NEWS EDITION

American Horticulturist

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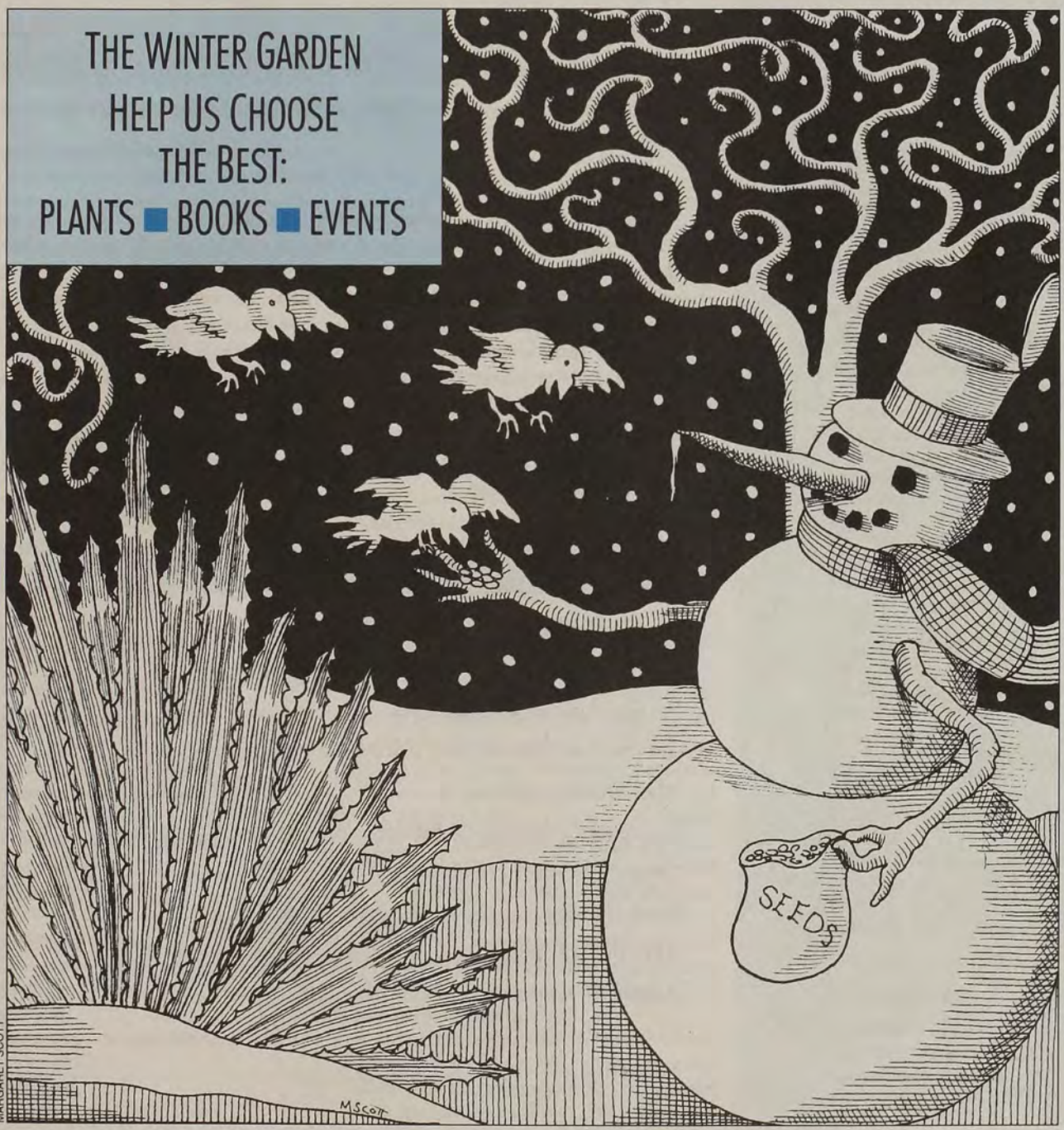
THE WINTER GARDEN
HELP US CHOOSE
THE BEST:
PLANTS ■ BOOKS ■ EVENTS



MARGARET SCOTT

American Horticulturist

Volume 74, Number 11 November 1995

ARTICLES

Winter Gardening

Nature in winter is like a great toy shop at night. The doors are locked, and only at the mysterious depths of the shop does some cold light burn.

—Donald Culross Peattie

The eloquent Peattie captured well the way most of us feel about our gardens in winter. But in fact, the doors are not locked. Winter is a wonderful time to re-evaluate the basic structure of our gardens and consider flaws in their designs. It gives us a chance to appreciate small wonders that we might miss in the hullabaloo of June: the intricate patterns of bark, the stark silhouette of a shrub, or understated flowers like those of witch hazels or winter aconites. We can intentionally heighten the magic by choosing plants that retain bright berries or seed heads, or that give birds shelter from brisk winds. Beginning on page 12, we offer some planting and landscape ideas, and some findings from a Maine evaluation of cold-hardiness.

DEPARTMENTS

MEMBERS' FORUM

Hostas Held Hostage

Your July issue dealing with animals in the garden has prompted us at the North Carolina Arboretum to take a further look at our "Plants of Promise" garden, where deer damage has been especially noticeable this summer. We enclose a preliminary listing of plants in your two categories, based on the resistant plant concept. We will continue our observations as the seasons progress.

The plants mentioned in the sidebar of your article are not repeated here, with the exception of four resistant hostas. Our hostas have been especially hard hit, but 'Blue Cadet', 'Elegans', and 'Sum and Substance' were not eaten, and 'Halcyon' lost buds only.

Marian Peacock, volunteer
Alison Arnold, garden manager
The North Carolina Arboretum
Asheville, North Carolina

PLANTS EATEN BY DEER

Asarum canadense (wild ginger)
Heuchera (all cultivars)
Phlox spp.
Sanguisorba tenuifolia (burnet)
Saponaria spp. (soapwort)
Tradescantia spp. (spiderwort)
Tricyrtis spp. (toad lily)
Viola cornuta (horned violet)

PLANTS NOT EATEN BY DEER

Ajuga spp. (bugleweed)
Astilbe spp.
Campanula spp. (bellflower)
Chrysogonum virginianum
Clematis paniculata
Clethra alnifolia (summersweet)
Deutzia gracilis
Epimedium spp.
Ferns
Itea virginica (sweetspire)
Lamium maculatum
Leucanthemum spp.
Lobelia spp.
Lonicera sempervirens (trumpet honeysuckle)
Magnolia spp.
Myosotis spp. (forget-me-not)
Pachysandra procumbens
Pelargonium spp. (scented geraniums)
Perovskia atriplicifolia (Russian sage)
Pulmonaria spp. (lungwort)
Rubus pentalobus (crinkle-leaf creeper)
Sagina spp. (pearlwort)
Salvia spp.
Solidago spp. (goldenrod)
Teucrium spp. (germander)
Tiarella spp.
Veronica spp. (speedwell)

Terror on the Terrace

I enjoyed "A Cavalcade of Critters" about animals in the garden in your July issue. Unfortunately, none of the articles gave me any insight into my particular problem.

About 10 years ago I built a brick terrace next to a house at the eastern end of Long Island, New York. The bricks are set in about 12 inches of sand; the sand in turn lies on top of several inches of gravel. And until this spring, the bricks lay quietly except for minor amounts of sand brought up by ants. Then my wife stepped on a patch of brick that gave way under her. She had "discovered" that a family of chipmunks had built a burrow under the terrace, finally undermining it.

We watched the parade of chipmunks in and out until the newborns were "of age," then decided it was time to expel the whole family. Easier said than done.

After some library and telephone research and based on expert advice, I tried a number of techniques to no avail. (I also learned that I had an unusual problem: Chipmunks are very shy of people and won't live next to a house. Hah!)

I did substantial digging around the area where the bricks gave way, but could not find the main burrow, only signs of tunnels.

I poured substantial amounts of liquid ammonia into the area and down any tunnels I found. This worked for a day or two.

I ran the water sprinkler on the whole terrace (about 24 feet by 10 feet) for several days. It was suggested that if I soaked their home they might go down the block

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where it was dry. It didn't work.

I thought of catching them in a Havahart trap and releasing them far away, but am afraid that a new family may take up residence. (I am reluctant to use rat traps to kill them, and in this instance as well, new chipmunks may come along.)

A local farm products store has—would you believe?— fox urine. I don't know if this will drive away the chipmunks, but the smell might drive us away.

Do you have any thoughts as to how to encourage a family of chipmunks to give up living in my brick-in-sand terrace and go somewhere else—say the woodpile 30 feet from the house? *Boris Rubinstein*
New York, New York

Whew! Do any of our members have any ideas that Boris Rubinstein hasn't tried, or any experience with fox urine?

More on Invasives

To paraphrase Tom Tadfor Little in his July letter, I was surprised and disappointed by his assumption that a gardener's perspective on the matter of invasive plants would be different from an ecologist's. The more I garden, the more I learn that the warnings of ecologists (in which group I am proud to include AHS) are right on target.

Mr. Little's belief that only municipalities and large estates need consider the consequences of their landscaping decisions is naive. As individual gardeners, each of us has only a small impact on the environment, but multiply that small impact by the total number of gardeners and the ultimate effect can be overwhelming.

As for AHS's editorial practices, I have never received the message that home gardening is irresponsible or even that some gardeners are. Instead, I feel that you've carried out your educational mission with considerable tact and understanding of our human fallacies. I would be greatly disappointed, and would cancel *my* subscription, if you changed your message. I expect scientifically based information from you, not gardening "happy speak," and I will use that information to make decisions that I hope benefit both my garden and the environment. I consider you a guide, not a bully.

Finally, I wonder whether Mr. Little has perhaps been planted in the wrong garden. To me, deserts are some of the most breathtaking places on earth. I concede that desert landscapes are not to everyone's taste, but Mr. Little should consider that where he sees only "brown desiccation," others find a dramatic and living beauty.

Cheryl Rucks
Hercules, California

Help Us Celebrate!

In 1997, the American Horticultural Society will be 75 years old. To mark this diamond anniversary, we are expanding our annual awards program to honor not only individuals who have contributed to the field of horticulture, but also the best plants and the best books for American gardeners. We want to kick off these new awards in a big way by recognizing the 75 best plants and the 75 best books of all time for American gardeners. And as a way of extending our celebration throughout the country in 1997, we plan to recognize the 75 best gardening events in America. We need your input!

We want these choices to represent all regions of our membership. We particularly want nominations from members in the West—half a continent and more away from our River Farm headquarters. You can vote as many times as you like in any category, using copies of the relevant forms reproduced here or by submitting your nominations on a blank piece of paper.

You can rhapsodize at length on any of these topics, but please have your responses on the plant and book surveys to us no later than March 1, 1996. Because the recognition of the 75 best garden events will involve contacting their sponsors, we need those responses no later than January 2, 1996.

To offer an incentive for this sort of decisive behavior, we will give a free copy of the *American Horticultural Society Encyclopedia of Gardening*—a $59.95 retail value—to the first 20 respondents. The encyclopedia was named book of the year for 1994 by the Garden Writers Association of America. Even if you already have a copy, it will make a wonderful holiday gift.

Mail responses to: 75th Anniversary, American Horticultural Society, 7931 East Boulevard Drive, Alexandria, VA 22308-1300. Thank you!

AMERICA'S 75 BEST GARDENING EVENTS

GREAT NEWS! You've just won an all-expense-paid trip for yourself and a companion to an exotic little spot halfway around the world that you've always dreamed of visiting. But when you see the dates of the trip your heart falls to your feet because that is the week of _____, a horticultural event that you can't possibly bear to miss.

What would an anniversary celebration be without special events? But instead of one big event that will unavoidably be at least half a continent away from many of our members, we thought we'd let you invite us to your house! Let us know the gardening event or events—flower show, lecture series, annual meeting—that you simply can't bear to miss, and we'll honor it as one of the 75 best horticultural events in America during 1997. Try to be objective—but if you truly believe that your own local flower show is an undiscovered gem that you would travel 200 miles to attend, tell us about it.

We will need to contact sponsors of all the events we honor, however, so if your favorite event is really in the "undiscovered" category, please give us the name and address or phone number of someone to contact for more information.

Event _____

Location _____

Approximate Date _____

Contact Name _____

Contact Address _____

_____

Contact Phone Number (____) _____

Explain why you find this event outstanding _____

_____

_____

_____

_____

_____

Please have these responses to us no later than January 2, 1996.

Your Name _____

AHS Member Number (see address label) _____

Address _____

City/State/Zip _____

Daytime Phone Number (____) _____

AMERICA'S 75 BEST PLANTS

YOU'VE JUST MOVED INTO A NEW HOME. It's spring. The landscape is a blank slate and you have unlimited space. The first thing you plant is a _____.

YOU ARE GOING ON A VACATION TRIP to a state where you would love to live if you could. You time your journey to coincide with the blooming of the _____.

LAST SUMMER WAS THE PITS. Drought wiped out the hydrangeas, Japanese beetles stripped the roses, and the monarda was solid gray with powdery mildew. Still, you can look back with pleasure to relaxing in the shade of the great old _____ and enjoying the fragrance of the new _____ that never seemed to need watering.

If you've ever felt like composing a paean to your favorite plant, this is your big chance. To celebrate our diamond anniversary in 1997, the American Horticultural Society wants to honor the plants that have inspired us over the years—75 favorite plants chosen by our members.

Here are the rules. You can name as many plants as you like in any category. You can choose trees, shrubs, annuals, perennials, herbs, bulbs, vines, vegetables. But the plants to be honored must be tough. No hothouse plants: Any plant you nominate must be capable of growing outdoors year-round where you live. And please be specific: We must have either a species or cultivar, not just "hostas."

For each plant you name, tell us why you like the plant, either by filling out the form below or writing your own description. If you wish, share an anecdote about the plant—where you got it, why you chose it, your most pleasant memory about it. The best essays will appear in our magazine during our 75th year.

The final selections will be made by a panel of horticultural experts from around the country, based on both popularity—plants mentioned by the most members—and the strongest, most persuasive arguments. In this way, plants that are excellent but still underused will have a chance of winning. The plants must be readily available, however, either from local nurseries or through mail-order. No fair torturing your fellow gardeners by heaping praise on that vine you grew from seed collected on your last excursion to Macquarie.

Genus _____

Species _____

Cultivar _____

Common name _____

Attributes (check all that apply):

❑ Foliage: Color, lushness, fall color _____

_____

❑ Shape, habit _____

_____

❑ Flowers: Shape, color, abundance, time of bloom, long season, long-lasting _____

_____

❑ Fragrance _____

_____

❑ Edible _____

_____

❑ Drought tolerant _____

_____

❑ Heat tolerant _____

_____

❑ Cold tolerant _____

_____

❑ Shade tolerant _____

_____

❑ Disease resistant _____

_____

❑ Insect resistant _____

_____

❑ Fast growing _____

_____

❑ Winter interest: Bark, silhouette, persistent fruit _____

_____

Other Comments: _____

_____

_____

_____

_____

_____

Please respond no later than March 1, 1996.

Your Name _____

AHS Member Number (see address label) _____

Address _____

City/State/Zip _____

Daytime Phone Number (____) _____

AMERICA'S 75 BEST GARDENING BOOKS

YOU'VE LOST A MAJOR SPECIMEN PLANT from your garden unexpectedly and want to fill the hole it has left. For help in selecting its replacement, you turn to your bookshelf and take down _____.

THAT BEAUTIFUL VINE that covered the trellis near your patio in 1994 was a total bust this season. To help you figure out what went wrong, you thumb through your trusty volume called _____.

THANKSGIVING WEEKEND IS COLD AND RAINY, but company is gone and the refrigerator is full of food, so you have some time to put your feet up and think about next year's garden. For a mental jump start, you open _____ for yet another good read.

As much as we hope that you find *American Horticulturist* magazine and News Edition informative and helpful in your gardening, we firmly believe that magazines can't do it all. Every garden is very personal in its style, potential, and liabilities. That's why the American Horticultural Society offers its members a discounted book service: so that you can choose the references most appropriate to your climate and needs, and the authors you find most entertaining and inspiring.

For our 75th anniversary year, we want to honor the best gardening books of all time. As with our plant awards, you can nominate as many books as you want in any category. The following check list is intended to help jog your thought processes. You can duplicate our list, fill out the space at the bottom of the page, or write your own essay.

Our only hard-and-fast rule is that the book must be helpful to American gardeners. It will qualify if it is somewhat outdated now but has had a lasting impact on design or plant science. A book by a non-American writer may qualify if the author resides in this country or if it focuses primarily on design rather than plant choices.

REFERENCE Category:

- ❑ Encyclopedia—general, herbaceous, woody, regional, tropical
- ❑ Landscaping guide
- ❑ Gardening primer
- ❑ Pests and diseases
- ❑ Other _____

Attributes:

- ❑ Wide ranging
- ❑ In-depth coverage of topic
- ❑ Fills a unique niche
- ❑ Easy to use
- ❑ Accurate
- ❑ Well illustrated
- ❑ Other _____

NON-REFERENCE Category:

- ❑ Humor
- ❑ Essays
- ❑ Philosophical
- ❑ Garden descriptions
- ❑ Garden travel
- ❑ Garden history
- ❑ Plant descriptions
- ❑ Other _____

Attributes:

- ❑ Clearly written
- ❑ Entertaining
- ❑ Inspiring
- ❑ Other _____
- ❑ Well illustrated
- ❑ Informative

Comments: _____

_____

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_____

Please return your responses no later than March 1, 1996.

Your Name _____

AHS Member Number (see address label) _____

Address _____

City/State/Zip _____

Daytime Phone Number (____) _____

MAIL-ORDER EXPLORER

Succulent Selection

To the uninitiated, the Mesa Garden seed catalog seems like a confusing list of unfamiliar botanical names accompanied by terse, half-line descriptions. To cactus and succulent enthusiasts, however, the catalog is a treasure trove of more than 7,000 selections from around the world—many not available elsewhere and some rare or endangered species that nursery proprietor Steven Brack has a permit to propagate and sell.

COURTESY OF JAROSLAV ZAHORA

Brack has—with quiet efficiency, meticulous growing techniques, and encyclopedic knowledge—turned his Belen, New Mexico, nursery into a world-renowned source for cactus and succulent seeds and plants. Despite a loyal following among serious collectors in North America, Brack estimates that up to 90 percent of his seed purchasers live overseas—in England, Germany, Italy, South Africa, Australia, and a host of other countries. "There is much more interest and a higher proportion of people who grow from seed outside the U.S. Americans sometimes seem to need instant gratification, whereas with some of these plants it takes quite a commitment to get a good specimen," says Brack.

Shane Shipperley, an industrial chemist from Queensland, Australia, who describes himself as "a rabid cactus collector with a collection of approximately a few thousand plants," has purchased from Mesa Garden for the last five years. "Despite the difficulties and costs associated with importing cactus seed into Australia, this yearly ritual is well worthwhile. The range of seeds available is equal to no one else's that I have seen, and his yearly seed catalog gives me many hours of reading and anguish as I try to reduce my order to a level that will not bankrupt me," says Shipperley.

A little closer to home, Aaron Hicks, a graduate student in geochemistry at New Mexico Institute of Mining and Technology, says, "I have rarely met anyone so dedicated to a cause as Mr. Brack. The species he cultures are excellent—he has a *Welwitschia mirabilis* under culture, a number of very large agaves, and large specimens of many other genera. His collection of conophytums is a sight to behold when in flower."

Conophytums are nearly stemless succulent perennials native to South Africa and Namibia, and ranging from less than a half-inch to three inches tall and wide. Part of Mesembryanthemaceae, or the mesemb family, these stubby, clump-forming plants have a central crease or notch from which solitary, pedicel-borne, daisylike flowers emerge. Brack and his associate Steve Hammer, who goes on frequent seed-collecting trips for Mesa Garden, are esteemed for their knowledge of these tiny perennials. Brack offers seeds from around 500 selections and estimates he has around 10,000 stock plants that come into bloom from late August to early November. "It's a complicated genus, which is more interesting than a real small one, and there's real geographic variation—you can go from one mountain range to another and see the difference," he says. The plants are popular with collectors because they don't take up a lot of space. "You can keep a plant for 50 years in a three-inch pot."

Brack, who grew up on a farm in Wisconsin, recalls: "It was reading books that really got me hooked." His reading led him to the catalogs of some specialty nurseries and his first seed orders. "I saw there were ways to obtain many varieties from seed, and the cost was fairly modest. I probably started about 500 kinds the first year, and before you knew it I had oodles."

What fascinated him about his early contact with the plants was that the descriptions included information about the habitat and ecology of various species. "I found it incredible that I could know where the plant came from. I could look up on a map and see where it was found and what the climate is like there." This fascination with the relationship between habitat and species variation is one of the reasons Mesa Garden offerings have special appeal to serious collectors. The seeds and plants Brack sells come with detailed collection information, including individual reference numbers that he uses to track exactly when and where the seeds were collected.

Offering seeds from type-location plants would be worthless if cross-pollination were allowed to occur, so Brack hand pollinates all his specimens, using individual paintbrushes to avoid contamination. "We try to offer these geographical populations, and if you have open pollination then that's lost. In the greenhouses we try not to have anything related as a neighbor." Each greenhouse is also tightly screened to keep out pests and potential cross-pollinators. Says Hicks, "His care to exclude insects from his growing room is beyond reproach."

Ralph Peters, a mechanical engineer who lives in Albuquerque, has known Brack since 1981. "The quality and reliability of his seeds are outstanding. I have purchased seed and received seed from other sources and have occasionally had seed lots where there were more than a few 'odd' plants. This has not been a problem with seed purchased from Mesa Garden," says Peters.

After moving to New Mexico in the early 1970s, Brack worked for a cactus and succulent nursery for a couple of years before starting Mesa Garden in 1975. He offered only plants for the first few years, putting out his first seed list in 1980. To keep up with seed harvesting, seed cleaning, transplanting, and packaging, Brack now needs about seven employees. This is in addition

to wife Linda, who helps out on all fronts, and Hammer. The nursery has little downtime—Brack mails seeds all year long and ships bare-root plants most of the year.

Peter Prager, who works in the Department of Information and Technology at California State University at Northridge, says the nursery has "non-stop visitors. It has become a sort of mecca for people to go and see so many cactuses and succulents under one roof." Even customers who live far from New Mexico try to make it a point to visit the nursery once a year or more. Frank DiStefano, a chemist with an industrial firm in Macungie, Pennsylvania, says he likes to see what's new, take hundreds of slides, and "just converse about growing the plants."

In a profession where the rustling of rare and endangered species was once a common way for unscrupulous nurserymen to make a quick buck, Brack also receives commendations from customers and associates for his interest in conservation. Robert Sivinski, a botanist with the New Mexico Forestry Division, says Brack has contracted with the U.S. Fish and Wildlife Service to grow specimens of Knowlton's cactus *(Pediocactus knowltonii)* from seed in order to establish new populations of that endangered species. Sivinski says Brack's special knowledge and experience with cactuses "made it natural to go to him to try and ensure as much as possible the success of the operation."

Brack believes that making endangered and threatened species available through reputable dealers is the best way to prevent collection in the wild. "If people desire to acquire and grow these plants they will do it, so you might as well make them available in a legitimate way," he says.

Brack is one of those rare people who has successfully merged his personal interests and career. "I can't imagine doing anything else," he says. "I'm just a farm kid, but my interest in cactuses and succulents has given me contact with people from all over the world. Hardly a week goes by that someone doesn't come to Belen from the far corners of the globe." *—David J. Ellis*
Assistant Editor

To receive a Mesa Garden catalog, send two first-class stamps to P.O. Box 72, Belen, NM 87002. For information about cactus and succulent growing, join the Cacti and Succulent Forum on the Internet. Send this message: subscribe cacti_etc [Your Name] to listserv@opus.hpl.hp.com. *A Cactus and Succulent Plant Mall is available on the World Wide Web at* http://www.demon.co.uk/mace/cacmall.html.

GARDENERS' INFORMATION SERVICE

Q: ***Last fall I gave my neighbor some divisions of my monkshood*** **(Aconitum** ***spp.); both our plantings did well until this summer when most stems of my neighbor's plants showed severe wilting and poor flowering. In contrast, my plants are doing very well. Can you help?***

—M.O., Wilmington, Delaware

A: Your neighbor's monkshood is apparently suffering from either crown rot or wilt caused by soil fungi. Your healthy plants were probably transplanted into soil that harbored the offending fungi, which then attacked the susceptible monkshood. Because it is not practical to replace the infected soil or sterilize it with steam or chemicals, there is no control for these diseases. The monkshood should be dug and disposed of in a manner that will not spread the contamination. Replace it with plants that are not susceptible to these soilborne diseases.

Q: ***How do I harvest and treat my crop of luffa gourds? I want to use these luffas as sponges. —T.B., Salisbury, Maryland***

A: The luffa gourd—sometimes spelled "loofah"—is a member of the cucumber-squash family. It is also known as dishcloth gourd, rag gourd, or vegetable sponge. Luffa vines can grow 15 to 25 feet long, so gardeners with limited space may want to grow them on a trellis or frame. If you do grow the vines on the ground, place a board or other barrier underneath the fruits to prevent rot.

Shaped somewhat like zucchini, the gourds can reach two feet long. Young gourds can be eaten in the same manner as squash, but most people prefer to wait for the fibrous skeleton that forms just beneath the skin of the mature fruit. Luffas can be harvested when their stems turn yellow and the fruits begin to lose their green color. In areas with dry winter climates, luffas can be left on the vine to dry. The skin will dry out and flake off naturally. In areas with damper climates, luffas should be harvested and hung to dry in a well-ventilated garage or potting shed.

To prevent rotting—indicated by black blotches—luffas can be immersed briefly in a dilute bleach solution. Once they are thoroughly dry, cut the stem end off each gourd and shake out the seeds. Then soak the gourds in warm water overnight or immerse briefly in boiling water to soften the skin so it can be peeled away.

Q: ***My pachysandra bed has large patches of dying plants. The leaves have large brown blotches and the stems in affected areas have numerous large brown sunken lesions. What can I do?***

—M.S., Philadelphia, Pennsylvania

A: You describe the effects of a disease commonly known as leaf blight. Usually caused by a fungus, this disease is especially severe on plants that have been weakened by drought, winter injury, or scale insects. Severely diseased plants should be removed and destroyed.

Where infestations are limited to a small amount of leaf spotting, control can be achieved with foliar spray applications of a fungicide containing copper. The fungicide should be applied three times at weekly intervals, starting when new growth appears in the spring. As with all diseases, prevention is the best cure; reduce the likelihood of infection by not mulching pachysandra with materials that retain moisture and trim any overhanging tree or shrub branches to reduce humidity around the plants.

Q: ***We have a goldfish plant that has become unruly; can it be cut back?***

—L.W., Alexandria, Virginia

A: A number of plants within the gesneriad family are or have been called goldfish plant, but the name is perhaps most commonly associated with members of the genus *Columnea*, a group of mostly epiphytic plants native to tropical America. The brightly colored tubular flowers come in various shades ranging from yellow to red and have a curling lip that vaguely resembles the pouting mouth of a goldfish. Some members of the related genus *Nematanthus* are also called goldfish or guppy plants or vines.

Either genus is effective in a hanging basket and needs warmth, bright light, and fairly high humidity. Epiphytic species need to be grown on sphagnum moss attached to a piece of wood, or in a pot of loose bark chips. During the active growing season, water and fertilize regularly with a dilute mixture, but allow the plant a period of rest in winter by providing slightly cooler temperatures, withholding fertilizer, and watering less frequently. Blooms are produced on new shoots, so any pruning should be done immediately after flowering.

Q: ***How can I harvest and store caladium tubers for replanting in a bed next year? —B.C., Dearborn, Michigan***

A: Caladium tubers should be dug in the fall before danger of frost. Clean off any soil, remove old roots and leaf blades, and allow the tubers to dry completely. Tubers should be overwintered in dry sand, peat moss, or vermiculite in an area well above freezing but less than 65 degrees. Potted caladiums can be overwintered in their containers. In the fall, when the plants begin to naturally lose leaves, the frequency of watering should be reduced until the foliage dies. Pots should be stored in a dry place.

—Neil Pelletier, Director
Gardeners' Information Service

USE YOUR GIS

Our Gardeners' Information Service can help you find an elusive plant, suggest plants for special needs, or diagnose a problem and find a cure. Members of the American Horticultural Society can call GIS toll-free at (800) 777-7931 between 11 a.m. and 3 p.m. Eastern Time, Monday through Friday, except holidays.

CONSERVATIONIST'S NOTEBOOK

Eccentric Aquatic

by Steve Shelly

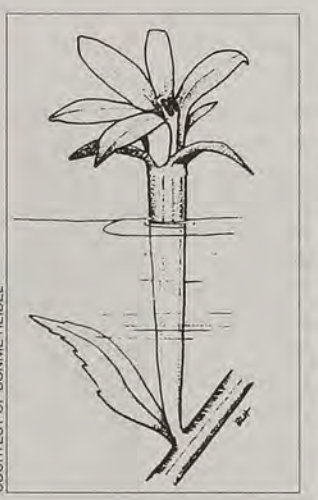
Howellia aquatilis, which grows only in seasonal pools that form in depressions left by retreating Ice Age glaciers, last year became the first plant species in Montana listed under the federal Endangered Species Act. The U.S. Fish and Wildlife Service designated water howellia as threatened, culminating the process triggered by a 1991 petition. It was signed by the Montana Native Plant Society, the Colorado-based Biodiversity Legal Foundation, and a local environmental group called the Swan View Coalition.

A member of the bellflower family, or Campanulaceae, water howellia is a sprawling aquatic plant with needlelike alternate leaves and tiny white-petaled flowers with yellow centers. Its known range extends sporadically from the Swan River valley in northwest Montana west through northern Idaho and into western Washington and Oregon. A population was at one time reported in the central Coast Ranges of California, but has not been located since 1928.

It is the only species within the genus *Howellia*, named for the plant's discoverers, brothers Thomas and Joseph Howell, who in the late 19th century were among the earliest resident botanists of the Pacific Northwest.

Currently, 110 populations of the species—each typically consisting of a discrete grouping of plants in a small pothole pond—are documented. More than half of the known populations are within the Swan River valley in Montana's Lake and Missoula counties. The total habitat occupied by the water howellia is less than 100 acres.

Because of the peculiar, highly restricted ecological relationships that howellia has developed, it could perhaps most accurately be characterized as an aquatic winter annual. In the Swan River valley, the plant inhabits ponds formed in depressions created some 10,000 years ago, when blocks of ice—buried by glaciers retreating northward—melted. These shallow ponds, their bottoms a firm substrate of clay and organic matter, average only one to two feet deep during the middle of summer. In a dry year, they wholly or partially dry out by early fall. It is this drying that is critical to the life cycle of howellia, since its seeds need exposure to air, along with cool temperatures, in order to germinate. The seedlings then overwinter buried in the snowpack. In late spring and early summer, the plants resume growth in the water that accumulates from snow melt and spring rain.



COURTESY OF BONNIE HEIDEL

As long as water remains in the pond, the stems produce both underwater and emergent flowers and fruits, but the seeds are only successfully released when the pond dries out.

This relationship can have a profound influence on the size of the populations from year to year, since the summer climate in a given year determines the amount of seed germination that takes place during the fall.

In 1994, for example, populations were much smaller than normal because of the unusually cool, moist summer the area experienced in 1993. The ponds retained much of their water all summer, greatly reducing germination. Conversely, this year, thanks to the drought experienced in 1994, howellia populations were among the best we have seen. Thousands of plants came up in places where there were none the year before. With this summer's dry weather being close to what might be called "normal" conditions—neither too wet nor too dry—populations of howellia can be expected to be fair to high in 1996. So, idiosyncratically, a good year for howellia means that conditions were optimal in the prior year.

The next step in the long-term conservation of howellia will be preparation of a recovery plan. It will be based on a strategy drafted by Montana Natural Heritage Program and forest service botanists and approved by the Flathead National Forest in spring 1994. The recommendations provide specific standards and guidelines that the U.S. Forest Service will follow in the event any land management activities are planned for areas that are either currently or potentially howellia habitat.

Being listed with the U.S. Fish and Wildlife Service affords howellia protection on federal land, but because Montana currently has no endangered plant protection laws, the species is not protected on private land within the state.

Howellia's highly specialized ecological adaptations also make it vulnerable to both short- and long-term natural habitat changes. Such changes might result from habitat shifts in occupied ponds, such as advancing vegetation succession, or from more lasting changes such as climate fluctuations. Such fluctuations, on a grand scale, were what created howellia's habitat in the first place.

For now the species has been afforded at least some degree of protection from human-related threats to its habitat. The Endangered Species Act does not purport to save species from natural extinction, but it can at least lessen the role our land management activities might play in that process, especially for highly specialized species such as *H. aquatilis*.

This article is reprinted by permission from the Winter 1995 edition of Kelseya, *the newsletter of the Montana Native Plant Society. The writer, Steve Shelly, is a botanist working jointly with the Montana Natural Heritage Program and the U.S. Forest Service's Northern Region, based in Missoula.*

Some Winter Winners

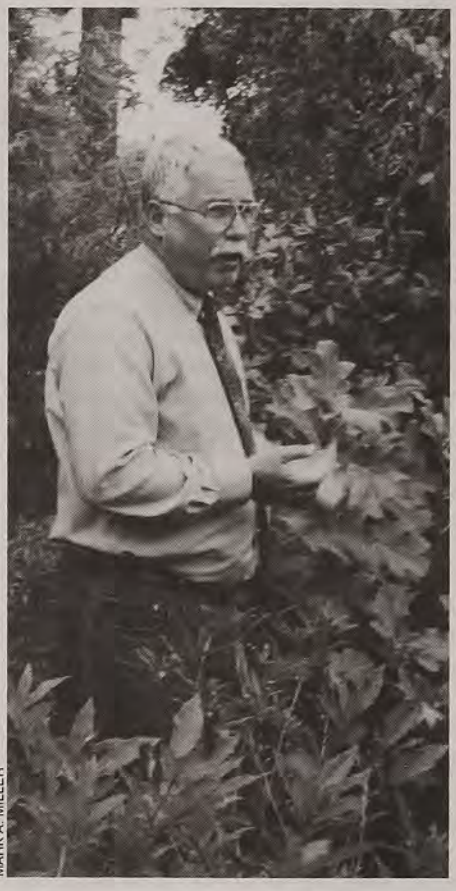
American gardeners who toil in our temperate regions understand the enticing call of spring. Soft balmy breezes and the smell of warming earth make us dust off the gardening tools, peek over the neighbors' fences to see what they've got coming up, and jam the parking lots of local garden centers. Spring fever is in full bloom as we "ooh" and "aah" over beds of pastel tulips nodding in the wind, or bask in the glow of a blazing red azalea.

Now that winter is fast approaching even in our South, the enthusiasm of May has become the apathy of November. Many of the summer dazzlers have disappeared or been cut down, colors are muted browns and grays. The emphasis on spring and early summer as the season of color is common throughout the country, notes J.C. Raulston. "People are so spring-interested, so hot to buy at that time. We end up with spring-focused gardens because we're so desperate to have something showy after a long winter."

Raulston, professor of horticulture at North Carolina State University (NCSU) and director of the NCSU Arboretum in Raleigh, spoke to gardening enthusiasts in September at Twombly Nursery. The Monroe, Connecticut, nursery has become a specialist in plants for the winter garden.

The importance of varied seasonal interest is not just a matter of aesthetics, Raulston explained, but also a matter of diversity in the landscape, a promotion of environmentally sound practices, and a departure from monoculture. "We need to get away from the monoculture of planting certain plants because they do well or are traditionally favored. The American elm should have taught us that. Diversity is safety, and it is interest."

The ornamental elements that make spring and summer so showy, such as flowers and foliage, can be present in the winter landscape as well. Berries, attractive bark, and the overall outline of plants—often understated at other times of the year—can be show stoppers when snow is on the ground. Raulston praised the still relatively unknown Japanese flowering apricot *(Prunus mume),* which is covered with blossoms in January. He also recommended fall- and winter-blooming witch hazels—*Hamamelis virginiana, H. vernalis, H. mollis,* and their hybrids—as well as *Jasminum nudiflorum,* the winter jasmine.



MARK A. MILLER

COURTESY OF TWOMBLY NURSERY

J. C. Raulston, left, leads a tour of the Twombly winter garden. **Yucca filamentosa *'Golden Sword', above, provides unexpected shape and color.***

Woody plants noted for their beautiful foliage included cultivars of the American holly, such as the ground cover 'Maryland Dwarf'; the bright golden-foliaged 'Sunny Foster' holly *(Ilex × attenuata);* variegated yuccas; and many examples of conifers, such as the *Cephalotaxus* species and their cultivars, which can be deer-proof alternatives to the more common yews. Raulston pointed out that a number of familiar perennial plants also feature evergreen leaves: *Helleborus, Euphorbia, Asarum,* and *Pachysandra* cultivars can all provide a great deal of foliage effect in January and February.

Colorful berries are an important aspect of winter interest and tend to give a longer-lasting effect than other seasonal characteristics, although the longevity of berries can vary from year to year, Raulston noted. "Bird interest and winter temperatures are the determining factors in persistence of ornamental fruits," he said. "One year the birds don't seem to care about a certain plant, and the next year they will strip

them." Raulston noted the virtues of berry-bearing plants such as *Skimmia, Poncirus* (hardy orange), and the deciduous hollies *(Ilex verticillata, I. decidua,* and *I. serrata).* "The modern cultivars of deciduous hollies are hard to beat for winter interest from berries," he said.

The attributes of a plant with ornamental bark are recognizable throughout the year, but can be especially pleasing in winter. Lacebark pine *(Pinus bungeana),* yellow and redtwig dogwoods, and paperbark maple *(Acer griseum)* take on a dramatic effect when viewed within a sea of white. Roses and raspberries aren't usually known for their winter impact, but *Rosa sericea* subsp. *omeiensis* forma *pteracantha* has showy thorns, and the silver bark of *Rubus cockburnianus,* left to arch leafless to the ground, shines against the winter sky.

Winter appeal can be hauntingly beautiful, or whimsically haunting. Seeing a contorted filbert, its twisting branches covered with snow and casting a warped shadow, can charm the viewer in daylight and cause Halloween flashbacks at night.

According to Raulston, discovering plants that provide winter interest in the garden, whether by flower, fruit, bark, or berry, can be accomplished in several ways. "New cultivars and varieties of established plants are a vital source of diversity," he said. Other possibilities are planting related species of well-known favorites, using newly introduced species, and, lastly, altering our cultural practices. Changing the practice of the fall clean-up, for example, can allow perennials to play a bigger role in the winter garden. "One of the biggest enemies of winter interest is the neat and tidy garden, everything cut down to the ground," he said. "Perennials can go through the seasons as well." Leaving the rose mallow that was so showy in summer to dry when the weather turns cold can be very effective. Ornamental grasses have a great deal of winter appeal when left to their own devices. A selectively trimmed perennial border can make a statement in the snow, rather than resemble a herbaceous grave. "Leave the pruners in your pocket and you might be pleasantly surprised," said Raulston.

Another cultural practice that can make or break a garden during a bleak period is siting. "It's not just the plant but how you use it," observed Raulston. Placing a winter-flowering witch hazel on an exposure where the petals can be backlighted by the sun creates the impression that the plant is glowing. Contrasting the white bark of a birch with the green shoots of a nearby bamboo can be quite eye-catching. And featuring a yellow-foliaged false cypress against an evergreen background increases its landscape statement significantly. One must also keep in mind that proper siting means placing the plant in an environment that is optimal for its growth and development. Plants that exhibit variegation or yellow foliage often require some shading from the scorching effects of winter sun.

If the notion of a winter garden only makes you feel deprived of what you have come to consider a well-deserved season of rest, Raulston would say that's OK, too. He believes that gardeners should temper their enthusiasms with a sense of priorities—and a sense of humor. If, for instance, you flee to warmer climes from November to March, then winter interest in your garden would definitely offer no appeal. And there's no reason not to maintain a playful attitude toward your garden and its appearance. Take an easy route to achieving winter color and spray paint your ornamental grasses, as Edith Eddleman does in her famous perennial border at the NCSU Arboretum. On the other hand, you may want to take a risk and try a plant that's uncommon in your area. "Humans must learn not not to take [their gardens] too seriously," said Raulston. "They think 'Oh, my plant died, I'm a bad person.' Get over it. Plant another one."

—Mark A. Miller
Resident Horticulturist

STALKING WINTER WEEDS

Whether you plan to putter around the back yard this winter or gambol through the countryside on brisk afternoons, there's no reason the game of "name that plant" can't continue to be part of the fun.

For 20 years, Carol Levine has been teaching both budding scientists and curious amateur gardeners how to botanize year-round. A field botany instructor at both the New York Botanical Garden and the University of Connecticut's Bartlett Arboretum, she easily found texts to help her students in the growing season and books on identifying woody plants in winter. But there were few describing the winter guise of herbaceous plants. A 1976 book by Lauren Brown, *Weeds in Winter,* is user friendly, but describes only 125 species.

DICK RAUH. REPRODUCED BY PERMISSION.

Chimaphila umbellata

Levine decided to take the matter in hand, although it took nine years to bring her dream, *A Guide to Wildflowers in Winter* from Yale University Press, to fruition. "I had all these plants—we've included close to 400 species—hanging in my basement. If anybody had lighted a match, the whole house would have gone up."

Dick Rauh, an illustrator working on his master's in botany, took a class from Levine and ended up drawing all of those dried plants. He illustrated a glossary to help the amateur with such terms as "bilabiate" (two-lipped), "loment" (a leguminous fruit conspicuously constricted between the seeds), and "silique" (a long narrow fruit of the mustard family).

The plants are divided into groups based on the characteristics that are most helpful in identifying them. In some cases, it is the habitat—salt marsh, fresh water, or woodland. It may be habit—vine or ground cover, for instance—berrylike fruits, seed capsules with a distinctive number of chambers, or calyxes (the sepals, or outer series of floral leaves) with a certain shape. The calyx in members of the composite family, for instance, forms a pappus—a crown of fine hairs or bristles at the top of its fruit, or achene. Smell can also be a clue, as in members of the mint family, whose identity can be further confirmed by their square stems.

Levine notes that while leaves may be long gone, leaf scars will remain and will show whether the leaves were opposite or alternate. Many plants, particularly biennials, will leave behind a basal rosette of leaves. Black-and-white photographs by Samuel Ristich illustrate the various forms of these.

Paperback copies of *A Guide to Wildflowers in Winter* are available through the AHS Book Service for a discount price of $17 plus $2.50 shipping and handling. See page 19 for ordering information.

—Kathleen Fisher, Editor

A Cold, Hard Appraisal

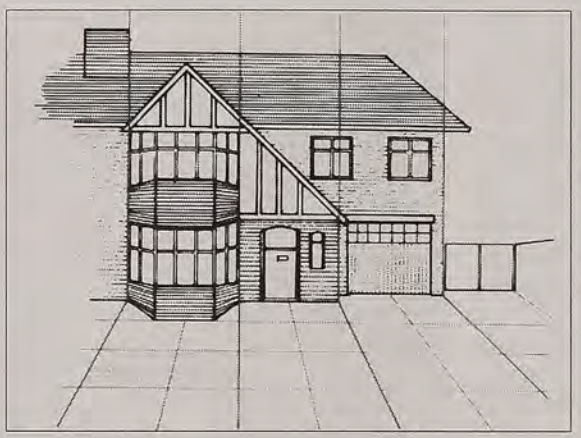
Winter is the best time to evaluate the "bones" of your garden. This can be a bit like looking at yourself in the buff in a dressing-room mirror under harsh lighting. Those who have been disciplined may like what they see, while the rest of us will wince in dismay. Consider these aspects of your landscape while the bloom is off the rose:

✦ **Screening.** You'll be more aware of any unpleasant vistas. If foliage hides the view in summer, and if it is not one that you see a lot in winter, you may want to leave well enough alone. Otherwise, it may be time to consider some evergreens or a trellis.

✦ **Overgrown plants.** You may discover that you need less greenery next season, rather than more. For example, you may discover a wonderful little conifer that has been overwhelmed by other plants all summer. Is it enough to enjoy it in just one season, or do you want to let it have a little more prominence all year?

✦ **Paths.** If your garden is a little weak in this department, a path is the perfect off-season project. (If your design will require any digging, you may want to get started before the ground is frozen solid.) Make your paths wider than you think you'll need. Eventually there will be a wheelbarrow overloaded with pruned limbs, or a companion you'll want alongside you as you amble through your plantings. For a low-cost approach, "call the local tree trimmer and see if he has some shredded trimmings he needs to get rid of," suggests Sarah Boasberg, a landscape designer who serves as chairman of the American Horticultural Society Board of Directors. "After a year or two, when your paths have better soil than your beds, you can use it for compost."

✦ **Vertical elements.** America's fruited plains are beautiful, but much of their impact comes from being so...*big*. A flat square of one-eighth acre loses much of that zing, and if you've been a perennials purist, your winter garden may lack appeal for anyone but Nanook of the North. Adding some upright shapes doesn't require buying a big conifer. Mark Miller, resident horticulturist for the American Horticultural Society, plans to add some deciduous shrubs to the perennials beds at our River Farm headquarters. "This is partly for winter interest, but also for year-round vertical interest and for the rooms that more upright plants tend to create in a garden," Miller says. If winter interest is key for you, choose plants with interesting bark, silhouettes, or berries. Most berries will bring birds around to put on a free show. Bird feeders, too, can serve simultaneously as landscape elements, great entertainment, and a gift to your fellow creatures. And in the live-action department, nothing can beat a huge clump of ornamental grass for adding hypnotic movement as well as vertical interest.



Designer John Brookes uses a grid based on a structure's architecture to find pleasing proportions for his gardens. This seemingly asymmetrical house was designed to proportions based on the width of its bay.

✦ **Shape and proportion.** These are probably the most important considerations for a well-designed garden and the hardest to articulate. As with any art, there is a feeling of "I don't know much about it, but I know it when I see it." You can more easily see proper proportion—or its lack—when there are fewer leaves and flowers to distract your eye. Long Island designer Kathleen Cullen suggests taking photographs of your property in winter and making photocopies of them. You can then use a Magic Marker to add specimen plantings, a gazebo, fencing, or anything else that strikes your fancy, giving you a crude but useful preview at a bargain rate.

A more complicated concept is suggested by English designer John Brookes in his *Garden Design Workbook*. Brookes uses a grid to establish proportion between structure and grounds. The grid is developed by finding a rhythm in the prominent features of your house—doors, windows, bays, ells, the garage. The grid can be halved, doubled or quadrupled, or turned 45 or 90 degrees, but is followed in some proportion to determine the size of patios and beds, and then plant groupings. This need for proportion extends to the shapes of beds. Too many gardeners trying for sweeping curves, Boasberg observes, end up instead with "little squiggles." The voids in garden designs should also be in proportion. Odd little corners between a bed and a driveway, for example, are both visually jarring and hard to maintain. "If you have the right shapes," says Boasberg, "your garden will still look good even when the roses are covered with blackspot." —*Kathleen Fisher, Editor*

Garden Design Workbook *by John Brookes is available from the AHS Book Service for $14.35 plus $2.50 shipping and handling.*

How Low Will They Go?

Winter can be a joy: all those bright berries, all those interesting silhouettes, all those snow-covered conifers. All that...death.

Let's face it. Our own Department of Agriculture rates plants not on beauty or drought tolerance, but one attribute only: whether they're likely to survive winters in a given region. And justifiably so. Especially if it's a high-priced specimen shrub or tree, you don't want to gamble on a plant so tender that it already has one root in the grave.

For New Englanders and other residents of USDA Zones 4 and 5, there's a free guidebook, "Woody Landscape Plant Cold-Hardiness Ratings," from the Maine Agricultural and Forest Experiment Station. First published in 1983, it was updated last year with hardiness ratings for almost 2,000 taxa, evaluated for a minimum of three years at the Lyle E. Littlefield Ornamentals Trial Garden of the University of Maine. Littlefield, associate professor emeritus of ornamental horticulture, had collected more than 1,000 specimens—with an emphasis on crabapples, lilacs, and rhododendrons—before he retired in 1986. He died in 1988. Beginning that year, Paul Cappiello, an associate professor of landscape horticulture, began expanding the collection, which now includes more than 3,500 taxa, including major collections of magnolias, mountain laurels, hollies, dogwoods, and blueberries.

Some of the plants are old favorites, while others are still unnamed. Each is rated from 1 to 5, with 1 representing little or no damage and 5 indicating that the plant suffered complete winter kill.

Some findings bring home the importance of provenance—a specimen's particular place of origin. One *Acer triflorum*—an Asian maple with peeling bark—got a 1, while another collected in a different region got a 5. The gardens are in a high, windy site, so plant placement also made a big difference. The same cultivar in some cases got both a 1 and a 5, depending on whether it was placed in an open or more protected environment.

Cappiello described some plants for us that he considers the best and most surprising performers:

✦ ***Eupatorium purpureum* 'Atropurpureum'.** Joe-pye weed. Although not strictly a woody plant, this perennial puts up semi-woody stems that, at six to eight feet tall, easily take the place of a shrub in the landscape. Considered an undesirable weed until a few years ago, Joe-pye weed is now the anchor of the Littlefield collection's fall garden. This cultivar produces ash-purple flowers that last for a full two months, and the towering purple stems make a magnificent backdrop for fall-blooming asters and black-eyed Susans. Typically described as requiring moist, almost wet soils because of its native habitat in East Coast swamps and ditches, it has done well in the Littlefield garden in moderately dry soil.

✦ ***Hydrangea paniculata* 'Grandiflora Dwarf'.** Panicle hydrangea. Sometimes called dwarf peegee hydrangea, it is not often encountered in garden centers but has garnered rave reviews from visitors to the Maine garden. This cultivar tops out at eight feet and is much finer in texture than 'Grandiflora'. Smaller leaves and inflorescences and shorter internodes give the plant a more organized appearance. The small, mostly sterile flowers are as showy as those of the larger forms but do not droop from excessive weight.

✦ ***Magnolia* 'Elizabeth'.** While there are newer and deeper yellow-flowered magnolias on the market, 'Elizabeth' has been the best, most consistent performer in the Maine tests. Its extremely rapid shoot growth (up to three feet a year in Marsh Island's 95-day growing season) and excellent cold hardiness make it superior. The five-inch flowers are pleasantly fragrant and sport a light, delicate color that is one of the most pleasing of all the yellows.

✦ ***Magnolia stellata* 'Centennial'.** Star magnolia. This cultivar has been around since the early 1970s and was originally released in honor of the 100th anniversary of Harvard University's Arnold Arboretum. Two specimens in the Littlefield garden are 20 years old, 18 feet tall, and display an obediently uniform, upright oval form. It is among the most floriferous of all magnolias, with an intoxicatingly delicate fragrance. While about 10 percent of 'Centennial' flower buds are killed in Maine's worst winters (lower than 30 below zero), those remaining still produce what Cappiello calls "a stupendous display."

✦ ***Stewartia koreana.*** Korean stewartia. "This specimen has been a wonderful surprise!" he says. A single plant selected from a group of seedlings originating from seed collected at the Arnold Arboretum in 1974, it has survived every year since with no winter damage and has been lab tested to 34 degrees below zero. At an early age this specimen exhibits bark exfoliation to show shades of olive green, tan, and gray, and it develops spectacular, fire-engine red fall foliage. "Among the best red color of any plant I've seen," says Cappiello.

✦ ***Weigela florida* 'Red Prince'.** Old-fashioned weigela. "Hands down the showiest weigela on the market today," this plant has been around for some time but still has not caught on. In the Littlefield garden, 'Red Prince' begins flowering in early June and continues in full flower for more than six weeks. It then flowers at about one-third that level (but remaining nicely showy) for the rest of the summer. "Every garden should have a 'Red Prince," Cappiello says.

To obtain a copy of "Woody Landscape Plant Cold-Hardiness Ratings," write to: Dr. Paul Cappiello, Bulletin #156, University of Maine, 5722 Deering Hall, Orono, ME 04469-5722. He will send copies as long as they last. —*K.F.*

Wildlife in the Winter Garden

Many of the things that provide winter interest in a landscape—brightly colored berries, the waving seed heads of ornamental grasses, and evergreen trees and shrubs—also provide food and shelter for wildlife, thus giving you even more to gaze out at as you sip your coffee on frosty winter Sundays.

You're doing an important service, too, since in winter, animals that don't hibernate are in their greatest need of food, water, and cover. To attract them, you'll need to consider all three of these factors. And to attract a whole menagerie, you'll want to aim at creating a diverse habitat, since different critters have different requirements.

Food

"The importance of planting a well-selected collection of berry-bearing shrubs is not always realized; but when the autumn days come and flowers grow fewer the bright berries come to our rescue in making indoor decorations, as well as providing color in the garden and food for birds."

Louise Beebe Wilder's words ring just as true today as they did when she penned them in 1937. There are enough plants that offer winter forage to our feathered and furry friends to suit the taste of almost any gardener. Food can be found on evergreen and deciduous trees, vines and shrubs, ground covers, and ornamental grasses.

Evergreens and ornamental grasses are particularly valuable because they serve double duty as a source of both food and concealment. Craig Tufts, chief naturalist with the National Wildlife Federation and co-author with Peter Loewer of *Gardening for Wildlife*, recommends junipers *(Juniperus* spp.) for bird gardens because their berrylike cones are popular with birds like grosbeaks and waxwings and their thick needles provide cover for many other species. In the West, Sierra juniper *(J. occidentalis)* is hardy to USDA Zone 5, while

Rocky Mountain juniper *(J. scopulorum)* and eastern red cedar *(J. virginiana)*—both hardy to Zone 3—are good choices for residents of central and eastern North America. Evergreen hollies and viburnums, available in a variety of shapes, habits, and berry colors, also provide food and cover for birds and small mammals. Dwarf lingonberry *(Vaccinium vitis-idaea* var. *minus)*, an evergreen that forms dense mats four to six inches tall, is useful as both a ground cover and a food source. Hardy to Zone 4, its tiny red berries ripen in late fall and stand out against the glossy green leaves.

Another genus with a variety of species useful as ground covers is *Gaultheria*. Native to the West Coast from California to Alaska, salal *(Gaultheria shallon)* grows to five feet and bears clusters of blue to black fruits, but beware—it tends to sucker prolifically. Wintergreen *(G. procumbens)*—native to eastern North America and hardy to Zone 3—is an attractive ground cover with glossy green leaves that give off a wintergreen odor when bruised. Fleshy scarlet fruits form in July and persist into the following spring. Daniel Hinkley, co-owner of Heronswood Nursery in Kingston, Washington, wrote in an August 1994 *American Horticulturist* article that the fruit of wintergreen is browsed by grouse and turkey and the foliage by white-tailed deer.

Crabapples and hawthorns are among the few deciduous trees that offer wildlife some winter cheer by holding on to their fruit into late December or the New Year. *Malus* 'Golden Hornet', which has egg-shaped yellow fruits, is one such selection. Michael Dirr, author of *Manual of Woody Landscape Plants*, says that Washington hawthorn *(Crataegus phaenopyrum)* and green hawthorn *(C. viridis)*, both hardy to Zone 5 and native to central and eastern North America, have fruits that ripen in late fall and persist into spring. Dirr praises a *C. viridis* cultivar, 'Winter King', which he says has a rounded habit and fruits that are "among the handsomest of the hawthorns." Westerners have the native western black hawthorn *(C. douglasii)*, a small tree hardy to Zone 5 that bears black fruits much enjoyed by birds.

Many deciduous shrubs not only hold their berries into winter, but also have good fall color. Winterberry *(Ilex verticillata)* is a deciduous holly, hardy to Zone 3, that produces colorful red, berrylike drupes. Suitable for planting in damp areas, winterberry has a number of cultivars, including 'Winter Red' and 'Sunset'. The American cranberrybush viburnum *(Viburnum trilobum)*—native to eastern North America and hardy from Zones 2 through 8—also retains its berries through most of winter, as do barberries *(Berberis* spp.).

A wide variety of ornamental grasses—popular for their four-season interest—are now available to gardeners. For use in wildlife gardens, Tufts and Loewer recommend native grasses such as Virginia bluestem *(Andropogon virginicus)*, June grass *(Koeleria cristata)*, northern sea oats *(Chasmanthium latifolium)*, Indian grass *(Sorghastrum nutans)*, buffalo grass *(Buchloe dactyloides)*, and switch grass *(Panicum virgatum)*. All have attractive seed heads that provide food from late summer into winter.

SHELTER

"The grandeur of the conifers, impressive at all seasons, is especially so in the winter.... The wind as it blows through the branches may sing a glee or a dirge, but it is warmer in the shelter of these restful evergreen trees."

Although Ernest H. Wilson may have had humans in mind when he wrote the preceding lines, undoubtedly evergreen trees are the best source of winter shelter and concealment for birds. Tufts and Loewer recommend hemlocks *(Tsuga* spp.), Douglas fir *(Pseudotsuga menziesii)*, Colorado spruce *(Picea pungens)*, and eastern white pine *(Pinus strobus)* as particularly valuable for shielding birds from harsh winters. For gardeners with small properties, most of these trees are available in low-growing or dwarf forms.

Heaths and heathers *(Erica* and *Calluna* species) make attractive evergreen ground covers that provide both winter flowering interest and good cover for small creatures. Hundreds of species and cultivars are available for different regions and landscapes.

Some ornamental grasses also provide good winter shelter for birds and small mammals. Large grasses, such as the various cultivars of *Miscanthus sinensis* or ravenna grass *(Erianthus ravennae)*, provide both good hiding places and sources of bedding material.

One way to create a wildlife shelter in your garden is to grow vines over a makeshift teepee of stakes or over low-growing shrubs. Tufts and Loewer suggest using vines such as trumpet vine or non-invasive honeysuckle species for spring and summer flowering interest. Add Boston ivy *(Parthenocissus tricuspidata)* or Virginia creeper *(P. quinquefolia)* for fall color, or a true ivy *(Hedera* spp.) for year-round color. Vines such as our native bittersweet *(Celastrus scandens)* retain their fruit into winter and offer a source of food for mockingbirds, sapsuckers, and flickers. Other possibilities are hop vines *(Humulus* spp.) and morning glories *(Ipomoea* spp.). Similarly, climbing and shrub roses offer the protection of thorns, and some—such as *Rosa rugosa* 'Hansa', hardy to Zone 4, and Virginia rose *(R. virginiana)*, hardy to Zone 5—have tasty hips that last well into winter.

WATER

"Water, water, every where, Nor any drop to drink."

For much of northern and central North America in winter, Samuel Taylor Coleridge's immortal lines about the ocean hold true for water caught up in the grip of frost. Sources of unfrozen water are vital for wildlife. Birdbaths can be fitted with heaters purchased from specialty stores, and automatic deicers are available for larger, in-ground ponds.

Creating a water garden is a lot easier and cheaper than you might think. Thanks to the advent of flexible pond liners, a small pond that will cater to a wide variety of animals can be built for as little as $100. Of course, the sky—and the bounds of your property—is the limit for water gardening, and you can greatly expand the variety of animals you attract to your garden with creative landscaping around water features.

—David J. Ellis
Assistant Editor

ORNAMENTAL HORS D'OEUVRES

Here are some more candidates for your animal-edible landscape:

Evergreen shrubs

✦ ***Mahonia aquifolium.*** The blue-to-black-berried Oregon grape holly has glossy, spine-tipped leaflets that turn purple to red in winter. Grows to six feet with upright, heavy stems. (Zone 5-8)

✦ ***Pyracantha* spp.** Dubbed "firethorns," these prickly shrubs come in a variety of forms. Most have colorful salmon to orange fruits in fall and winter. (Zone 6-8)

✦ ***Skimmia japonica.*** A dome-shaped shrub three to four feet tall and as wide. Red drupes are borne on female plants. Male pollinator required. (Zone 7-9)

✦ ***Viburnum davidii.*** A three-to-five-foot-tall mounded evergreen shrub with fruits that turn turquoise blue in fall. Ideally suited to the maritime climate of the Pacific Northwest. Another clone required for fruit set. (Zone 7-8)

✦ ***Viburnum rhytidophyllum.*** An excellent specimen or background shrub that grows to 15 feet tall and wide. Red berries form in late summer, turn black, and last into winter. (Zone 6-8)

Deciduous shrubs

***Berberis* spp.** A cosmopolitan genus of evergreen and deciduous mounded shrubs, most with spines and colorful fruits:

✦ ***B. koreana.*** A compact suckering shrub to six feet tall with dark green leaves that turn reddish purple in fall. Bright red berries last into winter. (Zone 4-7)

✦ ***B. thunbergii.*** Forms dense, rounded, three-to-six-foot bushes. Leaves turn orange to purple in fall, and bright red berries form in October. Many cultivars available. (Zone 4-8)

✦ ***B. wilsoniae.*** A thorny, mounded shrub to three feet with gray-green leaves that turn scarlet in fall. Globose, coral pink berries form in late summer. (Zone 6-8)

***Cotoneaster* spp.** With both evergreen and deciduous species, this is a versatile genus with selections that provide nearly year-round interest, a variety of habits and forms, and often copious fruit production:

✦ ***C. apiculatus.*** Cranberry cotoneaster is a small shrub to three feet high and six feet wide with long-lasting red fruits. (Zone 4-8)

✦ ***C. horizontalis.*** Also red-fruited, rockspray cotoneaster forms a layered mound. Useful as a low-growing shrub or ground cover over a wall or bank. (Zone 4-8)

✦ ***C. lacteus.*** Over time, this evergreen species will form a dense mound up to 20 feet across and 12 feet high. Its bright red fruits contrast attractively with its leaves. Grows best along the West Coast. (Zone 6-8)

***Symphoricarpos* spp.** Snowberries are bushy, rounded, shade-tolerant shrubs native mostly to North America. Their common name is derived from the white berrylike drupes that form in late fall and may persist into winter. Many species and cultivars are available:

✦ ***S. albus.*** Common snowberry is a bushy, rounded to broad shrub. It grows to six feet tall and wide and tends to colonize by suckering. White berrylike drupes form in late fall. (Zone 3-7)

✦ ***S.* × *chenaultii.*** Chenault coralberry is a low, arching shrub three to six feet tall with white or pink-tinged fruit. Michael Dirr praises the cultivar 'Hancock', which he says seems to resist the powdery mildew that affects other selections. (Zone 4-7)

✦ ***S. orbiculatus.*** Coralberry or Indian currant is a low-growing shrub with pink-tinged or purple-red fruit. (Zone 2-8) *—D.E.*

GARDENING BOOKS

Books are chosen for the AHS book service 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. If you'd like to order a book that is not listed here, call the AHS Horticultural Book Service at (800) 777-7931.

NEW TITLES

Natural by Design: Beauty and Balance in Southwest Gardens

Judith Phillips

Softcover. Retail price: $35. AHS price: $31.50.
Book code: MNP 115

A landscape designer and native plant expert, Phillips takes the reader on an illustrated garden tour through the rich ecosystems of the Southwest and into gardens she has designed in upland forests, shrub/desert grasslands, riparian oases, and arid city plots. Her plant palette includes native trees, shrubs, wildflowers, and grasses—nearly 200 are individually described in a companion volume, *Plants for Natural Gardens*—and she broadens it to embrace dozens of adaptive plants that will flourish in the demanding conditions of the West. *1995. 199 pages.*

Plants for Natural Gardens

Judith Phillips

Softcover. Retail price: $27.50. AHS price: $24.75.
Book code: MNM 115

Subtitled *Southwestern Native and Adaptive Trees, Shrubs, Wildflowers, and Grasses,* this companion book to *Natural by Design* concentrates on more than 200 plants, individually photographed and profiled. The key to any successful garden is knowing the plants, the conditions that nurture them, and the care that must be taken in their propagation, cultivation,

transplanting, and pruning. Knowing the native and adaptive plants of your region and how best to use them in the landscape will enable you to create gardens of self-sustaining beauty. In addition to discussing hardy and beautiful native plants, Phillips offers suggestions for adaptive plants that can succeed in more protected garden settings. *1995. 148 pages.*

Landscaping with Native Trees

Guy Sternberg and Jim Wilson

Hardcover. Retail price: $34.95. AHS price: $31.45.
Softcover. Retail price: $24.95. AHS price: $22.45.
Book code: CHA 115 (specify hardcover or softcover)

With more than 200 color photographs illustrating descriptions of 100-plus native trees, this book combines the usefulness of a reference with the beauty of a coffee-table classic. Sternberg, a landscape designer and arborist, and Wilson, author and former co-host of the PBS series "The Victory Garden," have turned their years of experience in the field into a valuable guide that points out both the advantages and limitations of the trees that have formed the backbone of the American landscape. Detailed descriptions of each tree species include information about foliage, flowers, fruit, culture, growing ranges, problems, cultivars, and related species. *1995. 288 pages.*

The Book of Rhododendrons

Marianna Kneller

Hardcover. Retail price: $45. AHS price: $40.50.
Book code: TIM 115

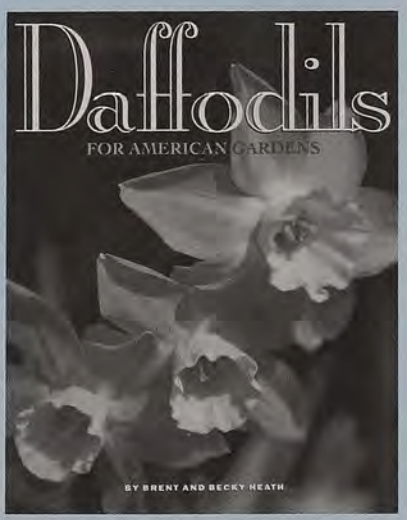
This gorgeous, oversized new book is a collection of rhododendron species paintings showcasing the work of Kneller, artist-in-residence at Exbury Gardens, Hampshire, England. More than 70 full-page color botanical paintings, accompanied by text from 50 of the world's leading rhododendron experts, highlight the most notable subsections of the rhododendron genus. Also included are in-depth illustrative and textual studies of leaf and flower forms, a full species list, a list of the world's greatest rhododendron gardens, and a glossary of terms. *1995. 160 pages.*

Gardening for Wildlife

Craig Tufts and Peter Loewer

Hardcover. Retail price: $29.95. AHS price: $26.95.
Book code: ROD 995

This new guide from the National Wildlife Federation (NWF) is a complete handbook for transforming any back yard into a lovely year-round haven for birds, mammals, amphibians, and other wild creatures. Detailed plant lists, garden plans, and basic organic gardening know-how show you how to create a healthy, thriving garden that you'll enjoy as much as the wildlife you are attracting. With the aid of 150 color photographs, Tufts, a naturalist with the NWF's Backyard Wildlife Habitat Program, and Loewer, an award-winning garden writer, provide a wealth of information on what is already working for back-yard wildlife enthusiasts across the country. *1995. 192 pages.*



Daffodils for American Gardens

Brent and Becky Heath

Hardcover. Retail price: $24.95. AHS price: $22.45.
Book code: ELL 115

Written by the owners of the Daffodil Mart in Gloucester, Virginia, this is the first exhaustive guide to daffodils for American gardens and gardeners. Everything you need to know about our most popular bulb is covered—from forcing paper-whites indoors to naturalizing masses in a woodland glade or developing prize hybrids. An encyclopedic listing of the 200 best cultivars for North America, illustrat-

ed with more than 300 color photographs, is sure to make you reach into that stack of fall bulb catalogs. *1995. 144 pages.*

Deep in the Green

Anne Raver

Hardcover. Retail price: $24.95. AHS price: $22.45.
Book code: KNO 115

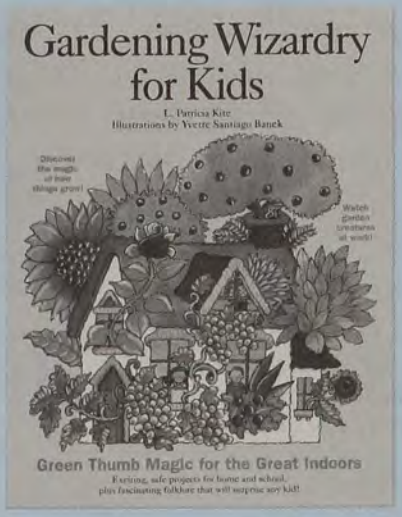
A compilation of essays by Raver, an award-winning garden columnist for the *New York Times*, this delightful book entertains and educates at the same time. Raver has something fresh to say about almost any subject relating to gardening, whether it is giving the lowdown on crickets or eulogizing the great trees that were once home to the gods. An ideal book to curl up with on the couch on those long winter evenings. *1995. 280 pages.*

Gardening Wizardry for Kids

L. Patricia Kite

Softcover. Retail price: $14.95. AHS price: $13.45.
Book code: BAR 115

Just in time for that special eight- to 12-year-old on your holiday shopping list, Kite's creative book helps kids discover the magic of how things grow. More than 300 indoor gardening projects and fascinating folklore about growing things add up to hours of indoor fun for anytime and any child. Each of the exciting and safe projects calls for inexpensive materials available in any household. At home or in the classroom, kids can witness just how things grow and even watch garden creatures such as earthworms and snails at work. The



tidbits of horticultural folklore will surprise, enlighten, and inspire any kid—and even some adults. *1995. 220 pages.*

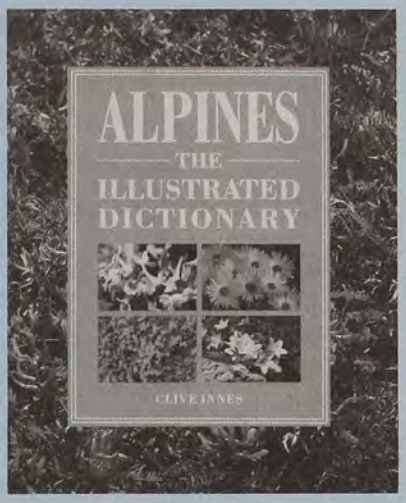
REFERENCE

Alpines: The Illustrated Dictionary

Clive Innes

Hardcover. Retail price: $39.95. AHS price: $35.95.
Book code: TIB 115

The book alpine gardening fans have been waiting for, this encyclopedic reference contains full-color photographs of more than 1,000 plants. Each photograph is accompanied by notes on habitat, distribution, growing habit, flowering season, and any individual characteristics of special interest. The expert text, penned by



internationally known author and horticulturist Innes, provides an incomparable reference for botanists, growers, and knowledgeable enthusiasts and collectors alike. *1995. 192 pages.*

Flowering Crabapples

Father John L. Fiala

Hardcover. Retail price: $49.95. AHS price: $44.95.
Book code: TIM 718

This book reflects the late Father Fiala's 50 years of passionate interest in the hybridization and cultivation of the ornamental crabapple. After outlining the history of these trees in North America, it describes and illustrates hundreds of them, and includes chapters on landscaping, companion plants, propagation, culture, and hybridizing. Beautiful photographs illustrate the dramatic variations of color and form. *1995. 273 pages.*

GARDENING BOOKS

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GARDENING BOOKS

AHS brings you the best in gardening books with the convenience of mail-order and the added benefit of significant discounts from retail prices. For ordering information, please see previous page.

Title	Book Code	AHS Price
AHS Encyclopedia of Garden Plants, *Brickell*	MAC 993	$42.50
AHS Encyclopedia of Gardening, *Brickell and McDonald*	GAR 194	$49.95
The American Gardener's World of Bulbs, *Glattstein*	LIT 395	$22.45
Best Bulbs for Temperate Climates, *Hobbs and Hatch*	TIM 994	$26.50
Color Echoes, *Harper*	MAC 755	$35.00
Conifers (2nd Edition), *Van Gelderen and Smith*	TIM 394	$62.95
Ferns, *Dunk*	HAR 901	$27.00
Ferns for American Gardens, *Mickel*	PRE 902	$54.00
Field and Garden Vegetables of America, *Burr*	ABB 995	$32.50
A Gardener's Dictionary of Horticultural Terms, *Bagust*	STE 593	$24.95
A Gardener Obsessed, *Charlesworth*	DRG 995	$22.95
Gardening by Mail, *Barton*	HOU 594	$17.00
Gardening with Perennials Month By Month, *Hudak*	TIM 993	$50.95
Gardening with Water, *van Sweden and Oehme*	RAN 395	$36.00
Gardens of Philadelphia and the Delaware Valley, *Klein*	TEM 995	$26.95
Hemerocallis: Daylilies, *Erhardt*	TIM 593	$24.95
Hortica, *Graf*	ROE 393	$210.00
Hortus Third, *Staff of L.H. Bailey Hortorium*	MAC 393	$135.00
Index of Garden Plants: New RHS Dictionary, *Griffiths*	TIM 194	$53.50
The Inward Garden, *Messervy*	LIT 395	$40.50
Manual of Climbers and Wall Plants, *Burras, Consultant Editor*	TIM 620	$35.95
Manual of Grasses, *Darke, Consultant Editor*	TIM 621	$35.95
Manual of Herbaceous Ornamental Plants, *Still*	STI 594	$43.50
Manual of Woody Landscape Plants, *Dirr*	STI 993	$38.95
Maples of the World, *Van Gelderen, De Jong, and Oterdoom*	TIM 194	$53.95
Native Gardens for Dry Climates, *Wasowski*	RAN 601	$31.50
The Natural Garden, *Druse*	RAN 893	$30.00
The Natural Habitat Garden, *Druse*	RAN 694	$36.00
The Natural Shade Garden, *Druse*	RAN 103	$35.00
The New Houseplant, *McDonald*	MAC 103	$36.00
Noah's Garden, *Stein*	HOU 693	$18.65
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Perennials and Their Garden Habitats, *Hansen and Stahl*	TIM 993	$42.50
The Pruning of Trees, Shrubs and Conifers, *Brown*	TIM 618	$26.95
Rodale's All New Encyclopedia of Organic Gardening, *Bradley and Ellis*	ROD 993	$25.50
The Rose Bible, *Reddell*	CRO 995	$45.00
Step by Step Organic Flower Gardening, *Ogden*	GAR 995	$22.50
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Sunset Western Garden Book, *by the editors of Sunset Books and Sunset Magazine*	SUN 759	$25.00
Tasha Tudor's Garden, *Martin*	HOU 395	$31.50
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The World of Magnolias, *Callaway*	TIM 594	$40.45
BOOKS ON WILDLIFE AND WINTER GARDENING:		
Colour in the Winter Garden, *Thomas*	TIM 115	$16.15
The Garden in Winter, *Verey*	TIM 110	$21.45
Gardening for Wildlife, *Tufts and Loewer*	ROD 995	$26.95
Waterscaping: Plants and Ideas for Natural and Created Water Gardens, *Glattstein*	GAR 910	$17.00
The Winter Garden, *Glasener, editor*	BBG 115	$ 6.25
Winter Garden Glory, *Bloom*	HAR 115	$22.50
Winter Ornamentals, *Hinkley*	SAS 115	$ 8.95

AHS BULLETIN BOARD

TREE CARE DAY AT SOCIETY'S RIVER FARM

The landscape of the American Horticultural Society's River Farm headquarters got some welcome attention in October when local members of the National Arborists Association and the International Society of Arboriculture spent a day working on the property's historic trees. Approximately 50 corporate and individual members of the associations donated their time for the tree maintenance work, which included pruning, cabling, and fertilizing.

According to H. Marc Cathey, AHS president, the gardens will benefit greatly from this work. "Our gardens are very fortunate to have many old trees dating back to when George Washington owned River Farm. Professionally pruning and training historic trees will help protect and prolong their life well into the 21st century."

Members of the two organizations hope that such community service projects will help bring to homeowners' attention the importance of regular tree care and proper maintenance.

"It's not enough to plant a tree on Arbor Day," says Ron Rubin from The Care of Trees, a tree-care company in Herndon, Virginia. "People need to understand that their trees need regular and proper care in order to survive."

Trees in the home landscape need more attention than their counterparts in the wild because they are subjected to conditions much harsher than a cool, moist forest setting. Forest soils are rich in organic matter, but urban soils are often compacted and covered with turf, making it difficult for tree roots to gather nutrients and water.

Professional arborists suggest several ways homeowners can help their trees survive these challenges:

✦ ***Plant the right tree.*** Before planting a new tree it is important to compare your site to the tree's requirements.

✦ ***Plant properly.*** Follow the instructions provided by the nursery or have a professional do the job.

✦ ***Mulch.*** Apply mulch three to four inches thick around the base of the trunk, but don't pile it against the tree. Extend the mulch out to the edge of the tree's canopy; this is especially important for a young or newly planted tree.

✦ ***Water appropriately.*** Watering is especially important to help newly planted trees adjust. It is also important to remember that different trees have varying water needs.

✦ ***Mow and trim weeds carefully.*** Collisions with lawn mowers and weed trimmers can damage young trees. A layer of mulch can eliminate the need for trimming next to the trunk.

✦ ***Monitor your landscape.*** Thoroughly inspect your landscape at least once a season. Take note of any apparent stress, disease, or developing insect problems.

Even these steps to proper tree care will not prevent damage brought on by age and weather. And when something is obviously wrong with a large, mature tree, such as a major limb that is dead, homeowners have to ask themselves: Do I really want to climb a rickety ladder balancing a chain saw in one hand and clinging to the tree with the other while wondering where to start cutting? Or has the time come to call in a professional?

Rubin says the main reason to use a professional arborist is to avoid injury to yourself and your tree. "Most people just don't have the equipment and know-how to remove limbs from a 90-foot tree," he says. "But most important, hiring an arborist allows you to use that person's knowledge and expertise in tree care."

In addition to pruning and fertilization, arborists' services include root management to prevent their invading septic systems and breaking up pavement; cabling and bracing for older trees in need of support; tree and stump removal; and insect and disease control. Most arborists can also identify potential problems and take corrective actions before trees become hazardous.

The National Arborists Association suggests that before hiring a professional arborist a homeowner should ask for references on the firm's work quality, confirm that the firm has adequate liability insurance, and ask if the firm is a member of any professional associations. A local arborist can usually be found by looking under "tree" in the Yellow Pages.

AHS FLOWER SHOW AWARD

As the growing season comes to a close, the 1995 flower show season also comes to an end. At 17 shows across the country this past year, the American Horticultural Society awarded citations to displays that demonstrated the relationship between horticulture and the environment and inspired viewers to beautify their homes and communities.

At the Southern California Home and Garden Show in Anaheim August 19-27, the AHS award was presented to an exhibit by Boulderscape, Inc. The main feature of this exhibit was a bubbling waterfall cascading down a system of sandstone boulders into a rock-lined stream. The plantings included weeping fig trees, small palms, ferns, and butterfly iris, blended with spots of color throughout from flowering annuals and water lilies.

According to Mary Tebo of Valley Center, California, who presented the award for AHS, the exhibit was a dynamic example of what can be done in the hillside environment so prevalent in Southern California. It was equally suggestive of what can be accomplished in a flat environment, where there are no rocks or boulders, or how to create an interesting feature for corner pockets of back-yard gardens, parks, industrial areas, or city landscapes.

Tebo says, "If this could be installed on a cement floor, the mind goes wild imagining it in a natural habitat."

REGIONAL HAPPENINGS

Mid-Atlantic

✦ **Nov. 12. Camellia Society of the Potomac Valley's Fall Show.** National Arboretum, Washington, D.C. Information: (202) 245-2726.

North Central

✦ **Nov. 11-26. Rags to Riches—Fall Flower Show.** Olbrich Botanical Gardens, Madison, Wisconsin. Information: (608) 246-4550.

✦ **Nov. 23-Dec. 31. Christmas Around the World.** Frederik Meijer Gardens, Grand Rapids, Michigan. Information: (616) 957-1580.

✦ **Nov. 23-Jan 7. Harmonious Holidays.** Floral Show at the Show Dome. Mitchell Park Conservatory, Milwaukee, Wisconsin. Information: (414) 649-9830.

Northeast

✦ **Oct. 28-Nov. 19. Longwood Gardens 1995 Chrysanthemum Festival.** Longwood Gardens, Kennett Square, Pennsylvania. Information: (610) 388-1000 or (800) 737-5500.

✦ **Nov. 1-Mar. 31. Blossoms, Bugs, Butterflies, and Birds' Nests.** Exhibition of botanic artists: Katie Lee, Robin Kerith Smith, and Sue Wall. Glyndor Gallery, Wave Hill, Bronx, New York. Information: (718) 549-3200.

✦ **Nov. 18. Identifying Plants in Winter.** Class. Bernheim Arboretum, Clermont, Kentucky. Information: (502) 955-8512.

Northwest

✦ **Nov. 4. Seeds Across the Globe.** Workshop. Washington Park Arboretum, Seattle, Washington. Information: (206) 543-8800.

✦ **Nov. 8. Fall Seed-Sowing Class.** Berry Botanic Garden, Portland, Oregon. Information: (503) 636-4112.

✦ **Dec. 8-9. Holiday Bazaar.** Leach Botanic Garden, Portland, Oregon. Information: (503) 761-9503.

South Central

✦ **Nov. 12-16. New Frontiers in Lawn Care.** Green Industry Expo Conference. Fort Worth Tarrant County Convention Center, Fort Worth, Texas. Information: (800) 458-3466.

Southeast

✦ **Nov. 4-5. 1995 National Chrysanthemum Show.** Georgia Chrysanthemum Society. Terrace Garden Inn, Buckhead, Georgia. Information: (404) 261-1441.

✦ **Nov. 8. The Gardener: The Creative Force Behind Any Garden.** Slide-illustrated lecture by landscape designer James David. Atlanta Botanical Garden, Atlanta, Georgia. Information: (404) 876-5859.

✦ **Nov. 10-11. 12th Annual Hydroponic Grower Conference.** Delta-Orlando Resort, Orlando, Florida. Information: (216) 725-5656.

✦ **Dec. 11-13. 10th Annual North Carolina Vegetable Expo.** Holiday Inn Four Seasons, Joseph S. Koury Convention Center, Greensboro, North Carolina. Information: (919) 515-3619 or (919) 782-0067.

Southwest

✦ **Nov. 18. Vegetable Gardening in Flagstaff.** Workshop. Arboretum Horticultural Center, The Arboretum at Flagstaff, Flagstaff, Arizona. Information: (602) 774-1441.

✦ **Nov. 30-Dec. 2. Noche de las Luminarias '95.** Holiday festival. Desert Botanical Garden, Phoenix, Arizona. Information: (602) 941-1225.

West Coast

✦ **Nov. 2-5. Fall Plant Festival.** Daily lectures and plant sale. The Huntington, San Marino, California. Information: (818) 405-2141.

✦ **Nov. 11. Production Techniques for Organic and Sustainable Landscaping/Gardening.** McLaren Lodge, Golden Gate Park, San Francisco, California. Information: (916) 756-6967.

✦ **Dec. 2. Fruit Tree Pruning.** Descanso Gardens, La Cañada-Flintridge, California. Information: (818) 952-4401.

✦ **Dec. 2-3. Camellias and the Holidays in the Garden.** The Pacific Camellia Society Show. The Arboretum of Los Angeles County, Arcadia, California. Information: (818) 821-3222.

✦ **Dec. 5-10. Heritage House Victorian Christmas Tours.** Heritage House at the Fullerton Arboretum, Fullerton, California. Information: (714) 773-3404.

WILDFLOWER SEEDS

The New England Wild Flower Society is selling seeds or spores of more than 100 varieties of wildflowers and ferns in its 1996 Seed and Book Catalogue.

All requests for the 1996 Seed and Book Catalogue must be received by March 1 because seed sales close March 15. Requests will be filled in the order received.

To obtain the catalog, send $2.50 to Seeds, New England Wild Flower Society, Garden in the Woods, 180 Hemenway Road, Framingham, MA 01701.

SOUTHERN CALIFORNIA TREES

Street Tree Seminar, Inc., an organization of professionals in the tree industry, has released an expanded version of its *Street Trees Recommended for Southern California*, first released in 1971. With 20 new trees, *Street Trees* now contains 350 photographs of 85 trees as well as detailed cultural information. Some of the species described include mountain she-oak *(Casuarina stricta)*, white ironbark *(Eucalyptus leucoxylon)*, and cajeput tree *(Melaleuca quinquenervia)*. To order the book, send $25 plus $3 for shipping and handling to Chairman, Publications Committee, Street Tree Seminar, Inc., 2200 East Via Burton Street, Anaheim, CA 92806, or call (714) 991-1900.

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Classified Ad Rates: All classified advertising must be prepaid. $2 per word; minimum $50 per insertion. Copy and prepayment must be received on the 20th of the month three months prior to publication date. Send orders to: AHS Advertising Department, 506 Russell Road, Alexandria, VA 22301, or call (703) 549-2112.

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BOOKS

HORTICA—Color Cyclopedia of Garden Flora, with Hardiness Zones, also INDOOR PLANTS, 8,100 color photos, by Dr. A.B. Graf, $238. TROPICA 4, 7,000 color photos of plants and trees for warm environments, $165. EXOTIC HOUSE PLANTS, 1,200 photos, 150 in color, with keys to care, $8.95. Circulars gladly sent. Shipping additional. ROEHRS CO., Box 125, East Rutherford, NJ 07073. (201) 939-0090. FAX (201) 939-0091.

BULBS

DUTCH BULBS for fall planting, 12cm Tulips, DN1 Daffodils, Hyacinths and miscellaneous. Catalog free. Paula Parker DBA, Mary Mattison Van Schaik, IMPORTED DUTCH BULBS, P.O. Box 32AH, Cavendish, VT 05142. (802) 226-7653.

CACTI AND SUCCULENTS

RARE AND EXOTIC PLANTS from around the world. Catalog $2, refundable. ABBEY GARDEN CACTUS, P.O. Box 2249, La Habra, CA 90632-2249. (310) 905-3520.

CARNIVOROUS PLANTS

CARNIVOROUS (Insectivorous) PLANTS, seeds, supplies, and books. Color brochure free. PETER PAULS NURSERIES, Canandaigua, NY 14424.

HOUSE PLANTS

ORCHIDS, GESNERIADS, BEGONIAS, CACTI AND SUCCULENTS. Visitors welcome. 1994-1995 catalog, $2. LAURAY OF SALISBURY, 432 Undermountain Rd., Salisbury, CT 06068. (203) 435-2263.

PLANTS (UNUSUAL)

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., Williams, OR 97544-9599.

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DAYLILIES FOR COAST GARDENS

There's a price to pay for living next to a body of salt water: The list of plants that can tolerate seaspray, saline and sandy soil, and high winds is relatively short. Many gardeners are playing it safe by landscaping with coastal natives, although imported plants such as *Rosa rugosa* have also proven their mettle. Still, the color palette available has been relatively limited.

Therefore, leaders of the All-America Daylily Selection Council—an organization of *Hemerocallis* growers—could hardly wait to toot their horn when they received evidence that these low-maintenance summer-bloomers virtually sneer in the face of seashore conditions.

Stewart Nagle of Clear Lake Shores, Texas, a geologist, was impressed when he observed that daylilies, along with antique roses, were the sole survivors of repeated flooding in his Galveston area garden. They tolerated standing water that was a foot deep for more than a week at a time.

For Darrel Apps, who grows and breeds daylilies as the owner of Woodside Gardens in Bridgeton, New Jersey, it took a trip out of the country to bring home the plants' salt tolerance: He noticed that daylilies were perfectly at home on a steep seafront hillside on an island off the coast of Korea, where he and other plant explorers were constantly lashed with seaspray.

Apps suggests that because daylily roots form a broad mat, they can also be useful in controlling erosion, not only along the shore, but in areas prone to mudslides, on roadsides, or other steep sites. And their salt-tolerant nature also recommends them for areas where salt is used to clear snow and ice off winter roads, the council adds. Apps recommends that gardeners along seafront properties exposed to high winds choose daylilies with shorter scapes, or stalks.

FEDERAL LANDSCAPE GUIDE FINAL

The Clinton administration has issued its guidelines on landscaping practices for federal lands with changes that "if properly interpreted and used are something that the industry can live with," says Craig Regelbrugge, director of regulatory affairs and grower services for the American Association of Nurserymen (AAN).

The goals of the document, called "Guidance on Environmentally and Economically Beneficial Landscape Practices on Federal Landscaped Grounds," include encouraging the use of regionally native plants, design and construction practices that minimize adverse effects on natural habitat, pollution prevention through composting and reduced use of fertilizers and pesticides, reduced water and energy use, and development of federal demonstration projects to stimulate interest in these practices.

Members of the nursery industry objected strongly to the document when it was released as a memorandum in April 1994 because they felt it could be seen as a mandate to plant only native plants. AAN coordinated a response by 17 industry organizations, and several of their key concerns were addressed in the final document. These include a change in the definition of native plant to eliminate use of the word "state," says Regelbrugge. "We pointed out that the term is a geopolitical one that has nothing to do with plant ranges. We felt that it laid groundwork for often well-intentioned native plant societies to push for rules that would allow plants to only be purchased within the state." The document now refers to regionally native plants.

Regelbrugge says that the final document reads less like a mandate because of language in its preamble supporting the idea of choosing the right plant for the right place. The industry has noted that in disturbed urban environments in particular, non-native plants may perform better than natives. Regelbrugge adds that AAN would have preferred to see such language emphasized in the body of the document.

Concern about invasive non-native plants was clearly a driving force behind the issuance of the document, he says. "Highway departments are interested in finding the hardiest, most rapidly establishing plants, and sometimes a line is crossed. On the other hand, if plants fail to establish, what about the soil erosion that occurs? But there is no 'bad actors' plant list in the guidance."

In spite of the changes in language, AAN still objects to the document's "sweeping and often inaccurate 'one-size-fits-all' assumptions about plant selection," says its legislative newsletter, *Update,* adding that "there is much room for misinterpretation and misuse of the guidance by federal land managers and those specifying plants for federally funded projects."

TREES MAY HELP CURB VIOLENCE

In the past, researchers have found that plants in the landscape can improve our moods, help us heal faster from surgery, and reduce vandalism. Now a study at the University of Illinois indicates that a green landscape—with as few as four or five trees—may reduce domestic violence.

William Sullivan, an assistant professor in the Department of Natural Resources and Environmental Sciences at the University of Illinois at Urbana-Champaign, and Frances Kuo, a research scientist there, gave structured interviews to 70 African-American female heads of household in the Robert Taylor Homes, a Chicago public housing development. Some of the 28 high-rise buildings are surrounded only by concrete and asphalt, while others are in what researchers called "high nature" environments. "These weren't arboreta or parks," says Sullivan. "These were places with maybe four or five trees." The buildings are identical in other ways, and there is no systematic difference in the groups of people living in one building or another.

Residents of the green areas feel safer and more positive about their living quarters, and report more visitors and better relations with their neighbors than residents of the non-green areas. They were also less likely to use violence to resolve conflicts, as indicated by their responses to a standard psychological scale. They are more likely to use reasoning to discipline their children, and less likely to use physical violence with adult partners.

The study was funded by the U.S. Department of Agriculture National Urban Community Forest Advisory Council, and initial findings were reported at a meeting of the National Forest Service last winter. Sullivan says that he and Kuo will next be working with a developmental psychologist, Angela Wiley, to replicate the study, and to learn if the presence of trees also has a positive effect on children's cognitive and intellectual development. "We believe that the presence of trees brings people out of their buildings," Sullivan says, "and provides a setting in which they are more likely to interact in a friendly way."