Plateau, the Cumberland Plateau, and the Coastal Plain. Here the vegetations from these three unique environments blend into a remarkable diversity of species, with

overlapping ranges creating many unusual plant associations. Our members who choose to visit this beautiful wilderness will hike along trails into the forest areas.

Private Gardens

While in the Birmingham area we will visit a lovely new townhouse garden and a residential garden filled with native wildflowers and endangered species that the owner rescued from the bulldozer as dams, freeways, and shopping centers were built. We will also have the privilege of visiting "a gardener's garden" that combines both formal and naturalistic elements with a focus on plants; a restful garden planted among stones and along the path winding through a hollow; and a beautiful back yard garden abundant with fresh vegetables and flowers.

Following a picnic lunch in the gardens at Ebsco corporate headquarters, our tour will take us on to Shoal Creek to visit more residential gardens, one featuring an all-white border that creates a stunning view from the kitchen window. We will enjoy tea in the Clubhouse at Shoal Creek Golf Club, recent site of the PGA Golf Tournament.

Members' Forum

All members are invited to join AHS President George Ball Jr., and members of the AHS Board and staff Thursday, April 18, during a lunch-time open discussion on issues facing AHS today.

The Club

The Club, an elegant private dining and dancing club atop Red Mountain and overlooking the Birmingham city skyline, will be the site for the AHS Awards Banquet on Saturday, April 20. Not to be missed!

Embassy Suites Hotel

Our headquarters hotel for the 46th Annual Meeting features a lovely central atrium where guests may enjoy complimentary breakfast each morning and a complimentary cocktail reception each afternoon. Each guest room is a two-room suite with separate living and sleeping rooms.

Speakers

Dr. William E. Barrick is executive vice president and director of gardens at Callaway Gardens (Pine Mountain, Georgia). He is a prolific researcher and writer in horticulture, and was recently elected president of the American Association of Botanical Gardens and Arboreta (AABGA).

Lula Rose Blackwell is an acclaimed floral artist whose work is featured in the book, *Elegance in Flowers*.

Duncan Callicott is principal of Callicott & Associates Landscape Architects & Horticultural Consultants, specializing in residential landscape design. He is former director of the Tennessee Botanical Garden & Fine Arts Center (Cheekwood) in Nashville.

Karen Chapman is president of the Birmingham Botanical Society.

John Alex Floyd is marketing services director of *Southern Living*, *Southern Accents*, and *Travel South* magazines. He received the 1988 AHS Horticultural Communication Award.

Gary Gerlach is executive director of the Birmingham Botanical Gardens.

Norman Kent Johnson is a "garden maker" who specializes in residential gardens, including several of the gardens we will visit. He has been an editor with *Southern Living*, *Landscape Architecture*, and *Garden Design* magazines, and recently published the book, *Everyday Flowers*.

Sylvia Martin has been a photographer with Southern Progress Corporation for 11 years. Her own studio does editorial, commercial, and industrial photography.

Robert Marvin is a landscape architect from Hilton Head, South Carolina, where he is actively involved in wetlands preservation. He has designed the Birmingham Botanical Gardens, the Southern Progress corporate headquarters, and the Day Butterfly House and Sibley Center at Callaway Gardens.

Arthur Stewart is an artist whose paintings of flowers have delighted Birmingham area residents, especially gardeners, for years. Examples of Mr. Stewart's work will be seen at the Birmingham Museum of Art.

American Horticultural Society
Alexandria, Virginia
(800) 777-7931 or (703) 768-5700



***Aronia melanocarpa* (87), 300 X.**

bronze in winter. Pale yellow flowers in summer; red, strawberrylike fruits in fall. Round bushy habit. Zone 7. O.

94. *Eucommia ulmoides*. Hardy rubber tree. Height: 60 feet. Grows 1 foot per year. Tolerates drought and city conditions. Hardy, deciduous, rubber-producing plant. Fruit is a seeded, winged nutlet. This tree prefers full sun and tolerates almost any type of soil, except an extremely wet one. Zone 5. B.

95. *Juglans ailantifolia* var. *cordiformis*. Heart nut. Height: 60 feet. An erect-growing tree of medium size with handsome leaves often as large as 30 inches long. The nuts are heart shaped and are 1-1½ inches long. Break up seed or soak overnight. Plant seed 1 inch deep in the spring. Zone 4. B.

96. *Koeleruteria paniculata*. Golden-rain tree. Height: 30 feet. Very attractive, wide-

spreading tree, with long, pinnate leaves with 9-15 ovate leaflets. The yellow flowers are followed by conspicuous bladderlike fruits. Leaves turn yellow in autumn. Flowers best in hot, dry summers. Zone 5. B,F,O.

97. *Paulownia tomentosa*. Princess tree. Height: 45 feet. Fast-growing tree similar to the catalpa tree in texture and shape. Leaves broad, ovate, to 1 foot. Fragrant flowers 2 inches long, corolla pale violet, darker spotted inside. Podlike seed capsules, 1½-2 inches long. Tolerates pollution and a wide variety of soils and conditions. No stratification required, but light is necessary for germination. Sow indoors with a temperature of 70° F. Surface sow on very moist beds. Zone 5. A,B,H,L.

98. *Picea glauca*. White spruce. Height: 60-70 feet. Bluish green leaves are ¾ inch long. Cones are cylindric, 1½-2 inches long. Withstands heat, wind, and dryness better than most spruces, but needs cold winters. Cones fall in winter. Zone 4-7. B,Eb.

99. *Pieris japonica*. Lily-of-the-valley bush. Height: 10-30 feet. A medium-sized shrub with attractive glossy, coppery foliage when young. Large panicles of bell-shaped flowers are attractive during winter. Sow seed on sandy peat and cover lightly with pulverized sphagnum, maintain temperature of 60-65° F. Germination takes 2 months. Zone 5. A.

100. *Pinus radiata*. Monterey pine. Height: 75 feet. Large tree with deeply fissured dark brown bark and a dense head of branches. Leaves are bright green. Cones are 2-6 inches long, borne in whorls along branches, often remaining intact for many years. An attrac-

tive tree for mild inland and coastal areas. Zone 7. B,Eb.

101. *Pinus strobus*. Eastern white pine. Height: 50-150 feet. One of the outstanding timber pines of North America. Horizontal branches with soft, gray green needles 2-4½ inches long. Cones are cylindrical, 4-8 inches long and fall in the winter. Grows quite rapidly; widely used for reforestation. Zone 4-7. B,Eb.

102. *Prunus lyonii*. Catalina cherry. Height: 3-25 feet. Evergreen shrub or tree native to Channel Islands off California coast. Leaves are 3-5 inches long, smooth margined or lightly toothed. Creamy white flowers borne in profusion in April-May with black, large-stoned fruit ripening in August-September. Prefers full sun and good drainage. Nice as a screen, hedge, or specimen tree. Sow in August where tree is to be grown. Zone 7-9. B.

103. *Pyrus calleryana* 'Bradford'. Bradford pear. Height: 30-50 feet. Forms a vigorous, medium-sized, dense-headed tree. Flowers profusely in late March or early April. Highly praised as an ornamental and commonly planted as a street tree. Triangular in shape. Resistant to fireblight disease. Old trees tend to split in storms. Zone 5-9. B,Eb or O.

104. *Staphylea trifolia*. American bladder-nut. Height: 10-15 feet. A hardy-flowering shrub whose seed are enclosed in inflated, balloonlike fruit. Easily grown in any fertile soil in sun or part shade. Zone 5. B,Db,Ec.

105. *Vitex agnus-castus*. Chaste tree. Height: 6-25 feet. Velvety-hairy deciduous shrub with masses of fragrant, ½ inch long, lilac flowers in 5-7 inch spikes. Blooms in late summer. Fast growing. Zone 6. Ec or O.

Herbs

106. *Agastache foeniculum*. Anise hyssop. Height: 3 feet. A member of the mint family, this perennial herb has spikes of blue flowers and leaves that smell of anise. Dried leaves are used in seasonings, potpourri, and tea. Prefers full sun but will grow in partial shade. Zone 4. A,B,L.

107. *Allium tuberosum*. Garlic chives. Height: 20 inches. This variety of chives has flat leaves and a delicate garlic flavor. The white flowers are quite striking when in bloom in late summer and early fall. Hardy perennial. Zone 3. A,L.

108. *Calendula officinalis*. Pot marigold. Height: 2 feet. Annual. Flowers are bright yellow-orange. It is said to kill nematodes in the soil. Flowers are edible and are also used as a dye. A,B.

109. *Carum carvi*. Caraway. Height: 2 feet. Biennial. Tall frost-hardy biennial, caraway is an ancient herb cultivated for its aromatic seed and tender young leaves. The second year, flower stalks arise in early summer, topped by white blossoms that produce abun-

dant seed. Prefers full sun. Seed crop matures faster if you stop watering when flowers form. Zone 4. B,L.

110. *Chrysanthemum parthenium* 'Ultra Double White'. Feverfew. Height: 2-3 feet. Pungently aromatic, ferny foliage covers this neat, well-branched plant. Numerous full, double, daisylike flowers. Best in light, sandy soil. Self-seeds very freely. Tea made from leaves reputed to relieve headaches. Full sun to partial shade. Zones 4-10. A,B,L.

111. *Coriandrum sativum*. Coriander. Height: 1-3 feet. Annual member of the carrot family. Delicate plant with parsleylike leaves.

We have many excellent culinary herbs to choose from this year. Garlic chives (107) can be snipped into salads, soups, or sauces and boasts white, starlike blossoms; coriander (111) is very easy to grow and produces delicious leaves and seed; and Italian parsley (118), often rated the best culinary parsley, is rich in vitamins A and C.

Seed (coriander) are used for baking and flavoring; foliage (cilantro) is used for Chinese and Mexican cooking. In the heat of the summer, this plant prefers part shade. A,B.

112. *Isatis tinctoria*. Woad. Biennial. Height: 4 feet. Flowers are yellow panicles. An important dye plant yielding a beautiful blue dye. Sprays of seed pods are useful in dried arrangements. Plant in full sun. A,B.

113. *Levisticum officinale*. Lovage. Height: 4-6 feet. Hardy perennial. Lovage looks like a tall, much-branched celery with slender stems. Grows best in rich, moist soil. It prefers full sun, but will do with some shade in the afternoon. Chop leaves and stem tips to flavor meats, salads, and soups. Zone 3. B.

114. *Nepeta cataria*. Catnip. Height: 3 feet. Flowers are white to purple, small but borne on spikes 5 inches long. Blooms July-September. Cats love this plant! It also makes a soothing tea. Since it is a member of the mint family, it can be very invasive. Plant in sun or shade. Zones 3-9. A.



Levisticum officinale (113), 1,000 X.

115. *Ocimum basilicum* 'Anise'. Anise basil. Height: 2 feet. Annual. Used in Thai and Cambodian cuisine and in Italian dishes. Vigorous plant with rose-colored flowers. A,B,L.

116. *Perilla frutescens*. Green perilla. Height: 3 feet. Annual. Attractive, crinkled, lime green leaves. Flavor is different than the purple perilla, with a heavy, sweet aftertaste. Used in Japanese cooking. A,B,L.

117. *Perilla frutescens* 'Atropurpurea'. Purple perilla. Height: 3 feet. Annual. Fresh leaves used to flavor pickled plums. Attractive red-purple plant that vigorously self-seeds. Used in Japanese cooking. A,B,L.

118. *Petroselinum crispum* var. *neopolitanum*. Italian parsley. Height: 3 feet. Biennial best grown as an annual. Leaves are flat and flavor is stronger than the curly type of parsley. Leaves are used as a garnish and for seasoning soups and other dishes. B,G,I,L.

126. *Annona cherimola*. Cherimoya. Height: 20 feet. Evergreen tree. Leaves are oval or lanceolate, remaining velvety beneath. Strongly aromatic. Flowers usually solitary opposite the leaves, with nodding fragrant outer petals. Four inch fruits, covered with U-shaped scales. Custardlike edible fruit is greenish when ripe. Hand pollinate for fruit. Needs full sun and good soil. Zone 9. A.

127. *Aristea ecklonii*. Height: 1½-3 feet. Small rhizome, evergreen. Needs good soil, good drainage, and ample moisture. Flowers are tubular, ½-¾ inch wide, bright greenish yellow, and tinged with purple. Bright purple berries. Zone 8. Ea.

128. *Billardiera longiflora*. Height: 7-14 feet. Twining vines, stems very thin; leaves are evergreen. Flowers are solitary or multiple at the branch tips, trumpet shaped and greenish yellow often turning pink later. Flowers are followed by bright purple, oblong berries. Basal leaves 1-2 feet long. Likes

119. *Brassica rapa*. *Chinensis* group. Pak-choi 'Lei Choi' Chinese cabbage. This Chinese member of the cabbage family has crispy, thick stalks and dark green top leaves. Excellent for stir fry. Matures in 45 days. Direct seed in early spring and late summer. B.

120. *Citrullus lanatus*. Emperor melon (watermelon). Fruits reach 19 inches in length and 10 inches in diameter. If late flowers are disbudded fruits can reach 20-25 pounds. Fruits have a green and yellow-striped skin. Flesh is orange, thick, and juicy with fine flavor. Does not reach full sweetness until fully mature. Matures in 75-95 days. B,L.

121. *Cucumis metuliferus*. African horned cucumber. Vine that requires 10 square feet per hill. Needs full sun, fertile soil, ample water, and fertilizer. Fruit is ovoid, bright orange tinged with red, and thinly covered with blunt, snoutlike spines. Flesh is a brilliant, transparent green. Requires a long hot period to mature. B,L.

122. *Lactuca sativa*. Royal oak leaf lettuce. Heat-tolerant, long standing lettuce with large, oak-shaped, dark green leaves. Matures in 50 days. B.

123. *Phaseolus coccineus*. White knight runner beans. Annual vine to 8 feet tall. White flowers. Plant outdoors in spring after danger

shade, good soil, and good drainage. Takes several weeks to germinate. Zone 8. A,L.

129. *Calotropis procera*. Mudar. Height: 6-15 feet. A shrub from the West Indies. Local name means miraculous plant. Sap is used on cuts and blisters. Requires moderate drainage. Propagated by cuttings in sand over heat. Zone 10. N.

130. *Cyphomandra betacea*. Tomato tree. Height: 10 feet. Treelike shrub, evergreen. Fast growing, likes full sun and fertile soil. Pink flowers in late summer. Produces fruit in the winter; bears fruit after 1-2 years. Eat fruit fresh in salads or serve stewed. Zone 10b. A,L.

131. *Eriobotrya japonica*. Loquat. Height: 15-30 feet. Big leathery leaves, glossy deep green on top, rust-colored underneath. Small clusters of white flowers in the fall. Fruits 1-2 inches long, apricot-colored, and edible. Drought resistant once established. Will grow

of frost is past. Needs support to climb. Matures in 73 days. B,L.

124. *Tetragonia tetragonioides*. New Zealand spinach. Half-hardy perennial makes a good summer substitute for true spinach. Leaves are triangular and dark green. In the North, short runners form and plants spread to 2-3 feet. In very hot climates plants do well with light afternoon shade. Also makes a good container plant. Soak seed in water overnight. Matures in 60-90 days. A,B,L.

125. *Zea mays*. Red dent field corn. Excellent resistance to blight and drought. Stalks average 9 feet with 9-12 inch ears. Kernels are white until they mature then turn red. Contains 16-20 rows of red kernels. Matures in 105 days. B,L.

Vegetables

Save this catalog!

Seed packets are marked by catalog number only, so it will be your only means of identifying the seed you have selected.

Free Advice!

Have questions about seed, sources, fungus, or fertilizer? We'd like to help you solve your gardening problems. Write us here at River Farm or take advantage of our toll-free number to call the Gardeners' Information Service between 11 a.m. and 3 p.m. EST.

(800) 777-7931

This is a free service—one of your AHS membership benefits! We have an extensive reference library, plus staff and volunteers who can answer questions about plant care or help you find sources for gardening tools, plants, and accessories.

Plants for Home, Greenhouse, and Southern Zones

in a container. Germinates in 2-3 weeks. Zone 9. A.

132. *Eucomis zambesiaca*. Height: 1 foot. Deciduous bulb. Prefers full sun, good soil, and good drainage. Flowers are spikelike racemes, greenish white in summer. Rosette leaves up to 2 feet long. Keep on the dry side during winter dormancy. Does well in large bulb pans. Zone 8.

133. *Massonia pustulata*. Deciduous bulb. Two ovate leaves to 4 inches long. Stemless pink flowers nestled between leaves in late winter. Prefers full sun, gravelly soil, and excellent drainage. Keep moist but not wet, and fairly dry in the summer. Takes one month to germinate, three years to flower. One bulb per 6 inch pan. Zone 9.

134. *Opuntia ficus-indica*. Spineless cactus. Height: 18 feet. Yellow flowers in spring, red fruit in late summer. Needs full sun, good drainage. Requires little water in summer once established. Use fresh fruit in preserves

A number of edible fruit-bearing plants are available for the indoor gardener. We recommend the pineapple/banana-tasting cherimoya (126), the peachlike loquat (131), the tomato tree (tomatillo) (130), and the very exotic passion fruit (136).

and jelly. Surface sow in soilless mixture, keeping a temperature of 60-65° F. Zone 8. A.

135. *Parkinsonia aculeata*. Jerusalem thorn. Height: 15-30 feet. Deciduous tree. Green and yellow bark, spiny, sparse foliage. Long blooming season with numerous yellow flowers. Zone 9. G.

136. *Passiflora edulis*. Passion fruit. Height: 6-7 feet if supported. A vigorous vine; needs pruning after second year. Plant in full sun and give ample water. Flowers are 2-3 inches across, white with white and purple crown. Fruit to 2 inches across, greenish yellow to purple. Sow seed in the spring; needs minimum germination temperature of 60-65° F. Zone 8. A.

137. *Protea neriifolia*. Height: 10 feet. Erect treelike shrub with a single strong trunk. Bright green oblong leaves. Lower bracts are papery, cracking, and eventually curving backwards like wood shavings. Sow seed in flats, outside, in fall, in a well-drained medium. Cover with thin layer of coarse sand. Germination takes at least 4-6 weeks. Zone 10.

138. *Rebutia* spp. Crown cactus. A mix of small, easy-growing flowering cacti that form clusters. Flower colors range from red, orange,

yellow, magenta, and pink. Needs very little water and a cool location in winter, very bright light and fertilization in summer. Seed germinates best between 65-75° F. Surface sow in a well-drained mix. After 1 year transplant to 2-2½-inch pots. A.

139. *Sparaxis pillansii*. Height: 2 feet. Herbaceous corm. Open clusters of ½ inch long short-tubed flowers with 6 branched styles borne on a branched stem. Flowers from October-1, corms should be planted in late November (protect with mulch) or in spring for summer bloom. Set corms about 2-3 inches deep with a little sand sprinkled underneath. Zone 10.

Sorry, Not Available

140. *Sparaxis tricolor*. Harlequin flower. Height: 1½ feet. Sword-shaped leaves and small funnel-shaped flowers in spikelike clusters on 1 foot stems, in yellow, pink, purple, red, and white. Blooms over a long period in late spring. Plant in full sun. Will grow in containers. Zone 9. L. Very small amount of seed available.

141. *Strelitzia reginae*. Bird-of-paradise. Height: 3 feet. Tropical house plant sporting large, stiff, spear-shaped leaves with lighter-colored midribs. Unusual, showy, birdlike flowers colored orange or yellow, each with a dark blue "tongue." Sow fresh seed immediately after soaking for 2-4 days in very warm water, changing water every day. Germination from 30 days to 1 year. Grow in moist, rich soil and full sun to partial shade. Let soil dry between waterings. Zone 10. A.

AHS Exclusives

The following seed were provided to AHS by a commercial grower who concluded that while they produced beautiful plants, they were for various reasons not cost-effective to propagate for the commercial market. Take a chance! Few of your friends are likely to have a Mexican cigar plant, and we guarantee you'll be the only gardener on the block with these particular hybrids. If you like one well enough, you can even name it after yourself, a friend, or your dog.

142. *Celsia arcturus*. Cretan bear's-tail. Height: 1½ feet. Annual. Similar to *Verbascum* spp. (82, 83) but differing in having 5 stamens. Flowers are white with large, deep pink eye. Sow seed indoors 6-8 weeks before last frost at 70-75° F. Do not cover seed with soil; they need light to germinate. Transplant seedlings to garden 2 weeks after danger of frost is past. A.

Sorry, Not Available

143. *Cuphea ignea*. Mexican cigar plant. Height: 3 feet. Biennial. Leaves oblong or lanceolate to 3 inches long, but mostly smaller.

Thanks to the following individuals for their help with the 1991 Seed Program: Carol Dowling, Aubrey Glass, Aubrey Glass Jr., Jane Glass, and Maureen Heffernan.

Solitary, slender, tubelike flowers bright red, with violet and white tip, to 1 inch long. Requires temperature of 75-80° F for germination. Sow seed indoors in a sterile growing medium. A.

144. *Impatiens* hybrids. Height: 10 inches. Annual. Flowers are white with large, deep pink eye. Sow seed indoors 6-8 weeks before last frost at 70-75° F. Do not cover seed with soil; they need light to germinate. Transplant seedlings to garden 2 weeks after danger of frost is past. A.

145. *Pelargonium* hybrids. Height: 16 inches. Annual. Flowers are medium pink, free-and early flowering. Needs full sun for at least half a day. Moderately water actively growing geraniums and let soil dry out between waterings. Fertilize every 2 weeks February-March. Keep in relatively small pots. Sow seed indoors in February. A.

146. *Verbena* hybrids. Height: 10 inches. Annual. Flowers in various shades of pink, white, lavender, red, and magenta. *Verbena* is somewhat difficult to germinate. At 70-75° F germination occurs in 14-21 days. Sowing seed indoors usually gives more predictable results than direct seeding. Sow seed indoors in light, sandy soil. Set plants out in full sun. A.

Seed Exchanges Offer Obscure Varieties

One of the most heartening trends in American horticulture in the past decade has been the appearance of nonprofit seed exchanges that attempt to preserve regional, ethnic, and old-fashioned varieties for future generations. Seed exchanges are not seed companies: there is usually a membership fee and an expectation that members save seed and share them with other members. If you are willing to do so, the following seed exchanges offer the possibility of growing rare plants and participating in an important grassroots movement for genetic preservation.

♦ **The Seed Savers Exchange**, Rural Route 3, Box 239, Decorah, IA 52101. This is the largest, and most influential seed exchange in North America, dedicated to preserving vegetable and fruit varieties that are family heirlooms, traditional native American crops, garden varieties of the Mennonite and Amish, varieties dropped from seed catalogs, and outstanding foreign varieties.

♦ **Heritage Seed Program**, Rural Route 3, Uxbridge, Ontario, L0C 1K0, Canada. The Canadian equivalent to the Seed Savers Exchange, specializing in heirloom and endangered varieties of vegetables, fruits, grains, herbs, and flowers. The HSP also sells (for 50 cents) a resource list of seed companies and nurseries that sell heirloom, rare, unusual, or regionally adapted varieties of vegetables and fruits.

♦ **The Flower and Herb Exchange**, Route 3, Box 239, Decorah, IA 52101. Dedicated to the preservation of heirloom herbs and flowers.

♦ **CORNS**, Route 1, Box 32, Turpin, OK 73950. Specializes in open-pollinated corn varieties.

♦ **Native Seeds/SEARCH**, 2509 North Campbell Avenue, #325, Tucson, AZ 85719. Concentrates on traditional native crops of the U.S. Southwest and northwest Mexico.

♦ **The Grain Exchange**, The Land Institute, 2440 East Water Well Road, Salina, KS 67401. Maintains a seed list of hundreds of varieties of grains.

♦ **Central Prairie Seed Exchange**, Dianna Rogers, 7949 South West 21st Street, Topeka, KS 66604. Locally adapted Central Prairie vegetable varieties.

♦ **The Abundant Life Seed Foundation**, P.O. Box 772, Port Townsend, WA 98368. Devoted to preserving open-pollinated varieties of vegetables, herbs, and ornamentals; focus is on plants regionally adapted to the Pacific Northwest.

♦ **The Seed Saving Project**, Department of Agronomy, Hunt Hall, Davis, CA 95616. Rare vegetables, flowers, and herbs regionally adapted to the California interior valleys.

Q: Could you point me towards some books on seed saving and propagation by seed? This is one aspect of horticulture that most general gardening reference works leave out, and I would like to learn more!

S. O., Monroe, Louisiana

A: The Gardeners' Information Service receives many questions on propagation by seed. We are happy to answer questions on seed collection, storage, and germination, but readers with a particular interest in propagation may want to acquire some of the sources listed below to help them on their way. Too many gardeners avoid this rewarding sphere of horticulture, undoubtedly because of lack of adequate information. But seed saving and propagation is no more difficult than other aspects of gardening and chances are it will save you money and make you a better, and more diverse, gardener.

Seed Sources

The first, and perhaps most important, stage of propagation by seed is obtaining good quality seed of the plant in question. There are four ways to do this: by trade, by purchase, by collection of cultivated plant seed, and by wild collection.

Besides the AHS Seed Program, there are a number of places where gardeners may obtain seed for free or at a nominal cost. Try the numerous seed exchanges across North America that preserve hard-to-find and old-fashioned varieties (see sidebar page 9). Also, many plant societies offer seed exchanges as a benefit of membership as do botanical gardens and arboreta.

The major source of seed for purchase is, of course, seed companies. As any gardener knows, commercial seed company catalogs are invasive—they colonize postal boxes across the continent with innumerable editions, most identical. They are particularly troublesome in the winter months when the gardener is idle, dreaming of spring, and vulnerable to the tugs of color and marketers' text. The challenge, then, is not in finding seed companies, but in weeding them out, resisting their hard sell, and locating the ones that have exactly what you want (and not what they want you to buy).

Probably the single most useful book in the Gardeners' Information Service library, and the solution to the seed

catalog problem, is the *Andersen Horticultural Library's Source List of Plants and Seeds* (1989), published by the Andersen Library at the Minnesota Landscape Arboretum. The most comprehensive listing of seed sources in North America, the Andersen guide lists 40,000 plants commercially available from 1,200 seed and nursery catalogs. No photos, no color, no endorsements or enticements, and almost no text, this book lets the purposeful gardener choose seed calmly and knowledgeably.

The Seed Savers Exchange publishes the *Garden Seed Inventory* (1988)—a more specialized and equally valuable directory of garden vegetable seed listing 5,291 nonhybrid varieties sold by 215 seed companies. Besides giving the common and scientific names and sources, the *Garden Seed Inventory* provides the days to maturity and a brief description of everything from asparagus (*Asparagus officinalis*) to water spinach (*Ipomoea aquatica*).

The collection and saving of cultivated plant seed has yet to receive adequate treatment in print, especially for the home gardener. The requirements for plant selection, isolation, pollination, and seed harvesting can be quite exacting, especially if you are concerned with preserving genetic purity. Canada's Heritage Seed Program publishes a 33-page pamphlet, "How To Save Your Own Vegetable Seeds" (1990) that treats the most popular vegetables. Storey Publishing has recently released *Saving Seeds* by Marc Rogers, an update of his 1978 *Growing & Saving Vegetable Seeds* with additional material on garden flowers. This month, the Seed Savers Exchange will publish what promises to be the definitive work on vegetable seed saving, *Seed To Seed* by Suzanne Ashworth. This 240-page book will detail seed-saving techniques for 160 vegetables.

Stalking Your Seed

One of the most rewarding ways of obtaining seed is the wildland stalk, when the gardener turns botanist-plant hunter and abandons the familiar cultivated fields for the tangle of wilderness. Take along a regional flora to help you identify the plants, their flowering times, and their likely environments. James A. and Cheryl G. Young's *Collecting, Processing and Germinating Seeds of Wildland Plants* (1986) will also be indispensable. The Youngs have collected much information on the entire seed collection and germination process from field surveying, the

timing and means of seed collection, seed cleaning and storing, to stratification, germination testing, and sowing. The second half of the book outlines the specific requirements for tree, shrub, herbaceous plant, and grass seed.

For those interested in propagating wildflowers, Harry R. Phillips's *Growing and Propagating Wild Flowers* (1985) makes a nice companion volume to the Youngs' book. The bulk of this very readable work is an encyclopedia of wildflowers, carnivorous plants, and ferns, with a detailed plant description for each species as well as information on seed collection, cleaning, storage, propagation, cultivation, and landscape use. Unfortunately the scope is limited to East Coast native flora.

How-to Books

Now that you've acquired and saved your seed, you need to learn how to germinate it. The best general work on propagation by seed, and one that should be in every gardener's library, is Nancy Bubel's *The New Seed-Starters Handbook* (1988). Here you can learn the general and the not-so-general: where to purchase bean-threshing bags, the seed viability of kale (five years), tips for teaching children about seed planting, how to build a cold frame, how much seed you need for 64 different vegetables (one ounce of witloof chicory, for example, sows a row of 250 feet). The book has five sections: starting seed indoors, moving plants outdoors, special techniques and situations, saving seed, and an encyclopedia of plants to grow from seed (over 200 vegetables, fruits, garden flowers, wildflowers, herbs, trees, and shrubs). Informative sidebars, how-to illustrations, source lists, a glossary, and an engaging style round out this gem of a book.

The most comprehensive source for the germination requirements of specific ornamental and edible plants is *Park's Success With Seeds* (1978) by Ann Reilly, published by the George W. Park Seed Co. Reilly covers nearly 500 species; she details the uses, habit, and germination and cultural requirements for each. There are also color photos aplenty: one for each species and—this is extremely useful—one for each seedling.

Park also publishes a volume for herb gardeners—*Park's Success With Herbs* (1980) by Gertrude B. Foster and Rosemary F. Loudon—with the same encyclopedic and photographic treatment of over 100 plants used for their fragrance, flavoring, or medicinal capacities.

—Thomas M. Barrett

How to Order

Although we have a considerable amount of many of the species listed in this catalog, in some cases the seed is in short supply. To increase the chances that you will get the seed you want, fill out the order form on this page and mail it immediately. Whenever possible, we will send you your first-choice selections, but please also list alternate selections that we can send in case we run out of your first choices. AHS will not choose substitutes for you if you do not pick alternates.

After sending in your order, **it is important that you keep this catalog: you will need it to identify the seed you receive.** All the seed packets are marked with only the master list numbers that appear in this catalog. **You will not be able to identify your seeds if you do not save this catalog.**

The cut-off date for orders is May 1. We will not be able to fill orders that arrive after this date. The longer you delay in placing your order, the less likely it is that you will receive your first choices.

As you complete the order form, we hope you will consider making a donation to help defray the cost of the Seed Program. We suggest a minimum of \$2 if you are ordering 10 packets of seed, and \$3 if you are ordering 15 packets of seed. All contributions to the American Horticultural Society are tax-deductible.

If you decide to order any of the books reviewed on page 10, **please make out a separate check for the books only.**

Seed Program 1992

One of the greatest rewards of gardening is the feeling you get when you've raised a plant in such abundance that you have enough seed, cuttings, or divisions to share with your friends. Start thinking now about sharing your 1991 bounty with the American Horticultural Society's nationwide community of gardeners. Although much of the seed in our catalog is donated by seed companies and botanical gardens, we also depend heavily on donations from members. We would love to see more members involved in both the give and the take of the Seed Program. Particularly if you have any unusual or rare plants in your garden, we hope you will collect the seed and send it to us for the 1992 seed offerings so that it can be shared with other American Horticultural Society members.

For information on the 1992 Seed Program, write to:

Seed 1992
American Horticultural Society
7931 East Boulevard Drive
Alexandria, VA 22308

Seed Catalog Order Form

The American Horticultural Society Seed Distribution Service

- ◆ List your selections by number only.
- ◆ Attach the mailing label from your copy of the News Edition or fill in your name, address, and member code number. **Your member number is located at the top left hand corner of the mailing label on the back of this issue.** By including your member number we can provide you with prompt and efficient service. Please make any address corrections on the label.
- ◆ Save your catalog to identify the seeds you have selected.

AHS Member Code Number _____

Name _____

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List Your Selections by Number Only

Please send me the following "first preference" seed packets:

- | | | | |
|----------|----------|-----------|-----------|
| 1. _____ | 5. _____ | 9. _____ | 13. _____ |
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| 4. _____ | 8. _____ | 12. _____ | |

In case the supplies of some of your selections have been depleted, please list alternate selections on the blanks below:

- | | | | |
|-----------|-----------|-----------|-----------|
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☐ **Please send me all 15 selections.** I enclose my \$3 voluntary contribution to help defray postage and handling costs.

You can help us continue to expand and improve the AHS Seed Program if you contribute more. Contributions to the American Horticultural Society are tax-deductible.

MAIL TO: AHS Seed Program, P.O. Box 0105, Mount Vernon, VA 22121.

Book Order Form

- | | |
|--|--------------------------|
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AHL110 |
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Postage and handling: \$2.50, first book; \$1.50, each additional book. Virginia residents add 4½% sales tax. Please allow six weeks for delivery. Prices are subject to change without notice. **Please write separate checks for book and seed orders.**

☐ **Enclosed is my check for \$** _____

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45th Williamsburg GARDEN SYMPOSIUM

April 7-10, 1991

Colonial Williamsburg and the American Horticultural Society invite you to spend four spring days in Williamsburg attending the 45th Garden Symposium. Come and talk flowers amid the special colors and bouquets of dogwood, redbud, tulips, and other favorites of the season.

The theme of the symposium, "Garden Earth," will remind us of the very fragile environment that we all share. As gardeners we have special opportunities—and obligations—to make certain we utilize the soundest methods for protecting plant species, conserving water, and beautifying the earth by planting our own gardens while supporting high quality public landscaping in our many communities. In his keynote address, U.S. Assistant Secretary of Agriculture Charles Hess will describe the federal government's program for the environment. Added to the informative presentations of a knowledgeable panel of speakers will be tours, exhibits, and clinics. San Francisco will be the honored city, and journalist-lecturer Joan Hockaday will present an illustrated talk about her city entitled "Garden-making by the Sea: The Gardens of San Francisco from Gold Rush to Thomas Church."

Speakers in order of appearance are:

The Honorable Charles Hess, U.S. assistant secretary of agriculture: "Enhancing Garden Earth Through Science and Education."

Neil Diboll, plant ecologist and nurseryman, Westfield, Wisconsin: "Prairies and Meadows: The Ecological Gardens of Yesterday and Tomorrow."

Patricia Gibbs, Colonial Williamsburg historian, and *Vanessa Patrick*, Colonial Williamsburg architectural historian: "The Plantation Gardens of Masters and Slaves at Carter's Grove."

Joan Hockaday, journalist and lecturer, San Francisco, California: "Garden-making by the Sea: The Gardens of San Francisco from Gold Rush to Thomas Church."

Jane Campbell Symmes, Cedar Lane Farm, Madison, Georgia: "Using Native Plants in your Garden."

Roger B. Swain, science editor of *Horticulture* magazine and a host of PBS's "The Victory Garden": "Bugs, Birds, and Beas-



ties: Getting a New Grip on Wildlife in the Garden."

Kenn Stephens, president, International Design Symposium, Ltd., Westwood, Massachusetts: "Flower Parade: The Color and Style of Flower Arranging Artistry in the Americas."

Wesley A. Greene, landscape supervisor, Colonial Williamsburg: "Fronds and Neighbors: Native Ferns for the Home Landscape."

Douglas F. Welsh, president, National Xeriscape Council: "Xeriscaping: Water Conservation Through Creative Landscaping."

Warren Schultz, editor-in-chief, *National Gardening* magazine: "Glasnost in the Garden: An American Visit to Soviet Gardens." (Closing luncheon)

Call a friend and plan to come to Williamsburg on April 7. Feast your eyes on a cornucopia of horticultural delights and take home a satchel of new ideas. For a

registration folder, please mail coupon below to Symposium Registrar, Box C, Williamsburg, VA 23187, or call (804) 220-7255.

45th Williamsburg Garden Symposium

Please send me a registration folder for the 45th Williamsburg Garden Symposium.

Name _____

Address _____

City _____

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MAIL TO: Symposium Registrar, Box C, Williamsburg, VA 23187.

AHS Bulletin Board



River Farm's view of the Potomac River had been obscured by volunteer trees, vines, and brush (left) until Program Director Joe Keyser began clearing the mess during his lunch hour. He is now planting the bank with bulbs and daylilies.

Flower-Arranging Seminars Scheduled

Flower arrangers of all experiences are invited to participate in the many flower-arranging seminars offered at River Farm this year. The series is presented by AHS in conjunction with International Design Symposium, Ltd., a nonprofit education and service organization that explores design methods in fine and decorative arts, garden design, architecture, interior design, and historic preservation.

In January, Sally Nash will present *The Classical World—More than Ancient Ruins*, featuring "Traditional Designs Using Fruit and Foliages" on

January 15 and "Modern Sculptural Designs Using Fruits, Vegetables, and Foliages" on January 16. Nash, an artist and flower arranger, leans toward a naturalistic approach in her designs. She has judged shows for the Garden Club of America, the National Council of State Garden Clubs, and the American Daffodil Society.

February will usher in *The Romantic Era* with two classes by Pauline Runkle. "Candlelight, Flowers, and Music—Table Arrangements" will be held on February 27; "Using Flowers and Contemporary Glass" on February 28. As owner of Floral Artistry in Manchester-by-the-Sea, Massachusetts, Runkle designs distinctive arrangements for corporations, individuals, and museums.

March brings *The Renaissance—Heir to Many Flower Traditions* with Kenn Stephens, founder and president of IDS. On March 19 Stephens will present "Flower Arrangements and a New Renaissance" followed by "Designs that Speak of Form and Texture" on March 20. Stephens's work explores the relationship between garden design and interior design. His clients have included the National Cathedral in Washington, D.C., Christ Church Cathedral in Houston, Texas, and Westminster Abbey in London.

Stephens will return with *The Mother of Gardens*, featuring "Flower Art of Ancient China," on May 14 and "Naturalistic and Gardenesque Arrangements" on May 15. In June he

presents *The Influence of Ikebana* with a session on "Line Arrangements in the West" on June 11 and "Modern Massed Line Designs" on June 12.

Floral materials will be provided for each workshop, but participants are encouraged to bring flowers and design materials from their own gardens as well as containers of their choice. The 10 a.m. to 4 p.m. sessions are \$75 per day and include supplies and lunch. Registration is limited to 20 participants per session. For more information call or write AHS.

Helpful Lists

The Gardeners' Information Service has three resource bulletins that will be of interest to gardeners and horticultural professionals. *Plant Societies of the United States and Canada*, *National Horticultural Organizations in the United States and Canada*, and *Gardening, Horticultural, and Botanical Publishers of North America* are available for \$1.50 each (or all three for \$4).

GIS has also completed a series of lists of gardens in every state and Canadian province. Each briefly describes state/provincial botanical gardens, arboreta, and conservatories; museum, estate, and historic gardens; and other public gardens. To receive a GIS garden list, send \$1 per state or province (five for \$4) to Gardeners' Information Service at the AHS address. Make checks payable to the American Horticultural Society.



This year's fall festival, "A Celebration of Japan," drew a record attendance of 2,300. Outdoors, visitors enjoyed Japanese food and browsed through crafts and plants for sale. Indoors, they were treated to koto music, oriental paintings, and an exhibit of ikebana floral arrangements by the Ohara School of Washington.

Contact AHS at 7931 East Boulevard Drive, Alexandria, Virginia 22308, (703) 768-5700, or (800) 777-7931.

Members' Forum

Low Profile Among Pros

I have a small horticultural business, and I am appalled at the number of people in our profession who are not members of the American Horticultural Society. As a founder of the International Herb Growers and Marketers Association, a charter member of the Kentucky Herb Growers and Marketers Association, and an honorary member of the Oklahoma Herb Growers, I am well aware that organizations like these have many potential AHS members. But I have yet to see a mention of River Farm, *American Horticulturist* magazine or News Edition, or to encounter a display at any of the large trade shows.

Although the publications of the organization are not directed at the industry itself, they are for our customers. As business people we need to support AHS. But in order to support it, businesses must be approached, must see the advantages offered, and should, by all rights, "pay their dues" to the industry by supporting this nonprofit organization.

American gardeners are becoming much more sophisticated. They are no longer satisfied with the overgrown blooming flats set out on hot asphalt at garden centers. They are looking for quality, for perennials, and for larger plants. Smart discount houses are aware of this and now train garden center personnel to care for the material that they contract to be grown. We have come a long way, but we need to go further, and AHS can help. But a membership campaign, wider advertising, perhaps some

reshaping of the magazine, is absolutely necessary. In the meantime, I am grateful to the Society for the work it does, for its fine publications, and for the presence of this learned group.

Mary Wetzel Peddie
Washington, Kentucky

You are right that everyone would benefit from a closer association between AHS and the nursery profession. There are, of course, a number of excellent organizations and publications exclusively for professionals. But professionals and consumers need a forum for communicating with each other. As our president, George C. Ball Jr., noted in our September News Edition, this would result in gardeners demanding higher quality, and being willing to pay for it when they get it.

Unfortunately, membership and marketing campaigns are expensive—a case of needing money to make money. As an extremely lean, nonprofit group, we must rely on our friends in the profession to support us in low-cost ways: distributing membership brochures to their customers, contributing to our seed program, advertising in our publications. Plant societies can mention us in their newsletters. There are probably other ways that we haven't thought of, and we're open to suggestions.

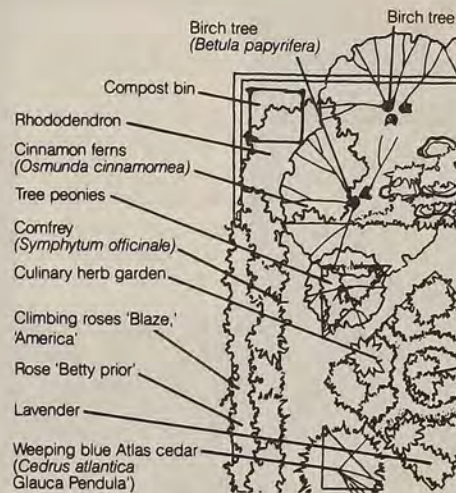
A Glory-ous Bin

In regard to the request in the November issue for ways to camouflage compost: For years I have used a simple system consisting of a four-foot diameter circle of 48-inch tall, six-inch square wire fencing held in place by three inexpensive fiberglass electric fence stakes. Each spring I've allowed crown vetch to cover the wires, but a morning glory such as 'Heavenly Blue' would do just as well. Thus the site is handsomely screened during the growing season and after our first hard frost I simply add the debris from the screening plant to the compost. I do not turn the pile. The stakes and screen are easily removed when I'm ready to fill my beds with the compost.

Sharon E. Herrmann
Kirkwood, Pennsylvania

Compost on a Rooftop

Of course city and suburban gardeners can have attractive or unobtrusive



The above plan, reproduced with permission from *The City Gardener's Handbook*, shows a corner of Linda Yang's yard, where she has concealed her compost behind a rhododendron and a birch.

compost! I couldn't imagine coping with compost in a small city space until I met a rooftop gardener who did. His heap was a study in simplicity: a slatted wood box about the size of an orange crate (which maybe it had been), raised an inch or so off the floor and topped with a hinged cover stained a nondescript shade. His compost pile did not smell. Nor was it visually offensive. It also occupied hardly any space at all.

The only space I could find on my terrace garden for my own venture was a half whiskey barrel prepared for a plant I'd never bought. The whiskey barrel has since been replaced by a variety of more fancy-looking compost "makers." The best is a rigid, dark brown polyethylene affair that measures a squarish two feet wide by two and a half feet high, and blends discreetly into the shadow of a shrub.

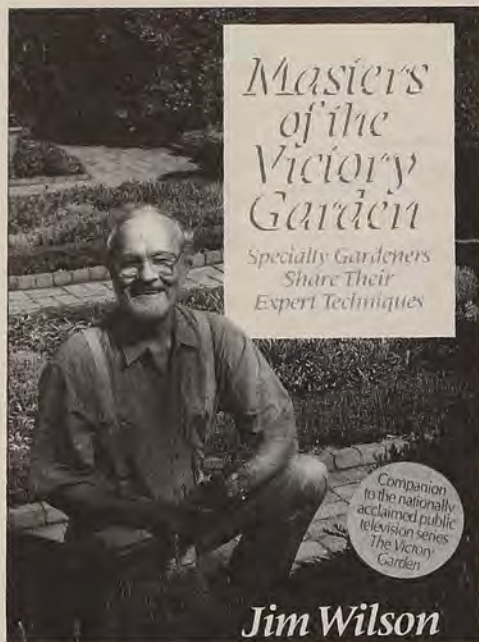
Linda Yang
New York City

Linda Yang, garden columnist for the New York Times, describes her introduction to composting more fully in her new book, The City Gardener's Handbook: From Balcony to Backyard. She now gardens in a back yard measuring 18 by 50 feet, and as a photo in her book shows, her compost maker is invisible behind the screen of a rhododendron and a birch.

Geranium Book

Mary Peddie of Rutland of Kentucky Herb Specialists and Judy Lewis of Lewis Mountain Herbs are working on a book project about scented geraniums. They are accumulating bibliographic data, primary written sources, and unpublished primary source information. They would appreciate hearing from AHS members who have data, information, and knowledge about the "scenteds." Contact Mary Peddie, P.O. Box 182, Washington, KY 41096, (606) 759-7815.

Gardeners' Bookshelf



Masters of the Victory Garden

Jim Wilson. Little, Brown and Company, Boston, 1990. 244 pages. Color photographs. Publisher's price: softcover, \$19.95. AHS member price: \$17.00.

Since I never tire of reading about the experiences of other gardeners, I was eager to settle down with *Masters of the Victory Garden*. I wasn't disappointed. Jim Wilson—a host of the PBS series “The Victory Garden” and author of this companion volume—digs deep into the lives of each of the featured gardeners, discovering their secrets of raising beautiful plants and delving into the history of their particular gardening passions.

Wilson writes: “For lack of a better name, we call them ‘Masters of the Victory Garden.’ None has the hubris to proclaim, ‘I am the best!’ They flinch at the term ‘expert,’ and even grumble at being called an ‘authority.’” He adds, “My new friends would be the first to admit that I would not have gone wrong had I chosen some other Garden Master in their specialties. The woods are full of good hobby gardeners growing specialty plants. I chose to feature these particular Garden Masters to present a cross section of backgrounds, ages, lifestyles, aspirations, and climates.”

Many general gardeners may be harboring a secret wish to specialize in

a particular plant. But even if you just want to learn more about the plants you already grow, this book is for you. Rhododendrons, hostas, daylilies, roses, antique fruit trees, herbs, dwarf conifers, peonies, wildflowers, lilies, and peppers each receive a chapter. The garden masters of each offer tips on how to get started and suggest cultivars and species for the beginner. Wilson also includes general information on each plant—how to grow, when to plant, pests and diseases to watch out for, and more. Sidebars and boxes throughout the chapters include specific information on and photos of a variety of plant-related projects, including hybridizing daylilies, dividing hostas, grafting fruit trees, protecting peppers.

The layout of the book, combined with the excellent photos and Wilson's enjoyable writing style, makes this a book I know I'll refer to again and again.

—Mary Beth Wiesner

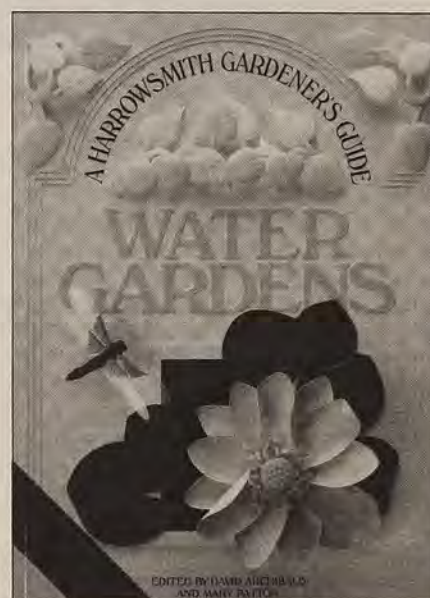
Water Gardens

Edited by David Archibald and Mary Patton. Illustrations by Marta Scythes. Camden House, Willowdale, Ontario, Canada, 1990. 95 pages. Color photographs and black-and-white illustrations. Publisher's price: softcover, \$9.95. AHS member price: \$8.45.

Water Gardens, produced by the editors of *Harrowsmith Country Life* magazine, is a good introduction to the world of water gardening. The book is composed of a series of essays written by experts in the water gardening arena. “Old Pleasures Rediscovered” by Montreal landscape architect Friedrich Oehmichen examines the history of water gardening. “Design and Construction” is given a thorough going over by Douglas Gilberg, a specialty grower of herbaceous and aquatic plants in Saint Louis, Missouri. “Management and Maintenance” is described in clear terms by Henry Reimer, who propagates aquatic plants near Tillsonburg, Ontario. Jennifer Bennett, a contributing editor of *Harrowsmith* magazine, discovers the pleasures of container water gardening in the final essay of the book. Color photographs illustrate landscaping ideas, aquatic plants and animals, and

the technical aspects of building water gardens.

The final chapter of *Water Gardens* contains a detailed plant list with recommendations from three experts who garden in three different zones: Eva Feuersenger owns Hillier Water Gardens in Qualicum Beach, British Columbia, in Zone 8; Howard R. Crum is operations manager of Lilypons Water Gardens in Lilypons, Maryland, in Zone 7; Sue See is owner/manager of Moore Water Gardens Ltd. in Port



Stanley, Ontario, in Zone 5. *Nymphaea* species (water lilies) and *Nelumbo* species (lotuses) each have their own sections followed by alphabetical listings of hardy marginal (shallow water plants) and bog plants (moisture-loving plants that grow at the sides of ponds); tropical marginal and bog plants; and oxygenating plants. Plants are illustrated with black-and-white drawings and each listing includes a brief description of the plant and its habitat and comments from all three experts. Gardeners who like full-color photographs of plants may be disappointed to find black-and-white drawings in this section, but the illustrations by Marta Scythes are precisely detailed. I wish the editors had thought to label the drawings—in some cases it's difficult to tell which drawings go with which plants. Overall this is a good book for the beginner.

—M. B. W.

The Naming of Flowers

Anne Halpin. Illustrations by Rob Proctor. Harper & Row, New York, 1990. 64 pages. Color illustrations. Publisher's price: hardcover, \$10.00. AHS member price: \$8.50.

I've loved books and stories since my parents read me my first bedtime tale as a child, but I never realized that the stories behind the names of plants could be as absorbing as any fairy tale was then. Plant names may commemorate persons in the field of botany or biology or they may describe plant parts, but many botanical and common plant names are rooted in ancient myths, legends, and folklore.

If you've ever wondered how garden flowers received their names, *The Naming of Flowers* is just the book to begin your education. In this pocket-size book Anne Halpin explores the stories behind the names of 27 wild and garden flowers. Bleeding-heart (*Dicentra spectabilis*), marigold, bachelor's-button (*Centaurea cyanus*), dame's rocket (*Hesperis matronalis*), primrose, and Saint-John's-wort (*Hypericum*) are among the flowers included.

One of my favorites is the story of the lilac. *Syringa*, the lilac's botanical name, is derived from the Greek *syrinx*, or pipe, a reference to the plant's hollow stems. "A syrx is not just any kind of pipe—it is the name of the pipe of Pan, whose haunting sound perfectly reflects its sad origins." According to Greek myth, Pan, the goat-footed god of shepherds, was in love with the

nymph Syrx. He pursued her through the forest and when Syrx collapsed in exhaustion on the bank of a river, Pan went to embrace her. But the water nymphs had rescued Syrx and Pan found himself "hugging a clump of reeds instead. His beloved lost to him, Pan cut the reeds into several lengths and made a pipe upon which he played the plaintive melodies of his broken heart."

The backgrounds of some plant names are easy to figure out—pinks, the common name for *Dianthus*, are named for their color—but others may require some imagination. The spurs of the delphinium flower resemble the nose of a bottle-nosed dolphin and its name is based on *delphis*, the Greek word for dolphin.

Rob Proctor's botanical illustrations beautifully complement the stories.

—M. B. W.

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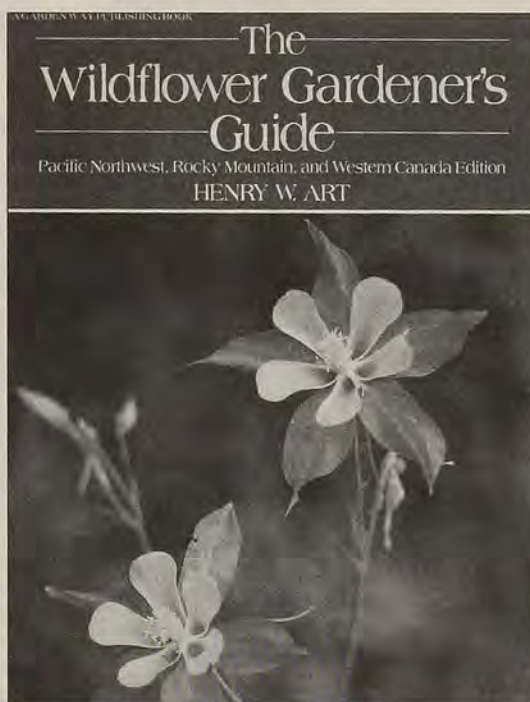
The Wildflower Gardener's Guide: Pacific Northwest, Rocky Mountain, and Western Canada Edition

Henry W. Art. Storey Communications, Inc., Pownal, Vermont, 1990. 179 pages. Color photographs and black-and-white line drawings. Publisher's price: softcover, \$12.95. AHS member price: \$11.00.

The low-maintenance and environmental aspects of native plant gardening have enticed many gardeners to set aside small areas for native species or to create sweeping wildflower meadows in large vacant areas. If you are a recent convert to the native plant movement, a veteran of wildflower plantings, or just want to see what the fuss is all about, pick up a copy of *The Wildflower Gardener's Guide*. This is the newest edition to the series, which includes two other guides—for the *Northeast, Mid-Atlantic, Great Lakes, and Eastern Canada* and for *California, Desert Southwest, and Northern Mexico*.

Art's book is packed with information on wildflower gardening. Included are suggestions of how to use native plants in the garden—in beds and borders, in rock gardens, in containers, as ground covers, and to attract butterflies and hummingbirds; detailed information on what to plant, when to plant, and how to plant; propagation techniques; and conservation methods.

Then it's on to the 33 plant descriptions. Wildflowers are divided into four



sections—north coastal forest, montane forest, alpine, and dry foothill species. Each wildflower is illustrated with a color photograph and a detailed black-and-white line drawing. A map showing the plant's natural range and a chart listing family, color, height, flowering time, fruiting time, growth cycle, hardiness zone, and habitat are also included. Descriptions are followed by cultural information, propagation methods, and lists of companion plants.

Appendices list suppliers of seed and plants, botanical gardens and arboreta, native plant and horticultural societies, and references. A glossary and index are also provided.

—M. B. W.

Gardeners' Dateline

Mid-Atlantic

♦ **Feb. 8-10. The Maymont Flower and Garden Show.** Richmond Centre, 400 East Marshall St., Richmond, Virginia. Information: Maymont Foundation, 1700 Hampton St., Richmond, VA 23220, (804) 358-7166.

♦ **Feb. 15. Class: Low Maintenance Perennials.** U.S. Botanic Garden, Maryland Ave. and First St., S.W., Washington, DC. Information: Public Programs Office, (202) 226-4082.

♦ **Feb. 15-16. Third Annual Meeting of the Association of Professional Landscape Designers in conjunction with the environmental conference "Leaving No Stone Unturned V."** Bethesda, Maryland. Information: Joel Lerner, membership chair, (301) 652-1212 or Peggy Connors, executive vice-president, (617) 934-5200.

♦ **Feb. 20-24. The Washington Flower and Garden Show.** Washington Convention Center, 900 Ninth St., N.W., Washington, DC. Information: TJS Productions, 7668-B Fullerton Rd., Springfield, VA 22153, (703) 569-7141.

♦ **Mar. 15-17. The 10th Anniversary Pesticide Forum of the National Coalition Against the Misuse of Pesticides—A Decade of Determination: A Future of Change.** Alexandria, Virginia. Information: NCAMP, 701 E St., S.E., Suite 200, Washington, DC 20003, (202) 543-5450.

North Central

♦ **Jan. 5-8. GrowerExpo '91.** Pheasant Run Resort, Saint Charles, Illinois. Information: GrowerExpo '91, P.O. Box 532, Geneva, IL 60134, (708) 208-9080, Fax (708) 208-9350.

♦ **Jan. 12-Mar. 10. Azalea Show.** Foellinger-Freimann Botanical Conservatory, Fort Wayne, Indiana. Information: Foellinger-Freimann Botanical Conservatory, 1100 South Calhoun St., Fort Wayne, IN 46802, (219) 427-1267.

♦ **Jan. 31-Feb. 3. Saint Louis Flower Show.** Kiel Hall, 1400 Market St., Saint Louis, Missouri. Information: Saint Louis Flower Show, Junior

League of Saint Louis, 10405 Clayton Rd., Saint Louis, MO 63131, (314) 997-3407.

Northeast

♦ **Jan. 20-22. Empire State Tree Conference.** Syracuse, New York. Information: New York State Arborists Association, (518) 783-1322.

♦ **Feb. 28-Mar. 3. The 75th Annual Worcester Spring Flower Show: The Language of Spring.** The Centrum, Worcester, Massachusetts. Information: Worcester County Horticultural Society, (508) 869-6111.

AHS Calendar

The American Horticultural Society's *National Calendar of Gardening Events* is North America's most complete guide to the horticultural and gardening events occurring through December 1991. The 56-page calendar provides times, places, contacts, and descriptive information on activities scheduled by hundreds of plant societies, state and regional horticultural societies, garden clubs, and public gardens, arboreta, and trade organizations. The *National Calendar* also includes information on Arbor Days throughout the nation, major flower shows, and an appendix of those groups sponsoring events. Calendars are available for \$3 each—just \$2.25 when ordering more than 10. For discounts on larger amounts or for nonprofit organizations, call (800) 777-7931.

♦ **Mar. 8-17. New York Flower Show.** Pier 92, 55th St. and the Hudson River, New York, New York. Information: Horticultural Society of New York, 128 West 58 St., New York, NY 10019, (212) 757-0915.

♦ **Mar. 9-17. New England Spring Flower Show.** Sponsored by the Massachusetts Horticultural Society. Information: Massachusetts Horticultural Society, 300 Massachusetts Ave., Boston, MA 02115, (617) 536-9280.

♦ **Mar. 10-17. Philadelphia Flower Show.** Philadelphia Civic Center,

Philadelphia, Pennsylvania. Information: Pennsylvania Horticultural Society, 325 Walnut St., Philadelphia, PA 19106-2777.

Northwest

♦ **Feb. 5, 7. Course: Fundamentals of Plant Recognition.** Center for Urban Horticulture, University of Washington, Seattle, Washington. Information: Dave Stockdale, (206) 685-8033 for details on this and other classes.

♦ **Feb. 7-8. Alaska Greenhouse & Nursery Conference.** Anchorage. Information: Cathy Wright, Alaska Division of Agriculture, SR Box 7440, Palmer, AK 99645, (907) 745-4119.

♦ **Feb. 15-18. Northwest Flower and Garden Show.** Washington State Convention Center, 8th and Pike St., Seattle, Washington. Information: Northwest Flower and Garden Show, 1515 N.W. 51st, Seattle, WA 98107, (206) 789-5333, Fax (206) 784-5545.

South Central

♦ **Jan. 23-25. American Sod Producers Association Midwinter Conference & Exposition.** San Antonio, Texas. Information: American Sod Producers Association, 1855-A Hicks Rd., Rolling Meadows, IL 60008, (708) 705-9898, Fax (708) 705-8347.

Southeast

♦ **Jan. 20-23. Landscape Magic '91.** Hosted by Walt Disney World Seminar Productions and the Florida Nurserymen and Growers Association. Lake Buena Vista, Florida. Information: Walt Disney World Seminar Productions, Landscape Magic '91, P.O. Box 10,000, Lake Buena Vista, FL 32830-1000, (407) 363-6620.

♦ **Feb. 1-3. Come to the Source.** Louisville, Kentucky. Hosted by the Management Clinic of the American Association of Nurserymen. Information: The Management Clinic, 1250 I St., N.W., Suite 500, Washington, DC 20005, (202) 789-2900.

♦ **Feb. 7-10. Show: Orchids Around Florida.** Treasure Coast Mall, Stuart, Florida. Information: John Murchake, (407) 692-9105.

♦ **Feb. 16. Sixth Annual Guilford Horticultural Society Symposium.** Guilford County Agricultural Center, 3309 Burlington Rd., Greensboro, North Carolina. Information: Jeanette Windham, Symposium Chairperson, 5070 Bunch Rd., Summerfield, NC 27358, (919) 643-5677.

♦ **Feb. 22-24. The 16th Annual AVSA-Judged Show: The Gay '90s—Then and Now.** Eastlake Square Mall, Tampa, Florida. Sponsored by the Tampa African Violet Society. Information: Joanne Martinez, Chairman, 809 Taray DeAvila, Tampa, FL 33613, (813) 963-7424.

♦ **Feb. 23-Mar. 3. The South's Salute to Spring.** Charlotte Merchandise Mart, Charlotte, North Carolina. Information: Southern Spring Shows, Inc., 810 Baxter St., P.O. Box 36859, Charlotte, NC 28236, (704) 376-6594, Fax (704) 376-6345.

♦ **Feb. 26. Behind-the-Scenes Tour of Selby Gardens.** 811 South Palm Ave., Sarasota, Florida. Information: Spencer Ketchum, Director, News Bureau, Selby Gardens, (813) 366-5731.

♦ **Mar. 2. The Secret Garden—A Symposium.** North Carolina State University, Raleigh, North Carolina. Keynote speaker Allen Lacy. Information: Catherine Knes-Maxwell, NCSU Arboretum, P.O. Box 7609, Raleigh, NC 27695-7609, (919) 737-3132.

♦ **Mar. 6-10. Atlanta Flower Show.** Atlanta Apparel Mart and INFORUM, Atlanta, Georgia. Information: Kate Nerone, Atlanta Flower Show, Atlanta Market Center, 240 Peachtree St., N.W., Suite 2200, Atlanta, GA 30303, (404) 220-2121.

West Coast

♦ **Jan. 13. Bulb Sale.** Sponsored by the Southern California Gladiolus Society. Los Angeles State and County Arboretum, Arcadia, California. Information: (818) 446-8251.

♦ **Jan. 18-21. First Annual Los Angeles International Flower and Garden Show.** Fairplex Convention Complex (Pomona), Los Angeles, California. Information: Duane Kelly or Deion Torgeson, (714) 593-8865.

♦ **Jan. 19. Camellia Seminar.** Descanso Gardens, LaCanada Flintridge, California. Demonstration of grafting camellias and lecture by

camellia hybridizer Julius Nuccio. Information: (818) 952-4400.

♦ **Jan. 31. Spring Hort Show.** Fairplex Exposition Center, Los Angeles County Fairgrounds, Pomona, California. Information: Richard Staples, 3136 Root Ave., Carmichael, CA 95608, (916) 488-6434.

♦ **Feb. 7. Garden Talk: Plants of New Zealand.** Slide lecture by Kathy Musial, curator at the Huntington Botanical Gardens, San Marino, California. Information: (818) 405-2282.

♦ **Feb. 8-June 2. Exhibition: Orchids: A Victorian Passion.** Huntington Library Exhibition Hall, San Marino, California. Information: (818) 405-2282.

♦ **Feb. 9. African Violet Show.** South Coast Botanic Garden, Palos Verdes Peninsula, California. Sponsored by the South Coast African Violet Society. Information: (213) 772-5813.

♦ **Feb. 17-20. First Annual Executive Forum of the Associated Landscape Contractors of America.** Radisson Palm Springs Resort and Convention Center, Palm Springs,

California. Information: ALCA, 405 North Washington St., Suite 104, Falls Church, VA 22046, (703) 241-4004, Fax (703) 532-0463.

♦ **Mar. 7-10. The 43rd Annual California and Pacific Southwest Recreation & Park Conference and Exhibit.** Santa Clara Convention Center, Santa Clara, California. Information: Susan Wipf, Director of Marketing, CPRS/NRPA Conference Headquarters, P.O. Box 161118, Sacramento, CA 95816, (916) 446-2777, Fax (916) 446-0285.

International

♦ **Feb. 3-5. International Garden Centre Conference '91.** Burswood Convention Centre, Perth, Australia. Information: John Stanley Associates, 142 Hummerston Rd., Kalamunda, Western Australia 6076. Telephone +619 293-4533, Fax +619 293-4561.

♦ **Feb. 27-Mar. 3. Garden Club of Toronto Show: If I Had a Dream...** Civic Garden Centre, 777 Lawrence Ave. East, Don Mills, Ontario, M3C 1P2. Information: Judy Dingle, (416) 447-5218.



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Viral Pesticide Looks Promising

Virologists from Boyce Thompson Institute for Plant Research and entomologists at the New York State Agricultural Experiment Station of Cornell are monitoring a cabbage patch where a genetically altered virus was released in August 1989. This is the first experiment of its kind conducted in the United States. The virus is a version of a naturally occurring organism that destroys cabbage loopers but is harmless to other organisms. So far the virus has not spread beyond the target plot and ladybugs and other beneficial insects have been unaffected. The scientists hope the virus will be a forerunner of viral pesticides that can replace some chemicals.

Petunia Protector

Natural insecticides may help petunias—distant relatives of the tomato—fend off the destructive tomato fruitworm. The natural chemicals were discovered in petunia leaves and stems by Agricultural Research Service scientists in Albany, California. When fruitworms were fed the chemicals—petuniolides and petuniasterones—young tomato fruitworm larvae died and the growth of older worms was stunted.

Studies of two other tomato relatives indicate that fruitworm-fighting chemicals are also present in cape gooseberry and tomatillo. Protoplast fusion and

microinjection may make it possible for scientists to transfer the natural resistance chemicals into tomatoes. The tomato fruitworm also enjoys potatoes, corn, cotton, and soybeans, which might likewise be protected with the transferred natural chemical.

Tree Acts Pass

President Bush's tree planting initiative, "America the Beautiful," was approved by Congress in October. The initiative, which was included in the forestry portion of the 1990 Farm Bill, received \$73.7 million for fiscal year 1991. Of that amount, \$21.2 million will be designated for urban and community tree planting and improvements, \$32.5 million will be used for rural forestry programs, and \$20 million will be used to create the National Tree Trust Act of 1990.

President Bush has called the Tree Trust Act "a key part" of the "America the Beautiful" legislation. It calls for the president to designate a private nonprofit foundation to receive a one-time federal grant that will promote public awareness of the importance of trees and provide financial assistance to grassroots volunteers to plant trees. The foundation will also begin to raise millions of dollars more to help reforest America's communities.

"America the Beautiful" calls for the planting, maintenance, and improvement of one billion trees per year over the next several years.

Congress also funded a \$15 million tree planting program that will be

administered by the Small Business Administration. Under the program, SBA will provide grants to state and local governments which, in turn, will contract with small businesses to plant trees on state and municipal lands. The program includes funds that will maintain the newly planted trees for three years.

Big Green Blackballed

Opposition by almost two-thirds of California voters spelled defeat for the "Big Green" environmental initiative in November. Proposed by a coalition of California politicians and environmentalists, Proposition 128 would have phased out the use of chemicals known to cause cancer and expanded the state government's power to protect endangered areas (see the July News Edition). It addressed issues of global warming, contamination of food, and pollution of coastal waters, and contained a provision to protect ancient redwood stands from being cleared.

The initiative was vigorously opposed by farmers and nursery professionals, who said it would have eliminated up to half of the pesticides they use and made growing some field crops virtually impossible. The initiative's loss was blamed on its price tag—estimated at anywhere from \$3 billion to \$12 billion a year—and voters' cynicism about government bureaucracies, rather than a lack of concern about the environment.



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