1995 Seed Catalog Enclosed!
Plus
Survey Responses
Mail-order Tips
American Horticulturist

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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! Temperate folks must temporarily shift their 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. Thrown-away pots, peat moss (your article was excellent), inorganic fertilizers, packaging, and the impact of millions 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 dogood 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...
that many gardeners would want us to be. At this year's Cullasaja 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.

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,

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.

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 redesign 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
Happy Hunting

How 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 company 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

MAIL-ORDER EXPLORER

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.

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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 dasyliurns 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 on the roof and buried it.

Company policies for replacement or refund also vary greatly. Woodlanders guarantees 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, 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 repeating 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.

Heronswood’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
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 weed for decades, the plant is plagued by reduced to a tenuous existence in prairie hay Annual mowing of hay meadows re-virgin prairie habitat by the agricultural of plants that flower produce a seed pod tide that swept the Midwest in the wake of and that seedling establishment in the wild victim to the plow. Deprived of most of its virgin prairie habitat by the agricultural 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 rail-road rights-of-way and pioneer cemeteries. About 130 populations are known, pri-marly west of the Mississippi River in western Missouri and northeastern Kansas. Small natural populations exist in Iowa and Illinois, but A. meadii is considered ex- tant 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 con-sists of closely related plants that are inca-pable 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 pro-fessor 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 re-moves 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 re-search 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 pro-gram, Bowles warns that many generations of propagation in controlled garden envi-ronments 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 Missis-sippi. In 1994, using seed from the popula-tion at Morton and juvenile plants grown from seed collected in Kansas and Mis-souri, Bowles and his associates conducted trial restorations of Mead's milkweed at four locations in Illinois and Indiana. 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 collect-ed in Missouri seemed slightly more re-silient than those from Kansas. Plants grown in drier environments seemed to do better than those in mesic areas, possibly be-cause of reduced competition from grasses. Based on the field tests, preliminary rec-ommendations 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 loca-tions are being withheld to prevent the van-dalism that occurred in Shawnee National Forest. Until the species can be reintro-duced 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
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?

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?

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?

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: 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?

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?

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 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?

A: Red-osier or redtwig 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 'Rosa'. 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 fertilizing 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

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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.

Following an exclusive tour of a private Sea Island residence and beautifully landscaped gardens is the rare opportunity to explore the ruins of St. Simons Island's historical Cannon's Point Plantation. Then you will discover the beauty of antebellum Retreat Plantation, site of one of America's first arboreums. Please join us. Call 800-SEA-ISLAND for reservations and information.
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. E. 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 derivative 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

For more information on herbal medicine or the work of the American Botanical Council, write to P.O. Box 201660, Austin, TX 78720, or call (512) 331-8868.
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.

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 dropping 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. erythrostachys**. 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.


5. **A. majus 'Tetraploid Mix'**. Common snapdragon cultivar. Height: 24-3 feet. Narrow, dark green leaves on erect stems and showy, almost orchid-like flowers in a variety of colors. Blooms from midsummer to frost. For culture, see 'Ruffled Super Tetra', above.


7. **Asclepias curassavica**. Bloodflower. Height: to 31/2 feet. A tropical milkweed. Shrubby with narrow opposing leaves, it bears orange-red flowers with yellow centers in late summer and fall.


10. **Celosia argentea 'Forest Fire'**. Cockscomb cultivar. Height: 24-30 inches. Feathery, erect plumes are bright scarlet over dark bronze foliage. 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. **Cnidoscolus benedictus**. Blessed thistle variety. Height: 2-3 feet. Herb with Mediterranean and Middle East origins. Species bears yellow thistle-like 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**.


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

PS. 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.


25. Datura inoxia. 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. campanulata. Downy thorn-apple, angel’s trumpet. Height: 3-5 feet. A shrubby, spreading plant with coarse, dark-green leaves. White, downward hanging, double flowers bloom in the evening, giving off an intense fragrance. Caution: All parts of plant are poisonous. For culture, see D. inoxia.

27. D. meteloides. Angel’s trumpet. Seeds of D. metel and subspecies of D. inoxia 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. inoxia.


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 globe 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.


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.


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


47. Miresbis 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. Each 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. Shoofly 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 medicinal.

50. Nicotiana sylvestris. 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. sylvestris '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 1¾ 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.


54. Popaver rhoeas. Corn poppy, Shirley poppy. Height: 2 feet. Cup-shaped flowers have pink, 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.


59. P. 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. P. sp. Mixed poppy species. Pink, red, white, and orange blooms.

61. Pelargonium alchimeoide. Geranium species. Height: 1½ feet. A slender, erect plant with pubescent, deeply-lobed, and serrated leaves wized with red. Flowers are white with rose-colored veins and bloom in summer. Prefers shade. Perennial in their tropical habitats, pelargoniums are treated as annuals in much of North America. They can be brought indoors and overwintered. Sow 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 waxy to maroon flowers all summer. Low-spreading plant that is short-lived and produces lots of seeds. Germinate indoors in early spring or sow directly outdoors.


64. P. xhortorum '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.


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


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.


73. *Salvia clevelandii*. 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. *Saxifraga umbrosa*. Creeping saxifrage. Height: 6 inches. A sprawling, densely branching plant with opposing, nearly oval leaves and three-quarter-inch, daisy-like flowers. These have yellow rays and purple centers. Thinned to about 6 inches apart. Seedlings don’t like to be transplanted.


76. *Senecio cineraria*. Dusty-miller. Height: 2-3 feet. The yellow or cream-colored 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.


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.


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.


87. *Xeranthemum annuum*. Immortelle. Height: 2-3 feet. Fuzzy, grayish stems and leaves. Daisylike flowers are up to 1/2 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.


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


106. *Aquilegia alpina*. Alpine columbine. Height: 1-2 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: 3-1/2 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.


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.


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


116. *Anemone dioica*. Goatsbeard. Height: 4-7 feet. An erect, shrubby perennial with many branching stems. Feathered, 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.


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. Sow or sow seeds should be scarified. Zone 4-9.

119. *Baptisia tinctoria*. 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. Sow or sow seeds should be scarified. Zone 4-9.


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.


**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.

**AMERICAN HORTICULTURIST**
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.


128. Delphinium sp. Larkspur. Donor unsure of species. Height: 4-6 feet. Blue, red, pink, white, violet, or yellow flowers bloom profusely from early to mid-summer 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: 1-1.2 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.


132. Digitalis lutea. Straw foxglove. Height: 2-3 feet. Abundant racemes of small, light yellow to white tubular flowers. Foxgloves prefer sunny, well-drained 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 8-10.


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


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 are double-sided, glossy leaves form an attractive collar around the steel-blue flower heads. Cold treat. Zone 4-8.


143. E. yuccifolium. Rattlesnake master. Height: 2-4 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. Mistflower, 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 sunny sites, especially beside pools or streams. Can be invasive. Cold treat in moist medium. Zone 5-10.


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 mixes for 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 soilless 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.
Prefered 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.


147. *Filipendula vulgaris* (also called *F. hexapetala*). Meadowsweet, dropwort. Height: 1-2 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.


155. *Hemerocallis* cultivars. Daylilies. Height: 1 1/2-3 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.


158. *H. moscheutos*. Common rose mallow. Height: 3-4 feet. Impressively 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.

159. *H. moscheutos*. Common rose mallow. Height: 3-4 feet. Hot-pink flowers are up to 7 inches in diameter. Multi-stemmed form and large leaves give the plant a shrubby habit. Prefer 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.


162. *H. sieboldi*. Seersucker plantain lily. Height: 2-2'/2 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: 1'/2-2 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. tectorum*. 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* 'Auro-maculata'. Height: 2-2'/2 feet. Has yellowish-white foliage that later turns green. Purple flowers. For culture, see 'Frances Williams'. Zone 3-9.

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


173. *Leucanthemum vulgare* (formerly *Chrysanthemum leucanthemum*). Oxeye daisy. Height: 2-3 feet. A large daisy bloom up to 7 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: 2'/2 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 divided, which is unusual for a chrysanthemum. Pinch plants to encourage a fuller shape. Sow in warm soil. Zone 4-9.


177. *L. spicata*. Blazing-star species. Height: 2-5 feet. Two-foot spikes of five to 14 rosy purple flowers 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: 1'/2 feet. Similar to the species but with flowers in various hues of purple.
Lilium formosanum. Lily species. Height: 5-7 feet. Very abundant dark green leaves up to 8 inches long. Trumpet-shaped flowers are 3-8 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.


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.

Macleayia cordata. Plum 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 large, showy, greenish-white flowers, with slender, conical spicules. Spreads aggressively by runners. Seeds are collected from AHS's River Farm headquarters. Zone 3-8.


Mecanopsis ccbambica. 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 viability decreases with age. Can be started indoors or sown outdoors after danger of frost has passed. Zone 6-9.


Onopordum acanthium. Scotch thistle. Height: 3-9 feet. Biennial or triennial that bears rose-mauve thistle-like 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.


P. x 'Glorys Daisy'. Black-eyed Susan cultivar. Height: 2-3 feet. Gold, yellow, brown, or white flowers bloom in midsummer. Single flowers are 3-6 inches wide and have center bands of yellow, brown, 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.


Penstemon. Height: 1-3 feet. A short, erect, sub-shrub with silver-green stems 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 3-9.

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 spikes. Flowers of the species are lilac to bluish-lavender, while those of the cultivar are white. For culture, see P. eatonii. Zone 3-9.


Plectranthus 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.


Pulicaria. 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.

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


R. x 'Gloriosa Daisy'. Black-eyed Susan cultivar. Height: 2-3 feet. Gold, yellow, brown, or white flowers bloom in midsummer. Single flowers are 3-6 inches wide and have center bands of yellow, brown, 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.


Sagittaria latifolia. Wapato, broad-leaved arrowhead. Height: 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.

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. Seeds of 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.

S. nemorosa (also called S. x superba). Species not known in cultivation in the USA but various cultivars are clustered under the hybrid aubrieta. Height: 3 feet. Has rough- ovear, green leaves and violet-blue flowers clustered around a terminal spike. Zone 3-9.

207. Schizachyrium scoparium. Little bluestem grass. Height: 2-5 feet. A clumping warm-season grass with blue-green foliage and long square stems rising from a woody rootstock. Has very hairy, fine leaves and feathery yellow pinnate bracts that stem from leaf axils. Blooms attract butterflies. Prefers part shade. Zone 5-6.


209. Sidalcea malviflora. Checker bloom or prairie mallow. Height: 2-4 feet. Silky pink flowers open off terminal raceme surmounting round, glossy green basal leaves. Bloom 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.


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 6-12 inch racemes appear in spring. Likes some shade in warmer climates. Soak seeds overnight or scatter them with sandpaper before sowing. Zone 3-9.


221. V. chamaemelum. Purple mullen. 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.


228. Yucca filamentosa. Adam's needle. Donor of cultivars may be 'Golden Sword'. Height: 8 feet. Inflorescence rises above basal rosette of spiny leaves in 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. Drystore seeds for six months before germinating. Takes approximately 5 years to bloom from seed. Zone 5-10.

229. General Purpose Mix. A 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 (Rudbeckia hirta), dwarf evening primrose (Oenothera fruticosa), corn poppy (Papaver rhoes), penstemon (Penstemon strictus), California bluebell (Phacelia campanularia), common yarrow (Achillea millefolium), ironweed species. Zone 4-8.

230. Knee-Hi Mixture. A low-growing mix of annuals is suitable for all hardiness zones in the lower 48 states. Included are baby's-breath, wallflower, sweet alyssum (Lobularia maritima), sweet William catchfly (Silene amenta), sweet William (Dianthus barbatus), dwarf evening primrose (Oenothera fruticosa), corn poppy (Papaver rhoes), penstemon (Penstemon strictus), California bluebell (Phacelia campanularia), common yarrow (Achillea millefolium), ironweed species. Zone 4-8.

231. Low Water Mix. A 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, wallflower, sweet alyssum (Lobularia maritima), sweet William catchfly (Silene amenta), sweet William (Dianthus barbatus), dwarf evening primrose (Oenothera fruticosa), corn poppy (Papaver rhoes), penstemon (Penstemon strictus), California bluebell (Phacelia campanularia), common yarrow (Achillea millefolium), ironweed species. Zone 4-8.

SAVE THIS CATALOG!
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 aster (Aster spp.), bachelor's button (Centaurea cyanus), lanced-leaved coreopsis (Coreopsis platyglossa), cypress vine (Antigonon leptopus), butterfly pea (Clitoria ternatea), morning glory species (Ipomoea spp.), 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 (Coreopsis platyglossa), cypress vine (Antigonon leptopus), butterfly pea (Clitoria ternatea), morning glory species (Ipomoea spp.), and others.

234. Southwest Mix. A mix of wildflowers suitable for Arizona, southern California, southern Nevada, and New Mexico. Included are Texas a spring aster (Aster subsp. tankanum), lanced-leaved coreopsis (Coreopsis platyglossa), cypress vine (Antigonon leptopus), butterfly pea (Clitoria ternatea), morning glory species (Ipomoea spp.), and others.


241. C. recta. Clematis. Height: 2-3 feet. A nonwintering 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 small, downy stems and gray-green leaves. Bears white flowers in late summer and produces an edible yellow fruit in early fall. Resultant seed heads have decorative feathery appendages. For culture, see C. integrifolia. Zone 5-8.


244. Dioscorea batatas. Chinese yam, common yam. 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. Also produces a large, tuberous root. Requires rich soil and some support. 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.

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.


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. 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 late summer. Those offered are pink and white. Very adaptable. Scarcification or an overnight warm water soak may improve germination. Zone 3-9.

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


**VINES**


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. Tops need 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.

**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

Height: 2-4 feet. A delicate annual with small, waxy leaves. Prefers moist, cool conditions. 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. Seeds overnight will speed germination.

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**VINES**


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 an-
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.


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 nicked and seeds cold treated. Zone 3-7.


259. Callicarpa americana. American beauty-berry. Height: 3-8 feet. A loosely branched, open shrub with coarse, light green fuzzy foliage and a cupular mass 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, beauty berry may still be worth growing but will die back to the ground in winter.

260. C. americana var. lactea. White American beauty-berry. 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 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.


263. Cassia flava. Ringworm cassia. Height: 8 feet. A large-leaved shrub native to the tropics. Bears large yellow flowers on spike-like 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 hot water soaked and scarified before sowing indoors. Transplant outdoors after danger of frost has passed. Zone 8.


265. Cladrastis kentukea. American yellowwood. Height: 30-50 feet. Deciduous tree indigenous to southeastern and south central U.S. Has yellow, scented, 4-petaled flowers that cover the trunk with pound bright-green leaves that turn yellow to orange in fall. Fragrant white flowers in pendulous panicles bloom in June. Sow seeds shielded from fresh seed pods, or notch seed coats of dry seeds. Zone 3-8.

266. Cornus mas. Cornel 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 remain glossy all year. Prefers hot, moist, well-drained, loamy soil. Germination can be difficult and may take several months. Try alternating warm and cold treatments before sowing outdoors. Zone 4-8.


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 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.


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 midsummer to frost. Performs as herbaceous perennial in 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 blossoms from July through September on new growth. Prefers heat and dry, full sun. Prefers heat and dry. Self-sown seedlings can be invasive. Seeds are easy to germinate. Zone 5-8.

274. Kalina latifolia. Mountain laurel. Height: 7-15 feet. Native to 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.


277. Magnolia macrophylla var. ashei. Ashe magnolia. Height: 25 feet. Good small specimen tree, similar to species but with smaller leaves and shrunken habit. Leaves are bright green above and silvery beneath. Precocious bloomer that has been known to bloom when leaves are only 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 soilless potting mix that drains well to avoid seed rot. Zone 6–9.


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.


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 moist sand or sand and peat moss. Zone 4–8.


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


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.


294. Stryx japonica. 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 with moist, slightly 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 planted site with moist, slightly acid soil. Difficult to germinate. Alternate cold and warm treatments, or sow outdoors in fall. Zone 5–8.


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, 2–3-inch-wide clusters. Red fruit ripens in late summer and 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-stamed 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.


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: 3 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.


308. *Eruca vesicaria* subsp. *sativa*. Roquette, rucola. 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 midsummer, 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 the species, but with bronze-tinged foliage.

311. *P. 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. Sometimes strained 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.


315. *Levensicum 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.


318. *Monarda didyma*. American bergamot. Height: to 2 feet. Annual native to Appalachians and central U.S. Native, narrow leaved and purple flowers are less ornamental, 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.


323. *P. crupsum 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. Sow seeds in lukewarm water for 24 hours before germinating. Zone 3-9.


VEGETABLES

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, leaves 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.


330. A. sativum var. ophiocordovon. Serpent garlic, Korean garlic. Height: 2 feet. Do not provide bulbs from topssets. 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 sweet-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. Both roots and greens are tender and delicious. 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. Sow outdoors in late winter.

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 1 1/8 inches apart.

335. B. juncea. Red Indian 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. Sow outdoors in late winter or late summer. Sow outdoors in late winter or late summer.

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. Sow outdoors in late winter or late fall. 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, sow 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 sowings again in late summer for fall crop.


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

345. C. annuum 'Super Chili'. Chili pepper cultivar. Bears 2-3 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 give rise to the cultivar name. Matures in 100 days, so needs long growing season. Can be started indoors in 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.


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 55-60 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 12 feet. Disease resistant. Matures in 60 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 'Pointset'. 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'. Slicer 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.


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. Spreading vines produce orange-flushed 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-flavored, slightly flattened pie pumpkins that weigh 5–10 pounds. Dark-orange, ribbed pumpkin with a hard rind that keeps well through the winter. Plants are vigorous and productive. 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 2½ 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.


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. Datisca carota var. sativa 'Thumbelina'. Carrot cultivar. Yields sweet, round golfball-size roots. Ideal for window boxes and other containers. Maturity 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.


367. L. sativa 'Dapple Butterhead'. Head lettuce cultivar. Crisp, green leaves have bright red edges. Resistant to tip burn and bottom rot. Maturity 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. Plant 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. Lycopersicum xesciflorum '862 Glamour'. Tomato cultivar. A dependable old cooking variety. Vine is often grown on the ground without support. Matures in 74 days.

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

374. L. xesciflorum '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. xesciflorum '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 cocineus. 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.
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. macrorcapon. 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. sativum 'Dwarf Green Sugar Pea'. Pea cultivar. 2- to 3-inch pods on 2-foot vines. Pods should be picked before they swell. Matures in 65 days. Peas do best in a cool, moist weather. Staggered plantings at 2-week intervals from last frost through mid-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 transplanted up with 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 outdoors after frost or indoors in 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 rightly 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.


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 constant: moist. Seeds should be sown outdoors and staggered for continuous harvest.

387. R. sativus 'Fluo'. Fnio 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 1-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 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 in late winter through mid-spring and then again beginning in late summer.


391. S. melongena var. esculentum '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 'Bloomdale 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 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.

397. Brassica oleracea. Mixed cabbage varieties. A mix of ten cabbage varieties, including early, late, round, flat, red, and green types. Requires 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.

398. Jung's Salad Blend. A combination of 'Prizehead' and 'Plato II' lettuces, kale, endive, radicchio, 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 cooler temperatures. They are often sown in late summer for fall crops. In the south they can be grown as winter crops. Do not cover seeds.

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**VEGETABLE SEED MIXES**

397. Brassica oleracea. Mixed cabbage varieties. A mix of ten cabbage varieties, including early, late, round, flat, red, and green types. Requires 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.

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**GREENHOUSE**

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

400. Brachychitium borsfeldii. 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. Fish tail 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. Hepeastrum spp. Amaryllis varieties. Height: 2½-3 feet. Seeds are from two varieties crossed by donor. Tends to be bulbous and 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, daisy-like 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, rock-like 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 flowers emerge from 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 flowe. 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.
1995 SEED CATALOG DONORS

The American Horticultural Society Seed Exchange Program is made possible by the contributions of seed by our members, horticultural societies, and seed companies. This catalog represents an all-time record number of seeds! Our thanks to everyone who made this catalog possible:

INDIVIDUALS, NONPROFITS

Annie Adler, Clifton Park, New York
Kathryn Albert, Cornish, Maine

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.
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+ To increase your chances of getting your first-choice selections, please mail us your order form as soon as possible.

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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 xeyopiscum '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 annus '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 grow 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 umbellata); rocket larkspur (Delphinium ajacis); and others. Mixture should be direct sown in early spring or fall.

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☐ 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.
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
during which 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 see 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 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 possess knowledge that AHS members are allowed free admission—a membership asset! I suggest you have them put up a sign for volunteers and staff, perhaps for the public.

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).

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<tr>
<th>Service</th>
<th>very useful</th>
<th>not very useful</th>
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<td>On-line access to answers to my personal gardening questions.</td>
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<tr>
<td>On-line access to gardening tips (pests, pruning, etc.).</td>
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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.

GARDENING 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, urban, 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
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 her 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
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 430 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
Book code: ISP 140
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
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.

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
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
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
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 beauty of the great Islamic gardens are explored in regional chapters, each fully described and illustrated, using photographs, miniatures, engravings, and plans. 1987. 240 pages.

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 landscape, 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, revealing the important contributions of Italy and France, China and Japan, and 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

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Or call toll-free (800) 777-7931.
Prices in effect until February 28, 1995.
After expiration date, orders may be filled on a pending availability. Please allow four to six weeks for delivery. Prices are subject to change without notice.

January 1995 AHS Book Catalog
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 Gardner’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, discussing 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.

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 Vayette; 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 Passalong 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.

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, texture, and subtle seasonal changes. The flowering plants in the private garden of Sir John Thouon, 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 beechnes, 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.

1995 FLOWER SHOWS

- Mar. 1-5. Garden Club of New York City Flower Show. Civic Garden Center, New York City. Information: (212) 570-4611.

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

Northeast

South Central

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

Southwest

West Coast
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 reopening 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 destructa. 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, canker, 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, Kmart, Lowe’s, and Wal-Mart continued to sell dogwoods. Kmart 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.
CLASSIFIEDS

Classified Ad Rates: All classified advertising must be prepaid. $1.25 per word; minimum $25 per insertion. 10 percent discount for three consecutive ads using the same copy, provided each insertion meets the $25 minimum after discount. Copy and prepayment must be received on the 20th day of the month three months prior to publication date. Send orders to: AHS Advertising Department, 2300 South Ninth Street, Suite 501, Arlington, VA 22204-2320, or call (703) 892-0733.

THE AVANT GARDENER

FOR THE GARDENER WHO WANTS MORE FROM GARDENING! Subscribe to THE AVANT GARDENER, the liveliest, most useful of all gardening publications. Every month this unique news service brings you the newest, most practical information on new plants, products, techniques, with sources, feature articles, special issues. 27th year. Awarded AQUATIC SCULPTURES, LATTERS (Insectivorous) PLANTS, seeds, supplies, and books. Color brochure free. PETER PAULS NURSERIES, Canandaigua, NY 14424.

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GENESIS:(1-1-1) COMPOSTED POULTRY MANURE for indoor and outdoor gardening. Send $5 check or money order for 2-lb. starter bag to: GENESIS, 85 C Mill St., Suite 101, Roswell, GA 30075.

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QUALITY GROUND COVERS AND PERENNIALS. Aegopodium, European Ginger, Ivies, Lamiums, Hardy Cactus, Plumbago, Sweet Woodruff, Sedums, Vincas. Send for complete list. ILISON GARDENS, Inc., Dept. H, P.O. Box 277, Perry, OH 44081. FAX (216) 259-2378.

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IRRIGATION

DRIP IRRIGATION—Complete selection from 20 manufacturers, highest quality, low prices, technical support. Pond and tank liners. Free catalog. DRIPWORKS, (800) 522-3747.

NURSERY STOCK


PERENNIALS

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OVER 2,000 KINDS of choice and affordable plants. Outstanding ornamentals, American natives, perennials, rare conifers, pre-bonsai, wildlife plants, much more. Descriptive catalog, $3. FORESTFARM, 990 Tetherow Rd., William- ers, OR 97544-9599.

TILLANDSIAS (AIR PLANTS)—Easily grown without soil. Great plants for indoors, patios and craft-making. Send for free brochure. POL- LIWOG PRODUCTS, P.O. Box 21134, Dept-I, Castro Valley, CA 94546.


RARELY OFFERED SOUTHEASTERN NATIVES, woody, herbaceous, nursery grown. Many hardy northern. Also newly introduced exotics selected for Southern gardens. Send $2 for extensive mail-order list. WOODLANDERS, 1128 Colleton Ave., Aiken, SC 29801.

JOY CREEK NURSERY perennials and native plants. Catalog $2, refundable. JOY CREEK NURSERY, Bn 2, 20300 N.W. Watson Rd., Scappoose, OR 97056.


ROSES

200 PRACTICAL ROSES FOR HARD PLACES, Species, Old Garden, Rugosa, Canadian, Austin, Hardy Shrub, Climber, Rambler, Ground cover. Free 22-page catalog. Narrated color 30-min. video supplement: $3 postpaid. THE ROSERAIE AT BAYFIELDS, P.O. Box R(AH), Waldoboro, ME 04572.

HARDY ROSES, OWN ROOT ROSES. We propagate Canadian Explorer and Parkland Roses, Rugosa hybrids, OGR’s, David Austin English Roses and Miniatures, all on their own roots. Color catalog $2 (credited). No import permit required. HARDY ROSES FOR THE NORTH, Box 2045AH, Grand Forks, BC Canada V0H 1H0 Box 273AH, Danville, WA 98224. FAX (800) 442-3122.

38 JANUARY 1995
VIBURNUMS

VIBURNUMS DELIGHT THE CONNOISSEUR with flowers, berries, and handsome foliage. Their easy culture recommends them for every garden. Several dozen viburnums are listed in our lovely mail-order catalogue, $3. FAIR WEATHER GARDENS, Box 330-A, Green-

wo, NJ 08323. (609) 451-6261.

Our catalog tells you how to grow plants, not how to buy them. Complete descriptions and advice on over 1000 varieties of perennial, ornamental grasses, prairie wildflowers and vines. Send $1.00.

SEEDS

SEED SAVERS, HERB GROWERS, CRAFTERS. Imprinted seed packets, information, glassine envelopes, 4-mil zip-polybags. Free sample and IAR, SASE. V. L. PRICE HORTICULTURAL, 506 Grove Avenue, Catawissa, PA 17820-1000.

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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 Treesentials 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 interpreted 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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