

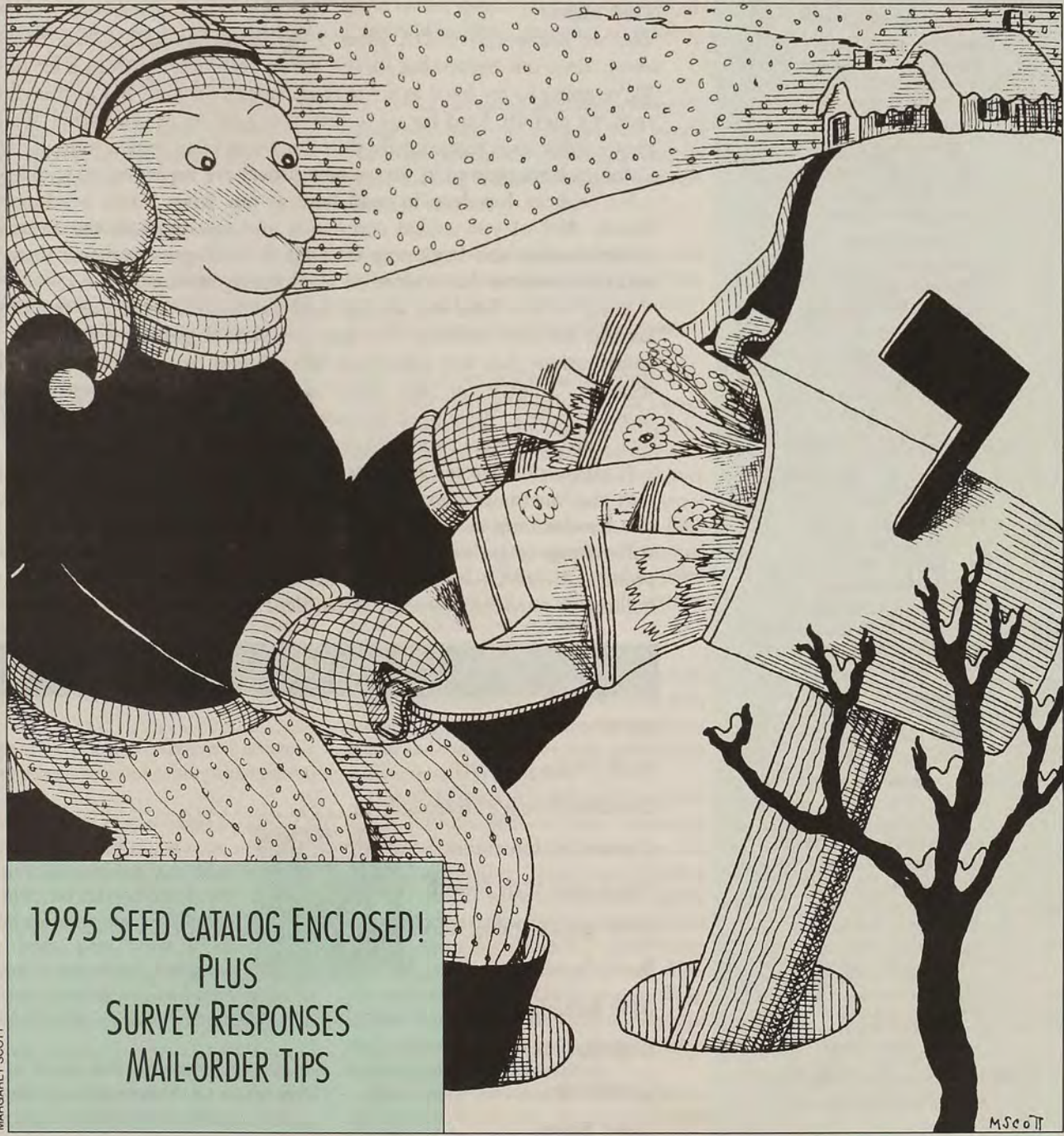
NEWS EDITION

# American Horticulturist

January 1995

A Publication of the American Horticultural Society

\$3.00



1995 SEED CATALOG ENCLOSED!  
PLUS  
SURVEY RESPONSES  
MAIL-ORDER TIPS

MARGARET SCOTT

# American Horticultural Society

*The American Horticultural Society seeks to promote and recognize excellence in horticulture across America.*

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# American Horticulturist

Volume 74, Number 1

January 1995

## ARTICLES

### Mail Mania

Yes, we know you USDA Zone 9 gardeners are still outside working away. Since our September survey, we've been hearing from a lot of you. We're going to try hard to write more stories for you, but at this time of year, it's awfully hard for us to give you buckets of sympathy! We temperate folks must temporarily shift our focus from mulch to mail carrier. Catalogs have poured in. Brave new orders are beginning to trickle out.

We've been hip-deep in mail here at our River Farm headquarters. Nearly 400 of you added comments and questions to the September questionnaire, and beginning on page 3, we'll print some of them and address concerns that seemed to elicit strong feelings.

Many of you listed our annual Seed Exchange Program as one of your favorite member benefits. This year you were so generous with your seed contributions that our education office began to look like the climactic scene in "Miracle on 34th Street"—the stream of boxes and envelopes seemed endless. We topped our previous record for types of seed offered by a third, and have expanded the catalog from 12 to 18 pages.

A group that we felt *was* deserving of more sympathy in late winter was our fine mail-order nurseries. We send them garbled orders in illegible handwriting with checks in the wrong amount, and somehow they still manage to get us the plants we want. In this issue we've devoted our popular "Mail-Order Explorer" department to nursery owners' tips for making the ordering process as painless as possible on both sides.

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# MEMBERS' FORUM

## Dear Members:

Nearly 400 of you who responded to our September survey added comments about what kind of articles you would like to see or questions about policies of the American Horticultural Society and its publications. We're busy finding authors for the topics that interest you. In this issue, we want to answer a few of your questions and concerns. As promised, all respondents will remain anonymous unless they have requested that their names be used.

## Environmental Issues

AHS's conservation/environment emphasis—including water conservation, preservation of native plants, planting to attract birds and butterflies—is as important to me as gardening tips.

We do not enjoy a rabid, environmental focus as [occurs] in your articles now and then. There is entirely too much environmental push in all parts of life these days. Gardeners, above all, do not need this constant enviro-harassment by poorly informed bureaucrats.

There are many horticulture publications that are useful and beautiful. AHS publications need to go further—as an alternative publication for more environmental issues.

Information on environmental issues is thoroughly covered by other publications.

Gardeners think of gardening as an environmentally sound activity, but it is anything but. They need to know more about its impact on the environment. Throw-away pots, peat moss (your article was excellent), inorganic fertilizers, packaging, and the impact of zillions of hothouse-grown bedding plants.

Give us more info on native American plants and gardens in the U.S.—some stuff on environmentally responsible gardening,

or even take ownership for driving a new gardening ethic in America.

No environmental stuff please! I've OD'd on the environment and the associated do-good issues, special pleading, etc. In fact, I've OD'd on the environment worse than on O.J.

Pictures of and about society members are such a trite way to fill a magazine. I would like to see more stress on native plants. So much is being lost and the gene pool depleted of natives.

Please remain a horticultural magazine, and leave the environment realm to environmental magazines. "Environmentalists" have taken over too many publications.

I own five acres in Piedmont, North Carolina. My goal is to enhance the native habitat with native and non-native species appropriate to the various micro-environments on my land. The plants I choose must not only be ornamental, they must provide food and/or habitat for wildlife. Any articles reflecting a similar goal would be appreciated. Currently, I tend to think of your publications as primarily written for gray-haired rose growers.

*Some of our best friends are gray-haired rose growers! But we find that they, too, are concerned about the entire world of plants, and whether the next generation will enjoy access to nature.*

*Part of the mission of the American Horticultural Society is to encourage "environmentally responsible gardening." One way of doing this is to describe those native species that don't require copious amounts of water or chemicals to combat diseases and pests. A recent informal, independent survey indicated that American Horticulturist writes far more about native species than do other national gardening magazines.*

*But it is not our intention to become native-species chauvinists, nor do we believe*



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that many gardeners would want us to be. At this year's Cullowhee Native Plant Conference in North Carolina, an annual meeting attended by some of the nation's most dedicated growers of natives, a request for a show-of-hands indicated that only about half a dozen of the some 450 in attendance grew only natives in their home gardens.

In sharing information about horticulture, AHS recognizes that plants satisfy our souls on many levels. As individual entities, they reward us with their beauty or flavor. In our landscapes, they create soothing retreats and increase the value of our homes. But we believe they have a crucial role to play on a much broader level: their presence may decrease crime on our city streets, or an endangered species in the rain forest may hold the cure for cancer. We believe it is our responsibility to protect plants both as individuals and intricate communities. Our goal in reporting on environmental concerns that can affect gardeners—from the use of peat moss to the collection of natives from our parks to the greening of our blighted urban landscapes—is to be as balanced as possible. We hope that you will bring us up short when we lapse into “rabid.”

### Travel Program

You folks do a great job. The one thing I would think about though is the image portrayed when we “blue-collar” gardeners receive the brochures from the Society for what some would refer to as “elitist” vacations/trips. I do hope our contributions do not underwrite such excursions. They look like wonderful trips but must be 100 percent self-funding.

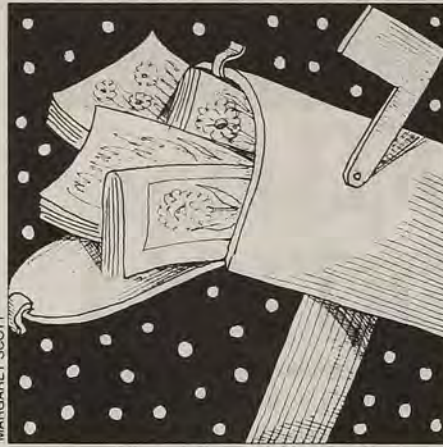
We received many similar comments. Our travel program, directed by the Leonard Haertter agency in St. Louis, Missouri, is entirely self-supporting. No member dues pay for any promotional materials or staff time involved in leading these trips. All participants in these trips make an additional contribution to the American Horticultural Society. As a result, the trips bring the Society a substantial profit that helps underwrite other AHS programs.

### Down-Home Activities

I would like to see local seminars, day trips, or classes between annual meetings.

I would like to become involved with AHS as a volunteer, but am not sure how I can—from Denver. Perhaps you can list volunteer opportunities in the News Edition.

I'm interested in connecting with other,



MARGARET SCOTT

more experienced AHS members in my area. Any suggestions?

—Joan Lamson, P.O. Box 2967, Pine Knoll Shores, NC 28512-2967

What would be really useful to me is a means of networking with other professional horticulturists, particularly those who are in business for themselves and have experience starting from scratch in a location that is really isolated. I have degrees in horticulture but no business experience, and I'm very isolated here in Nevada.

As a national organization, AHS tries to provide national and international travel opportunities, such as visits to private gardens and behind-the-scenes guided tours of public gardens, not available through other channels. As a not-for-profit organization with a very small staff, we can best serve as an umbrella organization, helping to connect members with local and regional horticultural groups offering more low-cost regional trips and lectures, as we do with our “Regional Happenings” in each News Edition. This year we are co-sponsoring some lectures and symposia around the country, and arranging for our members to obtain free or discounted admission at local garden and flower shows. You'll find more information on these efforts in this month's “AHS Bulletin Board” on pages 34 and 35.

One way in which we have made use of volunteers elsewhere in the country is at regional flower shows. We would love to have a representative of AHS explaining our benefits at the Colorado Garden and Home Show next year. Members interested in volunteering in their cities should contact Membership Director Darlene Oliver.

We recognize members' desire to talk personally to each other from nearly 50 years of annual meetings. We know that not everyone can come to those meetings, and having every one of you in one place

at one time could be too much of a good thing. Those who want to be contacted by other members within easy “sharing” distance can write us letters to be published in a future “Members' Forum.”

### News Edition

I think the magazine should have more pictures and always be in color. The issues that are like this month's are very drab and boring to look at. They don't really make me want to read them.

I enjoy being a member of an organization that promotes horticulture through internships, kids' gardening, and safer pest and disease controls. As a horticulturist, I like having usable information I can pass on to others in ways they can understand. The News Edition is an excellent resource for me. The four-color magazine is usually thrown out, maybe with an article being read only occasionally.

Clearly, the News Edition has some staunch fans, but there continues to be some confusion about what it is and isn't. One respondent said “I don't think I get this,” which seemed strange since the survey was in the News Edition. What the News Edition is not is our magazine with all the color bleached out. What it is, is an expanded version of what was once purely a Society newsletter.

It was launched as a four-page newsletter, Gardeners Forum, in January 1957. In spring 1968 its name was changed to News & Views and it grew to eight pages. In November 1980, in order to begin accepting advertising in our second publication with the blessing of the U.S. Postal Service, we made it the News Edition of American Horticulturist. Its standard size was 16 pages until the fall of 1989, when the Board of Directors responded to the editor's desire to make it more “meaty” and granted permission to expand it to a standard 24 pages. With special insertions like the Seed Catalog it often exceeds this, and this month breaks a record with 40 pages. These pages are not added on the basis of having received more advertising, as happens with commercial publications, but as our way of giving members more benefits without taking away the information and features they have come to expect.

We did realize that in the course of a re-design a year ago, intended to make the magazine and News Edition more similar in appearance, the words “News Edition” had disappeared from the publication. Not a good move, in hindsight, since everyone wants to call it something, and we feel it

has graduated from the "newsletter" status. So this month it is regaining its name on the cover.

### Children and Gardening

I strongly support your work with children. I believe that if children learn food does not come from the market and that plants and animals are part of our web of life and must be protected and respected, our species may survive.

I joined AHS when I registered for your children's symposium in August 1993, and I can't believe what I'd been missing all the years before.

The Society stuff is boring. Get off the children's gardening kick.

Our church is supporting a fertile-ground project (urban gardening/environmental education for kids). Its director attended the recent conference that I learned about through AHS. The issues on kids' programs were quite helpful.

Although I feel it important that we inspire our children on the aspects and joys of gardening and, particularly, to educate them on the importance that plants play in our lives, I think we've/you've beaten that one to death long enough. While an occasional column on that sort of topic is certainly of benefit, I think it is time the AHS refocus its attention to the plants themselves, as well as the roles they play in the societies of the world.

I especially enjoyed the recent newsletter dedicated to gardening with children. I'm trying to get my kids interested in eating a wider variety of veggies, and growing their own has helped. I recently saw my son giving his friends a "tour" of our garden, telling them about the plants and which ones they could eat. They also note which plants are preferred by birds and bugs.

I found the News Edition on children and horticulture very exciting, and I don't even have children.

I know children need educated. I don't need [to be] convinced. I take a gardening magazine for information about plants and gardens. And how to grow them. You have almost become too politically correct for me.

Please less "kids and gardening." I support it, but to non-parents it's boring to read about.

Those of you who had positive comments regarding our children's symposia and reporting on them outnumbered by four to one those who said "enough!" We plan to continue our "Planting the Future" department in the magazine to recognize outstanding children's garden programs, garden designs, and ideas for increasing children's awareness of plants and nature. We will also be reporting on some highlights of our symposia. We vow to be sensitive in the future, however, about usurping the space of more plant-oriented features.

### Flower Show Admissions

Enjoyed the free admission to the Cincinnati Flower Show and would like to know more of what is available.

*Our experiment with obtaining free admissions to flower shows for AHS members was such a success last year that we now have free or discounted admissions to more than 20 shows in 1995. The Cincinnati show will be admitting AHS members free on one of its four days—April 30—and will also hold a special reception for them with AHS President H. Marc Cathey in attendance. Details on the first of these shows continued on page 31*



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Bill Welch



Kim Hawks



Felder Rushing



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Registration is limited so call or write today for a complete brochure and registration materials.

Sponsored by The Colonial Williamsburg Foundation in conjunction with The American Horticultural Society.

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# MAIL-ORDER EXPLORER

## Happy Hunting

**H**ow many of us have drooled over a catalog's color photograph of a sprawling shrub smothered in blossoms and, anxious weeks after sending our big check in, received a ring-box-sized package containing a shriveled twig?

Once we learn to take catalog descriptions with a grain of salt, mail-order exploring can become a rewarding adventure. Still, most gardeners have at least one horror story about an unwanted substitute or a plant that expired the day after the deadline for refunds. But nursery owners can relate a few sad tales of their own that make ours seem relatively tame: customers who move away before their orders arrive or boxes of plants that are returned with tire tracks on them.

What should mail-order customers know, we asked nursery and seed company owners from around the country, to help ensure themselves a trouble-free mail-order safari this year?

"Order early," was one common response, if you want to avoid disappointment or shipping delays. If you use mail-order to obtain unusual plants, it stands to reason that supplies aren't unlimited. "The people who order first are the ones who are going to get their selections," advises Tovah Martin, staff horticulturist for Logee's Greenhouses in Danielson, Connecticut. Robert McCartney of Woodlanders, an Aiken, South Carolina, nursery that features southeastern natives, says their biggest problem is "getting people to realize that with the propagation of plants, especially rare plants, if you run out you can't just get some more next week." Every year, he says, certain plants become popular suddenly and unexpectedly, and it's the early orders that get filled.

One way to be first in line, some nursery owners suggest, is fall planting. "In our case," says McCartney, "the best thing to do is to get the catalog in September and order for early delivery in the fall."



Michelle Avent, who with her husband, Tony, sells hostas and unusual perennials through Plant Delights in Raleigh, North Carolina, seconds that idea. "We've been trying to promote fall planting where it's feasible, but there's not the adrenaline flow for gardening in the fall."

Calling ahead before ordering can help with planning. "We offer customers the opportunity to check on availability of plants by faxing us—it saves disappointment," says Robert Jones, co-owner with Daniel Hinkley of Heronswood Nursery in Kingston, Washington.

Another headache for nurseries is customers who don't do all their homework before they order, especially when ordering by phone. "We urge our customers to be as specific as possible about their needs and wishes so the order-taker won't be left making decisions," says Duane Thompson of DeGeorgi Seed Company in Omaha, Nebraska. Woodlanders' McCartney concurs. "A lot of confusion comes from people just plowing ahead and ordering without reading about shipping times and minimum orders," he says.

Being disorganized when ordering can increase mistakes and add to shipping charges. "Customers often want to change orders, which we try to do if we can, but if we have to send two shipments it increases costs," says Harry De Vries, office manager for Hortico, Inc., a Canadian com-

## DAVE'S TOP TEN LIST!

Assistant Editor David Ellis's recommendations for avoiding mail-order mayhem:

1. Order early.
2. Read the ordering information and company policy statement carefully before ordering.
3. Consider fall planting.
4. Research and organize your selections before ordering.
5. Before sending a written order, call or fax to ensure that what you want is available.
6. Ask for a specific shipping period. Request expedited shipping; it costs a little more but saves stress on plants.
7. Be sure you are going to be home when the order arrives, or ask a neighbor to watch for it.
8. Open the order as soon as it arrives and make sure the plants look healthy. If they don't, inform the nursery immediately.
9. Plant as soon as possible. If you can't plant immediately, store the plants where they won't be subjected to extreme temperatures or drying out.
10. Read the planting directions and follow them. If in doubt, call your local Extension agent or the nursery for help.

pany specializing in roses. Adds Avent: "Customers should read ordering information and follow the directions—the requirements differ from one company to another." For example, Yucca Do Nursery in Waller, Texas, is in a fire-ant area, and its owners prefer not to use the strong chemical drench required for shipping container plants to non-fire-ant states. They normally ship plants bare-root to those areas, but will drench plants if customers ask for it. "We have a map of fire-ant and non-fire-ant



states, but people in the borderline states have to tell me [their status]," says co-owner Carl Schoenfeld. Customers have to treat bare-root plants differently: Yucca Do recommends planting them first in a protected growing area, rather than putting them in their permanent location immediately.

Substitution policies also differ from company to company. Most nurseries provide a space on the order form where customers can list alternative choices or indicate that they don't want substitutions. Logee's, Heronswood, Plant Delights, and Woodlanders offer customers the option of listing substitutes or having their accounts credited. At DeGeorgi's, Thompson says the order form has a box that can be checked to prevent substitutions; otherwise, a similar seed variety is substituted. "We're always overly generous—we try to make sure what we're sending is as close to what is ordered as possible," says Thompson. De Vries says that in general, Hortico does not substitute. "We try to provide items later in the season if they are not available [when first ordered]," he says.

Schoenfeld says their customers can choose their own substitute plants, let Yucca Do make the alternative choices, or get a refund. "Most people choose substitutes. They may list a lot of substitutes or say 'Send a substitute only for this one plant.' One person just wadded a hundred-dollar bill in an envelope and said 'Send me three dasyliroids and keep the change.'" When customers don't indicate a preference and only a small amount of money is involved, Schoenfeld says he will generally send a plant rather than a refund. "Obviously, it's more profitable for us."

Although customers may be disappointed when a particular plant is out of stock, they rarely have a negative reaction to substitutes. In fact, Schoenfeld says, he will sometimes send a substitute for a plant they do have in stock if the first choice is a poor one for the customer's region because of soil preference or cold tenderness.

A number of nurseries recount headaches that arose because customers weren't home when their orders arrived, or hadn't informed the nursery they were moving.

McCartney recalls a Massachusetts customer who was away from home in January when the order arrived and then called to say it hadn't been delivered. Woodlanders refunded the customer's money and made a claim to the delivery company. In spring, the package was found behind the house, where snow had fallen off the roof and buried it.

Company policies for replacement or refund also vary greatly. Woodlanders guar-

antees the plants to arrive in good condition and offers replacement or refund if notified of a problem within 10 days of receipt. McCartney says that when problems do occur, "Most times it's because people wait a long time before planting and the plant dies." At Heronswood, Jones says, "We feel our responsibility for the plant ends after it leaves the nursery. However,

---

*Order early  
if you want to avoid  
disappointment or  
shipping delays.*

---

we are aware that a few plants are marginal when they leave the nursery and if there's a problem we'll gladly credit them if notified within 10 days."

"If there's a problem, we want to know about it," says Avent, who says the company's policy is to offer replacement or refund for any reason when notified in writing within five days after receipt of the order. "What we're trying to get away from is the people who get a healthy plant but leave it in the box for a couple of weeks," she says.

As a seed company, DeGeorgi's policy "is to be as much like a retail store as possible—with even the slightest complaint we are happy to offer a refund or replacement. We really believe it's our fault much of the time. If someone is having trouble germinating seeds, then we may have failed to give the best instructions," says Thompson.

Thompson recalls one customer who ordered seeds for *Coix lacryma-jobi*, a grass called Job's tears. DeGeorgi's was out of seeds, but Thompson had some plants on hand and sent those instead. A few weeks

later he got a note thanking him for the plants, but requesting a refund because the seeds had not arrived.

Logee's allows 15 days after receipt for a customer to respond with a complaint. "We guarantee safe delivery of the plant, but we don't guarantee someone is going to be able to grow it—we feel that's something every gardener should be able to do themselves," says Martin. Logee's provides basic cultural instructions with all their plants, but sometimes that's still not enough. "I got a call from a gentleman once, and there was almost nothing he didn't do to kill the plant," relates Martin. Apparently feeling that the plant wasn't thriving, the customer removed all the soil and dipped the roots in a fungicide. After repotting it and watering it heavily, he put it in a dark spot. "I agreed to replace the plant," says Martin, "but tried to explain what to do to avoid that happening again."

In general, mail-order nurseries go out of their way to satisfy their customers, but to keep costs down many have minimal staffs. Yucca Do's staff, for instance, does their office work in co-owner John Fairey's home. They don't take phone orders, and they don't take American Express—or any other credit cards.

Huronswood's Jones says some customers have unrealistic expectations about specialty nurseries. "We have the type of catalog that puts us into the category of a larger organization, but we're a small grower with only a few people in a lot of different roles," he says. "Often customers call us wanting specific planting instructions for their areas. We try to help, but that's almost impossible for us—very few people know about requirements across the country." Jones urges gardeners to seek help from local Extension agents or garden experts and to research local microclimates and soil conditions.

—David J. Ellis  
Assistant Editor

## GREEN THUMBS UP—AND DOWN

The American Horticultural Society recently received a complaint from a member about poor service from a mail-order nursery that we have listed many times as a source. We wrote the nursery to ask about the problem and received no reply. Polling friends about their experiences with that nursery convinced us that we should no longer list it as a source for plants mentioned in our articles.

We prefer to be positive in our publications. We would like to hear about your mail-order experiences both good and bad. Repeated complaints about a nursery will be treated in a similar manner: Lack of response will result in our no longer recommending it as a source. On the other hand, if you have found a nursery that offers excellent service and selection, especially a small specialty nursery, please let us know about it. We hope to continue profiling the best specialty mail-order nurseries in our "Mail-Order Explorer."

—Kathleen Fisher, Editor

# CONSERVATIONIST'S NOTEBOOK

## Mead's Milkweed

Since 1991, when an entire population of newly restored Mead's milkweed (*Asclepias meadii*) was stolen from Illinois' Shawnee National Forest, researchers and conservation officials have kept new recovery sites of the federally threatened species as closely guarded as the formula for Coke.

Once found throughout the midwestern plains from eastern Kansas north and east to southwestern Wisconsin and northwestern Indiana, Mead's milkweed, along with a host of other tallgrass prairie plants, fell victim to the plow. Deprived of most of its virgin prairie habitat by the agricultural tide that swept the Midwest in the wake of pioneer settlement, the species has been reduced to a tenuous existence in prairie hay meadows and in prairie remnants in railroad rights-of-way and pioneer cemeteries. About 130 populations are known, primarily west of the Mississippi River in western Missouri and northeastern Kansas. Small natural populations exist in Iowa and Illinois, but *A. meadii* is considered extinct in Indiana and Wisconsin.

Named for Samuel Mead, a physician and botanist who collected the species in western Illinois in 1843, Mead's milkweed was already disappearing from its eastern range by the time taxonomist John Torrey published the first description of the species in 1856. A usually single-stemmed plant rising from a tuberous root, Mead's milkweed is a slow-growing, long-lived perennial herb restricted to mesic and dry-mesic prairie environments. Mature specimens can reach two feet tall, with arrow-shaped leaves and a characteristic solitary downward-nodding umbel containing about 12 fragrant yellow-green flowers. Common associates include prairie dropseed (*Sporobolus heterolepis*), Indian grass (*Sorghastrum nutans*), and big bluestem (*Andropogon gerardii*).

Like many other milkweed species, *Asclepias meadii* is self-incompatible, or incapable of being fertilized by its own pollen or

that of direct relatives. "It appears each of the populations east of the Mississippi consists of closely related plants that are incapable of producing seeds," explains Marlin Bowles, a research associate at the Morton Arboretum in Lisle, Illinois. Bowles is on a team of scientists developing a recovery plan for Mead's milkweed for the U.S. Fish and Wildlife Service, which in 1988 declared the plant a threatened species.

According to Robert Betz, a former professor at Chicago's Northeastern Illinois University who has studied Mead's milkweed for decades, the plant is plagued by a number of other reproductive handicaps, including the fact that less than 10 percent of plants that flower produce a seed pod and that seedling establishment in the wild is extremely low.

Annual mowing of hay meadows removes seed capsules before they mature, thereby preventing sexual reproduction and development of genetic diversity within populations. According to Bowles, annual mowing may be fostering development of large clones of genetically similar milkweed that spread by rhizomes rather than by seed.

Bowles, Betz, and Jeanette McBride, a research assistant at Morton, have developed a genetically diverse garden population of Mead's milkweed at the arboretum by crossbreeding plants grown from seed gathered from across the range of the species. Despite the success of this propagation program, Bowles warns that many generations of propagation in controlled garden environments may yield seed better adapted to the garden setting than to survival in the wild.

One of the major objectives of the ongoing recovery program is re-establishing populations of *A. meadii* at sites within the species' original range east of the Mississippi. In 1994, using seed from the population at Morton and juvenile plants grown from seed collected in Kansas and Missouri, Bowles and his associates conducted trial restorations of Mead's milkweed at four locations in Illinois and Indiana.



JIM NACHEL/MORTON ARBORETUM

Among the variables tested were the effects of seed source, drainage, annual burning, and competition from other plants.

Higher survival rates or better growth was seen in experimental plots managed by annual burning than in unburned habitats. In general, plants derived from seed collected in Missouri seemed slightly more resilient than those from Kansas. Plants grown in drier environments seemed to do better than those in mesic areas, possibly because of reduced competition from grasses.

Based on the field tests, preliminary recommendations for restoring Mead's milkweed include finding protected late-successional prairie or restored prairie sites with dry-mesic environments and managed burning after seeds develop.

Experimental plantings at additional sites in Illinois are planned, but the locations are being withheld to prevent the vandalism that occurred in Shawnee National Forest. Until the species can be reintroduced in areas that will allow for development of a genetically diverse population, Mead's milkweed will remain on the list of threatened prairie plants. "The species is very rare, and I suspect it will be for some time to come," says Betz. —D.E.





# CALL FOR PRESENTATIONS

The American Horticultural Society,  
in conjunction with  
The California Arboretum Foundation for THE ARBORETUM of Los Angeles County,  
presents

## “Gardens for Youth: Nourishing Mind, Body, and Heart” June 27-30, 1995 • Pasadena, California

The third American Horticultural Society Symposium on Youth Gardening is being planned in conjunction with The California Arboretum Foundation for THE ARBORETUM of Los Angeles County and will be sponsored by Descanso Garden and The Huntington. More than 30 leading national and California-based horticultural and educational organizations will be co-sponsoring the symposium.

The symposium will bring together successful examples of youth gardens and gardening programs to teach educators and others how to replicate them in schools, community programs, and public gardens nationwide. The symposium will also teach educators and others how to implement environmental education and environmental action programs for youth through plant and gardening programs.

The symposium is seeking a broad spectrum of 30- to 60-minute workshop presentations and 10-minute “New Idea” presentations that describe successful youth gardens and programs, at both local and national levels and from any number of perspectives. These would include, but are not limited to:

- ◆ Hands-on, minds-on approaches to plant science and gardening curricula.
- ◆ Theory and research on youth’s relationship to plants and gardens.
- ◆ Interdisciplinary educational uses of plants and gardens.
- ◆ Training educators to effectively teach students about plants and gardening (e.g., how to teach children about plant life cycles, seed dissection, plant genetics, seed starting; what kinds of questions to ask kids).
- ◆ Evaluating educational gardening programs.
- ◆ Botanical and public gardens as classrooms for youth and resources for educators.
- ◆ How to integrate garden field trip experiences into the curriculum.
- ◆ Gardening and financial resources to help start and sustain programs.
- ◆ Improving children’s nutrition through school and community gardening programs.
- ◆ Child-oriented garden/landscape designs for schools and community spaces.

The symposium is also seeking:

- ◆ Poster presentations.
- ◆ Indoor and outdoor exhibits.
- ◆ Indoor and outdoor discovery carts.
- ◆ Hands-on outdoor workshops that allow participants to learn gardening skills and/or teaching skills.

**Audience:** Pre-kindergarten through 12th-grade educators; public garden, arboretum and zoological garden staff; landscape designers; community youth leaders; Cooperative Extension staff; community garden clubs; and parents, grandparents, and other interested adults.

For a proposal submission form or registration brochure, please contact:

Maureen Heffernan  
American Horticultural Society  
1995 Symposium  
7931 East Boulevard Drive  
Alexandria, VA 22308-1300  
(800) 777-7931 • FAX: (703) 765-6032.

**Deadline for submissions: February 1, 1995**



# GARDENERS' INFORMATION SERVICE

**Q:** I've heard that baking soda can be used to help control some fungal diseases on roses. Can you tell me how to make it?  
—J.M., Salt Lake City, Utah

**A:** One of our GIS bulletins, "Recipes for Homemade Least-Toxic Pesticides," includes the recipe for a baking soda solution that has been the focus of research at Cornell University. It requires dissolving a tablespoon of baking soda in a gallon of water and adding a few drops of insecticidal soap to help the solution spread and stick to foliage.

It may help prevent some fungal diseases on roses if repeatedly sprayed to cover the tops and undersides of foliage every three to four days from spring through early fall. Test the solution on a small leaf area before treating the entire plant. Rose cultivars differ in their sensitivity to the solution, so you may need to vary its strength to avoid burning or discoloring the leaves.

**Q:** When should I prune my hardy hibiscus?  
—B.B., Alexandria, Virginia

**A:** The late summer- and fall-blooming hibiscus, *Hibiscus syriacus*, can be pruned back anytime from late fall through early spring. While it doesn't need yearly pruning to encourage blooms, an occasional trim will control its height and spread and remove any winter-damaged branches.

**Q:** How do I know how much fluorescent light to give plants that I have started from seed?  
—C.S., New York, New York

**A:** As a general rule, if you don't have enough natural light to grow seedlings, they need about 15 to 20 watts of light per square foot of growing area. A double row of standard fluorescent lighting tubes is usually enough for a row of flats about 16 inches wide. Place the light tubes about four inches above the plants and be sure to keep raising the lights as the plants grow.



**Q:** I was given a house plant with beautiful large red flowers called Chinese hibiscus or rose-of-China as a Christmas gift. How should I take care of it?  
—A.G., Madison, Wisconsin

**A:** During the winter, the Chinese hibiscus, *Hibiscus rosa-sinensis*, needs a rest. Keep it in a bright but cool site (between 50 and 60 degrees) and let the soil dry out a bit between waterings. Eliminate fertilizers. Do mist the plant over the winter since it likes fairly high humidity.

In early spring, begin to increase watering and start a monthly feeding with a complete and balanced fertilizer—a 5-5-5 formulation would be fine. Make sure the plant is in bright direct sunlight for at least four to six hours each day with day temperatures of about 70 to 75 degrees and night temperatures about 10 to 15 degrees cooler—but never under 55 degrees.

The plant can be pruned for height and shape in early spring before active growth resumes. When its roots get potbound, repot it in a well-aerated soil mixture. Check it frequently for whiteflies, aphids, mealybugs, and spider mites.

**Q:** When is the best time of year to prune corkscrew willows?  
—D.P., Knoxville, Tennessee

**A:** Like most willow species, corkscrew willow, *Salix matsudana* 'Tortuosa', can be pruned back in early spring. It can withstand heavy pruning and will swiftly recover to produce new growth.

**Q:** The needles on my Austrian pine are yellowing. What could be going wrong?  
—D.K., Cheyenne, Wyoming

**A:** This is probably caused by an overly alkaline soil, possibly exacerbated by an alkaline water supply. Pines like an acidic soil. A high soil pH, on the other hand, prevents the plant from taking up iron, which causes the foliage to yellow. It's always a good idea to get a soil test

## SEND FOR SEED TIPS

The American Horticultural Society Gardeners' Information Service has a four-page resource bulletin, "How to Save Seeds from Herbaceous Plants." It gives detailed information and tips on how to save seeds, store seeds, and test for germination rates. It is available by sending \$2 with a self-addressed, stamped envelope to: AHS, GIS, 7931 East Boulevard Drive, Alexandria, VA 22308-1300.

to see how much you need to change your soil's pH. Elemental sulfur will lower it one point for each pound applied to 100 square feet, or you can fertilize the pine with a dilute application of an acid fertilizer, like Miracid, between early spring and fall. Then mulch the root zone with several inches of pine needles or amend it with peat moss to help keep the pH low and improve soil quality.

**Q:** I love the red stems of the red-osier dogwood and would like to grow one outside my kitchen window where I can see it in winter. Can you tell me how big it gets and give me specific cultivation tips for growing it?  
—E.B., Chardon, Ohio

**A:** Red-osier or redbud dogwood, *Cornus sericea*, is hardy from USDA Zones 2 through 8 so it would certainly survive in your area. It is a fast-growing, multi-stemmed, shrubby plant with a mature height anywhere from seven to nine feet and has a broad, rounded spread to 10 feet or more. It can be grown in full sun to part-shade and in a wide range of soil types, but since by nature it's a swamp dweller, it prefers a moist soil.

Its white spring flowers are less spectacular than those of dogwoods like *C. florida*, but it produces lovely reddish-purple leaves in fall and its dark red stems are spectacular against snow. Young stems

produce the most color, so you will occasionally want to prune out old growth. In fact, some people cut them back to the ground each year, both to get brighter color and to control the shrub's size.

**Q:** *How do you germinate catalpa seeds?* —D.G., Louisville, Kentucky

**A:** The seed capsules should be collected in October when the seeds have ripened. Leave the capsules in a cool dry area until they split open, then remove the seeds and store them in a clean, dry glass jar in your refrigerator until spring when they can be sown.

**Q:** *I thought I saw some pink lily-of-the-valley at a garden show. Were they just discolored or are there some true pink varieties? If so, where can I buy them?*

—M.E., Wheeling, West Virginia

**A:** Yes, there is a soft pink variety of lily-of-the-valley. It is *Convallaria majalis* 'Rosea'. One source is Kelly Nurseries, 410 8th Avenue N.W., Faribault, MN 55021, (507) 334-1623.

**Q:** *I am finally going to make it to England in the spring. Can you tell me the dates of this year's Chelsea Flower Show in London?*

—N.P., Wilmington, Delaware

**A:** The 1995 Chelsea Flower Show will be May 23 through 26. May 23 and 24 are member days, i.e., you must be a member of the Royal Horticultural Society (RHS) to attend. For more information on how to join the RHS and/or to buy tickets, contact the Royal Horticultural Society, 80 Vincent Square, London, SW1P 2PE, United Kingdom. Their telephone number is 011-44-71834-4333; FAX 011-44-71630-6060. The 24-hour Flower Show Information Line is 011-44-71828-1744.

For more information on visiting gardens in the United Kingdom, call the British Tourist Agency in New York City. The number is (212) 986-2200.

**Q:** *I have brought my Gardenia jasminoides plant indoors, and the petals and a few of the leaves are starting to fall off. Will it be okay? How can I make the plant bloom again next year?*

—A.B., Fredericksburg, Virginia

**A:** It's natural for your plant to start dropping its petals and leaves since it is now beginning to go into its resting or dormant phase, which lasts from early winter

through early spring. Start reducing your fertilizing and watering. Let the soil dry out a bit between waterings. If necessary, this is also a good time to prune the plant back.

Keep winter temperatures between 60 and 75 degrees during the day and 60 to 65 degrees at night. Place your plant in bright, but not direct, light. Never situate gardenias in dry or drafty areas at any time of the year because they need fairly high humidity.

To encourage bud formation in early spring, increase watering and start fertiliz-

ing the plant with an acid-based fertilizer. Make sure the plant is getting at least four to six hours of bright light per day. Humidity levels must be kept high (at least 60 percent), so begin misting the plant several times a day. Nighttime temperatures are even more important now. Make sure they don't get above 62 degrees.

Being potbound will increase flowering, so transplant gardenias only when their roots have completely filled the soil area of the container.

—Maureen Heffernan  
Education Coordinator



Come meet the masters in the irresistible garden setting of Sea Island's world-famous resort. Learn first hand from America's leading authorities at this exceptional gathering of gardening enthusiasts. The Mobil Five-Star Cloister offers you the chance to participate in three powerful days of sessions including The Evolution of Design, Landscaping With Native Plants, Color and Plants for Southern Gardens, The Evening Garden, Garden Illumination and Perennial Gardening.

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# PLANTS AND YOUR HEALTH

## Fighting for Phytotherapy

Although modern medicine can accomplish such miraculous feats as organ transplants and the eradication of cancerous tumors, many believe that the American approach to medicine leaves a gaping hole in health care—preventive medicine. Critics argue that Western medicine addresses only crisis health situations, offering little effective help for sufferers of chronic problems that pose no immediate threat, such as arthritis, and even less advice on how to prevent problems. While no one thinks conventional medicine should be thrown out, many, including international groups such as the World Health Organization (WHO), believe medicinal plants can play a major supporting role in modern health care, especially in prevention.

China is one country that fully understands the importance of traditional herbal medicine, or phytotherapy, and has incorporated it with Western medicine in its national health plan. At the top of China's priority list, however, is preventive medicine. According to Steven Foster, co-author of *Herbal Emissaries: Bringing Chinese Herbs to the West*: "Since China is home to almost one-third of the world's population, it's simply more practical and economical to try to prevent diseases than to treat them." Chinese research on traditional herbal medicine assumes that a drug that has worked for generations is effective and seeks only to find out how it works in order to improve its effectiveness and safety. Unfortunately, Foster adds, such a concept is alien to Americans.

In the United States, plant-based derivatives already appear in a quarter of the prescription medicines produced. But many other plants with healing properties are shunned by the medical community despite scientific data from other countries showing their effectiveness. For example, products derived from *Echinacea*, especially those from the purple coneflower *E.*

*purpurea*, are used in Germany to stimulate the immune system to increase the body's resistance to colds and flu. Despite studies that have isolated key ingredients in purple coneflower known to have immunostimulatory effects, the herb is still not accepted by doctors here in the United States.

Another plant commonly used in other countries is evening primrose (*Oenothera biennis*). Supporters cite research showing its seed oil is effective in treating atopic eczema, premenstrual syndrome, alcoholism, elevated cholesterol levels, Sjogren's syndrome, mild hypertension, and scleroderma. Yet the U.S. Food and Drug Administration (FDA) does not support any of these claims and does not allow packagers of evening primrose oil to mention any of these benefits.

In *Herbal Medicine* by R. F. Weiss, phytotherapy proponent H. E. Bock says of herbal medicine: "It presents itself as a gift of nature, with a cosmic naturalness that makes it the obvious choice for a first-treatment approach. Generations have made use of it, gained experience, and cherished it, like a historical treasure, as a source for therapy."

In 1993 WHO sponsored a symposium on the use of medicinal plants. The result was a standard guideline for the assessment of herbal medicines and a recommendation that governments of the world protect medicinal plants, improve regulation of herbal medicines, and respect traditional medicine approaches. WHO also concluded that traditional medicine must be used in order to meet its goal of "health for all by the year 2000."

In the United States, access to herbal medicines is restricted by FDA regulations. Before any new drug—chemical or herbal—is approved, research must prove it both safe and effective. These tests can cost \$50 million to \$200 million per product—more than a pharmaceutical company is willing to pay for something anyone can grow in their backyard. Moreover, herbs cannot be patented, while the chemical de-

rivative of an active ingredient can be.

As a result of these restrictions, packagers of herbal medicines have to sell their products as food supplements, which do not require preapproval testing. Food supplements, however, cannot make any healing claims or issue warnings about potential risks.

Says Mark Blumenthal, executive director of the American Botanical Council: "Due to labeling restrictions, the American public remains ignorant of the potential benefits of many herbal products sold in the U.S."

While traditional Chinese medicine holds substances with multiple healing properties in high esteem, Americans are traditionally skeptical about medicines that claim several uses, placing more value on a powerful one-shot drug. The misconception that herbs are old-fashioned and unscientific has also helped promote a general distrust of phytotherapy. But the American Botanical Council contends that in many cases herbal medicines are safer than prescription drugs that isolate the plant's chemical components. Herbal medicines react more slowly, the council contends, and often include their own antidotes to counteract any toxic effects. Nor is it necessary for a user to guess how many leaves to chew or berries to swallow; most herbs are now available in standardized forms, such as powders, extracts, and pills, to prevent inaccurate measurements and eliminate the guesswork.

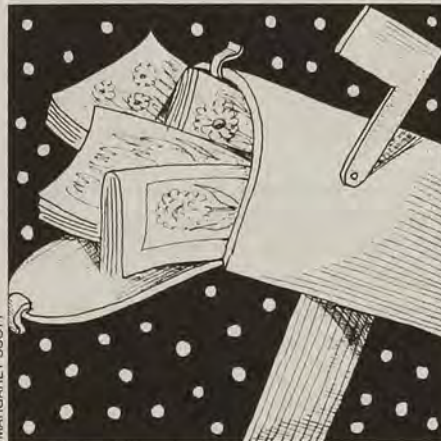
Phytotherapy proponents don't suggest that health care should be taken into the patient's own hands. But groups such as the American Botanical Council are promoting education about herbs and their potential through publications, research, and, most importantly, through supporting legislative efforts to make herbal medicine more accessible. —Nikole Williamson  
Editorial Assistant





# 1995 SEED CATALOG

The descriptions in this catalog have a few assumptions in common. Unless otherwise stated, plants grown from these seeds will do best in well-aerated soil with full sun. Seeds should be covered unless the contrary is indicated. The best temperature for warm conditioning is about 70 degrees; cold conditioning should be done at 40 degrees. "Warm soil" is that with a temperature of at least 70 degrees. USDA zone numbers tend to be conservative; plants may grow outside the ranges specified.



MARGARET SCOTT

## ANNUALS

1. *Amaranthus caudatus*. Love-lies-bleeding, tassel flower. Height: 3–5 feet. Vivid red tassel-like flowers last for weeks. The young leaves and seeds are edible. Seeds should be left uncovered or covered only lightly. Sow in warm soil.

2. *A. cruentus*. Purple amaranth. Donor says it's a *Rodale multiflora*. Height: to 5 feet. Features spiky green to maroon flowers drooping from terminal panicle. Used by Native Americans as a food plant. Can be grown like corn, but more drought tolerant. May need staking. For culture, see *A. caudatus*, above.

3. *A. hybridus* var. *erythrosthachys*. Prince's-feather. Height: 5 feet. Thick stalks bear narrow, foot-long leaves and upright flower spikes in midsummer. Both flowers and foliage are red. For culture, see *A. caudatus*, above.

4. *Antirrhinum majus* 'Ruffled Super Tetra' mix. Snapdragon cultivar mix. Height: 2½–3 feet. Large-flowered snapdragon featuring gracefully ruffled blooms in mixed colors from midsummer to frost. Narrow, dark green leaves on erect stems. Sow in warm soil. Do not cover seeds. Pinch young plants back to encourage branching. Grows as perennial for donor in Zone 4/5.



5. *A. majus* 'Tetraploid Mix'. Common snapdragon cultivar. Height: 2½ feet. Narrow, dark green leaves on erect stems and showy, almost orchidlike flowers in a variety of colors. Blooms from midsummer to frost. For culture, see 'Ruffled Super Tetra', above.

6. *Arctotis* hybrids. African daisy. Thompson & Morgan hybrids. Height: 1–1½ feet. A mix

of pink, yellow, orange, cream, red, and purple daisylike flowers that bloom in spring and early summer. Solitary flowers bloom on long stalks over spreading rosettes of basal foliage. Makes excellent cut flowers. Drought resistant but needs water during development in late winter and early spring. Can be sown outdoors after last frost or started indoors in early spring.

7. *Asclepias curassavica*. Bloodflower. Height: to 3½ feet. A tropical milkweed. Shrubby with narrow opposing leaves, it bears orange-red flowers with yellow centers in late summer and fall.

8. *Briza maxima*. Large quaking grass. Height: 1–2 feet. Loosely-tufted, slender ornamental grass. Green to silvery spikes droop from terminal inflorescence and wave in a breeze. Attractive in dried arrangements. Sow seeds one-eighth inch deep 2–4 weeks before last frost.

9. *Catharanthus roseus* 'Tropicana Rose'. Madagascar periwinkle cultivar. Height: 14–15 inches. Two-inch-wide rose-colored flowers bloom above glossy bright green foliage. Tolerates full sun to part shade in moist, well-aerated soil.

10. *Celosia cristata* 'Forest Fire'. Cockscomb cultivar. Height: 24–30 inches. Feathery, erect plumes are bright scarlet over dark bronze foliage. Sow in warm soil.

11. *C. cristata* 'Pink Candle'. Cockscomb cultivar. Height: 12–18 inches. Feathery, erect plumes of pale pink flowers bloom above oval green leaves. Somewhat bushy habit. Sow in warm soil.

12. *Centaurea cyanus*. Cornflower, bachelor's button. Height: 1–3 feet. Ruffled double blooms

in mixed colors—mainly blue, but also purple, red, pink, and white—are held aloft by wiry gray-green stems. Used for cut flowers. May self-sow. Drought tolerant and easy to germinate after 6 months' dry storage.

13. *Cleome hasslerana* 'Pink Queen'. Spider flower cultivar. Height: 4 feet. Produces numerous pink flowers with "spidery" stamens and seed pods. Compound leaves have spines at the base. Makes a good cut flower. In hot sunny weather the petals will curl during the day and open fully in the evening. Grows well in sun or part shade and prefers a dry soil. Do not cover seeds.

14. *C. spinosa*. Spider flower species. Similar to *C. hasslerana* and has the same cultural requirements. Flowers are off-white.

15. *Cleome* sp. Spider flower species. Donor unsure of species. Flowers are white and pink.

16. *Cleome* sp. Spider flower species. Donor unsure of species. Flowers are pink to purple.

17. *Cnicus benedictus*. Blessed thistle variety. Height: 2–3 feet. Herb with Mediterranean and Middle East origins. Species bears yellow thistlelike flower heads, but donor says this variety has purple flowers. Of interest to collectors of Biblical plants. Sow outdoors in early spring and thin seedlings to 1 foot apart. Self-sows once established.

18. *Consolida ambigua*. Rocket larkspur. Height: 1–3 feet. Pink, white, and dark blue flowers bloom on slender spikes from spring through summer. Keep roots cool by planting in light, rich soil and mulching around plants. Keep soil moist. Extreme hot weather shortens blooming season. Start indoors in early spring or sow directly outdoors.

19. *C. regalis* 'Blue Cloud'. Larkspur. Height: 3–4 feet. Resembles baby's-breath, with a bushy cloud of half-inch pale blue flowers. For cultural information, see *C. ambigua*.

20. *Coreopsis tinctoria*. Calliopsis, plains coreopsis. Height: to 4 feet. Fine, narrow-leaved stems bear flowers up to 2 inches across. These have yellow rays and purple-brown centers. Very elegant. Tolerates poor soils. Sow in warm soil.

21. *Cosmos bipinnatus* 'Sensation'. Cosmos cultivar. Height: 5–6 feet. A tall, bushy plant with finely textured, feathery foliage and flat, open pink flowers. Flowers early summer to frost. Drought tolerant. Sow in warm soil. Self-sows.

22. *C. sulphureus*. Yellow cosmos. Height: 3–6 feet. A bushy plant with fine, feathery foliage

## DEAR MEMBERS:

Each fall, a harvest of seed from all over the country and abroad begins pouring into the American Horticultural Society's headquarters here at River Farm. As I write this, the seed has taken over my office like a horticultural avalanche—boxes and bags full of seed are piled up everywhere. It's hard to believe that in a few more weeks all the seed will be sorted, researched, cataloged, cleaned, numbered, packaged, and placed into storage bins to await your orders.

We are proud of our Seed Exchange Program and delighted that our members eagerly anticipate selecting and growing their free seeds each year. In fact, a large amount of the seed we receive has been sent in by members who collected the seed from a plant that they originally got, many years ago, from the AHS Seed Exchange Program!

I would like to thank everyone who was so generous with their time and efforts in collecting and sending in seed to the program. All of you deserve to be commended for giving hundreds of other members the chance to discover and enjoy your plants.

I would like to extend special thanks to all of the seed companies that faithfully donate seed to us every year. They deserve special recognition for giving you the opportunity to freely sample some of their exclusive and newest varieties. Their names and addresses are on page 30. Thank them and patronize them!

This year, individual members, nonprofit organizations, and seed companies were so generous that we broke our record for the number of varieties offered and far exceeded our expectations.

I would personally like to thank our 1994-95 interns, Julie Maloy and Kim Strader, for their excellent work in helping to organize the Seed Exchange Program.

On behalf of all the Seed Exchange Program staff, we hope that you will have as much enjoyment and satisfaction in growing your seeds as we do in offering the program to you each year. If you have specific ideas about how we can improve next year's Seed Exchange Program, we encourage you to call or write.

—Maureen Heffernan, Education Coordinator

P.S. We had such a positive response to the September Seed Giveaway we offered for the first time last year that we plan to repeat it in 1995.

and solitary, orange-yellow flowers on long stalks. Self-sows.

23. *C. sulphureus* 'Sunny Red'. Yellow cosmos cultivar. Height: 3-4 feet. A more compact plant that bears bright orange-red double flowers from early summer to frost. Foliage is darker green and coarser than *C. bipinnatus*. Easy to germinate and self-sows.

24. *Cynoglossum amabile*. Chinese forget-me-not. Height: to 2 feet. Erect unbranching stems have narrow leaves and bear clusters of small blue, pink, and white flowers near their tops. A handsome cut flower. Part sun. A biennial usually grown as an annual.

25. *Datura innoxia*. Downy thorn-apple, angel's trumpet. Height: 3 feet. Huge, dark leaves on sprawling stems and white, trumpet-shaped flowers up to 8 inches long. These are fragrant and open at night. Sometimes they have a pinkish cast. Pinching off spent flowers prolongs the blooming season, but spiky seed pods add late season interest. Caution: All parts of plant are poisonous. Sow indoors in late winter and transplant outdoors after last frost, or sow outdoors in warm soil.

26. *D. metel* var. *cornucopaea*. Downy thorn-apple, angel's trumpet. Height: 3-5 feet. A shrubby, spreading plant with coarse, dark-green leaves. White, downward hanging, dou-

ble flowers bloom in the evening, giving off an intense fragrance. Caution: All parts of plant are poisonous. For culture, see *D. innoxia*.

27. *D. meteloides*. Angel's trumpet. Seeds of *D. metel* and subspecies of *D. innoxia* are often labeled under this name. Height: 2-4 feet. A lush, exotic, sprawling plant with large dark-green leaves. Intensely fragrant 6- to 8-inch-long trumpet-shaped white flowers open in early evening, blooming from midsummer to frost. True *D. meteloides* flowers are flushed with lavender. Caution: All parts of plant are poisonous. For culture, see *D. innoxia*.

28. *Dianthus armeria*. Deptford pink. Height: 1-1½ feet. Usually grown as an annual, this tuft-forming biennial has pink, bearded flowers that bloom on wiry stems above needlelike foliage. Ideal for rock gardens. Self-sows.

29. *Dorotheanthus* sp. Dorotheanthus, Livingstone daisy. Height: 1-2 inches. A low-growing, succulent, annual herb with leaves covered by crystalline beadlike blisters. Daisylike white flowers with red centers rise on solitary stalks. Soil should be a well-aerated, sandy mix with little organic matter. Keep seedlings cool and moist after germination. Limited quantity available.

30. *Eschscholzia californica*. California poppy. Height: 2 feet. Finely divided blue-green foliage and 2-inch flowers ranging from deep orange to

pale yellow. Blooms better in sandy soil. Drought tolerant. Will reseed.

31. *Gaillardia pulchella*. Indian blanket, annual gaillardia. Height: 1½-2 feet. Perennial in desert gardens. Raylike red flowers are tipped with yellow. Oblong, gently toothed or serrated leaves. Descended from wild plants native to the American West. Drought resistant—will tolerate most soils. Germinates in 2-3 weeks under light at 70 degrees.

32. *Glaucium flavum*. Horned poppy. Height: 1-2 feet. An annual or biennial herb naturalized in the eastern U.S. Bears 2- to 3-inch vivid yellow flowers above a rosette of oval, lobed, gray-green leaves. Self-sows.

33. *Gomphrena globosa*. Globe amaranth. Height: 1-2 feet. Low-growing, rounded growth habit with cloverlike foliage. Bears spiky magenta flower balls on slender green stems from early summer to frost. Flowers are used for fresh and dried arrangements. Heat and drought tolerant.

34. *G. globosa*. Globe amaranth variety. Height: 1-2 feet. Similar to species, but has either white or bright pink-purple flowers.

35. *Gypsophila paniculata*. Baby's breath. Height: 3 feet. Sub-shrub that forms a globose bush. Tiny, airy white or pale pink flowers create a cloudlike effect. Blooms in late summer. Used for filler or dried arrangements. Flowers can be cut at full bloom to dry for bouquets. Thin to 18 inches apart. Tolerates dry alkaline soil.

36. *Helianthus debilis* 'Vanilla Ice'. Sunflower cultivar. Height: 5-6 feet. A fast-growing sunflower that features creamy white to yellow petals around a chocolate-brown center. Blooms from July to frost. Tolerates poor, dry soil. Plant outdoors after danger of frost has passed.

37. *Impatiens wallerana*. Impatiens. Height: 2-3 feet. Bears orange and red flowers from midsummer to frost. Needs part to moderate shade and moist, well-aerated soil.

38. *Impatiens* sp. Impatiens. Donor unsure of species. Height: 8-12 inches. An early blooming species with pink flowers that have a dark pink center. For culture, see *I. wallerana*.

39. *Impatiens* sp. Impatiens. Donor unsure of species. Height: 8-12 inches. Pale lavender flowers. For culture, see *I. wallerana*.

40. *Lampranthus spectabilis*. Lampranthus. Height: 6-12 inches. Shrubby plant with multiple, prostrate stems and curved, opposite leaves. Bears solitary, daisylike purple flowers in spring. Prefers dry soil and nighttime temperatures around 50 degrees. Limited quantity available.

41. *Linaria maroccana*. Spurred snapdragon, toadflax. Height: 1-1½ feet. A densely branching plant with fine, narrow leaves that produces spikes of tiny snapdragonlike flowers in red, purple, white, and yellow. Does best in cooler climates.

42. *Lunaria annua*. Money plant. Height: 3 feet. Flowers are purple or white and fragrant. Fruit is silvery, papery, and coin-shaped. Useful for dried arrangements. Full sun or light shade. Biennial but will reseed. Collect seeds when fully ripe and turning brown.

43. *L. annua* 'Variegata'. Money plant cultivar. Height: 2-3 feet. Similar to species, but has pink flowers and variegated leaves with creamy-white margins. Flowers in early spring, and attractive fruit develops in midsummer. Biennial but will reseed. Full sun or part shade.

44. *Lupinus densiflorus*. Gully lupine. Height: to 3 feet. A bushy plant with palmate leaves and erect racemes of yellow flowers with the form typical of the pea family. Will tolerate part sun; does best in cool, moist conditions. Soak seeds overnight in warm water or scarify them.

45. *L. hartwegii*. Lupine. Height: 2-4 feet. Spike-borne flowers are usually blue, but may be rose to pink; blooms from July to October. A native of Mexico, it prefers loamy, mildly acidic soils that don't stay too wet. Soak seeds in lukewarm water for 24 hours and nick seed coats before germinating outside.

46. *Melampodium paludosum*. Melampodium. Height: to 3 feet. A perennial in the Southwest, bears bright yellow starlike flowers on hairy foliage. Blooms frost to frost and is heat tolerant. Start indoors in early spring.

47. *Mirabilis jalapa*. Four-o'clock. Height: to 3 feet. A fast-growing, bushy plant with opposite, pointed leaves resembling mint foliage. Covered in summer with fragrant, tubular flowers in white, red, yellow, and pink. Some flowers are striped. Will tolerate some shade and is not particular about soil. Sow in warm soil. Will self-sow in warm areas. Its tubers can be dug in early fall and overwintered.

48. *Moluccella laevis*. Bells-of-Ireland. Height: 3 feet. A shrubby, sparsely leaved plant that produces numerous upright flower spikes in late summer. Each tiny pink flower is wrapped in a large, green, bell-like calyx. Favored as a cut flower. Rich soil gives better results. Self-sows. Seeds may germinate more readily if chilled for a few days and then soaked overnight. Do not cover seeds.

49. *Nicandra physalodes*. Shoo-fly plant. Height: 3 feet. A loose mass of large oval leaves and violet-blue, 1-inch flowers in July and August. Fruits resemble those of the Chinese lantern and are useful for arrangements. Sap is said to be insecticidal.

50. *Nicotiana glauca*. Tobacco flower. Height: 5 feet. A bold, basal rosette of bright green leaves up to 2 feet long, from which arises a thick stalk, topped in midsummer by a clump of long, tubular, fragrant white flowers. Tolerates some shade. South of Zone 7, may be grown as a tender perennial or biennial. Do not cover seeds.

51. *N. glauca* 'Sensation Mixed'. Tobacco flower cultivar. Height: 4-5 feet. Similar to the species but flowering in purple, pink, and white.

52. *Nigella damascena*. Love-in-a-mist, wild fennel. Height: to 1½ feet. Of Mediterranean origin, this low-growing plant features blue, pink, or white starlike flowers nestled in a mist of fine, needlelike leaves. Inch-long egg-shaped seed capsules add interest in fall and in dried arrangements. Flowers for 4-6 weeks beginning in July. Self-sows.

53. *N. hispanica* 'Curiosity'. Height: 1-1½ feet. Deep blue flower petals radiate from a cen-

tral core of green sepals that oddly resemble a jester's hat. Flowers are nestled in feathery foliage. Self-sows.

54. *Papaver rhoeas*. Corn poppy, Shirley poppy. Height: 2 feet. Cup-shaped flowers have silky, crimson petals that contrast with the dark centers. Blooms all spring and early summer. Excellent for spring color in borders. Self-sows.

55. *P. somniferum*. Opium poppy. Height: 1-4 feet. Pink double flowers bloom in summer over 3- to 5-inch serrated leaves. Tolerates part sun. Sow indoors in the dark in early spring after dry storage for 3 months at 70 degrees, or sow directly in ground before last frost. For best results, transplant before taproot forms.

56. *P. somniferum* 'Flore Pleno'. Moroccan poppy. Height: 2 feet. An upright plant with wiry stems supporting pale orange flowers with almost double blooms.

57. *Papaver sp.* Poppy. Donor unsure of species. Pale pink blooms. Poppies resent transplanting. Sow outside in cool soil after danger of frost has passed.

58. *Papaver sp.* Poppy. Donor unsure of species. Watermelon-red flowers.

59. *Papaver sp.* Poppy. Donor unsure of species. Height: 3½ feet. Ruffly pink to maroon flowers highlight serrated blue-green leaves. Donor says birds love the seeds and urn-shaped seedpods are attractive in dried arrangements.

60. *Papaver sp.* Mixed poppy species. Pink, red, white, and orange blooms.

61. *Pelargonium alchemilloides*. Geranium species. Height: 1½ feet. A slender, erect plant with pubescent, deeply-lobed, and serrated leaves zoned with red. Flowers are white with rose-colored veins and bloom in summer. Prefers shade. Perennial in their tropical habitat, pelargoniums are treated as annuals in much of North America. They can be brought indoors and overwintered. Scarify seeds before sowing outdoors after danger of frost has passed.

62. *P. elongatum*. Geranium species. Height: to 1 foot. Has bright green foliage highlighted by purple zones and bears white- to cream-colored flowers all summer. Low spreading plant that is short-lived and produces lots of seeds. Germinate indoors in early spring or sow directly outdoors.

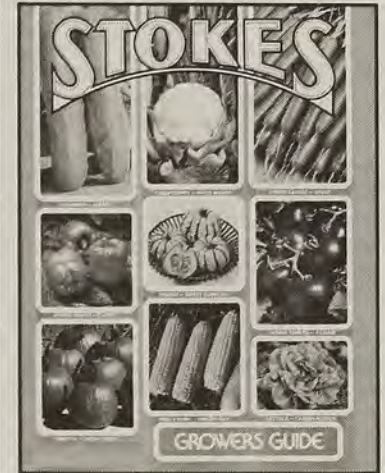
63. *P. × hortorum* 'Cameo'. Zonal geranium. Height: 12-15 inches. Bears deep salmon-colored blossoms all summer on densely flowering umbels. Prefers moist, cool soils. Cover seeds lightly and germinate in warm soil.

64. *P. × hortorum* 'Glamour Rose Pink'. Zonal geranium. Height: 12-15 inches. Characteristics and growth requirements similar to 'Cameo', but flowers are deep rose-pink with a white eye.

65. *P. odoratissimum*. Apple-scented geranium. Height: to 1½ feet. Has sprawling stems and kidney-shaped, apple-scented foliage. Flowers are white. Plant used as a source of geranium oil.

66. *P. papilionaceum*. Geranium species. Height: to 3 feet. Blooms have unequal petals;

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upper are rose colored marked with red, lower are white. Has rounded pubescent leaves and hairy stems. Foliage sometimes gives off citrus scent. Tolerates part shade. Start indoors in early spring for outdoor planting. Soak seeds overnight in lukewarm water and keep soil warm until germination occurs.

67. *P. ribifolium*. Geranium species. Height: to 3 feet. Bears small white flowers on hairy stems that become woody at the base. A rugged plant that prefers moist but not wet soil. Sow seeds indoors in early spring or directly outdoors.

68. *Petunia* × *hybrida*. Petunia cultivar. Donor unsure of species. Height: 1 foot. Rugged, compact plants bear red and purple flowers, some bicolors. Full or part sun. Sow indoors 8 weeks before last frost. Cover seeds very lightly, or just press them into the starting medium.

69. *Phlox drummondii*. Annual phlox. Height: 18 inches. Moundlike plants with narrow, pale green leaves that cover themselves in clusters of pink, red, lavender or white flowers all summer.

70. *Polygonum orientale*. Prince's feather, kiss-me-over-the-garden-gate. Height: to 6 feet. A native of Asia and Australia naturalized in the United States. Bears bright magenta flowers on dense, generally drooping spikes up to 3 inches long. An erect plant, with broad ovate leaves that clasp to the stem. Can be grown as a perennial to Zone 4. Tolerates part shade.

71. *Ricinus communis*. Castor bean. Height: to 15 feet. A small tree in its tropical habitat, but grown as an annual in North America. Fast-growing, exotic plant with erect habit. Large, many-lobed, dark-green leaves and heads of green and red flowers grow on thick reddish-purple stems. Globular, prickly seed pods develop in late summer. Caution: The attractive, glossy seeds are highly poisonous.

72. *Salpiglossis* sp. Painted tongue. Donor unsure of species. Height: to 3 feet. Native of Chile bears apricot-orange trumpet-shaped flowers all summer in cooler climates. May require staking. Attracts butterflies. Sow outdoors after danger of frost has passed, or start indoors for earlier bloom. Does best in rich, well-prepared soil.

73. *Salvia columbariae*. Chia. Height: 4–20 inches. A native of the Southwest and California, it bears half-inch-long blue flowers at the ends of stem and branches. Drought resistant, but prefers loamy soils. Start indoors and transplant outside in cooler climates.

74. *Sanvitalia procumbens*. Creeping zinnia. Height: 6 inches. A sprawling, densely branching plant with opposing, nearly oval leaves and three-quarter-inch, daisylike flowers. These have yellow rays and purple centers. Thin to about 6 inches apart. Seedlings don't like to be transplanted.

75. *Scabiosa stellata*. Starry scabiosa. Height: 1–1½ feet. Produces compound, hairy leaves and globe-shaped, yellow-white to lilac flower heads about an inch across.

76. *Senecio cineraria*. Dusty-miller. Height: 2–3 feet. The yellow or cream flower heads are several inches across but the plant is grown primarily for its white, woolly leaves. Can be sheared to prevent legginess. Needs cool temperatures (55–60 degrees) for germination.

77. *Silene armeria*. Sweet William catchfly. Height: 1–2 feet. Annual or biennial that self-sows and acts like a perennial. Bushy plant with brilliant lavender-to-pink flowers with notched petals. Flowers bloom in compact clusters above mostly basal leaves. Heat and drought tolerant. Do not cover seeds. Zone 4–8.

78. *Sorghum* sp. Egyptian wheat. Height: 8–10 feet. Rapidly growing, coarse-textured, upright annual grass. Has broad flat leaves and showy terminal flower spikes. Attracts birds. Sometimes puts out prop roots. Full sun or part shade; particularly suited to the Great Plains. Sow outdoors in spring.

## SAVE THIS CATALOG!

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

79. *Tagetes minuta*. Muster-John-Henry. Height: 3 feet. Late-blooming marigold that bears small, fragrant yellow flower heads 6 months after sowing. Said to deter nematodes and attract beneficial insects. Self-sows. Start indoors in late winter for late summer bloom.

80. *T. patula* 'Burgundy Ripple'. French marigold cultivar. Height: 1 foot. Unusual crimson flowers with gold edges. *T. patula* cultivars are heat tolerant and excellent for edging, borders, or window boxes.

81. *T. patula* 'Sophia Queen', 'Boy Yellow', and 'Boy Spry'. French marigold cultivars. 'Sophia Queen' grows to 1 foot and has yellow flowers with mahogany flecks. 'Boy Yellow' is a dwarf yellow form, growing to 8 inches. 'Boy Spry', another dwarf, has mahogany outer petals with a yellow crest.

82. *T. patula* 'Sparky'. French marigold cultivar. Height: 1 foot. Abundant bicolored double flowers in orange and yellow.

83. *T. patula* 'Striped Marvel'. French marigold cultivar. Height: 2 feet. Bushy plant that produces abundant red-and-yellow-striped flowers.

84. *Tropaeolum majus*. Nasturtium cultivar. Donor unsure of cultivar. Rambling, vinelike plant with round, bright green leaves and large flowers in yellow, orange, and red.

85. *Verbesina encelioides*. Butter daisy. Height: 3 feet. A native of western U.S. and Mexico that has naturalized eastward. Loose branching habit with bright yellow daisylike flowers and irregular, toothed leaves. Drought tolerant and attracts butterflies and bees.

86. *Wahlenbergia undulata* 'Melton Bluebird'. Height: to 12 inches. A low, tufted annual with an open spreading habit ideal for window boxes, baskets, and containers. Flowers start off slate blue and soften to pale blue with age. Prefers dry, limy soil. Tolerates part shade. Handle fine seeds carefully. Start indoors and do not cover seeds to germinate.

87. *Xeranthemum annuum*. Immortelle. Height: 2–3 feet. Fuzzy, grayish stems and

leaves. Daisylike flowers are up to 1½ inches wide and may be single or double. Blooms in red, pink, purple, and white in late summer and fall. Thin to about 8 inches. Doesn't like to be transplanted.

88. *Zinnia angustifolia* 'White Star'. Mexican zinnia cultivar. Height: 1–1½ feet. A narrow-leaved species that bears white, daisylike flowers with yellow centers.

89. *Z. elegans* 'Golden Queen'. Common zinnia cultivar. Height: 2–3 feet. Double yellow daisylike flowers on robust stalks with bold opposing leaves. Deadhead regularly for summer-long flowering.

90. *Zinnia* 'Persian Carpet'. Zinnia cultivar. Height: 18 inches. Smaller than *Z. elegans* with narrower leaves. 'Persian Carpet' produces mostly double flowers in red, orange, and yellow.

## PERENNIALS

91. *Abelmoschus manihot*. Sunset hibiscus. Height: 5–6 feet. Tender perennial grown as an annual in temperate regions. Large ruffled yellow flowers with a purplish center bloom in late summer. Easy to germinate. Zone 7–10.

92. *Achillea filipendulina* 'Coronation Gold'. Fernleaf yarrow. Height: 3 feet. Low-growing yarrow with small, flat, dense heads of yellow flowers from late spring to midsummer. Flower heads retain color for dried arrangements if cut before pollen development. Heat-tolerant plant that prefers dry soil and full sun. Zone 4–8.

93. *A. millefolium*. Common yarrow. Height: 2 feet. Flat heads of rich red flowers bloom in summer above feathery dark green leaves. Will rebloom if dead flowers are removed. Good for dried arrangements. Needs full sun. Zone 3–10.

94. *A. millefolium*. Common yarrow. Donor unsure of variety. Height: 2–3 feet. Similar to species but has deep pink flowers that fade to cream. Zone 3–10.

95. *A. millefolium* 'Summer Pastels'. Galaxy hybrid. Height: 2 feet. 1990 All-America Selections winner that flowers in a variety of colors including apricot, salmon, scarlet, lilac, cream, orange, gold, and mauve. Used as border plants or in dried and fresh arrangements. Best in full sun and dry soil. Zone 3–9.

96. *Alcea rosea*. Common hollyhock. Height: 10 feet. Spikes of single red flowers 2–4 inches across. Requires staking. Best for the back of a border or against a wall or fence. All hollyhocks germinate best in cool temperatures (55–60 degrees). Biennial. Zone 3–9.

97. *A. rosea*. Common hollyhock. Height: 10 feet. Spikes of single pale pink to white flowers. Requires staking. Biennial. Zone 3–9.

98. *A. rosea*. Common hollyhock. Height: 8–10 feet. Light yellow blooms suffused with peach on wandlike terminal racemes. Requires staking. Zone 3–9.

99. *A. rosea* 'Indian Springs Hybrids'. Common hollyhock hybrids. Height: 4–6 feet. Light



to medium pink flowers bloom in July. Requires staking. Zone 3–9.

100. *A. rugosa*. Hollyhock. Height: to 6 feet. Similar to *A. rosea*, but with bushier habit. Yellow flowers bloom in early summer. Biennial. Plants grown from seeds sown indoors in January may bloom first year.

101. *Alcea* sp. Hollyhock. Donor unsure of species. Height: 6–8 feet. Spikes of single, mixed-color flowers 2–3 inches across. Requires staking. Plant in rich soil. Zone 2.

102. *Allium cernuum*. Nodding onion. Height: 1–2 feet. Typical onion leaves and loose nodding umbels of lilac to pink flowers. Tolerates a variety of growing conditions. Zone 4–8.

103. *Alyssoides graeca*. Bladderpod. Height: 1–2 feet. Herb native to mountains of central Europe. Bears bright mustard-yellow flowers that bloom from April to June. Resembles alyssum, but has larger flowers and produces decorative, bloated, bladderlike seed pods. Zone 5–8.

104. *Anemone* spp. Windflower species. Seeds collected from *A. narcissiflora* and *A. nemorosa*. Height: ½–1½ feet. *A. nemorosa* has white flowers, sometimes reddish. *A. narcissiflora* has creamy white flowers occasionally flushed with purple. Both flower in late spring and early summer. Compact plants with deeply lobed basal foliage. Both species tolerate part shade and prefer rich soil of mixed sand and loam. Store seeds in moist media or peat moss in refrigerator for 2–3 weeks before sowing. Can be sown outdoors after last frost or indoors in early spring. Zone 3–9.

105. *A. sylvestris*. Snowdrop anemone. Height: 1–1½ feet. A fast-spreading species that should be placed with care. Quickly colonizes in rich, loose soil. Fragrant, nodding white flowers bloom in late spring over mound of basal foliage. Zone 3–9.

106. *Aquilegia alpina*. Alpine columbine. Height: 1–2½ feet. Nodding bright blue or blue-and-white flowers with spreading sepals and short, hooked spurs. Erect form above clumps of blue-green basal foliage. Spring blooming. For this species, donor suggests sowing seeds then cold treating for three weeks before germinating at 70 degrees. In general, columbines prefer part shade and rich, well-aerated soil. It's probably best to sow columbines outdoors in fall or early spring without covering the seeds. Zone 3–9.

107. *A. canadensis*. Canadian columbine. Height: 3–3½ feet. Five-petaled flower with spurs of vivid scarlet and yellow. Blooms in late spring to early summer. Airy, blue-green foliage and a very graceful and elegant habit. For culture, see *A. alpina*. Extended dry storage may improve germination. Zone 3–8.

108. *A. flabellata*. Fan columbine. Height: 1 foot. Stout-stemmed, Japanese species with bushy habit. Blue-green leaves have a purple tinge. Bears up to three nodding blue-to-purple flowers on hairy stalks. For culture, see *A. alpina*. Zone 3–9.

109. *A. flabellata* var. *alba*. Fan columbine variety. Height: 1–1½ feet. A compact plant with blue-green leaves and nodding, ½-inch white

flowers with short, hooked spurs. For culture, see *A. alpina*. Zone 3–9. Limited quantity available.

110. *A. flabellata* var. *pumila*. Fan columbine variety. Height: 6 inches. A compact plant with blue-gray leaves and nodding, deep blue flowers with conspicuous hooked spurs. For culture, see *A. alpina*. Zone 3–6.

111. *A. formosa*. Western columbine. Height: 2–3 feet. Red and yellow spurred flowers borne on wiry stems above clumps of deeply lobed blue-green foliage. For culture, see *A. alpina*. Indoor germination may be improved by refrigerating seeds for at least 3 weeks after sowing. Zone 3–9.

112. *A. vulgaris* 'Nora Barlow'. Columbine cultivar. Height: 1–2 feet. Spurred red double flowers tipped with white or pink. Airy and graceful plant with fanlike leaves. For culture, see *A. alpina*. Extended dry storage may improve germination. Zone 3–8.

113. *Aquilegia* spp. Mixed columbine species. Height: 1–3 feet. Mixed red, white, purple, blue, and yellow flowers blooming late spring to early summer. Airy blue-green to gray-green foliage and a very graceful and elegant habit.

114. *Arisaema triphyllum*. Jack-in-the-pulpit. Height: 16–20 inches. Named for green or purple hoodlike bracts (spathes), which are followed in autumn by bright red berries. Needs full or part sun and rich soil. Sow in fall. Zone 4–9.

115. *Armeria pseudarmeria*. Sea pink. Height: 15 inches. A clump-forming perennial with dark-green, succulent, pointed leaves of 1- to 2-inches long. Small, bell-shaped flowers bloom in summer. Soak seeds overnight in lukewarm water before germinating at 60–65 degrees. Zone 6–8.

116. *Aruncus dioicus*. Goatsbeard. Height: 4–7 feet. An erect, shrublike perennial with many branching stems. Feathery, cream-colored flowers are clustered on multiple spikes up to a foot long. Cold treat then warm treat without covering seeds, or sow outdoors in fall. Zone 3–9.

117. *Asclepias tuberosa*. Butterfly weed. Height: 3 feet. Orange, occasionally red and yellow umbels bloom in late spring to midsummer. Attractive straplike leaves from 2–6 inches long. Excellent for borders or meadow areas. Thrives in drier, infertile soils. Usually pest free. Zone 4–9.

118. *Baptisia australis*. False indigo. Height: 2–6 feet. Forms large clumps of cloverlike blue-green leaves. In summer, long racemes of blue flowers emerge. Requires full or part sun in moist, well-aerated soil. Sow in late fall or in early spring. Spring-sown seeds should be scarified. Zone 4–9.

119. *Belamcanda chinensis*. Blackberry lily. Height: 1½–3 feet. Bulb produces orange-red, spotted flowers to 2 inches across. Semi-erect, sword-shaped leaves form a fan. Midsummer flowers are followed by fruit capsules that split to expose shiny black seeds good for dried arrangements. Prefers rich soil. Should be protected during cold winters. Zone 5–10.

120. *Campanula trachelium* 'Alba'. Nettle-leaved bellflower cultivar. Height: 2–3 feet. Large

## SEED STARTING TIPS

◆ Use a container that has been cleaned and soaked in one part bleach added to 10 parts soapy water.

◆ Use a commercial or homemade soilless germination medium.

◆ Moisten growing medium before sowing the seeds.

◆ Sow seeds thinly and evenly in rows and label the rows.

◆ Keep the medium evenly moist without over- or underwatering.

◆ Most seeds and seedlings do best with an even soil temperature between 70 and 80 degrees. If you don't already have one, it is a good idea to invest in a bottom heating device to help keep the soil temperature constant.

◆ After germination, thin crowded seedlings by clipping with scissors at soil level so the remaining seedlings are at least one inch apart.

◆ Three to four weeks after germination, begin applying a dilute liquid fertilizer.

◆ Transplant seedlings to wider and deeper containers after they have developed two to four true leaves.

white bell-shaped flowers bloom on short erect spikes in late summer. Tolerates some shade but prefers moist, well-aerated soil. Zone 3–7.

121. *Chasmanthium latifolium*. Northern sea oats, wild oats. Height: to 3 feet. A clumping, warm-season grass with leaves like bamboo and seed pods like oats. The pods appear in August and turn copper in fall, then gray in winter. Does best in some shade. Will tolerate most soils but should not be allowed to dry out. Zone 5–9.

122. *Chelone glabra*. Turtlehead. Height: 2–6 feet. Clump-former related to penstemons and similar in habit. Dark-green, oval to lance-shaped leaves and white-to-pink bearded flowers in spikes. Prefers partly shaded location with moist but well-aerated soil. Do not cover seeds to germinate. Zone 3–9.

123. *Chrysopsis villosa*. Golden aster. Prairie plant native to central and western North America. Height: 1–5 feet. A bold, bushy plant with many-branched stems and pubescent lanceolate leaves. Yellow radial-petaled flowers bloom in late summer and fall. Tolerates dry, sandy soil and exposed conditions. Zone 4–10.

124. *Coreopsis grandiflora*. Tickseed. Donor unsure of variety. Height: 2–3 feet. Native of southeastern and south central U.S. Large-toothed yellow flowers borne on slender green stems above narrow, dark green leaves. Dead-head to extend flowering. Prefers a sandy soil. Do not cover seeds. Zone 6–9.

125. *C. lanceolata*. Lanceleaf coreopsis. Height: 2 feet. Similar to *C. grandiflora* but more graceful, with simple, lance-shaped leaves. Do not cover seeds. Zone 3-8.

126. *Crococsmia* × *crococsmiiflora* 'Lucifer'. Montbretia cultivar. Height: 3 feet. Deep red flowers bloom along branching spikes in mid-summer. Has clump-forming, swordlike, bright green leaves. Needs an open, sunny site. Sow in fall. Zone 5-9.

127. *Daucus carota*. Queen Anne's lace. Height: 2-3 feet. Indigenous to Europe and Asia but widely naturalized in North America. Small white flowers borne in a flattened cluster with single reddish flower in center. Blooms from June to September. Fernlike, airy texture provided by finely cut leaves and slender stems. Prefers full sun and sandy soil. Popular in flower arrangements. Biennial. Zone 3-10.

128. *Delphinium* sp. Larkspur. Donor unsure of species. Height: 4-6 feet. Blue, red, pink, white, violet, or yellow flowers bloom prolifically from early to midsummer on showy spikes above attractive, lobed leaves. May need staking. Young leaves and seeds of some delphiniums are toxic. Deadhead to induce further flowering. Prefers moist, slightly alkaline soil. Start indoors in late winter for flowers first year. Sow outdoors in spring or summer for flowers in second year. Zone 3-7.

129. *Dianthus barbatus*. Sweet William. Height: 1-1½ feet. Abundant red, pink, white, and violet fringed flowers. Excellent for rock gardens. Usually treated as a short-lived perennial or biennial. If seed is sown in early summer, plants should flower the following year. Makes a long-lasting cut flower. Prefers rich, moist, well-aerated soil. Zone 4-10.

130. *D. carthusianorum*. Cluster-head pink. Height: 1½-2 feet. Red or purple-red flowers in

terminal clusters borne on narrow stems bloom from June to September. Narrow, blue-green leaves form loose, grasslike habit. Good for naturalizing in dry alkaline soil. Start indoors and transplant in spring or fall. Zone 5-10.

131. *Dierama* sp. Wandflower, angels'-fishing-rod. Height: 2-4 feet. A tender perennial grown as an annual or greenhouse plant in most of North America. Purple and pink tubular flowers bloom on arcing, wiry stems in summer. Grasslike foliage grows in clumps. Start indoors and transplant outdoors in warm soil. Zone 8-10.

132. *Digitalis lutea*. Straw foxglove. Height: 2-3 feet. Abundant racemes of small, light yellow to white tubular flowers. Foxgloves prefer part sun and rich, well-aerated soil. Seeds sown outdoors in early fall or started in a greenhouse during winter should flower the following summer. Germination is rapid in warm soil. Zone 3-8.

133. *D. purpurea*. Common foxglove. Height: 2-4 feet. Extremely showy, tube-shaped, terminal flowers are purple-pink with brown-spotted throats. Blooms early June to mid-July. Self-sows. For culture, see *D. lutea*. Zone 4-9.

134. *D. purpurea* 'Alba'. Common foxglove cultivar. Height: 2-4 feet. Similar to species but has white flowers with pale green interior spots. For culture, see *D. lutea*. Zone 4-9.

135. *Echinacea purpurea*. Purple coneflower. Height: 2-5 feet. A sturdy, coarse, hairy plant with leafy, branching stems. Its solitary, daisy-like flowers may reach 6 inches across. Their showy, drooping petals vary from purple-pink to almost white, surrounding a rounded, prickly, bronze-colored cone. Easy, low-maintenance plant. Zone 3-8.

136. *Echinacea purpurea* var. *alba*. Purple

coneflower variety. Height: 2-5 feet. A sturdy, coarse, hairy plant with leafy, branching stems. White, drooping petals surround a rounded, prickly, bronze-colored cone. Easy, low-maintenance plant. Zone 3-8.

137. *Echinacea* spp. Purple coneflower varieties. Height: 2-3 feet. Mixed seeds from cultivars 'Bravado' (extra-large pink flowers) and 'White Lustre' (pure white flowers). Zone 3-8.

138. *Echinops exaltatus*. Globe thistle. Height: to 5 feet. Globular blue-to-gray spiky flower heads bloom for 6-8 weeks in summer. Tall upright plant with spiny, thistlelike leaves that are dark green above and white below. Tolerant of poor, dry soil. May take two years to bloom from seeds. Zone 4-9.

139. *E. ritro*. Small globe thistle. Height: 4 feet. Erect stands of sturdy stems with thistlelike leaves. Flowers are tightly grouped into large, spherical, compound heads. Easy, undemanding plant for a sunny location. Excellent for cutting and dried arrangements. Zone 4-10.

140. *Eryngium alpinum*. Sea holly. Height: to 2½ feet. Each plant bears three to five cylindrical steel-blue flower heads surrounded by slightly prickly, frilly bracts. Blooms in July and August. Steel-blue stems rise from rosette of glossy, leathery basal leaves. Excellent for dried arrangements. Prefers dry, sandy, deep soil; tolerant of drought and heat. Cold treat to improve germination. Zone 5-8.

141. *E. giganteum*. Stout sea holly. Height: 4-6 feet. Biennial that performs as a perennial by self-seeding. Large, silver-green, spiny bracts, which resemble holly leaves, form an attractive collar around the steel-blue flower heads. Cold treat. Zone 4-8.

142. *E. tripartitum*. Eryngium. Height: 2 feet. Origin unknown, probably a hybrid. Bears small, dark blue flowers from August to October. Foliage is dark green with white veins. Can be used in dried arrangements. Does not like root disturbance. Difficult to germinate. Cold treat or sow outdoors in fall or early spring. Zone 5-9.

143. *E. yuccifolium*. Rattlesnake master. Height: 3-4 feet. Whitish, rounded flowers are 1 inch across. Taller branches are leafless with few bracts. Prefers dry, slightly acid soil and needs a generous topsoil depth to accommodate its long taproot. Performs well in both shady woodland edges and sunny prairie settings. Good for dried arrangements. Difficult to germinate. Cold treat for 2 months. Zone 4-8.

144. *Eupatorium coelestinum*. Mist flower, hardy ageratum. Height: 1-3 feet. Dense showy clusters of blue or violet flowers bloom from late summer to fall. Light green, opposite leaves surround pubescent, red-brown stems. Prefers moist sunny sites, especially beside pools or streams. Can be invasive. Cold treat in moist medium. Zone 5-10.

145. *E. fistulosum*. Joe-pye weed. Height: 6-10 feet. Sometimes confused with *E. purpureum* and *E. maculatum*. Forms clumps up to 3-4 feet wide. Domed heads of pale pink to red or lavender flowers bloom in clusters up to 18 inches across. Blooms in late summer or fall on hollow stems spotted with purple. Long, lance-shaped leaves are arranged in whorls around the stem.

## SOIL RECIPES

Homemade mixes for germinating seeds and growing seedlings are easy to make and often less expensive than prepackaged ones if you use large quantities. Perlite, vermiculite, and horticultural sand are inexpensive and easily found at most garden centers.

Cornell University in Ithaca, New York, is renowned for its development of soil-less mixtures used by the commercial growing industry. The following formula, called "Cornell Peat-Lite," is recommended for germinating seeds:

- 1 bushel shredded sphagnum peat moss
- 1 bushel horticultural vermiculite (No. 4—fine)
- 4 level tbsp. ammonium nitrate (nitrogen source)
- 2 level tbsp. powdered superphosphate (20 percent)
- 10 level tbsp. finely ground dolomitic limestone

Mix all ingredients well before filling containers.

A simpler recipe for a germination medium is to combine equal parts of a soil-less commercial potting mix and perlite and vermiculite. However, because it doesn't contain any form of fertilizer, you will need to give seedlings a feeding of a dilute liquid fertilizer three to four weeks after they have germinated.

Once the seedlings have true leaves and are less susceptible to pathogens, you may want to transplant them to a larger container where they can grow until being hardened off in spring. For this, try a mix of equal parts potting mix, horticultural sand or vermiculite, and finished compost.

Prefers full sun and abundant moisture. Good for naturalizing. Can be pruned to stimulate lateral development or reduce height. May not bloom until second year. Sow outdoors in fall or cold treat and start indoors in early spring. Zone 4–9.

146. *E. purpureum*. Joe-pye weed. Height: to 10 feet. Open clusters of purplish flowers appear in late summer. Tolerates varied sun and soil conditions. Zone 4–9.

147. *Filipendula vulgaris* (also called *F. hexapetala*). Meadowsweet, dropwort. Height: 1½–2 feet. Small mound of feathery foliage gives rise to slender flower stalks that cluster in terminal panicles. Flowers are creamy white, sometimes tinged with red. Easy to germinate. Zone 3–8.

148. *Gaillardia aristata*. Blanket flower species. Height: 2 feet. Single daisylike flowers are rich yellow with red centers and bloom all summer. Short-lived and tends to sprawl. Zone 3–9.

149. *G. × grandiflora*. Blanket flower. Height: 2–3 feet. Native to western U.S. Bears large red-and-yellow daisylike flowers all summer and into fall. Leaves are long, finely lobed, and hairy. Drought tolerant, but needs full sun and light, well-aerated, non-clay soil. Zone 3–10.

150. *G. × grandiflora* 'Goblin'. Dwarf blanket flower. Height: 1–1½ feet. Red daisylike flowers are edged with yellow and bloom all summer over long, narrow leaves. This dwarf cultivar forms compact mounds. Deadhead to prolong blooming season. Tolerant of heat, drought, and poor soil. Zone 4–9.

151. *Gaillardia* sp. Blanket flower. Height: 3 feet. Donor unsure of species. Daisylike yellow and maroon flowers. Zone 3–9.

152. *Gerbera jamesonii*. Barberton daisy. Height: 1–1½ feet. Tropical perennial usually grown as annual north of Zone 8. Multicolored daisylike flowers rise on leafless stalks above a rosette of basal leaves. Needs moist, but well-aerated soil and cool nighttime temperatures. Afternoon shade helps in areas with hot summers. Do not cover seeds to germinate. Zone 8–10.

153. *Helenium autumnale*. Sneezeweed. Height: 2½–6 feet. A tall plant with an erect habit. Has elongated, alternate, serrated leaves and daisylike orange, yellow, and reddish-brown flowers that bloom late summer to frost. Zone 3–8.

154. *Hemerocallis* 'Stella de Oro'. Seeds from a daylily cultivar. Height: 1 foot. Parent is a miniature form that produces golden 3-inch flowers from May to frost. Won the American Hemerocallis Society Stout Medal. Germinates in 3–7 weeks. Full or part sun. Can be sown in fall. Zone 4–9.

155. *Hemerocallis* cultivars. Daylilies. Height: 1½–3½ feet. A mix of yellow, orange, pink, red, maroon, salmon, and bicolor flowers, which begin appearing about midsummer. For culture, see 'Stella de Oro'. Zone 4–9.

156. *Hesperis matronalis*. Sweet rocket. Height: 1–3 feet. Fragrant, showy white, purple, or blue flowers produced in loose terminal racemes. Blooms in May and June. Self-seeds prolifically. If seeds are started in winter or early spring, plants will bloom the first year. Does best with light shade and damp, well-aerated

soil. Sow in warm soil. Do not cover seeds. Zone 3–8.

157. *Hibiscus coccineus*. Scarlet rose mallow, Texas star hibiscus. Height: 6–8 feet. Deep red funnel-shaped flowers, 5–6 inches wide, appear from mid- to late summer. Narrow upright habit. A wetland native, but tolerant of drier soils. Full sun to light shade. Hibiscus seeds can have a low germination rate. This species should be sown without covering in warm soil. Zone 6–9.

158. *H. moscheutos*. Common rose mallow. Height: 3–8 feet. Impressive 6- to 12-inch flowers are red, white, pink, or bicolor. Blooms from midsummer to frost. Its many stems and 8-inch leaves give the plant a shrubby form. Full or part sun and moist, rich soil. Sow seeds outdoors in fall, uncovered. Zone 5–9.

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159. *H. moscheutos*. Common rose mallow. Height: 3–8 feet. Hot-pink flowers are up to 7 inches in diameter. Multi-stemmed form and large leaves give the plant a shrubby habit. Prefers full or part sun and moist soil. Sow in fall. Do not cover seeds. Zone 5–9.

160. *H. moscheutos* 'Southern Belle'. Rose mallow cultivar. Height: 3–6 feet. Large red, pink, or white flowers have a dark pink center. Prefers full sun and moist soil. Does well on banks next to water. Seeds should be sown, uncovered, in fall. Zone 5–9.

161. *Hosta* 'Frances Williams'. Frances Williams hosta. Height: 2 feet. Ribbed, blue-green leaves have yellow edges. White flowers rise on slender stalks to just above clumping, basal foliage. Hostas prefer shade and moist, well-aerated, loamy soil. Easy to germinate. Zone 3–8.

162. *H. sieboldii*. Seersucker plantain lily. Height: to 2½ feet. Large, ribbed, heart-shaped leaves have a blue-gray cast. In early summer, racemes of pale lilac flowers are borne on stems above the foliage. Prefers shade and rich soil. Zone 3–8.

163. *H. sieboldiana*. Siebold hosta. Height: 1½–2 feet. Ornate 10- to 15-inch-long gray-green ribbed leaves are clustered to form a rosette up to 4 feet wide. Flowers are pale lilac to waxy blue on scapes not much taller than the leaves. For culture, see 'Frances Williams'. Zone 3–8.

164. *H. tardiflora*. Hosta. Height: 1 foot. Bears lilac-purple flowers from late summer to early fall. Narrow, dark green leaves. For culture, see 'Frances Williams'. Zone 4–8.

165. *H. ventricosa*. Blue plantain lily. Height: 3 feet. Dark green leaves are up to 9 inches long and 5 inches wide. Bell-shaped late summer flowers are violet-blue on 3-foot stems. Needs shade. For culture, see 'Frances Williams'. Zone 3–9.

166. *H. ventricosa* 'Aureo-maculata'. Height: 2–2½ feet. Has yellowish-white foliage that later turns green. Purple flowers. For culture, see 'Frances Williams'. Zone 3–9.

167. *H. ventricosa* 'Variegata'. Height: 2–2½ feet. Green leaves with creamy-colored margins. Purple flowers. For culture, see 'Frances Williams'. Zone 3–9.

168. *H. venusta*. Hosta. Height: 6–24 inches. A decorative low-growing hosta suitable for rock gardens. Vigorous plant with rounded green leaves and purple flowers borne on stems above the basal foliage. For culture, see 'Frances Williams'. Zone 4–9.

169. *Iris pseudacorus*. Yellow iris hybrid. Height: 5 feet. Donor crossed yellow-flowered iris with three white-flowered varieties, so seeds may produce flowers in various combinations of white and yellow. Plant in moist areas. Blooms in late spring. Sow in fall. Do not cover seeds. Zone 5–9.

170. *I. pseudacorus*. Yellow iris hybrid. Height: 5 feet. Seeds produced from another round of crosses between yellow-flowered iris and three white-flowered varieties. Seeds may produce flowers with various combinations of white and yellow. Sow in fall. Do not cover seeds. Zone 5–9.

171. *I. sibirica*. Siberian iris. Height: to 3 feet. Faintly bluish foliage, sometimes red at the base, and delicate purple flowers in spring. Will tolerate part sun. Requires a moist soil; mulch to keep the roots cool. Do not cover seeds. Zone 3–9.

172. *I. tectorum*. Japanese roof iris. Height: 1 foot. Sword-shaped, erect, dark-green leaves and large pale-blue flowers. Prefers a moist, slightly acidic, sandy loam. Do not cover seeds. Zone 4–9.

173. *Leucanthemum vulgare* (formerly *Chrysanthemum leucanthemum*). Oxeye daisy. Height: 2–3 feet. A typical daisy flower up to 2 inches across, with white rays around a yellow center. Stem is erect and sparsely leaved. Blooms in late spring. Good for naturalizing in meadows and useful as a cut flower. Zone 3–9.

174. *L. × superbum* (formerly *Chrysanthemum × superbum*). Shasta daisy. Height: 2½ feet. White-rayed flowers are up to 3 inches across and have yellow centers. Blooms from early summer to frost. The dark green leaves are undivided, which is unusual for a chrysanthemum. Pinch plants to encourage a fuller shape. Sow in warm soil. Zone 4–9.

175. *Liatris aspera*. Rough blazing-star. Height: 3–6 feet. Upright stems with narrow leaves and loose spikes of purple flowers. Tolerates dry, shallow soil. Zone 5–7.

176. *L. mucronata*. Blazing-star species. Height: 3–5 feet. A narrow-leaved upright plant that bears spikes of lilac-colored flowers from July to October. Tolerates dry soil. Zone 7–9.

177. *L. spicata*. Blazing-star species. Height: 2–5 feet. Two-foot spikes of five to 14 rosy purple florets bloom on smooth stems. Drought resistant. Winter mulching is recommended in cold climates. Prefers moderately fertile, sandy soils that drain well in winter. Dry storage of seeds for up to 6 months may improve germination. Zone 3–10.

178. *L. spicata* 'Kobold'. Blazing-star cultivar. Height: 1½ feet. Similar to the species but with flowers in various hues of purple.

179. *Lilium formosanum*. Lily species. Height: 5–7 feet. Very abundant dark green leaves up to 8 inches long. Trumpet-shaped flowers are 5–8 inches long, white inside and maroon outside. Blooms mid- to late summer for about 3 weeks. Likes moist, sandy soil with full sun to part shade and benefits from winter protection. Zone 5–8.

180. *Lobelia cardinalis*. Cardinal flower. Height: 3–4 feet. Bright scarlet, occasionally pink or white lobed flowers are 1½-inches long. Blooms in summer. Prefers moist soil and light shade. In cooler climates, will tolerate full sun. Sow in fall. Do not cover seeds. Zone 2–9.

181. *L. siphilitica*. Blue cardinal flower, big blue lobelia. Height: 2–3 feet. An erect unbranching plant with oval leaves and dense terminal racemes of bright blue flowers. Blooms in late summer. Part sun in moist soil. Zone 4–8.

182. *Lupinus perennis*. Sundial or wild lupine. Height: 2 feet. One-foot spikes of showy blue, pink, or white flowers bloom in midsummer over clumps of compound leaves. Soak seeds in lukewarm water and nick seed coats before sowing outdoors. Self-sows readily. Zone 4–8.

183. *Lychnis chalcidonica*. Jerusalem campion, Maltese cross. Height: 2–3 feet. Lance-shaped 2- to 4-inch opposite leaves. Produces dense clumps of vivid scarlet flowers on tall stems in summer. Often needs staking. Full to part sun in a moist, well-aerated, fertile soil. Zone 3–9.

184. *L. coronaria*. Rose campion. Height: 2–3 feet. Bright magenta flowers borne on long stems contrast beautifully with greenish-white oval leaves that are 1–4 inches long. Blooms late spring into early summer. Needs full sun. Self-sows. Zone 4–8.

185. *L. coronaria* 'Alba'. Rose campion. Height: 2–3 feet. Silvery-white flowers that bloom from late spring to early summer are complemented by silver-green foliage. Self-sows. Zone 4–8.

186. *Macleaya cordata*. Plume poppy. Height: 5–10 feet. This clump-forming member of the poppy family produces enormous stems and 8-inch heart-shaped leaves. In summer, its stems are topped with feathery, foot-long panicles of creamy white flowers, each with a spray of conspicuous stamens. Spreads aggressively by runners. Seeds are collected from AHS's River Farm headquarters. Zone 3–8.

187. *Malva alcea* var. *fastigiata*. Hollyhock mallow variety. Height: 3–4 feet. Blooms in a mass of pink from July to October. Full to part sun. Short-lived, but usually self-seeds. Zone 4–8.

188. *M. moschata*. Musk mallow. Height: 2–3 feet. Bushy with satiny, rose-pink-and-white 2-inch flowers, June through September. Prefers lime-free soil. Zone 5–8.

189. *Meconopsis cambrica*. Welsh poppy. Height: 1–2 feet. Lemon-yellow flowers up to 2 inches wide bloom on slender hairy stems rising from a nest of narrow, serrated leaves. Planting site should offer some protection from mid-day heat and strong winds. A moist, well-aerated mixture of loam and sand is recommended as a medium. Fresh seeds germinate easily, but via-



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bility decreases with age. Can be started indoors or sown outdoors after danger of frost has passed. Zone 6–9.

190. *Nepeta mussinii*. Persian nepeta, catmint species. Height: 1 foot. Sprawling, square stems with opposite leaves are topped with loose racemes of lavender flowers in spring. Cut spent flowers for a second bloom. Thrives in dry sandy soils. Self-sows. Zone 3–8.

191. *Oenothera biennis*. Evening primrose. Height: 1–5 feet. Native of eastern North America. Fast-spreading, with yellow, cup-shaped flowers that spring from a rosette of long, flat basal leaves. Blooms open in late afternoon or evening beginning in early to midsummer. Tolerates full sun or part shade and likes dry, well-aerated soil. Cold treat or sow outdoors in fall. Do not cover to germinate. Zone 3–10.

192. *Onopordum acanthium*. Scotch thistle. Height: 3–9 feet. Biennial or triennial that bears rosy-mauve thistlelike flowers in heads 2 inches across in summer. Spiny, multi-toothed leaves are covered with a fine white down. Easy to germinate, but cold treatment may increase yield. Zone 3–9.

193. *Papaver orientale* 'Glowing Embers'. Oriental poppy cultivar. Bright orange-red ruffled flowers. Foliage is narrow and finely serrated. Among the longest-lived poppies; does best when undisturbed. Zone 3–9.

194. × *Pardancanda norrissii*. Park's candy lily hybrid. Height: 3 feet. A cross between *Pardanthopsis* and *Belamcanda* that bears 3- to 4-inch blooms in yellow, blue, red, purple, pink, white, orange, multicolor, striped, and polka-dot combinations. Flowers last one day but blooms appear summer through fall. Has iris-like lanceolate leaves and decorative black seed heads. Heat- and drought-tolerant. Biennial, but flowers in one year with long growing season. Can be started indoors or sown outdoors after last frost. Zone 5–10.

195. *Penstemon eatonii*. Penstemon. Height: 1–3 feet. A short, erect, sub-shrub with silver-green stem and basal foliage. Tubular scarlet flowers bloom in summer on terminal spikes. To avoid moisture build-up around the crown and roots, soil should be very well-aerated. Cold treat. Zone 5–9.

196. *P. grandiflorus*. Penstemon. Donor says 25 to 30 percent of seeds are from 'Albus' cultivar. Height: 2–4 feet. An evergreen rosette of gray-green foliage forms the base for this large-flow-

ered penstemon. The broadly bell-shaped and slightly bearded 2-inch-long flowers are displayed on 8- to 10-inch spires. Flowers of the species are lilac to bluish-lavender, while those of the cultivar are white. For culture, see *P. eatonii*. Zone 3–9.

197. *Physostegia virginiana*. White cultivar of false dragonhead, obedient plant. Donor unsure of cultivar. Height: 3 feet. Impressive 6- to 10-inch racemes with 1¼-inch snapdragonlike white flowers. Called "obedient plant" because flowers stay in whatever position they are placed. Blooms in late summer. Excellent for shady borders or wildflower gardens. Full to part sun and moist, well-aerated soil. Best to plant in spring. Zone 2–9.

198. *Platycodon grandiflorus*. Balloon flower. Height: 2–3 feet. Upright, sparsely leaved stems produce large blue, pink, or white buds resembling balloons. Flowers are up to 3 inches across and can last most of the summer. Plants appreciate some shade in the South. Zone 3–8.

199. *Ratibida columnifera*. Prairie coneflower species. Height: to 3 feet. Hairy, gray-green leaves. Flowers have bright yellow, slightly drooping rays and a dark central cone. Zone 4–8.

200. *Rudbeckia hirta*. Black-eyed Susan species. Height: 2–3 feet. Erect with rounded habit. Deep green foliage and yellow flowers with dark central cone. Blooms summer to fall. Excellent for borders, beds, and cut flowers. Full sun to very light shade. Tolerates heat and dry soils. Biennial. Zone 4–8.

201. *R. hirta* 'Gloriosa Daisy'. Black-eyed Susan cultivar. Height: 2–3 feet. Gold, yellow, bronze, orange, brown, and mahogany single flowers are 3–6 inches wide and have center bands of brown, yellow, or black. Full sun to part shade. Prefers a rich, moist soil, but will grow in poor soil. Heat and drought tolerant. Zone 4–8.

202. *R. triloba*. Thin-leaved coneflower. Height: 4½ feet. Distinguished from *R. hirta* by its smaller, more numerous flowers with shorter rays. Somewhat invasive. Sow in fall. Zone 3–10.

203. *Sagittaria latifolia*. Wapato, broad-leaved arrowhead. Height: to 4 feet. An herb native to bogs and wetlands in North America. Arrow-shaped leaves and white flowers in whorls of three arise on slender erect petioles from tuberous roots. Often grows submerged in shallow water. Blooms late summer to fall. Needs full sun and moist soil. Donor says seeds should be sown immediately in pots placed in shallow trays of water. One study indicated that seeds require 6 months of immersion in cold water to germinate. Zone 5–10.

204. *Salvia coccinea* 'Lady in Red'. Texas sage cultivar. Height: 12–15 inches. 1992 All-America Selections winner. Scarlet or red flowers bloom in tiers from spring through summer. Attracts hummingbirds and butterflies. Needs a fertile soil. Sow in warm soil. Grown as an annual in the north. Zone 7–10.

205. *S. nemorosa* (also called *S. × superba*). Salvia. Species not known in cultivation in the U.S., but various cultivars are clustered under the hybrid *superba*. Height: 3 feet. Has roughly oval, green leaves and violet-blue flowers clustered around a terminal spike. Zone 5–9.

206. *Saponaria officinalis*. Bouncing Bet. Height: 3 feet. Native of Europe and Asia naturalized in North America. Rough green leaves are borne on erect stems. Pale pink or white flowers appear June to September on short stalks. Sow in fall. Zone 4–8.

207. *Schizachyrium scoparium*. Little bluestem grass. Height: 2–5 feet. A clumping warm-season grass with blue-green foliage and long flower spikes bearing plumelike seed heads in late summer. Fall color ranges from bronze to bright orange. Self-sows and can be invasive. Zone 3–10.

208. *Seymeria macrophylla* (also called *Dasitoma macrophylla*). Mullein foxglove variety. Height: to 8 feet. Biennial variety discovered by donor in Wilmington, Ohio. Erect plant with large lower leaves. Bears pale yellow flowers in spiky bracts that stem from leaf axils. Blooms attract butterflies. Prefers part shade. Zone 5–6.

209. *Sidalcea malviflora*. Checkerbloom or prairie mallow. Height: 2–4 feet. Silky pink flowers open off terminal raceme surmounting round, glossy green basal leaves. Blooms in summer and may be deadheaded to encourage reblooming and additional basal growth needed for overwintering. Grows well in both full sun and part shade. Prefers well-aerated, moist, loamy soil. Thrives in cool, moist climates. Seeds can be started indoors or sown outdoors after last frost. Zone 5–10.

210. *Silphium perfoliatum*. Cup plant. Height 5–8 feet. Tall clump-forming plant native to central and eastern North America. Multiple square stems rise from a woody rootstock. Has opposite, simple leaves that curl around the stem to form cups. Bright yellow 3-inch-wide flowers bloom from July to September. Prefers moist soil. Zone 3–9.

211. *Sisyrinchium californicum*. Golden-eyed grass. Height: to 2 feet. Low clumps of sword-like leaves. From May to July, bright yellow flowers ride on stems above the foliage. Self-seeding but not aggressive. Requires a moist site in full sun. Sow outdoors. Do not cover seeds. Zone 8–10.

212. *Sorghastrum nutans* (formerly known as *S. avenaceum*). Indian grass. Height: to 5 feet. An upright, clumping warm-season grass with long, fine leaves and feathery, yellowish panicles that appear in late summer. Turns a burnt orange in fall. Effective in winter. Start in pots and transplant out after plants are well-established. Will reseed itself if sufficient moisture is available. Takes 5–7 years to mature. Zones 4–9.

213. *Stokesia laevis*. Stokes aster. Height: 18–24 inches. Dark green, narrow leaves and blue flowers with feathery, deeply cut rays. Blooms from July to October. Full sun to light shade. Do not cover seeds. Zone 5–9.

214. *Talinum teretifolium*. Fameflower. Height: 4–12 inches. Native from Pennsylvania south to Georgia and Texas. Semi-succulent with fleshy, short, tufted stems and slender, cylindrical leaves. Bright pink flowers rise above the foliage on slender leafless stalks. Prefers dry, sandy or rocky soil and full sun. Zone 6–10.

215. *Tanacetum parthenium* (formerly *Chrysanthemum parthenium*). Feverfew. Height: to 2

feet. Aromatic foliage and daisylike flowers with yellow centers and white rays. Sometimes dried for medicinal uses. Prefers sandy, well-aerated soil and full sun but tolerates light shade. Direct sow in early spring. Zone 6–8.

216. *T. vulgare*. Common tansy. Height: to 4 feet. A bushy plant with dark green, finely divided aromatic leaves and flat clusters of small, yellow, buttonlike flowers. Useful for dried arrangements. Plants are said to repel ants. Not particular about growing conditions. Can be invasive. Zone 4.

217. *Thalictrum speciosissimum*. Dusty meadow rue. Height: 4–6 feet. Perennial with bluish-green foliage and large, yellow, terminal panicles that bloom in summer. Plant in full sun or light shade in a protected site. Heat tolerant. Zone 3–7.

218. *Thermopsis caroliniana*. Carolina lupine. Height: 4–5 feet. Not really a lupine but resembles one in foliage and flower. Blue-green leaves are divided into three oval leaflets. Yellow, pea-type flowers on 6- to 12-inch racemes appear in spring. Likes some shade in warmer climates. Soak seeds overnight or scarify them with sandpaper before sowing. Zone 3–9.

219. *Tiarella wherryi*. Wherry's foamflower. Height: 1 foot. Long-petioled, downy maplelike leaves in neat mounds, topped in spring and early summer with racemes of small, white star-shaped flowers. Evergreen, with some red variegation. Leaves may turn dark red in winter. Requires a moist loam in light shade. Zone 5–9.

220. *Verbascum chaixii*. Mullein species. Height: 3 feet. Summer flowers are 5-lobed, slender yellow spires with purple stamens. Erect in form with toothed oval leaves covered in silvery hairs. Sow in warm soil. Do not cover seeds. Zone 5–9.

221. *V. chaixii* 'Album'. Mullein. Height: 3–4 feet. A columnar perennial rising from pubescent, coarsely toothed, gray basal leaves. Midsummer-blooming flowers are white with a plum-colored center and make an attractive contrast to the gray foliage. Prefers sandy or slightly rocky, well-aerated, alkaline soil. May self-seed in favorable sites. Does not do well in wet or cold soils. Do not cover seeds. Zone 5–9.

222. *V. phoeniceum*. Purple mullein. Height: 2–5 feet. Green basal leaves and white flowers. Self-sows readily. Do not cover seeds. Zone 5–9.

223. *V. thapsus*. Common mullein. Height: to 6 feet. Felted, gently toothed leaves are 1 foot long. One-inch yellow flowers form dense clusters along erect spikes. Tolerates dry soil. Sow in warm soil. Do not cover seeds. Biennial. Zone 5–9.

224. *Verbena bonariensis*. Brazilian verbena. Height: 3–6 feet. Tiny, fragrant, lilac-purple flowers are crowded into clustered half-inch spikes held aloft on terminal panicles. Widely

spaced leaves are clustered around self-supporting wiry stems. Heat and drought tolerant but needs dry feet. Darkness required for germination indoors. Zone 7–9.

225. *Vernonia altissima*. Ironweed species. Height: 7–10 feet. Narrow leaves on sturdy, erect stalks topped with a loose head of purple flowers. Best suited to a large meadow garden. Blooms in late summer. Self-sows. Zone 4–8.

226. *V. noveboracensis*. New York ironweed. Height: to 6 feet. Very similar to *V. altissima*. Zone 4–8.

227. *Veronica spicata*. Speedwell. Height: 6–30 inches. Erect spikes of small blue flowers arise from a sprawling mat of leafy stems. Blooms in July and August. Prefers moist, well-aerated soil. May need staking. Zone 4–8.

228. *Yucca filamentosa*. Adam's needle. Donor unsure of cultivar; may be 'Golden Sword'. Height: 8 feet. Inflorescence rises above basal rosette of spiny leaves on 3- to 5-foot stem. Off-white flowers hang from small branchlets. Blooms early to midsummer. Variegated leaves are green with yellow stripe. Drought resistant. Dry store seeds for six months before germinating. Takes approximately 5 years to bloom from seed. Zone 5–10.

## WILDFLOWER MIXES

229. **General Purpose Mix**. This mixture of annuals, biennials, and perennials is designed to suit all hardiness zones in the lower 48 states. At least 6 hours of sun are necessary. Included are baby's-breath (*Gypsophila paniculata*), black-eyed Susan (*Rudbeckia* sp.), catchfly (*Silene* sp.), prairie coneflower (*Ratibida columnifera*), lance-leaved coreopsis (*Coreopsis lanceolata*), calliopsis (*C. tinctoria*), oxeye daisy (*Leucanthemum vulgare*), common evening primrose (*Oenothera biennis*), dwarf evening primrose (*O. missouriensis*), blue flax (*Linum perenne*), California poppy (*Eschscholzia californica*), wallflower (*Erysimum hieraciifolium*), and others.

230. **Knee-Hi Mixture**. A low-growing mix of annuals, biennials, and perennials 12–24 inches tall. Included are baby's-breath, wallflower, sweet alyssum (*Lobularia maritima*), sweet William catchfly (*Silene armeria*), sweet William (*Dianthus barbatus*), lance-leaved coreopsis, perennial gaillardia (*Gaillardia aristata*), California poppy, satin flower (*Clarkia amoena*), prairie coneflower, rocket larkspur (*Consolida ambigua*), calliopsis, and others.

231. **Low-water Mixture**. Mixture of annuals, biennials, and perennials 12–30 inches tall that are best suited for areas that receive 10–30 inches of rainfall annually, but will adapt to moister areas if planted in sandy, well-drained soil. Cold hardy. Included are baby's-breath, blue flax, corn poppy (*Papaver rhoeas*), penstemon (*Penstemon strictus*), California bluebell (*Phacelia campanularia*), common yarrow (*Achillea millefolium*), perennial and annual gaillardia (*Gaillardia aristata* and *G. pulchella*), Cape marigold (*Dimorphotheca pluvialis*), annual toadflax (*Linaria maroccana*), and others.

## SAVE THIS CATALOG!

SORRY, NOT AVAILABLE

**232. Midwest Mixture.** A mix of annual, perennial, and biennial wildflowers for Illinois, Indiana, Iowa, eastern Kansas, Kentucky, Michigan, Minnesota, Missouri, eastern Nebraska, Ohio, Wisconsin, southern Manitoba, and Ontario. Included are asters (*Aster* spp.), bachelor's button (*Centaurea cyanus*), lance-leaved coreopsis, calliopsis, dame's rocket (*Hesperis matronalis*), candytuft (*Iberis umbellata*), scarlet-flowering flax (*Linum grandiflorum* 'Rubrum'), dwarf evening primrose, purple prairie clover (*Petalostemum purpureum*), and others.

**233. Southeast Mixture.** This wildflower mix is suitable for southeastern states from North Carolina south to central Florida and west to eastern Texas, Louisiana, and Arkansas. Included are New England aster (*Aster novae-angliae*), lance-leaved coreopsis, calliopsis, yellow cosmos (*Cosmos sulphureus*), purple coneflower, annual gaillardia, dame's rocket, standing cypress (*Ipomopsis rubra*), tree mallow (*Lavatera trimestris*), four-o'clock (*Mirabilis jalapa*), lemon mint (*Monarda citriodora*), corn poppy, Texas sage (*Salvia coccinea*), and others.

**234. Southwest Mix.** A mix of wildflowers suitable for Arizona, southern California, southern Nevada, and New Mexico. Included are Tahoka daisy (*Machaeranthera tanacetifolia*), farewell-to-spring (*Clarkia unguiculata*), cornflower (*Centaurea* sp.), prairie flax (*Linum perenne* subsp. *lewisii*), flowering flax (*Linum grandiflorum*), penstemon (*Penstemon strictus*), California poppy, corn poppy, tidy-tips (*Layia platyglossa*), yarrow (*Achillea* spp.), and others.

## VINES

**235. *Adlumia fungosa*.** Climbing fumitory. Biennial vine native to eastern North America from Ontario to Michigan and south to North Carolina. Bears pale to deep pink flowers from early summer to frost. Foliage is delicate and fernlike with coiling leafstalks. Plant in moderate shade; prefers moist, well-aerated soil rich in organic matter. Self-sows in damp places. Zone 4-8.

**236. *Antigonon leptopus*.** Mexican creeper, coral vine. Height: 30-50 feet. A tender perennial vine with jointed, slender stems and alternate, arrow-shaped leaves. Small, bright, coral-pink to coral-red flowers bloom in summer, followed by small, dry, triangular fruit. In temperate regions, start indoors and transplant in spring. Zone 9-10.

**237. *Campsis* sp.** Trumpet vine. Height: to 50 feet. A woody vine that climbs using aerial roots. Needs support from trellis or tree. Bears showy, orange-red, trumpet-shaped flowers in terminal clusters from summer through fall. Slow to germinate. Do not cover seeds. Zone 5-9.

**238. *Cardiospermum halicacabum*.** Balloon vine, heart pea. Height: to 10 feet. A tender woody perennial usually grown as an annual in temperate regions. Small white flowers bloom in midsummer, followed by straw-colored angular fruits. Needs support of wall, fence, or trellis. May self-sow in milder areas. Zone 9-11.

**239. *Clematis integrifolia*.** Solitary clematis.

Height: 2-4 feet. A clump-forming vine with erect herbaceous stems. Solitary terminal flowers bloom from June through September in colors ranging from blue to violet. Top needs full sun, but keep roots cool with moisture-retaining soil rich in compost and peat moss, and by mulching. Clematis seeds can be difficult to germinate or show low viability. Sow outdoors in late fall for spring germination. Cold treat to germinate indoors. Zone 3-8.

**240. *C. paniculata*.** Clematis. Height: to 30 feet. An autumn-blooming variety that bears fragrant 2- to 4-inch white flowers. Sturdy climber with stout branchlets, leathery compound leaves, and bountiful tangles of slender stems. For culture, see *C. integrifolia*. Zone 3-8.

**241. *C. recta*.** Clematis. Height: 2-3 feet. A nonvining species, but has erect habit that may require staking. Bears fragrant white flowers on terminal panicles above the foliage. Seedheads make attractive late-season display. For culture, see *C. integrifolia*. Zone 3-8.

**242. *C. tangutica*.** Clematis. Height: 10 feet. A climbing vine with slight, downy stems and gray-green leaves. Big, bright-yellow, broadly bell-shaped flowers bloom from late summer into fall. Resultant seed heads have decorative feathery appendages. For culture, see *C. integrifolia*. Zone 5-8.

**243. *Clitoria ternatea*.** Butterfly pea. Height: to 15 feet. A tender perennial vine believed to be native to Asia. Solitary bright blue flowers with white markings and compound leaves. Can be grown in a greenhouse all year, or grown outdoors as an annual. Soak seeds in lukewarm water for 24 hours before germinating. Limited quantity available.

**244. *Dioscorea batatas*.** Chinese yam, cinnamon vine. Height: to 10 feet. A relative of the cultivated yam, this vine grows from edible tuberous roots up to 3 feet long. Bears small, inconspicuous but fragrant flowers on twisted spikes jutting from leaf axils. Prefers moist, deep, well-aerated soil. Sow small root offsets outdoors. Zone 5-10.

**245. *Dolichos lablab*.** Hyacinth bean. Height: 6-10 feet. An ornamental member of the pea family with 1-inch-long pinkish-purple flowers. The 2-inch purple pod contains black or white seeds. These are edible but should be thoroughly cooked with 2 to 4 water changes.

**246. *Gelsemium sempervirens*.** Carolina jasmine, evening trumpet flower. Height: 10-15 feet. Tender perennial vine native to southeastern and south central U.S. and Central America. Twining climber with oval, pointed, lustrous leaves. Bears clusters of fragrant, funnel-shaped, pale-to-deep-yellow flowers from late spring to late summer. Requires rich soil and some stem support. Zone 7-10.

**247. *Ipomoea coccinea*.** Star ipomoea. Height: 10 feet. A slender-stalked, fast-growing vine with large, bright-green leaves and incandescent-red tubular flowers. Native to eastern and central U.S. Notch seeds or soak in tepid water before sowing.

**248. *I. quamoclit*.** Cypress vine or cardinal climber. Fast-growing vine grows to 20 feet. Slender threadlike leaves and brilliant red, trumpet-shaped flowers. Prefers moist, loamy soil. Can be

started indoors in spring in cooler areas. Notch seeds or soak in tepid water before sowing.

**249. *I. quamoclit* variety.** Cypress vine or cardinal climber. Identical to species but leaves are more maplelike and turn burgundy in fall. Fast-growing vine grows to 20 feet.

**250. *Ipomoea* spp.** Morning glory species. A mixture of species from this genus of tough, fast-growing vines with large trumpet-shaped flowers. Will tolerate some shade. Excellent for training or interplanting with other climbers. Can be somewhat invasive. Soaking seeds overnight will speed germination.

**251. *Lathyrus latifolius*.** Sweet pea vine, perennial pea. A 6- to 9-foot climbing vine with blue-green foliage and typical pea family flowers in midsummer. Those offered are pink and white or plain white. Very adaptable. Scarification or an overnight warm water soak may improve germination. Zone 3-9.

**252. *Macfadyena unguis-cati*.** Cat's-claw creeper. A clinging tropical vine with narrow 2-inch leaves. The showy yellow, trumpet-shaped flowers are 3 inches long and nearly as wide. Can take a degree or two of frost. Zone 8-10.

**253. *Passiflora incarnata*.** Maypop, wild passionflower. A climbing vine that can reach 30 feet, maypop has 3-lobed leaves and purplish pink flowers 2 inches across. It blooms in late summer and produces an edible yellow fruit that is opened by squeezing until it pops. Roots overwinter while top dies back. Spreads by root and can be invasive. Will tolerate part shade; requires moist, well-aerated soil. Can be difficult to germinate. Sow in warm soil. Zone 7-10.

**254. *Solanum seaforthianum*.** Star potato vine. Height: 10-20 feet. A tender perennial grown as an annual north of Zone 10. Slender, hairless vine bears star-shaped blue to purple flowers up to an inch wide. Leaves made up of three to nine thin leaflets. Egg-shaped fruits turn purple in fall. Afternoon shade recommended in hot areas. Zone 10.

**255. *Vigna* sp.** Black gamebird pea. Height: 2 feet. A twining leguminous annual vine with three-lobed leaflets and pealike flowers ranging from cream-colored to purple. Long, slender seedpods make a show later in the season. Needs a long growing season.

## TREES & SHRUBS

Tree seeds are often difficult to germinate because they have impenetrable seed coats or other complicated mechanisms to protect them from early germination. Many of the entries in this section incorporate germination advice from seed studies conducted by Norman Deno and published in his book, *Seed Germination Theory and Practice*. (See sidebar, page 23.) To sprout tree seeds, it is usually necessary to keep them moist while exposing them to one or more cycles of warmth and cold. Depending on where you live and the relative size of your indoor and outdoor space, you may want to plant tree seeds in a protected area outdoors, and let nature do the warm and cold conditioning. Conditioning seeds indoors clearly

gives the grower more control, and Deno found some seeds almost impossible to start outdoors. Unless otherwise noted, cold conditioning means 3 months at 40 degrees, and warm conditioning is 3 months at 70 degrees. It may also be necessary to break the seed coat physically, a technique called scarification. This can often be done by rubbing the seeds with sandpaper, but larger seeds may need to be nicked with a knife.

**256. *Abies procera*.** Noble fir. Height: 50-100 feet. Slow-growing fir. Pyramidal, with blue-green 1-inch needles and cones up to 10 inches long. Eventually loses its lower limbs. Likes cool, moist, acidic soil in full or part sun. Cold treat. Zone 5-7.

**257. *Acer pensylvanicum*.** Striped maple. Height: 15-30 feet. Decorative ornamental tree has green bark striped with white. Large, oval, three-lobed leaves turn bright yellow in fall. Difficult to germinate unless impervious seed coat is removed or notched and seeds cold treated. Zone 3-7.

**258. *Anisacanthus wrightii*.** Desert honey-suckle. Height: 2-4 feet. Low-growing shrub native to southwestern North America. Bears red flowers on one-sided terminal spikes. Prefers warm, dry climates. Zone 7-10.

**259. *Callicarpa americana*.** American beautyberry. Height: 3-8 feet. A loosely branched, open shrub with coarse, light green fuzzy foliage and a copious load of 1/4-inch violet fruits in fall. Full or part sun. Best to sow seed in fall. Zone 7-10. In Zone 5-6, beautyberry may still be worth growing but will die back to the ground in winter.

**260. *C. americana* var. *lactea*.** White American beautyberry. Height: 3-8 feet. Similar to species, but fruits are white. Best to sow seed in fall. Zone 7-10.

**261. *Camellia* sp.** Camellia. Donor unsure of species. Height: 10-15 feet. A slow-growing evergreen shrub that can reach 6-10 feet in diameter. Has glossy dark, leathery foliage and bears flowers that range from white to red. Depending on species, blooms open from fall through early spring. Flower buds can be damaged or killed by severe or extended frost. Prefers part shade and moist, well-aerated, acidic soil high in organic matter. Seeds are slow to germinate and should be soaked in hot water for 24 hours before sowing. Zone 7-9, but range can be extended in warmer coastal states and by siting plants in protected locations.

**262. *Caryopteris* × *clandonensis* 'Blue Mist'.** Bluebeard. Height: 2-4 feet. A low-growing deciduous shrub with gray-green aromatic leaves and clustered sky-blue flowers that bloom in late summer. Woody stems should be cut back hard in spring. Zone 6-8.

**263. *Cassia alata*.** Ringworm cassia. Height: 8 feet. A large-leaved shrub native to the tropics. Bears large yellow flowers on spikelike racemes and has leaves up to 2 feet long composed of multiple leaflets. Winged seed pods turn black when mature. Used by natives for treatment of ringworm. Prefers soil with a mixture of loam and sand. Seeds should be soaked in hot water and scarified before sowing indoors. Transplant outdoors after danger of frost has passed. Zone 8.

**264. *Cercis canadensis*.** Eastern redbud. Height: 20-30 feet. Width: 25-35 feet. A small deciduous tree native to the eastern United States. Reddish-purple blooms appear on the tree in April, lasting 2-3 weeks until heart-shaped foliage begins to develop. Pealike seed pods develop in summer. Thrives in full sun to part shade and prefers moist but well-aerated soil. Germination can be difficult and may take several months. Try alternating warm and cold treatments before sowing indoors, or sow outdoors in fall. Zone 4-9.

**265. *Cladrastis kentukea*.** American yellowwood. Height: 30-50 feet. Deciduous tree indigenous to southeastern and south central U.S. Has rounded, wide-spreading form with compound bright-green leaves that turn yellow to orange in fall. Fragrant white flowers in pendulous panicles bloom in June. Sow seeds shelled from fresh seed pods, or notch seed coats of dry seeds. Zone 3-8.

**266. *Cornus mas*.** Cornelian cherry, dogwood. Height: 20-25 feet. A small, multi-stemmed tree with a rounded form. Yellow flowers bloom for 3 weeks in March before foliage emerges. Dark green leaves surmount trunk with exfoliating bark. Bears oblong red edible fruit in July. Slow to germinate. Sow outdoors in fall, or alternate cold and warm treatments. Zone 4-8.

**267. *Corylus colurna*.** Turkish hazel or filbert. Height: 80 feet. A good street tree with symmetrical pyramidal form. Bark distinguished by corky corrugations. Gray-green catkins appear in early spring. After 15-20 years, hazel nuts produced at 2-3 year intervals. Edible nut meat is encased in hard brown husk. Prefers full sun and well-aerated, loamy soil. Can be difficult to germinate. Plant seeds outdoors in fall, or cold treat and plant indoors in early spring. Difficult to transplant. Supplemental watering beneficial for first few seasons, but drought tolerant once established. Zone 4-7.

**268. *Cydonia oblonga*.** Common quince. Height: to 20 feet. Broadly oval tree with dark green leaves. Pale pink flowers are profuse in late spring and beget pear-shaped yellow fruit in late summer. The edible fruit is widely used for preserves. Thrives in fertile soil. Zone 5-9.

**269. *Diospyros virginiana*.** Common persimmon. Height: 35-60 feet. Native to eastern and south central United States. Slow-growing tree with slender, oval-to-rounded crown and symmetrical form. Has lustrous dark green leaves with pale undersides that turn a rich purple in fall. Cream-colored flowers appear in May and

## A HELPFUL HANDBOOK

In the January 1994 News Edition, we interviewed Norman Deno, emeritus professor of chemistry at Pennsylvania State University, and reported on his self-published book, *Seed Germination Theory and Practice*. The book reports the results of his experiments starting some 2,500 different species of plants from seeds by conditioning or treating them to overcome the natural mechanisms that keep them from germinating.

Members who ordered his book told us they found it helpful, so we're going to plug it again. It's \$20 postage paid from Norman C. Deno, 139 Lenor Drive, State College, PA 16801.

June, followed by yellow or orange edible fruit that ripens in fall. Tolerates dry soil and does well in urban conditions. Cold treat, then warm treat to improve germination. Zone 4-9.

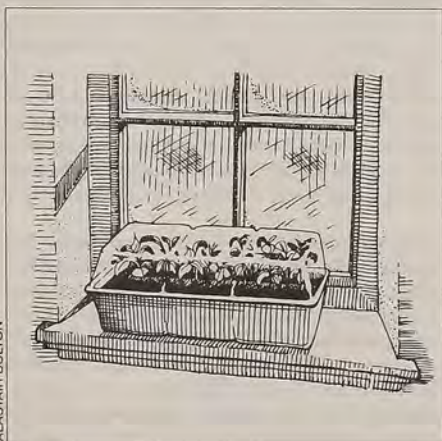
**270. *Fremontodendron californicum*.** Flannel flower. Height: to 20 feet. Evergreen shrub to small tree with an upright habit, native to California and Arizona. Bears yellow, saucer-shaped flowers that bloom from late spring to fall. May need staking or support of south-facing wall. Zone 8-11. Limited quantity available.

**271. *Halesia monticola*.** Mountain silverbell. Height: 60-80 feet. Native to southern Appalachians. Clusters of white to pale pink bell-shaped flowers are borne on pendulous stalks in April and May. Tolerates part shade, but prefers slightly acid soil. Seeds may take 2-4 years to germinate. Plant outdoors in fall, or alternate cold and warm treatments indoors. Zone 5-8.

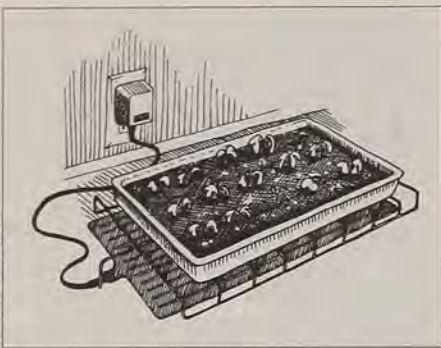
**272. *Hibiscus mutabilis*.** Confederate rose, cotton rose. Height: to 15 feet. A shrub or small tree with large, lobed leaves. White to pink flowers up to 6 inches wide bloom from mid-summer to frost. Performs as herbaceous perennial north of Zone 7, sending up new shoots each year from woody base. Zone 7-9.

**273. *Hibiscus* sp.** Donor unsure of species. Height: 8-12 feet. Donor grows this shrub as a perennial in Zone 5/6, cutting it to the ground in fall. Bears pink blooms from July through September on new growth. Prune heavily in spring. Prefers hot weather. Self-sown seedlings can be invasive. Seeds are easy to germinate. Zone 5-8.

**274. *Kalmia latifolia*.** Mountain laurel. Height: 7-15 feet. A native of eastern North America, this attractive evergreen shrub is dense and symmetrical when young, gradually becoming more open with age. Bears 4- to 6-inch clusters of flowers ranging in color from white to deep rose in May and June. Attractive glossy, dark-green leaves turn paler in winter. Seed capsules should be crushed and the fine seeds removed and germinated uncovered. Zone 4-9.



ALASTAIR BOLTON



275. *Koelreuteria paniculata*. Panicked golden rain tree. Height: to 40 feet. Spread may exceed height. A dense, broad tree with long, pinnate leaves and showy panicles of loose, yellow flowers in July. Flower clusters can exceed a foot in length. Likes full sun but adapts to a wide range of soil conditions. Self-sows prolifically. It may help to scarify seeds. Warm treat, cold treat, then sow in warm soil. Zone 5-9.

276. *Liriodendron tulipifera*. Tulip tree. Height: 70-90 feet. Width: 35-50 feet. Tall, fast-growing deciduous tree with pyramidal form that matures to a rounded, oval canopy. Has large, lobed leaves and bears greenish-yellow flowers from May through early June. Native of eastern and central United States. Prefers full sun and moist, well-aerated, loamy, slightly acidic soil. Cold treat and sow outdoors. Tap-root development makes tree difficult to move after one year's growth. Zone 4-9.

277. *Magnolia macrophylla* var. *ashei*. Ashe magnolia. Height: 25 feet. Good small specimen tree, similar to species but with smaller leaves and shrublike habit. Leaves are bright green above and silvery beneath. Precocious bloomer that has been known to flower when less than a foot tall, its creamy-white fragrant flowers open in June. Native tree from Florida west to Texas, but now rare in the wild. Prefers partly shaded site and moist, loamy soil. Before germination, seeds should be soaked for three days and outer seed coat removed. Cold treat seeds for indoor germination, or plant outdoors in fall. Use soil-less potting mix that drains well to avoid seed rot. Zone 6-9.

278. *M. macrophylla* 'Julian Hill'. Bigleaf magnolia cultivar. Height: to 40 feet. A large, open magnolia with 2-foot leaves. The white flowers appear in June and measure up to 11 inches across. Best as a specimen, surrounded by a large lawn. Plants have bloomed 9 years after sprouting. Sow indoors. Zone 6-10.

279. *M. stellata*. Star magnolia. Height: 15-20 feet with a spread of up to 15 feet. Fragrant, white, star-shaped flowers 3 inches across are tinged with pink. Blooms in early spring before leafing out. Close-set oval leaves give the tree a dense habit. Likes moist, acidic soil in a protected spot. Avoid a southern exposure, which tends to cause early bud break. Cold treat, then sow indoors. Zone 4-9.

280. *Oxydendrum arboreum*. Sourwood. Height: 25-50 feet. Indigenous from Pennsylvania west to Illinois and south to Florida and Louisiana. Pyramidal form with a rounded crown. Fragrant white flowers in long, drooping panicles bloom in June and early July. Lustrous, dark green leaves turn yellow, red, and purple in fall. Prefers acid soil and does poorly

in polluted urban settings. Do not cover seeds to germinate. Zone 5-9.

281. *Picea meyeri*. Meyer spruce. Height: 60 feet. A native of China, this evergreen exhibits typical conical habit. It has bluish-green needles that are soft to the touch and bears cones that ripen in late fall. Seeds should be germinated under light. Zone 4-7.

282. *Pieris floribunda*. Mountain pieris. Height: 2-6 feet. Dense, low, rounded, evergreen shrub native to the Southeast from Virginia to Georgia. Has dark green leaves and fragrant white flowers that bloom in upright panicles for 2-4 weeks beginning in April. Do not cover seeds to germinate. Zone 4-7.

283. *P. japonica*. Japanese pieris. Height: 9-12 feet. An upright evergreen shrub with a tidy habit and stiff, spreading branches. Alternate, lustrous, dark green leaves are highlighted in early spring by fragrant, white, urn-shaped flowers that droop from pendulous panicles. Do not cover seeds to germinate. Sow seeds on top of milled or screened sphagnum and place under mist or cover with clear plastic. Zone 4-8.

284. *Pinus densiflora*. Japanese red pine. Height: 40-60 feet. Specimen tree distinguished by irregular habit and often crooked trunk. Has bright green twisted needles and 1- to 2-inch cones that stay on the tree for 2-3 years. Prefers acid soil. Cold treat, then warm treat. Zone 3-7.

285. *P. parviflora*. Japanese white pine. Height: 25-50 feet. Salt-tolerant, therefore valuable for seaside plantings. Forms a dense conical pyramid at first, but later develops wide-spreading branches. Has stiff, twisted, blue-green needles. Sow in moist medium and cold treat, then warm treat for best germination. Zone 4-7.

286. *Rhododendron aborescens*. Sweet azalea, smooth azalea. Height: 8-20 feet. Best white azalea hardy in the North. Dark green leaves and fragrant, 1- to 2-inch white flowers with pink to red stigmas and stamens. Blooms between May and July. Do not cover seeds; sow on top of medium and keep evenly moist. Zone 4-8.

287. *R. adenopodum*. Height: to 10 feet. Large oblong leaves and pale rose bell-shaped flowers, spotted within. For culture, see *R. aborescens*, above. Zone 6-8.

288. *R. fortunei*. Fortune's rhododendron. Height: to 12 feet. Fragrant, lilac-pink flowers bloom in May. For culture, see *R. aborescens*, above. Zone 6-8.

289. *R. minus* var. *chapmanii*. Piedmont rhododendron. Height: to 12 feet, larger in the wild. Small shrub with a stiff habit. Pink, funnel-shaped flowers have greenish spots inside and chocolate-colored anthers. Blooms in tight clusters in April and May. For culture, see *R. aborescens*, above. Zone 5-8.

290. *R. reticulatum* (also known as *R. dilatatum*). Rose azalea. Height: to 25 feet. Deciduous shrub has diamond-shaped leaves that turn purple in fall. Bright purple flowers bloom in April and May. For culture, see *R. aborescens*, above. Zone 6-8.

291. *Rosa villosa*. Apple rose. Height: 1½-6 feet. Deciduous, bushy habit. Bears 2- to 3-inch

pink to almost red flowers. Red fruits as big as a small crabapple are used for cooking and making beverages. Cold treat. Zone 4-8. Limited quantity available.

292. *Sapindus drummondii*. Western soapberry. Height: 25-50 feet. Native to south central and southwestern North America. Makes a graceful small shade tree. Single-stemmed, low branched tree with a broad oval-to-rounded crown. Alternate, compound medium-green leaves turn to yellow and gold in fall. Small yellowish-white clustered flowers bloom in early summer. Half-inch-diameter yellow fruits form by early fall. Prefers dry soil, but seems adaptable. Scarify seed, then cold treat before sowing. Zone 5-9.

293. *Stewartia koreana*. Korean stewartia. Height: 20-30 feet. A dense, upright tree with generally pyramidal form. Ideal as a small ornamental. Large flattened white flowers with yellow stamens in the center open in July. Dark green leaves turn red and purple in the fall. Flaking, gray to orange-brown bark provides winter appeal. Germination is difficult and may be best left to natural outdoor temperature cycles. Zone 5-9.

294. *Styrax japonicus*. Japanese snowbell. Height: 20-30 feet with an equal or greater spread. A small, rounded tree with distinctive, low and wide-spreading branches. Leaves are a pointed oval shape. White, bell-shaped flowers are borne on a pendulous stalk in May and June. Prefers a sheltered site in full or part sun and moist, neutral to acid soil. Difficult to germinate. Warm treat, cold treat, then repeat the cycle. Zone 5-8.

295. *S. obassia*. Fragrant snowbell. Height: to 40 feet. Spreading deciduous tree that is dense and pyramidal while young, but becomes more open and rounded with age. Long, spreading clusters of fragrant, white, bell-shaped flowers bloom in early summer. Prefers a sheltered site with moist, slightly acid soil. Difficult to germinate. Alternate cold and warm treatments, or sow outdoors in fall. Zone 5-8.

296. *Viburnum lantana*. Wayfaring tree. Height: 10-15 feet with an equal spread. A rounded, multiple-stemmed shrub bearing 5-inch, serrated leaves and, in May, cream-colored flowers up to 5 inches across. Winter appearance is somewhat coarse. Will tolerate part sun. Likes a loamy soil but is drought-hardier than most viburnums. Cold treat. Zone 3-8.

297. *V. opulus*. European cranberry bush. Height: 8-12 feet. Easy to grow, upright, multi-stemmed viburnum with dark green, three-lobed leaves that show inconsistent fall color. White flowers bloom in May in flat, 2- to 3-inch-wide clusters. Red fruit ripens in late summer. Seed is difficult to germinate. Alternate cold and warm treatments. Allow root system to develop during cold conditioning before changing to warm treatment. Zone 3-8.

298. *V. prunifolium*. Black haw viburnum. Height: 12-15 feet. Deciduous shrub has lustrous dark green leaves that are pale below and turn purple in the fall. Creamy white, yellow-stamened flowers bloom in May in flat-topped clusters. Edible rose-colored fruits ripen to bluish-black in early fall. Slow germinating. Sow indoors and alternate warm and cold treatments. Zone 3-9.



299. *Vitex agnus-castus*. Chaste tree. Height: 10–20 feet. Deciduous, aromatic shrub. Dark green leaves have velvety gray hairs underneath. Fragrant, pale lilac flowers in 7-inch spikes make a spectacular show in late summer. Attracts butterflies. Easy to germinate. Self-sows prolifically. Zone 7–8.

## HERBS

300. *Agastache foeniculum*. Anise hyssop. Height: 3 feet. Perennial native of midwestern prairies and dry woods. Bears spike of blue flowers and large two-tone leaves, green above and white below. Can be sown outdoors in early spring or cold conditioned and started indoors. Use organic medium for best results. Zone 7–8.

301. *Agrimonia eupatoria*. Agrimony. Height: 3 feet. A perennial herb native to parts of Europe, Africa, and Asia. Upright stalks bear 6-inch-long oblong serrated leaves and small yellow flowers on spikes. Seed develops in prickly burrs. Leaves used to produce astringent gargle, among other cited medicinal uses. Drought tolerant. Zone 3–8.

302. *Allium tuberosum*. Garlic chives. Height: 20 inches. Hardy perennial. Flat leaves have a delicate garlic flavor. Striking white flowers in late summer and early fall. Somewhat invasive. Zone 3–10.

303. *Anethum graveolens* 'Mammoth'. Dill cultivar. Height: 2–3 feet. Fast-growing annual herb with large yellow flower heads and feathery greenish-blue leaves. The entire plant is aromatic. Indispensable for salads, sauces, soups, and fish. Sow in warm soil.

304. *Angelica archangelica*. Angelica. Height: to 5 feet. Biennial. Umbels of small greenish-white flowers appear in midsummer. The large, 3-part leaves can be cooked as a vegetable. Young stems and petioles are sometimes candied. Prefers moist soil and cool temperatures. Will tolerate some shade. Sow outdoors in late fall or indoors after refrigerating seed for 6–8 weeks. Zone 4–10.

305. *Angelica* sp. Angelica. Donor unsure of species. Height: 3½ feet. Long stalks bear compound leaves and clusters of small white flowers on umbels. This biennial usually dies after producing a crop of seeds, but its life may be extended by harvesting flower stalks before seeds are produced. Stems are candied and the leaves used as greens. For culture, see *A. archangelica*. Zone 4–10.

306. *Coriandrum sativum*. Coriander. Height: 1–3 feet. Annual. Small umbels of white, rose, or lavender flowers bloom in summer. Both the seeds and the finely divided foliage are used as seasoning.

307. *Cynara cardunculus*. Cardoon. Height: 6–8 feet. A thistlelike herb related to artichokes. Tall plant with spiny gray-green leaves that are white and hairy beneath. Purple flower heads resemble thistles. Young leaves and stalks are edible when blanched. Zone 6–10.

308. *Eruca vesicaria* subsp. *sativa*. Rocket, rugula. Height: 2½ feet. Annual. White flowers

have purplish veins. Dark green leaves have a strong, peppery flavor and should be picked when 4–6 inches long. Prefers light, rich soil. Quick growing and will tend to bolt in mid-summer, so it's best to plant in early spring and again in early fall.

309. *Foeniculum vulgare*. Fennel. Height: 3–5 feet. Perennial usually grown as an annual. Upright, with feathery gray-green foliage and large umbels of yellow-green flowers. These should be removed as they fade to prevent self-seeding. Licorice-flavored seeds are used in cooking. Stalks are usually eaten blanched.

310. *Foeniculum vulgare* var. *azoricum* 'Bronze'. Florence fennel cultivar. Height: to 6 feet. Perennial usually grown as an annual. Similar to species, but with bronze-tinged foliage.

311. *F. vulgare* var. *azoricum* 'Zefa Fino'. Florence fennel cultivar. Has a smaller bulb than the species and is more resistant to bolting.

312. *Hedeoma pulegioides*. American pennyroyal. Height: 6–8 inches. Annual. Multiple-branching stems give the plant a shrubby appearance. Small bluish-purple flowers appear in summer. Said to repel insects. Crushed leaves may be rubbed on the skin to ward off mosquitoes. Sometimes strewn in doghouses in the hope of keeping down fleas, or used in sachets to keep moths from woolens. Also used as a tea. Will tolerate some shade. Does best in poor soil; rich soils diminish its aromatic properties. Seedlings should be thinned to 4–6 inches apart.

## SAVE THIS CATALOG!

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

313. *Hyssopus officinalis* 'Alba'. Hyssop. Height: 1½–2 feet. A shrubby perennial evergreen herb with square stems and aromatic dark green leaves. White flowers bloom on 2- to 5-inch spikes in late summer. Various medicinal uses are documented. Tolerates some shade and prefers limy soil. Zone 4–9.

314. *Lavandula angustifolia*. English lavender. Height: 2 feet. Shrubby perennial herb with narrow, gray, fragrant leaves and scented lavender flower spikes that bloom in early summer. Deadhead after flowering ends. Sow outdoors in late fall or early spring. Zone 5–9.

315. *Levisticum officinale*. Lovage. Height: 2–6 feet. A perennial herb reminiscent of celery but with a stronger flavor. Fibrous fleshy stalks are topped with serrated gray-green foliage. Small creamy flowers yield seed that can be used like celery seed. Stalks and foliage are used in soups, stews, and raw in salads. Needs moist, well-aerated soil. Can be sown outdoors in the fall. Zone 4–8.

316. *Melissa officinalis*. Lemon balm. Height: 2½ feet. A hardy perennial herb that forms thick clumps of deep green, heart-shaped leaves with a citrus fragrance. Yellow flower buds open into white flowers in late summer. Needs part shade and prefers moist, well-aerated,

sandy soil. Do not cover seeds during germination. Zone 4–9.

317. *Melilotus alba*. White sweet clover. Height: 3–10 feet. A biennial usually grown as an annual. A white-flowered clover commonly grown as a green manure, cover crop, or honey plant. Will flower its first year. Not particular about soil.

318. *Monarda citriodora*. Lemon mint, lemon bergamot. Height: to 2 feet. Annual herb native to Appalachians and central U.S. Hairy, narrow leaves and purplish flowers are lemon scented, although not all seedlings inherit the scent. Attracts bees. May not flower until second year.

319. *Nigella sativa*. Black cumin, nutmeg plant. An annual herb with branching linear stems and feathery foliage. Solitary blue or white flowers eventually yield ornamental seed capsules containing seeds that can be sprinkled on bread and cakes, or ground and used as a seasoning. Tolerates part shade.

320. *Ocimum basilicum*. Sweet basil. Height: 1–2 feet. Annual. Bright green foliage and tiny, whorled, white flowers. Aromatic herb used in Italian cuisine. Pinch back new leaves and flower buds to produce more growth and a bushier habit. Prefers a warm location with a moist, well-aerated soil.

321. *O. basilicum* 'Citriodorum'. Lemon basil. Sweet basil cultivar. Height: 18–24 inches. Annual. Fresh, lemon-scented basil with white blossoms on terminal spikes. The entire plant is gathered for drying because leaves are sparsely distributed. Used in Asian cuisines. For culture, see species.

322. *Petroselinum crispum*. Parsley. Height: 14–16 inches. Biennial herb with dark green, curly leaves that create a bushy, airy appearance. Remove flower heads to stimulate leaf production. Leaves used in cooking and salads. Retains flavor well when dried. Prefers part shade and moist, well-aerated soil. Suitable for window boxes or containers. Zone 3–9.

323. *P. crispum* var. *neapolitanum*. Italian parsley, flat-leaf parsley. Height: to 3 feet. Biennial herb used as an annual. Dark green leaves are only slightly curly and have a stronger flavor than common parsley. Prefers part shade. Soak seeds in lukewarm water for 24 hours before germinating. Zone 3–9.

324. *Poterium sanguisorba*. Burnet. Height: 1–2 feet. Perennial. Small white or rose flower clusters appear in early summer. The finely cut leaves, bunched at the base of the plant, have a cucumberlike flavor. Use them in salads, vinegars, and in sour cream dip. Needs a dry, sandy, alkaline soil. Will not tolerate rich or poorly aerated soil. Zone 3–10.

325. *Salvia officinalis*. Broad-leaf sage. Height: 2–2½ feet. Shrubby perennial herb with oblong woolly gray leaves and violet-blue flower spikes. Abundant source of culinary sage. Prefers slightly alkaline, sandy soil. Zone 4–8.

326. *Satureja hortensis*. Summer savory. Height: 1–1½ feet. Low-growing annual herb with narrow, dark-green leaves and reddish stems. Pink flowers develop in leaf axils. Can become top heavy and require support. Used fresh or dried as flavoring.

327. *Abelmoschus esculentus* 'Clemson Spineless'. Okra. This easy-to-grow cultivar takes 55 to 65 days to maturity. Can be started indoors, or sown outdoors after last frost when ground warms up.

328. *Allium ampeloprasum*. Leek. Grown for mild-flavored stems and leaves. A long-season plant, leeks can be sown outdoors in spring or fall in warmer regions, or started indoors in late winter and transplanted outdoors for fall and winter crops in northern states. Will winter over in the ground in some climates.

329. *A. cepa* 'Red Simiane'. Onion cultivar. A sweet onion, with purple-red, elongated bulbs. Maturation time not specified. Needs light, fertile, deep soil. Plant 1/4 inch deep in warm soil. Can be sown in fall south of Zone 7.

330. *A. sativum* var. *ophioscorodon*. Serpent garlic, Korean garlic. Height: 2 feet. Donor provided bulbs from topsets. Plant in early spring for late summer harvest. Can be replanted in late fall to get larger heads.

331. *Beta vulgaris*. Lutz beet. An especially hardy German heirloom variety of beet that overwinters in Zone 7. Luscious greens and super-sweet flesh that doesn't get fibrous with age. Sow outdoors covered with a fine layer of soil.

332. *B. vulgaris* 'Detroit Dark Red'. Beet cultivar. Matures in 55–60 days. Round deep-red roots are tender and sweet, and leaves make delicious greens. Cool-weather crop that should be sown outdoors in early spring or fall. Repeat sowings every 3 weeks. Can be sown in containers.

333. *B. vulgaris* 'Early Wonder'. Beet cultivar. Matures in 55–60 days. Both roots and greens are tender and delicious. Cool-weather crop that should be sown outdoors where it is to grow. Stagger sowings for longer growing season.

334. *Brassica juncea*. Chinese broadleaf mustard. Height: 1 1/2 feet. Broad, bright green oval leaves are tender and very mild tasting. Matures in 45 days. Sow in spring and fall. Plant seeds 1/2 inch deep about 18 inches apart.

335. *B. juncea*. Red India mustard. A native of India with deep purplish leaves that have a white midrib. A fast grower with a pungent flavor that adds spice to salads. Will produce greens throughout the growing season, but needs part shade in midsummer. Can be started indoors or planted outdoors in late winter.

336. *B. juncea*. Spinach mustard. Height: 10–12 inches. Thick glossy leaves are spicy and crisp and can be eaten raw. Pick them when they're 3–4 inches long. Productive throughout the growing season. Can be used as a winter crop south of Zone 7.

337. *B. juncea* 'Southern Giant Curled'. Mustard green cultivar. Fast-growing, cold-tolerant green that matures in 40 days and produces attractive upright bright green leaves with a mild spicy flavor. Sow outdoors in late winter or late summer. Stagger sowings to extend harvest season.

338. *B. napus*. Siberian kale. Height: to 3 feet. Upright plant with frilly, reddish-purple veined leaves and yellow-orange flowers. Matures in 50 days. Can be used as a winter crop south of Zone 6.

339. *B. napus* 'American Purple Top'. Rutabaga cultivar. Matures in 75–90 days. Vitamin-rich rutabaga with sweet robust flavor and fine-grained flesh. Sow outdoors after last frost and again in late summer for fall crop.

340. *B. oleracea* 'Green Comet Hybrid'. Broccoli cultivar. Dense uniform heads made this broccoli an All-America Selections winner. Maturation is said to be extra early, but a time is not specified. Needs a moist site and cool weather. Start seeds indoors. Plants can be set out when they're 6 inches high, even before the last frost. Broccoli can be grown as a fall crop and, south of Zone 7, as a winter crop.

341. *B. rapa*. Chinese cabbage, pak choi. Height: 1 1/2 feet. Important in Asian cuisine. Flat, narrow leaves surround a white stalk. Both leaves and stalk are crisp and mild flavored. Matures in 50 days. Since this is a short-season crop, resow every 3 weeks or so. Will bolt in hot weather; mulch to keep the soil cool.

342. *B. rapa* 'Purple Top White Globe'. Turnip cultivar. Crisp roots and delicious greens distinguish this fast-growing turnip that takes 40–60 days to reach maturity. Sow outdoors in late winter and stagger sowings into early summer. Begin sowing again in late summer for fall crop.

343. *Capsicum annuum* 'California Wonder'. Sweet pepper cultivar. Yields sweet, round, green bell peppers. Matures in 120 days. Sow in warm soil. Plant 18–24 inches apart.

344. *C. annuum* 'Yellow Belle'. Pepper cultivar. An early pepper with bright yellow skin that ripens to bright red. Matures in 65 days. Start indoors and set outdoors when nighttime temperatures are above 50 degrees.

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345. *C. annuum* 'Super Chili'. Chili pepper cultivar. Bears 2 1/2-inch cone-shaped peppers that start out green and ripen to red. Good for salsa or cooking. A shrubby plant bearing small, bright red, very hot peppers. Matures in 120 days. Because it's so decorative, this pepper is often grown in containers and brought indoors before frost. Needs plenty of moisture. Sow in warm soil.

346. *Citrullus lanatus* 'Charleston Grey'. Watermelon cultivar. Produces long, 20- to 30-pound gray-green watermelons with pink to red flesh. Matures in 80–100 days. Can be started indoors in peat pots or sown outdoors after danger of frost has passed.

347. *C. lanatus* 'Moon and Stars'. Watermelon cultivar. A blend of two varieties, one brown-seeded with pink flesh and one black-seeded with pink to yellow flesh. Thick, green rind has large and small yellow spots that gave rise to the cultivar name. Matures in 100 days, so needs long growing season. Can be started indoors in

## A WORD ON WATER

After you have sown your seeds, never water them directly over the top of the container. This can uncover them so that they dry out or displace them from their rows so that they germinate too close together. Your soil should be thoroughly moistened before you sow the seeds. Then if the soil seems to be drying out, use a mister or place a doubled piece of burlap over the container and water through the burlap.

Better yet, you can water from the bottom up. If the container has drainage holes, set the entire container or tray in an inch or so of water and let the water wick up from the bottom until the medium is evenly moist. Remember that germination containers don't need to be more than two to three inches deep.

peat pots or sown outdoors after danger of frost has passed.

348. *Cucumis melo* 'Alaska'. Melon cultivar. Fast-maturing melon good for northern gardens. Fruits have creamy yellow netted skin that turns reddish-orange when ripe. Apricot-colored flesh is moist and sweet. Matures in 70 days. Start indoors in peat pots, or sow outdoors when soil reaches 60 degrees.

349. *C. melo* 'Green Nutmeg'. Melon. Extra early, slightly oval melon with ribbed, heavy, netted skin. Super-sweet flesh is light-green with salmon-colored center. Matures in 62 days. Sow outdoors when soil gets warm. If sowing indoors, use peat pots to minimize transplant shock.

350. *C. sativus* 'Boston Pickling'. Cucumber cultivar. Small, blocky fruits with tender skins are perfect for pickle making. Easy to grow and prolific. Matures in 53–60 days. Can be started indoors in peat pots or sown outdoors after danger of frost has passed.

351. *C. sativus* 'Orient Express'. An Asian variety of slicing cucumber with dark green fruits that average 10 inches long and an inch thick. Small seed cavity and mild taste. Vines grow to 8 feet. Disease resistant. Matures in 64 days. For culture, see 'Boston Pickling', above.

352. *C. sativus* 'Pepino Poinsett 76'. Cucumber cultivar. Dark green fruits. Long-bearing and does well in heat. Matures in 60–65 days.

353. *C. sativus* 'Poinsett'. Cucumber cultivar. Matures in 55–70 days. Easy to grow, it produces an abundance of tender fruit throughout the summer. Can be started indoors in peat pots or sown outdoors after danger of frost has passed.

354. *C. sativus* 'Slice Master'. Slice master cu-

cucumber. A smooth, mild-flavored dark-green cucumber with white markings. Matures in 55 days and produces a heavy yield. Sow 1 inch deep outdoors when soil warms up. Keep soil evenly moist during germination.

355. *C. sativus* 'Straight Nine'. Cucumber cultivar. Very uniform, dark green 9-inch fruit. Mildew tolerant. Matures in 65 days.

356. *Cucurbita* sp. 'All Seasons'. Hybrid bush squash. Height: 3 feet. Compact, upright bush bears 5-8 fruits that can be harvested young and cooked like summer squash, or allowed to mature for winter use. Slightly oval, bright orange fruits have slightly nutty flavor and can weigh up to 3 pounds. Matures in 90 days.

357. *C. maxima*. Spaghetti squash. This yellow-skinned winter squash has orange-yellow fibrous flesh that when cooked resembles strands of spaghetti. Sow seeds in mounds at least 3 feet apart after danger of frost has passed.

358. *C. maxima* 'Dill's Atlantic Giant'. Pumpkin cultivar developed by Howard Dill. Sprawling vines produce orange-fleshed pumpkins with a reddish-orange skin, weighing from 150 to 400 pounds. Matures in 120 days. Does best in loamy or sandy soil. Plant outdoors after soil warms, or start indoors in peat pots and transplant in spring. Plant in mounds at least 4 feet apart.

359. *C. maxima* 'Rouge Vif d'Etampes'. Pumpkin cultivar. A gourmet French pumpkin that produces decorative orange-red pumpkins about 6 inches high and 18 inches in diameter with bumpy, shiny skin and narrow, deep-ribbed sections. Matures in 100-120 days. Sow outdoors after danger of frost has passed.

360. *C. pepo*. Turner Family Original pumpkin. An heirloom variety raised by donor's family in western Pennsylvania for over 100 years. Produces sweet-fleshed, slightly flattened pie pumpkins that weigh 5-10 pounds. Dark-orange, ribbed pumpkin with a hard rind that keeps well through the winter. Vines are vigorous and profuse. Matures in 100-120 days. Can be sown outdoors in long growing season; otherwise, start indoors in peat pots.

361. *C. pepo* var. *ovifera*. Yellow-flowered gourd. Easy-to-grow plants bear beautiful, unusual-shaped gourds with interesting markings. Frequently used to beautify arbors, fences, and trellises. Slow-maturing gourd needs a long, hot growing season. Can be started indoors in peat pots to get an earlier start or planted outdoors when the soil warms up.

362. *C. pepo* 'Delicata'. Winter squash cultivar. A round tan squash with a dark green stripe. Squash weigh up to 1½ pounds with a color and sweet flavor reminiscent of sweet potato. Matures in 95 days. Sow seed in mounds after danger of frost has passed.

363. *C. pepo* 'Jack o' Lantern'. Pumpkin cultivar. Delicious in pies and breads. Seeds make tasty snack. Matures in 100-110 days. After soil warms up, sow outdoors in mounds 3-4 feet apart.

364. *C. pepo* 'Table Ace'. Winter squash cultivar. Vigorous, compact plants set heavy crops of dark green, acorn-shaped squashes with

bright orange flesh. Matures in 75 days. Sow in mounds 3 feet apart.

365. *Daucus carota* var. *sativa* 'Thumbelina'. Carrot cultivar. Yields sweet, round golfball-size roots. Ideal for window boxes and other containers. Maturation time not specified. Needs rich, well-worked soil. Several sowings can be made to prolong the bearing season. Seedlings should be thinned to 2 inches apart. Soil should be mounded slightly around the crown to prevent the carrot tops from turning green.

366. *Lactuca sativa* 'Bronze Arrow'. Leaf lettuce cultivar. A small-leaf lettuce with reddish leaves. Very hardy—tolerates temperatures down to 17 degrees without protection. Also heat- and drought-tolerant. Matures in 60 days. Cut head and lettuce will regrow.

367. *L. sativa* 'Dapple Butterhead'. Head lettuce cultivar. Crisp, green leaves have bright red edges. Resistant to tip burn and bottom rot. Maturation time not specified. For culture, see species.

368. *L. sativa* 'Green Towers'. Romaine lettuce cultivar. Height: to 12 inches. Large, full-bodied heads of gray-green leaves. Matures in 74 days. For culture, see species.

369. *L. sativa* 'Merveille des Quatre Saisons'. Lettuce variety. French Bibb-type lettuce produces reddish leaves with cranberry-colored tips and a pale green heart. Matures in 60-70 days. Part shade in hot weather will reduce bolting. Prefers well-aerated, loamy soil. For culture, see species.

370. *L. sativa* 'Valmaine Cos'. Romaine lettuce cultivar. Ideal salad lettuce with an 8- to 10-inch upright head. Outside leaves are dark green and interior leaves are pale and crinkled. Matures in 78 days. For culture, see species.

371. *Luffa* sp. Luffa, dishcloth gourd. Vigorous, nonwoody vine to 15 feet. Young gourds may be cooked like squash, but mature 12- to 18-inch cylindrical gourds can be harvested as sponges. Matures in 110 days. Sow outdoors after danger of frost has passed.

372. *Lycopersicon lycopersicum* '862 Glamour'. Tomato cultivar. A dependable old cooking variety. Vine is often grown on the ground without support. Matures in 74 days.

373. *L. lycopersicum* 'Husky Cherry Red'. Cherry tomato cultivar. Height: 4 feet. An early cherry tomato that produces 1-inch red fruits in 65 days.

374. *L. lycopersicum* 'Husky Gold'. Tomato cultivar. Height: 4 feet. A wilt-resistant variety of yellow tomato with a sweet, mild flavor. 1992 All-America Selections winner. Compact plants are suitable for containers, but need staking. Matures in 70 days.

375. *L. lycopersicum* 'Mamma Mia'. Tomato cultivar. A new disease-resistant and high-yielding cultivar that is delicious fresh and an exceptionally good meaty tomato for making sauces. Pear-shaped fruit matures in about 62 days.

376. *Phaseolus coccineus*. Scarlet runner bean. Long, twining vines produce bright scarlet flowers and can be trained up trellises or other structures. Beans can be picked immature as string

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beans or fully mature as shell beans. Matures in 65 days. Requires a loamy soil. Sow 1 inch deep at 6-inch intervals after danger of frost has passed. Water at the base of the plant to prevent mildew from attacking the leaves.

377. *P. sativum* var. *macrocarpon*. Sugar snap pea. Winner of the All-America Selections gold medal in 1979. The entire pod can be eaten and is delicious, tender, and crisp when young. Matures in 70 days.

378. *P. sativum* var. *macrocarpon* 'Dwarf Green Sugar Pea'. Pea cultivar. 2- to 3-inch pods on 3-foot vines. Pods should be picked before they swell. Matures in 65 days. Peas do best in a cool, moist situation. Stagger plantings at 2-week intervals from last frost through early summer.

379. *P. sativum* var. *sativum* 'Little Marvel'. Pea cultivar. Height: 15–20 inches. Fresh peas have sweet delicate flavor and may be frozen or canned. Matures in 55–70 days.

380. *P. sativum* var. *sativum* 'Wando'. Pea cultivar. A high-yielding pea variety that produces medium-large, dark green peas. Growth can be stimulated by use of trellises or stakes. Matures in 70 days.

381. *P. vulgaris* 'Louisiana Purple Pod'. Snap pole bean cultivar. Gorgeous purple flowers and pods, yielding large quantities of light brown beans. Delicious raw or cooked. Matures in 70 days. This bean is often trained up corn stalks.

382. *P. vulgaris* 'Purple Teepee Bush'. Bean cultivar. Yields beautiful deep purple beans on the outside of the bush. The "teepee" effect makes harvest convenient. The beans turn green when cooked. Matures in 51 days.

383. *P. vulgaris* 'Selma Zebra'. Pole bean cultivar. Height: to 6 feet. An early snap bean that produces medium-size green pods striped with purple. Bean pods turn green when cooked. The beans are light brown with black stripes. A vigorous climber that requires staking. Matures in 65–75 days. Easy to germinate either outdoors after frost or indoors in peat pots.

384. *P. vulgaris* 'White Greasy Grit'. Snap pole bean cultivar. Height: to 10 feet. Fast-growing vine produces a heavy load of 6-inch pods tightly packed with white beans. These have a nutty flavor and can be used either as snap or dry beans. Matures in 80 days. Definitely needs staking.

385. *P. vulgaris* 'White Papadi'. Pole bean cultivar. Height: 10–15 feet. Needs support, but beautiful white flowers make it decorative on trellises and arbors. Donor calls it prolific and drought resistant. Matures in 80–100 days.

386. *Raphanus sativus*. Daikon, Japanese radish. An early Daikon radish that matures in 40 days. Elongate, white radish with spicy, crisp flavor. Keep the soil in which young radishes are planted constantly moist. Seeds should be sown outdoors and staggered for continuous harvest.

387. *R. sativus* 'Fluo'. Fluo radish. A crisp and pleasantly pungent, elongated red radish with a white tip. Matures in 20–30 days. Prefers well-aerated soil that is kept consistently moist but not waterlogged. Sow seeds ½-inch deep outdoors in early spring. Tolerates crowding.

388. *R. sativus* 'Red Prince'. Radish cultivar. A scarlet, almost spherical, radish with white flesh that is crisp and mild flavored. Resists fusarium wilt. Matures in 23 days. Sow outdoors in moist, rich soil after last frost.

389. *R. sativus* 'Sparkler White Top'. Radish cultivar. Easy, fast-growing radish that matures in 20–50 days. Ideal vegetable for children to grow. Cool-weather crop that can be sown outdoors from late winter through mid-spring and then again beginning in late summer.

390. *Solanum melongena* var. *esulentum*. White eggplant variety from Thomas Jefferson Center for Historic Plants. Height: 2½ feet. An upright bush yielding 6-inch white egg-shaped fruits that turn ivory or golden-yellow when ripe. Maturation time not specified. It's generally best to start eggplants indoors in peat pots to minimize transplant shock. Transplant to warm soil.

391. *S. melongena* var. *esulentum* 'Early Beauty'. Eggplant cultivar. Height: 2–3 feet. Vigorous plants produce many small, dark purple fruits with very firm flesh. Has a long bearing season. Matures in 62 days. For culture, see white eggplant, above.

392. *Spinacia oleracea* 'Bloomsdale Savoy'. Spinach cultivar. Matures in 45–70 days. Fast-growing, cool-weather crop that is delicious and vitamin-rich. Can be sown outdoors at 2-week intervals, beginning in late winter, and then again in late summer, or germinated in moistened medium in refrigerator before moving outdoors.

393. *Zea mays*. Indian corn, ornamental corn. Variety unknown. Large cobs distinguished by kernels in rich variety of colors from white to purple. Frequently used for autumn decorations. Matures in 65–90 days. Corn does best in rich, well-aerated sandy soil with plenty of water. To improve pollination, it's best to grow corn in blocks rather than in one or two rows. Sow in warm soil.

394. *Z. mays* 'Io Chief'. Sweet corn cultivar. Height: 6½ feet. This All-America Selections winner produces 10-inch ears of sweet yellow corn. A low-water variety that matures in 89 days. For culture, see Indian corn, above.

395. *Z. mays* 'Peaches and Cream'. Sweet corn cultivar. Height: 6–7 feet. A tasty blend of white and yellow kernels on 8-inch ears. Matures in 60–90 days. For culture, see Indian corn, above.

396. *Z. mays* 'Silver Queen'. Sweet corn cultivar. Height: 8 feet. Produces tender, sweet snow-white kernels on 9-inch ears. Good for freezing and canning. Matures in 60–90 days. For culture, see Indian corn, above.

398. *Jung's Salad Blend*. A combination of 'Prizehead' and 'Plato II' lettuces, kale, endive, rhubarb, Swiss chard, and mustard. Described as a complete salad in a single packet. For culture, see directions for similar varieties.

399. *Lactuca sativa*. Mixed varieties. Varieties include looseleaf, butterhead, and green and red romaine. Lettuces require a moist, sandy loam and prefer cooler temperatures. They are often resown in late summer for fall crops. In the south they can be grown as winter crops. Do not cover seeds.

## GREENHOUSE

North of Zone 9, these plants must be grown in a greenhouse.

400. *Brachybilum horsfieldii*. Height: 1–3 feet. A perennial herb native to Java, where it grows epiphytically on trees. Slender lanceolate leaves and loose spikes of white, fragrant flowers rise from an aromatic rhizome. Forms green seed pods that split to reveal orange interiors with bright crimson seeds. Needs some direct light and a moist mix of peat and sand. Germinate indoors in warm medium.

401. *Caryota* sp. Fishtail palm. Height: 4–50 feet. Tropical palm tree that cannot be grown outdoors north of Zone 10. Height is variable depending on location. Typically gets solitary trunk with triangular, fishtail-shaped compound leaves. Flowers only once, after many years of growth. Tolerates part shade. Prefers soil that is an equal mix of peat and sand. Will not tolerate sustained temperatures below 60 degrees.

402. *Hippeastrum* spp. Amaryllis varieties. Height: 2½–3 feet. Seeds are from two varieties crossed by donor. Tender perennial bulb that needs to be overwintered indoors. Large, funnel-shaped white flowers streaked with orange bloom on erect stems rising from elongate basal leaves. Needs moist, well-aerated soil.

403. *Lapidaria margaretae*. Lapidaria. Height: to 1 inch. Succulent with 2–4 pairs of thick, angular, opposite leaves on insignificant stem. Leaves and stem are usually pale green to white, but sometimes have red markings on the edges. Small yellow, daisylike flowers bloom in late summer. Prefers a dry, sandy soil and cool temperatures. Limited quantity available.

404. *Lithops karasmontana*. Living stones. Height: to 1 inch. Flat, rocklike succulent divided into two ocher-to-brown lobular leaves by a crease on the upper surface. The top of each lobe is irregularly stippled. Small white flower emerges from crease between the leaves. Limited quantity available.

405. *Simmondsia chinensis*. Jojoba. Height: to 7 feet. This slow-growing evergreen shrub is native to southern California. Its numerous, stiff branches are covered with oval, leathery leaves. It's dioecious, which means the sexes occur on different plants. Takes about 3 years to flower. The fruits yield jojoba oil. Likes to be hot and dry. Sow in warm soil. Produces a long taproot, which resists transplanting. Not hardy beyond Zone 10.

## VEGETABLE SEED MIXES

397. *Brassica oleracea*. Mixed cabbage varieties. A mix of ten cabbage varieties, including early, late, round, flat, red, and green types. Require part shade in hot climates and moist soil. Will bolt during hot weather. Start seed indoors, then harden off and transplant outdoors around last frost date.



# 1995 SEED CATALOG DONORS

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Marty Belcher, Princeton, West Virginia  
Mary C. Beranek, Kirkwood, Missouri  
Helen Boatman, Victoria, Texas  
William Bolfik, Beaverton, Oregon  
Bill Boone, Seabrook, Maryland  
Norma J. Brown, Pittsburgh, Pennsylvania

Edward Bryans, Donnybrook,  
North Dakota  
C. Carter, Birmingham, Alabama  
E. Owen Clary, Aiken, South Carolina  
Mrs. J. K. Clinton, Ruston, Louisiana  
Mrs. R. C. Colyer, Long Island, New York  
Marilyn Corum, Jacksonville, Oregon  
Terry Coyne, Rockville, Maryland  
Beverly Creswell, Chesterton, Indiana  
Prince Crowell, Cambridge, Massachusetts  
Tonja Curry, Litchfield, Connecticut  
Dorothy L. Dean, Springfield, Virginia  
M. et Mme. Bruno Defay, Pebellit, France

## HOW TO ORDER

- ◆ List selections by number only.
- ◆ Attach the mailing label from this issue or fill in your name, address, and member number from the top left-hand corner of the mailing label. Your order will be shipped faster if you include your member number on the order form.
- ◆ In case our supply of your first-choice seed packets has been depleted, please be sure to list substitute selections in the space provided on the order form.
- ◆ To increase your chances of getting your first-choice selections, please mail us your order form as soon as possible.
- ◆ The deadline for ordering seed is May 1, 1995. Orders postmarked after that date will not be filled.
- ◆ Keep this catalog! You will need the catalog to identify the seeds you receive. Seed packets are identified only with the numbers that appear in this catalog. Replacement copies of the catalog are \$3 each.

## VOLUNTARY CONTRIBUTIONS

While seed offered in this annual program is free to our members, we do request a voluntary contribution to help defray postage and handling costs.

We request a minimum of \$3 if you are ordering 10 packets of seed, and \$4 if you are ordering 15 packets of seed.

## BONUS SEEDS

Additional contributions to the Seed Exchange Program help us fund student interns who help coordinate it. These funds also allow us to mail surplus seeds to schools and other nonprofit groups. Members who donate \$10 or more (including shipping and handling costs) to the Seed Exchange Program when they order will receive four bonus seed varieties as a thank-you. This year's bonus seeds, from W. Atlee Burpee and Applewood seed companies, are:

- ◆ *Lycopersicon lycopersicum* 'Gardener's

**Delight'**. Cherry tomato cultivar. A favorite cherry tomato with bright red bite-size fruits that are extra sweet and flavorful. Plants produce many clusters of fruit all summer. Start indoors to transplant. Matures in 65 days.

◆ **Lactuca sativa 'Green Ice'**. Lettuce cultivar. This early-maturing lettuce is ready to harvest 45 days after sowing. A sweet lettuce with dark green ruffled leaves. Slow to bolt. Direct sow in spring.

◆ **Helianthus annuus 'Sunrise'**. Sunflower cultivar. An easy-to-grow flower introduced in 1994. Lemon-colored flowers are 6 inches across with chocolate-colored centers. Flowers

on basal branches and grows to 5 feet. Great for screening and cut flowers. Seeds can be started indoors or sown directly outdoors.

◆ **Wildflower Mixture for Light Shade**. The mix includes 16 different annual and perennial wildflowers that will grow in strong, filtered sunlight or 1-4 hours of direct sun per day. Johnny jump-up (*Viola cornuta*); forget-me-not (*Myosotis sylvatica*); spurred snapdragon (*Linaria maroccana*); columbine (*Aquilegia vulgaris*); baby's-breath (*Gypsophila elegans*); candytuft (*Iberis unbellata*); rocket larkspur (*Delphinium ajacis*); and others. Mixture should be direct sown in early spring or fall.

## 1995 AHS SEED CATALOG ORDER FORM

Use Peel-off Mailing Label or Fill In: AHS Member Number: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

### First Choice Selections — List Your Selections by Number Only

- |          |          |           |           |
|----------|----------|-----------|-----------|
| 1. _____ | 5. _____ | 9. _____  | 13. _____ |
| 2. _____ | 6. _____ | 10. _____ | 14. _____ |
| 3. _____ | 7. _____ | 11. _____ | 15. _____ |
| 4. _____ | 8. _____ | 12. _____ |           |

### Substitute Selections — If my first-choice selections are unavailable, send these substitutes:

- |          |          |          |          |
|----------|----------|----------|----------|
| 1. _____ | 3. _____ | 5. _____ | 7. _____ |
| 2. _____ | 4. _____ | 6. _____ | 8. _____ |

- Please send me 10 selections. I enclose my \$3 voluntary contribution.
- Please send me all 15 selections. I enclose my \$4 voluntary contribution.
- Please send me my four bonus seeds. I have enclosed a donation of \$ \_\_\_\_\_ (a total of \$10 or more) to help AHS continue to offer and improve its Seed Exchange Program.

MAIL TO: AHS Seed Exchange Program, 7931 East Boulevard Drive,  
Alexandria, VA 22308-1300.

Allen Deitz, *Anchorage, Alaska*  
 S. Diaz, *Pasadena, California*  
 Diane L. Dick, *Longview, Washington*  
 Tom W. Dillard, *Little Rock, Arkansas*  
 Mrs. R.S. Dunham, *Cary, North Carolina*  
 Janice M. Edwards, *Lincolnshire, Illinois*  
 Ruth Fairall, *Cordova, Alaska*  
 Patricia L. Fawber, *Harrisburg, Pennsylvania*  
 Elise Felton, *Southwest Harbor, Maine*  
 Fury Feraco, *Fishing Creek, New Jersey*  
 Charles Martin Fitch, *Mamaroneck, New York*  
 George and Marion Floyd, *Houston, Texas*  
 Nanette Franz, *Aurora, Illinois*  
 Colleen Friedberg, *Portland, Oregon*  
 Judith Gordon Furr, *Radford, Virginia*  
 Barbara Giuffrid, *Siena, Italy*  
 Barry Glick, *Renick, West Virginia*  
 Karen Gray, *Copley, Ohio*  
 Greg Haas, *Houston, Texas*  
 Theodore J. Hahn, *Milwaukee, Wisconsin*  
 Barbara A. Harkin, *Scituate, Massachusetts*  
 James Harper, *Decatur, Georgia*  
 Katherine Harrison, *Omaha, Nebraska*  
 Wade W. and Ella F. Hartmann, *Davenport, Iowa*  
 Mimi Hedl, *Belle, Missouri*  
 M. S. Heise, *Mahtomedi, Minnesota*  
 Evelyn G. Helm, *Sun City, Arizona*  
 Cathy Harris Helms, *Homerville, Georgia*  
 Lori Henry, *Madison, Wisconsin*  
 Suzy and Indy Hershey, *Chattanooga, Tennessee*  
 Jacqueline Herterich, *Fernandina Beach, Florida*  
 Mrs. Julian Hill, *Vineyard Haven, Massachusetts*  
 Marsha Hill, *Corvallis, Oregon*  
 Lynn Hillbrandt, *Atlanta, Georgia*  
 Elizabeth Hinkley, *Winchester, Virginia*  
 Robert Holiday, *Royersford, Pennsylvania*  
 Kay Huber, *Montvale, New Jersey*  
 Debra Hughes, *Bolivia, North Carolina*  
 Flower Hund, *Warrensburg, Missouri*  
 Chris Inhulsen, *Montezuma, Georgia*  
 Jinny Jacobs, *Yachats, Oregon*  
 Roger Johnson  
 Nancy Jonasz, *Staten Island, New York*  
 Steven E. Keip, *Waukegan, Wisconsin*  
 C. Kolodin, *Piscataway, New Jersey*  
 Rolland Kontak, *Indianapolis, Indiana*  
 Kopser, *Bent Mountain, Virginia*  
 Helen M. Kramp, *Baltimore, Maryland*  
 Ann Kratzer, *St. Clair Shores, Michigan*  
 Kzozkum, *Washington, DC*  
 Larry Larson, *Carmel, Indiana*  
 Scott Lucas, *Lawai, Hawaii*  
 Lorraine Luzan, *West Grove, Pennsylvania*  
 Paulette Lynn, *Dubuque, Iowa*  
 Paul C. Mango, *Rochester, New York*  
 Cherie Mann, *Granada Hills, California*  
 Russell H. Manning, *Spring Valley, Minnesota*  
 Irma and Norbert Markert, *Ogdensburg, New York*  
 Mary Joy Martin, *Montrose, Colorado*  
 Mrs. Norman Martin, *Warrenville, Illinois*  
 Elaine Matto, *Shelton, Connecticut*  
 Eileen McDonnell, *Harleysville, Pennsylvania*

Rusty McKilligan, *International Geranium Society, Las Vegas, Nevada*  
 Shirley A. Meneice, *Pebble Beach, California*  
 Larry Miles, *Independence, Missouri*  
 Jean S. Moscow, *New York, New York*  
 Ms. Moss-Mercer's Third Grade Class, *Durham, North Carolina*  
 Charlotte S. Murdock, *Birmingham, Alabama*  
 Vivienne W. Nearing, *New York, New York*  
 Geraldine Nelson, *Middlesex, New Jersey*  
 Mary Nelson, *Haslett, Michigan*  
 Peggy C. Newcomb, *Center for Historic Plants, Thomas Jefferson Memorial Foundation, Monticello, Charlottesville, Virginia*  
 Old Sturbridge Village, *Sturbridge, Massachusetts*  
 Kathleen Osgood, *Fort Myers, Florida*  
 Frances Parker, *Easton, Maryland*  
 Debbie Peterson, *Lombard, Illinois*  
 Eleanor Popper, *New York, New York*  
 James R. Randall, *St. Albans, West Virginia*  
 Debbie Rivetts, *Kirkland, Washington*  
 Kevin Roberts, *Syracuse, New York*  
 Crystal Rogers, *Waverly, Alabama*  
 Willis C. Rogers Sr., *Homewood, Alabama*  
 Helene Rudner, *East Bridgewater, Massachusetts*  
 Mrs. Peter Sacksen, *Lunenburg, Massachusetts*  
 Charles E. Salter, *Tallahassee, Florida*  
 K. M. Sangster, *Suffolk, United Kingdom*  
 Catherine Scheffter, *Olympia, Washington*  
 Ernest W. Schuler, *Sewell, New Jersey*  
 Nora Schwab, *Fair Oaks, California*  
 Lark J. Shlimbaum, *Bay Shore, New York*  
 M. Signore, *Melrose Park, Illinois*  
 Carol P. Smith, *Hudson, Ohio*  
 Steve Sprehe, *Ponca City, Oklahoma*  
 Mary Ann Streeter, *Wenham, Massachusetts*  
 Carolyn Strobridge, *Springfield, Virginia*  
 Priscilla Sylvia, *Oak Bluffs, Massachusetts*  
 Theodore Payne Foundation, *Sun Valley, California*  
 Jane Thompson, *St. Peter, Minnesota*  
 Jim Turk, *Jonesboro, Georgia*  
 Norman E. Turner, *Grove City, Pennsylvania*  
 Mary Ruth Unger, *Anaconda, Montana*  
 Tom Vogelsang, *Sunman, Indiana*  
 Kate Walker, *Claude Moore Colonial Farm, Arlington, Virginia*  
 Janette Waltemath, *Portland, Oregon*  
 Constance Weeks, *Eliot, Maine*  
 Harry Wise, *Charleston, West Virginia*  
 Carol Wock, *Rexford, New York*  
 James A. Wolfe, *Rogersville, Tennessee*  
 Nancy Woo, *Cranford, New Jersey*  
 John J. Wurdack, *Beltsville, Maryland*

**America the Beautiful Fund**, 219 Shoreham Building, Washington, DC 20005, (202) 638-1649.

**Applewood Seed Company**, 5380 Vivian Street, Arvada, CO 80002, (303) 431-6283. Wholesale only.

**George J. Ball Seed Company**, 622 Town Road, West Chicago, IL 60185, (708) 231-3500. Wholesale only.

**Bountiful Gardens**, 18001 Shafer Ranch Road, Willits, CA 95490, (707) 459-6410. Catalog free.

**W. Atlee Burpee & Company**, 300 Park Avenue, Warminster, PA 18974, (800) 888-1447. Catalog free.

**Cape Iris Gardens**, 822 Rodney Vista Boulevard, Cape Girardeau, MO 63701, (314) 334-3383. Catalog \$1.

**Companion Plants**, 7247 North Coolville Ridge Road, Athens, OH 45701, (614) 592-4643. Catalog \$2.

**The Cook's Garden**, P.O. Box 535, Londonderry, VT 05148, (802) 824-3400. Catalog \$2.

**Deep Diversity**, P.O. Box 2, Tesuque Drive, Espanola, NM 87532.

**Howard Dill Ent.**, RR 1, Windsor, Nova Scotia, B0N 2T0, Canada. Catalog \$1.

**The Fragrant Path**, P.O. Box 328, Fort Calhoun, NE 68023, (402) 468-5782. Catalog \$1.

**Harris Seeds**, 60 Saginaw Drive, Rochester, NY 14623, (716) 442-0410. Catalog free.

**J. W. Jung Seed Company**, 335 S. High Street, Randolph, WI 53957, (414) 326-3121. Catalog free.

**Kitazawa Seed Company**, 1111 Chapman Street, San Jose, CA 95126, (408) 243-1330. Catalog free.

**KSA Jojoba**, 19025 Parthenia Street, Suite 200, Dept. AHS, Northridge, CA 91324. Seed list free.

**Magella's Homestead**, P.O. Box 241, Clarksville, OH 45113, (513) 289-2436.

**Mesa Garden**, P.O. Box 72, Belen, NM 87002, (505) 864-3131. Catalog \$1.

**Pinetree Garden Seeds**, Route 100, New Gloucester, ME 04260, (207) 926-3400. Catalog free.

**V. L. Price Horticultural Services**, 506 Grove Avenue, Catawissa, PA 17820, (717) 356-7011. Catalog free.

**Princeton Nurseries**, P.O. Box 185, Allentown, NJ 08501, (609) 259-7671. Wholesale only.

**Salt Spring Seeds**, P.O. Box 33, Ganges, British Columbia, V0S 1E0, Canada.

**F. W. Schumacher Company, Inc.**, 36 Spring Hill Road, Sandwich, MA 02563-1023, (508) 888-0659. Catalog free.

**Shepherd's Garden Seeds**, 6116 Highway 9, Felton, CA 95018, (408) 335-5400. Catalog free.

**Sunnyside Farms**, 9448 Mayfield Road, Chesterland, OH 44026.

**Sunshine Farm & Gardens**, Route 5A, Renick, WV 24966.

**Thompson & Morgan**, P.O. Box 1308, Faraday & Gramme Avenues, Jackson, NJ 08527, (800) 274-7333.

## COMPANIES

**Abundant Life Seed Foundation**, P.O. Box 772, Port Townsend, WA 98368, (206) 385-5660. Catalog \$2.

## Members' Forum

continued from page 5  
appear on page 34, and others will be highlighted in our February and March issues.

## River Farm Hours

Please make River Farm more accessible to those of us who work by finding weekends when money-earning events are not scheduled. Can you staff it with volunteers on some weekends?

*All of us on the AHS staff are also 9-to-5'ers (at least), so we sympathize completely. We couldn't come here if we didn't work here. We experimented with weekend openings in the summer of 1993, and the results were disappointing, to say the least. There were simply not enough visitors to have the grounds staffed and the groundskeepers on call. The money-earning events that we began to hold a year ago, like our travel program, help defray other expenses and pay the considerable maintenance involved with this historic property.*

## Book Program

I really like your book catalog. I wish a longer one was available.

I enjoy the book reviews/descriptions in the News Edition.

I have found your book reviews to be uncritical and have made some disappointing purchases based on glowing reviews.

*Our first member should have been happy with the long list of books offered in November. Members should be aware that even if a book has not appeared in one of our catalogs, Linda Miller, our book program director, may be able to obtain it for you at a discount. Call and ask!*

*Most of the comments regarding our book program were extremely positive, but the last one suggested that a word or two regarding our reviews and catalog might be in order. Until a couple of years ago, book reviews by staff and outside authors appeared in both the magazine and News Edition. It then became apparent that our members' desire to buy books far exceeded the number that we could possibly review. They needed good reference works and books by their favorite authors as well as new releases. We now have book reviews only in the magazine and a book catalog in the News Edition. Members of the publications staff try to choose books to be reviewed based on outstanding content or unusual subject matter. Reviewers are asked to address any weaknesses, or whether the*

*book might interest one audience and not another, but not to review the book at all if their overall opinion isn't favorable.*

*Miller selects books for our catalog according to her knowledge of what our members want: popular authors and popular or unique topics. These books are then described based on the publishers' publicity materials, which are as biased as descriptions in any other catalog.*

## Reciprocal Admissions Program

A list of gardens where membership discounts are available—printed in each publication—would be helpful. I travel a lot, but have misplaced the information received at renewal time.

Many of the botanical gardens do not profess knowledge that AHS members are allowed free admission—a membership asset! I'd suggest you have them put up a sign for volunteers and staff, perhaps for the public.

*We're glad you're taking advantage of our "RAP" program. A few months ago we printed the entire list of participating gardens in the News Edition, but it is simply too long to put in each issue. The list is mailed to all new and renewing members. Those who lose their list can call our membership office for a replacement.*

*We have supplied our RAP gardens with a sticker to be displayed in a prominent place. Frequently, those taking admissions at botanical gardens are volunteers who may not be aware of our program. We recommend that you take your "RAP sheet" with you. On weekdays, requesting to speak to garden staff or calling Darlene Oliver at AHS to mitigate are other, admittedly more hassle-fraught, solutions.*

**In future issues, we'll try to find space for more of your comments. For those who asked for more landscaping advice: Please take us up on our invitation to address your specific problems. Send photographs.**

## GIS ON YOUR PC—ASAP?

Some correspondents said they would like on-line computer access to our Gardeners' Information Service and articles about computer software for gardeners. There is certainly the possibility that in the future we could offer members not only electronic mail access to our GIS, but also make publications available on-line or on CD-ROM or diskette.

Since our last survey elicited so much response, we decided to conduct a mini-survey this month to determine what percentage of our members would find such services useful. If you own a personal computer, or have access to one at work or school where you would use it to obtain information about gardening, plants, or landscaping, please tell us about the following:

Is your computer:  IBM-compatible  an Apple product

If you have an IBM, do you have Windows software?  yes  no

Do you have a modem or on-line access?  yes  no

Do you have a CD-ROM drive?  yes  no

Do you have a color monitor?  yes  no

Which of the following computer services would you find useful? Rate them from 1 (very useful) to 5 (not very useful).

	very useful			not very useful	
	1	2	3	4	5
On-line access to answers to my personal gardening questions.	1	2	3	4	5
On-line access to gardening tips (pests, pruning, etc.).	1	2	3	4	5
On-line access to AHS publications.	1	2	3	4	5
AHS publications on CD-ROM or diskette.	1	2	3	4	5
Gardening books on CD-ROM or diskette.	1	2	3	4	5

MAIL TO: AHS, 7931 East Boulevard Drive, Alexandria, VA 22308-1300.

Books are chosen for the AHS book program based on perceived reader interest, unusual subject matter, or substantive content. The following are not intended to be critical reviews, but are based on publishers' descriptions.

## SEED BOOKS

### Garden Flowers From Seed

*Christopher Lloyd and Graham Rice*  
Softcover. Retail price: \$19.95. AHS price: \$17.95.  
Book code: TIM 195

Here is a dialog between two famous and opinionated garden experts who offer valuable advice on which seed-raised flowers to grow, how to germinate and tend them, and how to best use them in the garden. More than 230 genera are discussed, including thousands of annual and perennial plants. Sometimes Lloyd and Rice agree, sometimes they don't. The result is a witty, urbane, and thoroughly informative book for any gardener who raises plants from seed. 1994. 310 pages.

### The Bernard E. Harkness Seedlist Handbook

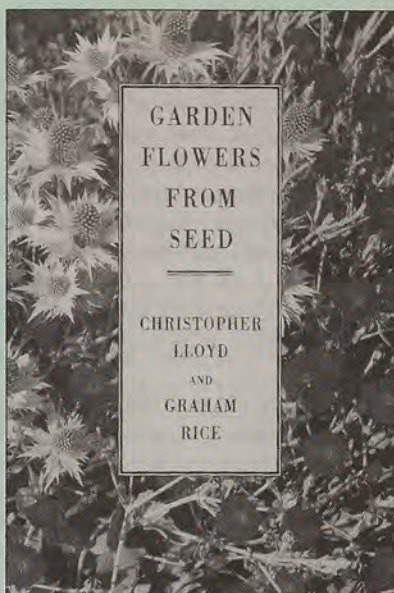
*Updated by Mabel G. Harkness*  
Softcover. Retail price: \$29.95. AHS price: \$26.95.  
Book code: TIM 030

First published in 1974, the original *Seedlist Handbook* grew from Bernard E. Harkness's experience as seed director for the American Rock Garden Society. This second edition, compiled and edited by his widow, has been expanded and revised. Most gardeners are familiar with only a fraction of the many splendid alpine plants available to them. This handy guide provides the basic information needed to use alpine seed lists. An essential reference work for every alpine and rock gardening enthusiast. 1993. 506 pages.

### Collecting, Processing, and Germinating Seeds of Wildland Plants

*James A. and Cheryl G. Young*  
Hardcover. Retail price: \$24.95. AHS price: \$22.50.  
Book code: TIM 060

The growing number of gardeners who are intrigued by the possibilities of native plants will find this encyclopedic treatment of seed collection and germination—from annuals to trees—an invaluable resource. Practical methods are presented in an easy-to-understand way, making this an asset for both amateurs and professionals. 1986. 236 pages.



### Seeds of Woody Plants in North America

*James A. and Cheryl G. Young*  
Hardcover. Retail price: \$49.95. AHS price: \$44.95.  
Book code: TIM 050

Long unavailable, this greatly revised edition of the *Agriculture Handbook 450* is one of the most useful source books ever published by the U. S. Forest Service. The new volume includes 386 genera, more than double the number previously covered, and adds more than 1,000 literature citations, reflecting the tremendous increase in knowledge of the propagation of woody plant species in the past two decades. The book is also useful for seed identification. 1992. 414 pages.

### Saving Seeds

*Marc Rogers*  
Softcover. Retail price: \$9.95. AHS price: \$8.75.  
Book code: GAR 010

Any gardener can become a successful seed saver. This book will tell you all you need to know about how to raise, harvest, and store seeds for the easiest-to-grow and most popular vegetables and ornamental plants. Marc Rogers discusses each vegetable and flower in detail and answers hundreds of gardening questions. *Saving Seeds* can help you get started on a fascinating and lifelong hobby. 1992. 185 pages.

### Fruit, Berry, and Nut Inventory

*Edited by Kent Whealy and Steve Demuth*  
Softcover. Retail price: \$22. AHS price: \$19.75.  
Book code: TSP 040

This second edition is a comprehensive inventory of 309 mail-order nursery catalogs. It describes 5,810 fruit, berry, and nut varieties, and contains a coded list of U. S. sources

that offer each one. Commercially available seeds and plants can be scanned for varieties that are best for specific climates or resistant to local diseases and pests. Northern and high-altitude growers will find the cold-hardy, short-season varieties they need. Southern gardeners can use the book to locate low-chill fruits. 1993. 520 pages.

### Weed Seeds of the Great Plains

*Linda W. Davis*  
Hardcover. Retail price: \$25. AHS price: \$22.50.  
Book code: UPK 070

Identifying weed seeds before they are inadvertently planted is a way to avoid using herbicides or mechanically removing them later. Lavishly illustrated, this book will help readers identify the seeds of 280 species of weedy plants of the Great Plains, including weeds commonly found along roadsides, in lawns, in crops, and in rangeland. It includes color photos, black-and-white life-sized silhouettes, full descriptions, and scientific and common names for each species. An illustrated glossary clarifies technical terms. 1993. 208 pages.

## FROM ANNUAL MEETING SPEAKERS

### Herbaceous Perennial Plants

*Allan M. Armitage*  
Hardcover. Retail price: \$37.95. AHS price: \$32.25.  
Book code: TIM 593

This comprehensive guide combines line drawings, color photographs, keys, and in-depth text describing more than 2,600 species and cultivars. Includes scientific, common, and family names; size; ornamental characteristics; adaptability range; and culture, propagation, and use. 1989. 646 pages.

### Allan Armitage on Perennials

*Allan M. Armitage*  
Hardcover. Retail price: \$18. AHS price: \$16.20.  
Book code: TIM 295

An excellent source of information about perennials for American gardens. Each of more than 120 plant portraits yields detailed descriptions that illustrate the plant's habit and features, and simplifies identification and selection of more than 220 species and hundreds of cultivars and varieties. Superb full-color photographs throughout make this a beautiful reference guide. 1993. 184 pages.



## The Book of Garden Design

John Brookes

Hardcover. Retail price: \$45. AHS price: \$40.50.

Book code: MAC 195

Good design is the key to all successful gardens, large or small, in the city, country, or suburbia. Yet for many people it proves elusive. Here, John Brookes demystifies the subject, clearly setting forth the fundamental principles and techniques of design used in the course offered at his School of Landscape Design. 1991. 352 pages.

## The Indoor Garden Book

John Brookes

Softcover. Retail price: \$14.95. AHS price: \$13.45.

Book code: DOR 195

This is a comprehensive, practical guide to the creative use of plants in the home. Beautifully illustrated with hundreds of exciting interior design ideas and step-by-step projects, it is a goldmine of detailed information on every aspect of choosing, displaying, and caring for house plants, cacti, bottle gardens, hanging baskets, window boxes, cut flower arrangements, and dried flowers and foliage. 1994. 287 pages.

## Gardens of Paradise: The History and Design of the Great Islamic Gardens

John Brookes

Hardcover. Retail price: \$36. AHS price: \$32.40.

Book code: NAM 195

John Brookes examines the garden as a symbol of paradise and traces the garden's historical origins, showing how its form evolved from both traditional irrigation systems and pre-Islamic Persian palaces. The beauties of the great Islamic gardens are explored

in regional chapters, each fully described and illustrated, using photographs, miniatures, engravings, and plans. 1987. 240 pages.

# WORLD GARDENS

## California Gardens: Creating a New Eden

David C. Streatfield

Hardcover. Retail price: \$55. AHS price: \$49.50.

Book code: ABB 295

The history of California gardens, both private and public, is a surprisingly vast topic, in both the time and land it encompasses. This volume surveys the entire history of the state's manmade vistas, from the pragmatic plantings of the Spanish missions, through Victorian fantasies and Hollywood extravaganzas, and culminating in contemporary drought-tolerant native plant gardens. *California Gardens* provides a thought-provoking, eye-dazzling chronicle of the state's diverse garden traditions, tracing their sources of inspiration from the rock gardens of Japan to the Persian gardens of paradise. 1994. 272 pages.

## Nature Perfected: Gardens Through History

William Howard Adams

Hardcover. Retail price: \$49.95. AHS price: \$44.95.

Book code: ABB 395

With its sumptuous color plates, comprehensive scope, and fascinating text,

this ground-breaking international history of the garden as an art form is ambitious and rewarding. Beginning with the ancient civilizations of Egypt, Greece, and Rome, it uncovers evidence of gardening through the art, history, and literature of these early cultures. It then takes us into the later civilizations of Islam, reveals the important contributions of Italy and France, China and Japan, lingers in the incomparable gardens of England, and finally transports us to the New World. Each chapter identifies and discusses major design and horticultural contributions made to garden history in each period and by each society. It also explores the dramatic impact on Europe of the discovery in 1492 of a new continent with its own unique flora and fauna. 1991. 356 pages.

## Southern Gardens: A Gracious History and a Traveler's Guide

Laura C. Martin

Hardcover. Retail price: \$45. AHS price: \$40.50.

Book code: ABB 195

The most celebrated gardens of the South, all of them open to visitors, are portrayed through 200 exquisite color photos and a lively, informative text. The author, who has traveled to each of the 32 gardens featured, is a delightful guide, leading readers on a fabulous tour along the Atlantic seaboard from Virginia to Florida and west to Mississippi. Arranged chronologically, the gardens illustrate different periods in the history of the South. This volume also provides notes that explain how to cultivate some of the outstanding plants in these gardens. 1993. 252 pages.

## AHS HORTICULTURAL BOOK SERVICE ORDER FORM

Book Code	Quantity	Book Title	Price Each	Total
Virginia residents, add 4 1/2% sales tax				
Postage & Handling (see chart below)				
Total				

### Order Instructions

Mail completed order form to: AHS Horticultural Book Service, 7931 East Boulevard Drive, Alexandria, VA 22308-1300.

Or call toll-free (800) 777-7931.

Prices in effect until February 28, 1995.

After expiration date, orders may be phoned in and will be filled pending availability. Please allow four to six weeks for delivery. Prices are subject to change without notice.

Postage & Handling	
\$ 1.00 — \$ 20.00	add \$2.75
\$ 20.01 — \$ 40.00	add \$3.75
\$ 40.01 — \$ 60.00	add \$4.75
\$ 60.01 — \$ 80.00	add \$5.75
\$ 80.01 — \$100.00	add \$6.75
\$100.01+	add \$8.00 per \$100.00
(Maximum: \$24 per order)	
Foreign orders: Please add appropriate postage.	

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State/Zip: \_\_\_\_\_

Daytime phone: \_\_\_\_\_



# AHS BULLETIN BOARD

## FREE, DISCOUNTED FLOWER SHOW ADMISSIONS EXPANDED FOR 1995

Our discounted admissions to major flower shows were so well received last year that, for 1995, we expanded this member benefit to include more than 20 shows around the country. The following flower and garden shows have offered free admission to those displaying a current AHS membership card:

### Colorado

The Colorado Garden and Home Show will be in the Colorado Convention Center in Denver January 21 to 29. This year's show will feature 19 display gardens by local landscape designers such as Autumn Gold, LID, Contemporary Landscapes, and Camelot Design, which will be judged in various categories including a People's Choice Award. Other attractions include educational seminars for both amateur and experienced gardeners, an exhibitors' raffle of gift certificates and products, a children's area, a Master Gardeners' booth, and Colorado State University Day. Proceeds from the show benefit the community through grants and scholarships. For tickets, call AHS headquarters at (800) 777-7931. For further information, call (303) 696-6100. A \$7 value.

### Washington State

The 12th annual Tacoma Home and Garden Show will bloom once again in the Tacoma Dome February 1 to 5 with exhibits, tips, demonstrations, and seminars to help spruce up the yard and shape up the home.

Highlights of this year's show will include the 1995 Washington State Beef Cook-Off; a fully landscaped Nightscape Garden with a computerized presentation of the sights, sounds, and colors of a backyard garden during a 24-hour period; more than 70 accredited gardening seminars and 700 exhibits; and a charity auction/dinner and the Parade of Playhouses, both to benefit Pierce County's Homebuilders, a non-profit organization that

provides intensive in-home counseling for families on the verge of having children placed in foster care. For information, call (206) 756-2121. A \$7 value.

### Florida

"Paradise in Full Bloom," the 1995 Palm Beach Tropical Flower Show February 3 to 5, will offer winter-weary gardeners a welcome change of view. Set along the waterfront of Glagler Drive in West Palm Beach, Florida, the show will present 12 tropical garden exhibitions, horticulture class competition entries from south Florida garden clubs and individuals, a Garden Marketplace overflowing with the best from area growers and nurseries as well as garden accessory vendors from near and far, and a Garden Theatre, an open forum of how-to instructions and discussions with the experts.

This first annual event will also feature the world premiere of Disney's newest topiary characters from "The Lion King" along with Mickey, Minnie, and other topiaries from the Walt Disney World collection. A New Plant Exposition will offer a peek at plants recently developed and tested, and the Plant Society's Showcase will display prized collections ranging from bonsai to begonias, palms to bromeliads, and herbs to orchids. For information, call (407) 655-5522. A \$9 value.

### Oregon

The 48th annual Portland Home and Garden Show, to be held at the Portland Expo Center February 22 to 26, will be adding something new this year—its first landscaping competition. Five of Oregon's top landscape designers—Drake's 7 Dees, Pacific Gardens & Water Works, Rittenhouse/Tamiyasu, Dennis' 7 Dees, and Almost Paradise Landscaping—will be competing for awards from AHS, the Oregon Landscape Contractors Association, and for the People's Choice Award.



The show will have more than 600 displays of the latest in gardening, landscaping and construction techniques, and accessories for the home and garden. For information, call (503) 246-8291. A \$6 value.

### Massachusetts

"Magical Moments," the 1995 New England Spring Flower Show, will be held in Boston's Bayside Expo Center March 11 to 19. The five-and-a-half-acre event, sponsored by the Massachusetts Horticultural Society (MHS), will feature more than 40 fully landscaped display gardens, lectures, demonstrations, competitions for young and amateur gardeners, and special events.

Some highlights of the show include a glass conservatory designed by Jim Secky of Amdega, surrounded by living topiaries by Allen Haskell of New Bedford; thematic topiary gardens ranging from New England woodland settings to the African jungle; an interior design section where the region's hottest talents will create magical rooms and memorable spaces; the Gardener's Marketplace, with more than 250 retailers; the Garden Demonstration Area, where experts will demonstrate flower arranging, garden design, and more; the Discovery Center, a special area devoted to interactive exhibits and demonstrations on environmental, garden-related topics; other ongoing lectures and demonstrations; the MHS Educational Exhibit; the Master Gardener Horticultural Information Station; and a children's area with interactive activities, baby animals, and a playground. For information, call (617) 536-9280. A \$13 value.

Offering discounted admission:

### Georgia

"Celebrations," the 1995 Southeastern Flower Show February 22 to 26, moves this year to the Town Hall Exhibition Center in City Hall East in Atlanta. This year's show will feature professionally landscaped display gardens, educational gar-

dens, free seminars, a children's activity center, the Marketplace, and professional and amateur competitions. For information, call (404) 888-5567.

### Upcoming Shows

Watch for more information on these and other shows offering free admission to AHS members:

- ◆ Cincinnati (Ohio) Home and Garden Show, February 25 to March 5;
- ◆ Fort Wayne (Indiana) Home and Garden Show, March 1 to 5;
- ◆ New York (New York) Flower Show, March 2 to 5;
- ◆ Cleveland (Ohio) Flower Show, March 4 to 12;
- ◆ Maryland State Home and Flower Show, March 8 to 12;
- ◆ Texas State Garden Show, March 11 to 12;
- ◆ Chicago (Illinois) Flower and Garden Show, March 11 to 19;
- ◆ Indianapolis (Indiana) Flower and Patio Show, March 11 to 19;
- ◆ Rochester (New York) Flower and Garden Show, March 16 to 19;
- ◆ Wichita (Kansas) Lawn, Flower, and Garden Show, March 16 to 19;
- ◆ Ann Arbor (Michigan) Flower and Garden Show, March 23 to 26;
- ◆ Cincinnati (Ohio) Flower Show, April 30. Special AHS member reception.

## AHS CO-SPONSORING SYMPOSIA, LECTURES

For nearly half a century, the American Horticultural Society has co-sponsored the Williamsburg Garden Symposium, along with the Williamsburg Foundation in Colonial Williamsburg, Virginia.

This year we will be expanding our involvement in high-quality events around the country by co-sponsoring symposia and lectures in New York, Georgia, and California as well.

**Mohonk Mountain House's third annual Garden Dreams program** will be January 20 to 22.

Some of the featured lecturers include author Charles O. Cresson, describing his family garden, Hedgleigh Spring, in Swarthmore, Pennsylvania; Marvin Davis, demonstrating the use of the rustic garden features made by his company, Romancing the Woods; Nelson Sterner on "Roses For Any Garden"; and AHS Board Chairman Sarah S. Boasberg tracing the art moderne movement in Europe and America through the influence of landscape architect Fletcher Steele.

## ANNUAL MEETING SET FOR JUNE 22-24

The 50th Annual Meeting of the American Horticultural Society will be held June 22 to 24 in an appropriately historical site: Philadelphia, Pennsylvania, cradle of liberty and a region of some of the most exciting public and private gardens in the United States.

Pre-meeting activities will include the President's Council Dinner Wednesday, June 21, and an optional tour of Longwood Gardens and the Winterthur Museum on Thursday, June 22. The meeting itself officially begins Thursday night with the Members' Forum—a time when members meet with AHS leaders to share their ideas for fulfilling the Society's mission.

Friday, June 23, will be filled with tours of two astounding yet very different gardens. Mount Cuba, the home of Pamela Copeland, is also the Center for the Study of Piedmont Flora, dedicated to the promotion and propagation of plants native to the region. Twenty of its acres—primarily wooded but also including a meadow and three ponds—are landscaped to remain as natural as possible while displaying the immense diversity of these plants in form, tex-

ture, and subtle seasonal changes. The flowering plants in the private garden of Sir John Thouron, on the other hand, were chosen to provide maximum color in June. His property includes a long walled border, rose garden, ornamental grasses, rock garden, a collection of beeches, and many other specialized garden areas.

On Saturday, June 24, participants will see areas of the city that have been transformed by the Philadelphia Green project of the Pennsylvania Horticultural Society, which will have representatives serving as guides, and on Sunday, June 25, there will be an optional tour of private gardens of the city's famous "Main Line."

Speakers at the meeting will include Richard Lighty, director of the Mount Cuba Center for the Study of Piedmont Flora, whose private garden has been designed along similar natural principles, and René van Rems, whose floral extravaganzas were show-stoppers at the AHS fund-raising gala at its River Farm headquarters in October.

Detailed registration information will appear in the March News Edition.

Mohonk Mountain House is a 2,500-acre National Historic Landmark resort 90 miles north of New York City in the Hudson Valley. For more information, call (800) 772-6646.

**The sixth annual Cloister Garden Series** will be February 23 to 26 at The Cloister, a Mobil 5-Star resort located on Sea Island off the southern coast of Georgia.

This year's program will feature horticulturist, author, and lecturer André Vitette; landscape architect Edward Blake speaking on the "Evolution of Design"; botanical illustrator and writer Peter Loewer and lecturer Vernon Daniel, both speaking on the night garden; and author William C. Welch on "Perennials for Southern Gardening." Participants will also tour two antebellum plantations—Retreat Plantation and Cannon's Point Plantation. For further information, contact Irene Butler at (800) 732-4752.

On April 3 the Orange County, California, District Garden Clubs will present a

**luncheon and lecture on herbs** by Shirley Kerins, curator of the Herb Garden at The Huntington museum and library in San Marino, California.

The program will begin at 11:30 a.m. in the Terrace Café at Knott's Berry Farm in Buena Park, California. Reservations must be made by March 27. To make reservations or for more information, call (714) 838-6318.

**The 1995 Williamsburg Garden Symposium**, April 9 to 12, will feature guest lecturers Roger Swain, author and co-host of the PBS series "The Victory Garden"; AHS Board member Thomas G. Amason Jr., whose garden in Birmingham, Alabama, has been featured in *Southern Living* magazine; Felder Rushing, author of *Pasalong Plants*; and Kim Hawks, owner of Niche Gardens in North Carolina. In addition to the guest lecturers, Williamsburg staff members will be on hand to answer questions and lead the optional Master Classes. For more information, call (804) 220-7280.

## 1995 FLOWER SHOWS

♦ Jan. 27-29. **St. Louis Flower Show.** Cervantes Convention Center, St. Louis, Missouri. Information: (314) 569-3117.

♦ Jan. 29-31. **Atlanta Garden and Patio Show.** Cobb Galleria Centre, Atlanta, Georgia. Information: (404) 998-9800.

♦ Feb. 23-26. **Rhode Island Spring Flower and Garden Show.** Providence Convention Center, Providence, Rhode Island. Information: (401) 624-1324.

♦ Feb. 23-26. **Maymont Flower and Garden Show.** Richmond Convention Center, Richmond, Virginia. Information: (804) 358-7166.

♦ Feb. 25-Mar. 5. **Southern Spring Show.** Charlotte Merchandise Mart, Charlotte, North Carolina. Information: (800) 849-0248.

♦ Feb. 25-Mar. 5. **New Jersey Flower and Garden Show.** Garden State Exhibit Center, Somerset, New Jersey. Information: (908) 919-7040.

♦ Mar. 1-5. **Garden Club of Toronto Flower Show.** Civic Garden Center, Toronto, Ontario. Information: (416) 239-6774.

♦ Mar. 1-5. **Washington Flower and Garden Show.** Washington Convention Center, Washington, D.C. Information: (703) 569-7141.

♦ Mar. 2-5. **Nashville Lawn and Garden Show.** Tennessee State Fairgrounds, Nashville, Tennessee. Information: (615) 352-3863.

♦ Mar. 5-12. **Philadelphia Flower Show.** Philadelphia Civic Center, Philadelphia, Pennsylvania. Information: (215) 625-8250.

### Don't See a Favorite Show?

This year the American Horticultural Society has expanded the number of flower shows to which our members will receive free or discounted admissions. The earliest of these shows are described in this issue's "AHS Bulletin Board" on page 34.

More shows offering free admission to our members will be highlighted in upcoming issues of *American Horticulturist*.



# REGIONAL HAPPENINGS

## North Central

♦ Jan. 1. **Holiday Concert: Classical Musings.** Olbrich Botanical Gardens, Madison, Wisconsin. Information: (608) 246-4551.

♦ Feb. 2-5. **Spring Home and Garden Show.** Builder's Association of Southeastern Michigan. Novi Expo Center, Novi, Michigan. Information: (810) 737-4478.

## Northeast

♦ Jan. 11-12 and 14-15. **Natural Design as Landscape Art.** Symposium. Villanova University, Villanova, Pennsylvania, and Connecticut College, New London, Connecticut. Information: (215) 247-5777, ext. 156.

♦ Jan. 21-23. **Garden Dreams.** Symposium. Co-sponsored by the American Horticultural Society. Mohonk Mountain House, New Paltz, New York. Information: (800) 772-6646.

♦ Jan.-Mar. **University of Massachusetts Cooperative Extension System's Green School.** Sturbridge Host Hotel and Conference Center, Sturbridge, Massachusetts. Course schedule and information: (508) 347-7393 or (800) 582-3232.

## South Central

♦ Jan. 7-Mar. 12. **Monet: Late Paintings of Giverny.** New Orleans Museum of Art, New Orleans, Louisiana. Information: (504) 488-2631, ext. 316, or (800) 753-6391.

♦ Feb. 8. **Nancy Stallworth Thomas Horticultural Lecture Series.** First lecture will be by J. C. Raulston. Museum of Fine Arts, Houston, Texas. Information: (713) 465-1104.

## Southeast

♦ Jan. 20-21. **WinterGreen '95.** Sponsored by Georgia Green Industry Association. Georgia International Convention and Trade Center, College Park, Georgia. Information: (706) 492-4664.

♦ Feb. 2-5. **Association of Professional Landscape Designers Annual Meeting and Conference.** Galt House East, Louisville,

Kentucky. Information: (301) 216-2620.

♦ Feb. 4. **Perennial Symposium.** Atlanta Botanical Garden, Atlanta, Georgia. Information: (404) 876-5859.

♦ Feb. 9-12. **Martin County Orchid Society Show.** Treasure Coast Square Mall, Jensen Beach, Florida. Information: (407) 287-6380.

♦ Feb. 11. **Guilford Horticultural Society Symposium.** Natural Science Center, Greensboro, North Carolina. Information: (910) 855-7450.

♦ Feb. 23-26. **Cloister Garden Series.** Symposium. Co-sponsored by the American Horticultural Society. The Cloister, Sea Island, Georgia. Information: (800) 732-4752.

♦ Feb. 24-26. **African Violet Society of America Annual Show and Sale.** Eastlake Square Mall, Tampa, Florida. Information: (813) 345-8295.

♦ Mar. 7-8. **Davidson Horticultural Symposium.** Davidson College, Davidson, North Carolina. Information: (704) 892-8285.

## Southwest

♦ Feb. 16-17. **High Desert Gardening and Landscaping Conference.** Ramada Inn, Sierra Vista, Arizona. Information: (602) 458-1104.

## West Coast

♦ Jan. 25. **Plants of Fame and Fantasy, Scandal and Splendor: Hot Peppers.** Lecture. The Huntington, San Marino, California. Information: (818) 405-2160.

♦ Feb. 8. **Paul Anderson on the Multicultural Uses of Herbs.** Lecture. The Arboretum of Los Angeles County, Arcadia, California. Information: (818) 447-8207.

♦ Feb. 19. **Centennial Celebration: Masked Victorian Ball.**

Aboard the *Queen Mary*, Long Beach, California. Information: (714) 773-2843.

♦ Feb. 24-26. **Pacific Orchid Exposition.** Fort Mason Center's Festival Pavilion, San Francisco, California. Information: (415) 546-9608.



## ARNOLD ARBORETUM TO ADVISE INDONESIA

The government of Indonesia, with funding from the World Bank, has awarded the Arnold Arboretum of Harvard University a \$2.4-million contract to provide technical expertise and management advice for a five-year, \$12-million Biodiversity Collections Project. Arboretum Director Robert E. Cook says this partnership—among a botanical institution, the government of a developing country, and an international financing agency that supports economic growth—addresses the conservation crisis in one of the world's richest regions of biodiversity.

The project has three goals: to restore deteriorating collections and research facilities at the national zoological museum and herbarium in Indonesia, to develop a national biodiversity database to make information about Indonesian wildlife fully accessible, and to train Indonesian scientists in collections maintenance, information management, and systematic biology.

## MORRIS ARBORETUM REOPENS FERNERY

The Morris Arboretum of the University of Pennsylvania celebrated the re-opening of its fernery in October. A designated national landmark, the fernery is the only remaining freestanding Victorian conservatory in North America constructed specifically for exhibiting ferns.

Built in 1899, the fernery was closed to the public seven years ago because of structural deterioration. A private donation made possible the necessary repairs, which included replacement of electrical, water, and heating systems, restoration of waterfalls and pools, and reconstruction of the curved glass roof and stone walls. The grounds around the fernery were also relandscaped.

The fernery was replanted with tropical and subtropical ferns and will be used to educate the public about the importance of conserving ecosystems in the tropics, where 11,000 of the 12,000 known species of ferns occur.

## INDIANA BANS DOGWOOD SALES

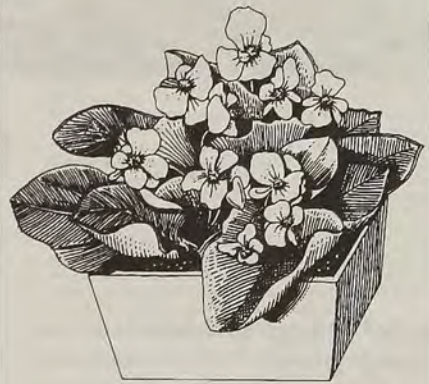
In an effort to prevent the spread of anthracnose in native dogwoods, the Indiana Department of Natural Resources (DNR) issued a 90-day ban beginning September 1 on the sale of all dogwood species, cultivars, and hybrids.

Last May, DNR staff discovered trees with symptoms of anthracnose for sale at a retail outlet. When lab tests confirmed that the trees were infected, the state stopped the sales at that store. During a subsequent statewide quarantine, further inspections found 27 nurseries with infected stock. Most of the diseased plants had originated in Tennessee.

Currently anthracnose is not a serious problem in Indiana with the exception of two northern counties, where native trees have been infected by landscape introductions. A statewide survey of native dogwood stands was first conducted in 1991, with a follow-up in several counties the following year.

Anthracnose is caused by a group of fungal pathogens, primarily *Discula destructiva*. It affects a number of trees and shrubs, but dogwoods, especially those in shady, wooded environments, seem to be the hardest hit. Early signs of the disease are spots or irregular dead areas on leaves or twigs. Trees already weakened by other environmental stresses may eventually succumb to heavy foliage loss, cankering, and branch die-back. Anthracnose is common in dogwoods from Connecticut to Georgia, reaching as far west as Ohio, and also occurs in dogwoods in the Pacific Northwest. Some species, such as *Cornus kousa*, have shown resistance to anthracnose, but even those once considered immune have succumbed to the disease under severe environmental conditions.

Despite the DNR's order to stop sales, K mart, Lowe's, and Wal-Mart continued to sell dogwoods. K mart has now been fined \$96,000, Lowe's \$18,000, and Wal-Mart \$17,000 for non-compliance. The DNR has also filed complaints with Indiana's Natural Resources Commission asking that nursery dealer licenses for 32 K marts be revoked.



## LET'S GROW TOGETHER

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- ◆ Free admission to participating botanical gardens and arboreta throughout the U.S.
- ◆ And much more!

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It's easy to give an AHS membership—simply call our Membership Department toll-free at (800) 777-7931.



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—Kathleen Fisher, Editor

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## "TUBED" TREES TALLER, HEALTHIER

A recent study at the Alabama Agricultural Experiment Station showed that plastic tree shelters are a cost-effective method for protecting new street tree plantings. The shelters allow planners to use smaller seedlings and lower the high establishment costs involved in mass plantings.

These shelters are stake-supported tubes three to five inches in diameter and two to four feet tall. They are translucent and open-topped to admit light and rain and let the tree grow.

The study compared 11 common shade tree species with and without tree shelters. Seedlings in the shelters had a survival rate of over 80 percent, compared to 55 percent for unsheltered trees, and first-year growth increased almost fivefold. They were most effective on sawtooth oaks and least effective on Florida maples. But although the sheltered seedlings were taller, reduction of light and wind effects resulted in a slightly smaller base diameter—0.8 inches, compared to 0.9 inches.

One source is Treessentials Company. The shelters are \$3 to \$5 each depending on size and volume ordered. For more information, call (800) 248-8239.

## INTERN DIRECTORY AVAILABLE

The 1995 Internship Directory, published by the American Association of Botanical Gardens and Arboreta, is now available. It lists 25 pages of internships offered by public gardens in 32 states, the District of Columbia, Canada, and Scotland. To order the directory, send \$5 to AABGA Internship Directory, 786 Church Road, Wayne, PA 19087.

## CLINTON MEMO CALLED "NO MANDATE"

Last April, the White House issued a memorandum recommending, among other "environmentally and economically beneficial practices," greater use of native plants on federal property. The two-page document caused consternation in the nursery industry over what some see as a "mandate" to plant only natives. This fall the American Association of Nurserymen (AAN), concerned that the broad language could be in-

terpreted to outlaw exotic plants, released a four-page response to the administration.

The White House memorandum also recommends construction practices that minimize adverse effects on natural habitats, use of composting and integrated pest management, and reducing water use with mulch, efficient irrigation, and recycling. It encourages federal agencies to develop demonstrations of these practices, and the Department of Agriculture to conduct research on propagation and use of natives.

"There is no mandate, period," says Bonnie Harper-Lore, a landscape architect with the Federal Highway Administration in Minneapolis, who chairs a task force that will draft guidelines for implementing the recommendations. "This is not an executive order, but gives support for something that a lot of people were already doing." For example, she says, there are highway department personnel who would like to use some of these practices, but who can't persuade their supervisors to change current policies. The recommendations also underscore the importance of landscaping in general, she adds. "And working as a landscape architect, I know that the landscape is usually the first thing that gets chopped off the budget."

The AAN argues that a native is not always the "right plant for the right place." While natives would be the obvious choice for a wetland restoration, landscapes in cities and suburbs have become too disturbed to be considered natural, wrote Robert Dolibois, AAN executive vice president, and non-natives may be better adapted to pollutants and other existing stresses.

"Plants which evolved in other ecosystems may be virtually pest-free in a different region. At the same time, natives may be plagued by pests—especially when used in stressful environments or in near-monocultures," he added.

Harper-Lore says that during a subsequent meeting with Dolibois, she noted that the recommendations suggest these steps be taken "to the extent practicable."

She adds that she expects the task force to encourage the development of commercial sources for native plants and the involvement of private nurseries in setting up demonstration sites. She agrees that the language should stress good site analysis. "I worked as a landscape designer for 10 years, and I know that natives are not appropriate for every site."



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