

American Horticulturist

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News Edition



LEILA CABIB

Children's Symposium Program Inside!

If your vocation or avocation brings you in touch with children and plants, you'll want to plan now to attend the AHS-sponsored National Symposium on Children and Gardening to be held in Washington, D.C., August 12 to 14. There will be more than 60 presenters—

educators, horticulturists, designers, artists, social scientists—from throughout the United States and abroad. The full program and registration information are on pages 15 to 18.

Beginning on page 11, you'll read about the exciting new gardens for children being built at our River Farm headquarters. Symposium participants will visit the gardens, and we hope our members will have a chance to gain inspiration and ideas from them.

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Trashing Your Garden

It isn't trash until you throw it out. Ordinary household waste is full of durable and interesting objects just waiting to be put to a second use—if you can think of one. Here are a few possibilities for the garden:

Let your plants drink from soda bottles or milk jugs. Punch a hole in the cap and saw off the bottom. Bury the container upside down with the cap on, next to a thirsty pumpkin and leave only a rim exposed. Fill with water.

Those same plastic milk jugs can be used as cloches to protect seedlings against frost, except that in this case you want to cut out the bottoms and place them over the plants right side up. Or you can bubble wrap your plants against frost. Fit plastic packing sheets with "blisters" around tomato cages or other suitable supports. A kind of bubble wrap is now being sold for this purpose (see p. 3). But there's no reason why used—and free—wrap wouldn't work just as well.

Turn your old garden hose into snakes. If you have a problem with birds, try cutting up a worn-out hose into four foot-long "snakes." Paint red or yellow stripes on your snakes to make them more conspicuous, then distribute them around your garden. Your trash may have other potential for wildlife control. Some gardeners scare birds with aluminum pie tins on string, for instance. Others use old pantyhose filled with human hair to repel deer.

Support your melons with pantyhose. You can save space in the garden by training melons and squash on a trellis and supporting the fruit in hammocks of run-filled pantyhose. If you prefer your melons at ground level, keep them from rotting by supporting them on overturned margarine tubs.

Jack up your garden with used tires. If you can stand the sight of them, old tires make great containers and they can be stacked to various depths. Placed around seedlings, filled with stones (to boost heat retention), and covered with plastic sheeting, they also make effective—if ugly—coldframes.

Make socks for your pots. Scraps of natural fibers, like cotton or linen, can be cut into small pieces and fit into pots. The "socks" allow proper drainage and simplify removal when the time comes to transplant.

Sow your seeds in corncobs. This seed-starting technique was invented for use in developing countries, but it might prove handy for you. Soak two-inch corncob sections in manure tea for about a month, then arrange them upright in a flat. Press a few seeds into the ends of each section and cover the lot with a little fine soil or compost.

Old pet food tins filled with beer are a commonly used slug bait, but any container that seems to be proliferating at your house—baby food jars, prescription medicine bottles—will do. Or use those little bottles, if they have lids, to stratify seeds next winter.

Once you start seeing trash as a potential resource, you will almost certainly find other reasons for keeping things you used to throw out. But of course, not every item is worth retrieving from the bin. We note one gardener's use of an old electric blanket for bottom heat in a seed-starting setup. It's probably best to avoid using electrical equipment for other than its intended purpose—at least if you're going to plug it in. But most of your trash will be perfectly safe, and all of it is free. Let us know what you find!

Recycle Your Garden Ideas!

Does your gardening involve recycling techniques that we didn't describe? Do you have experience with any of the techniques that we did describe? Either way, we want to hear from you. Write the editors, *American Horticulturist*, 7931 East Boulevard Drive, Alexandria, VA 22308-1300. We might publish your letter in our "Members' Forum," or incorporate your observations—with proper credit, of course—in a future News Edition article. Let us know what works for you, in regard to recycling or any other topic, so we can share your gardening knowledge with others.



Gardening With Someone Else's Trash

Recycling comes naturally to gardeners. With a compost bin and perhaps a gray water system (see page 5), our gardens can transform a large measure of household waste into beautiful, edible, and/or environmentally valuable plants. But the home garden is also the focus of a major industry, and gardeners represent a market for commercial forms of recycling too. Gardening products offer many opportunities for incorporating recycled materials. A review of what's available indicates that the field is promising, but much of the work is still tentative.

Recycling plastic and other petroleum derivatives is complicated. Despite the prevalence of plastic, it takes some looking to find it in recycled form. The most important horticultural use of plastic is as containers, and the industry is making modest but solid progress in recycling these (see page 4). Elsewhere, the picture is of a sparse but growing crop of applications. There are tree grates, compost bins, and rain barrels made of recycled plastic. There is a soaker hose made from recycled tires. (Instead of spraying water, a soaker hose "sweats" along its entire length.) Another manufacturer is using recycled plastic to make "bubble wrap" insulating tents for tomato plants. These developments are still too isolated to indicate a routine use of recycled plastic.

But there is no doubt that other applications will be found. Reclaimed resin is being used to mold "plastic lumber," for instance. These plastic boards might find a place in the landscape, perhaps as an alternative to treated wood. Used plastic is also being combined with scrap wood fiber to form an interesting set of composite materials. These are still in the experimental stage, but researchers foresee a broad range of eventual uses, including packaging, furniture, housing—even car parts.

It's easier to find garden products made of recycled wood fiber. You can buy mulching paper made entirely from recycled fiber or planters made from artificial "boards"—a "reclaimed wood product" that looks like ordinary wood.

Wood waste is being combined with concrete to form another set of composites that are likely to have landscaping applica-

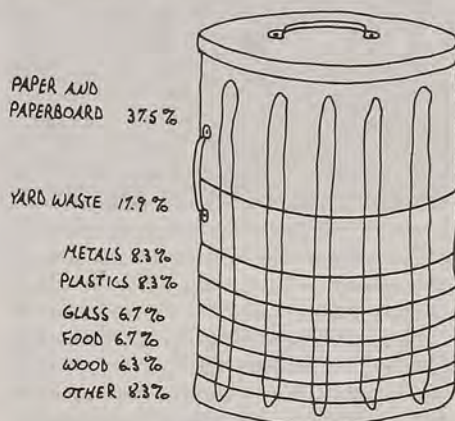
tions. "Chunkrete," an experimental composite developed by the U.S. Forest Service, consists of wood chunks suspended in a concrete matrix. It's lighter than concrete and better at dampening vibration. A Canadian company is already marketing another composite, called "Woodcrete." Intended for use as an exterior tile, Woodcrete resembles fired clay, but it can be sawed and nailed. The manufacturer says it's also a good insulator; it doesn't heat up readily in the sun.

Another structural material that may

mulch. Among the sources for wood chips are discarded furniture, condemned buildings, and diseased trees. Such materials may be laden with plant diseases or contaminants like lead paint or varnish. If you plan to use chipped wood waste in any quantity, it might be wise to ask your supplier where it comes from. And even clean chipped wood should not be worked into the soil, since its decay will rob your plants of nitrogen.

The soil itself presents recycling opportunities. Strictly speaking, any soil

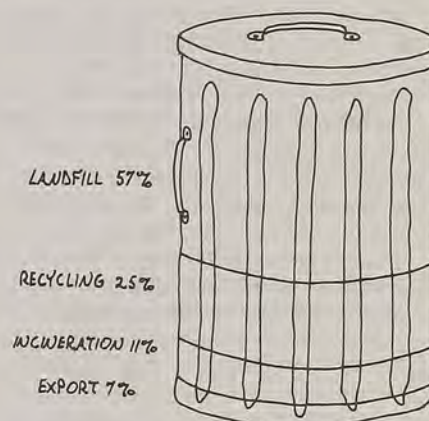
What Are We Throwing Away?



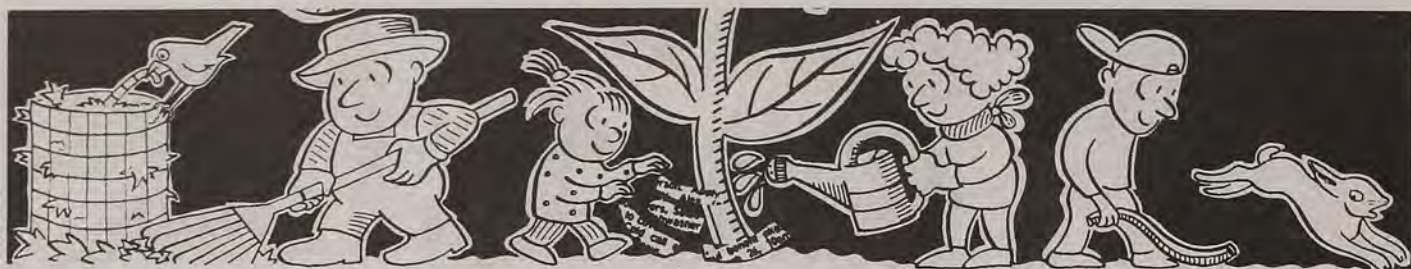
eventually find a place in the landscape was developed by Stanley Shetka, a professor at Gustavus Adolphus College in Minnesota. Shetka has found a way to produce a sort of reconstituted wood, by mixing wastepaper and water, then squeezing the resulting slurry. Shetka says his pressed paper "bricks" can be produced from any type of paper, and that if properly coated they are suitable for exterior use.

Probably the most important horticultural application for recycled wood is as mulch. Mulch may not sound like a glamor product, but for companies processing wood and some other plant materials, mulch has transformed trash into profit. In Hershey, Pennsylvania, for instance, the Hershey Foods Corporation sells cocoa hulls as mulch. (The hulls smell faintly of chocolate, perhaps making them an ill-advised choice for dieters.) Most mulch, of course, comes from wood, but not all wood makes good

Where Is Our Waste Going?



amendment is a form of recycling, but some amendments take the process further than others. One technique, developed by two University of Florida researchers, incorporates a hammer-milled confection of tires, glass, plastic, and paper. An increasingly common amendment is sewage sludge. The sludge is settled out of raw sewage, then heated to kill pathogens. Commercial growers are adding composted sludge to both field soils and container media, and sludge compost is being used by home gardeners as well. Despite its appeal as a recycling strategy, this approach has a serious liability: sludge frequently contains heavy metals, which are toxic to both plants and animals. At present, it is difficult to evaluate the risks of using sludge compost. Permissible levels of metal contamination vary from state to state, and few states require producers to indicate the metals content of their compost.



A Proliferation of Plastic Pots

If you have been gardening for more than a couple of seasons, you are probably facing the plastic pot dilemma: what are you supposed to do with the piles of containers that clog your storage shed? It's a shame to throw them away, but there's no reason to keep more on hand than your nursery does. The next time you buy plants, make a point of asking your growers if they will take the pots back for reuse. If they hear the suggestion often enough, they may start saying "yes."

Some nurseries have already discovered that taking back pots makes good economic sense. Last year, for instance, Al's Fruit and Shrub Center in Woodburn, Oregon, established a drop-off depot for unwanted pots. During the nursery's busiest period, from March through June, customers brought in about \$70 worth of usable pots daily. But the system isn't perfect. About 30 percent of the material returned proved unusable and was trucked off to a landfill. Disposal costs averaged \$3 for every \$70 worth of good pots returned.

Susanne Foster, a Washington State horticulturist and retired nursery owner, has taken this approach a step further, by setting up a regional pot collection program in Seattle. A \$4,500 grant from the city allowed Foster and a coalition of industry groups to organize three "Plant Pot Drop Spots" during a one-day collection drive last September. Volunteers sorted the thousands of pots that consumers brought in. About 75 percent of the collection, or six to eight tons, was reusable. A dozen local nurseries retrieved the good pots and the rest were trucked off to be ground up and recycled. The grant will cover another pot drop day this June, after which further funding will have to be found. Foster is encouraged by both consumer and industry response thus far. "I would like to see it established as an annual event," she says.

Such programs are a good start, but nurseries and home gardeners alike are still dumping mountains of plastic pots into landfills. Getting more of this material into the recycling loop is the task that Dick Bonnett has set himself. Bonnett owns Plastic Recycling Services (PRS) in Parkersburg, West Virginia, the only recycling company dealing exclusively with horticultural plastic. "If you can put a plant in it," Bonnett says, "I can recycle

it." PRS handles pots, flats, packs, plug trays, "and everything in between."

Bonnett explains that he is an "intermediate processor," which means that he doesn't actually make new pots from old. Instead, he cleans and sorts the used material according to type of plastic, then grinds it and ships it back to manufacturers. For the manufacturers it's a good deal: PRS's product is consistently cheaper than virgin plastic. Bonnett says his own margin has suffered from the recession, but he is optimistic about this year.

Bonnett collects most of his pots from

big greenhouses and wholesalers east of the Mississippi. He says he has to spend most of his time selling them on the system—convincing them that recycling is worth their time. He started his business in October 1990, and now has 12 full-time employees. Last year, PRS handled 1.2 million pounds of plastic. This year's target is three million pounds. That may sound like a lot, but Bonnett estimates that horticulture produces some 350 million pounds of plastic a year. "So far," he says, "we're not even at 1 percent of the industry."

Packing in the Plastic Peanut

If you've ever ordered plants—or anything else—through the mail, you've probably harvested a crop of polystyrene "peanuts." Sturdy shock absorbers and as light as gossamer, the peanuts have become standard in the mail-order industry. But critics call them a poor packaging choice because they're made from a nonrenewable resource—petroleum—and they don't decompose naturally.

Nevertheless, the Polystyrene Packaging Council, an industry advocacy group in Washington, D.C., claims environmental merit for the styro-goober. The council says that polystyrene packaging accounts for less than 2 percent by volume of municipal solid waste and that polystyrene can be recycled. In 1989, major manufacturers set up a recycling cooperative for reprocessing used polystyrene, mainly into durable plastic goods. Thus far, the cooperative is active in 40 states. Of course the peanuts can simply be reused, and a network of mailing services throughout the country is accepting them for that purpose. The network has over 2,500 collection points.

A few nurseries have decided it would be simpler to dump the goober and pack with something that doesn't require such a complex recycling process. Last fall, Wayside Gardens in Hodges, South Carolina, started using a material trademarked "Curlpak." Made of paper-thin wood shavings, Curlpak is produced entirely from waste wood, which would otherwise be clogging a landfill. Wayside reviewed several other possibilities, includ-

ing shredded newspaper and popcorn, before settling on Curlpak. So far, the company is happy with its choice. Curlpak is somewhat heavier than styrofoam, so shipping costs have risen. On the other hand, consumers are unpacking something they can use: Wayside suggests that you compost Curlpak, use it as pet bedding, or start the barbecue with it.

Smith & Hawken of Mill Valley, California, a mail-order retailer that sells bulbs and gardening supplies, switched to pellets made primarily from cornstarch. The pellets, called "Eco-Foam," look like the peanuts they are intended to replace. Smith & Hawken says the only ingredient besides cornstarch is polyvinyl alcohol, a nontoxic sizing agent that makes up 5 percent or less of the product's content. Eco-Foam can be composted, and it dissolves in water with uncanny speed. Its solubility makes it easy to dispose of—just don't unwrap any wet packages on the carpet. The company hopes that improvements in manufacturing will soon allow the production of pure cornstarch pellets.

Stranger still is the oat starch foam being developed by a contractor for the Canadian Department of Agriculture. The foam is edible and may eventually double as a snack food.

If your nurseries still pack with the peanut you might ask them to consider alternatives. Peanuts you've already acquired can be unloaded into the mailing service network mentioned above. Call (800) 828-2214 for the nearest collection point.



Hooking the Washer up to the Landscape

Are you letting a valuable resource run down the drain? Many gardeners have started piping some of their used household water into the landscape instead of letting it run into the sewer. If you live in a drought-prone area or if you pay a water bill, using this "gray water" could save you money. Even if you have your own well, gray watering could reduce your household's environmental impact.

Gray water is any household waste water except for what is flushed down the toilet (that's "black water"). But of course, there are varying shades of gray. Water from the kitchen sink, for instance, is usually excluded from gray water systems because it's too greasy. But water from the washing machine (provided you are not washing diapers) or the bathtub might find a second use outdoors.

The average American household produces a veritable river of gray water. Art Ludwig, the owner of Oasis Biocompatible Products, a supplier of gray water-compatible cleaners, estimates residential gray water production at 20 to 40 gallons per person per day. In personal terms, that means that your own private run-off could slake the thirst of four mature fruit trees or a dozen shrubs.

Gray water systems vary in complexity from pressurized, nanofiltered setups to hose and bucket brigades. For newcomers to the field, Ludwig recommends a simple technique for reusing washing machine water, which he regards as the most readily available gray water source. In its ideal form, the system involves running a hose from the washing machine through an exterior wall and into a plastic overflow drum. Another hose would run from the base of the drum to a mulch basin, where the water would soak into the soil. For such a system to work, the mulch basin has to be downhill from the drum, although Ludwig says the drum can be up to five feet higher than the washing machine. If gravity is on your side, you could probably be gray watering for under \$100. If it isn't, you will need a sump pump, but the system would probably still cost less than \$250.

This arrangement is simple, but it still demonstrates three features essential to any gray water system. It gets the water



ART LUDWIG

This rain barrel doubles as an overflow drum for washing machine gray water.

into the ground immediately; gray water may contain pathogens and should never be stored. It prevents water from backing up into the system. (The overflow drum does this; pump systems would also need a check valve on the line leading from the pump.) And the system can be turned off—that is, the water can be diverted into the regular sewer or septic line, in this case by switching hoses on the washer.

Gray water can be an important asset, but you can't do it halfway. The following questions should help you decide whether it would work for you.

Is gray water use legal in your area? Plumbing codes have tended to classify all household waste water as raw sewage. But water shortages, particularly in the West, are forcing revisions. In July, the California legislature will legalize gray water throughout that state, although municipal governments can still enact local bans. And next year, gray water guidelines will be included in the Uniform Plumbing Code, which means they could be adopted by 22 western states. In the East, the law is generally less favorable to gray watering. But this is one of those areas where the law lags behind social

reality: many people are using gray water illegally.

Is your house built on a slab foundation? If it is, then most of your plumbing probably drains into pipes below the slab, and these will not be accessible to the system. You will probably be limited to reusing water from your washing machine, but that option is still worth pursuing.

Do you use a water softener? In general, it's not a good idea to reuse artificially softened water because most softeners contain sodium chloride that may damage the soil.

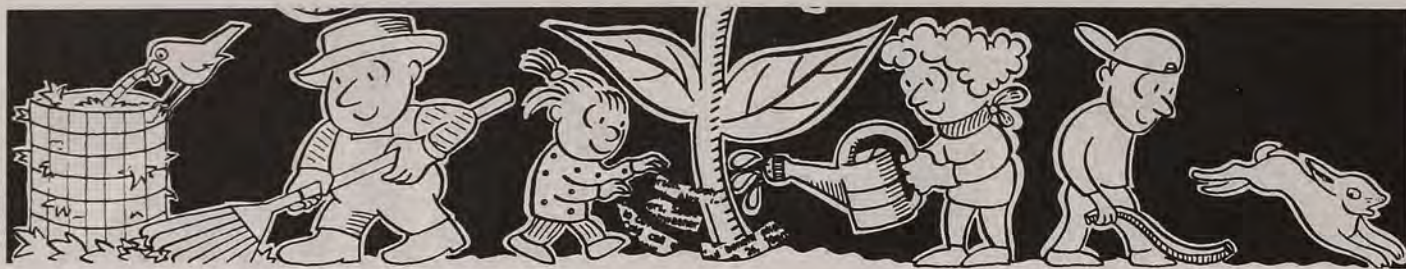
Do you know how to keep your soil healthy? Your soil must do more than just filter the gray water: it must have microbe populations high enough to consume impurities and kill any pathogens. So if you just tore up a concrete slab to make a lawn, you should probably wait a while before setting up a gray water system. And once the system is in place, you will have to watch the soil pH (high pH may indicate sodium buildup) and the soil structure (gray water may make additional loam necessary).

Are your plants suited to gray water?

Because it may contain pathogens, gray water should not be used in vegetable gardens, although it can be used on fruit trees. The possibility of contamination also means that you can't distribute it with a sprinkler, so you can't gray water your lawn. And acid-loving plants, such as rhododendrons, ferns, or hydrangeas, generally don't love gray water, which tends to be alkaline. Gray water works best with trees and ornamentals that like alkaline soils.

Finally, are you prepared to be very careful about what you pour down the drain? You will have to avoid cleaners with such harmful ingredients as chlorine, borax, or boron—or turn off your system when you use them.

A manual on gray water and a selection of gray water-compatible cleaners are available from Oasis Biocompatible Products, 1020 Veronica Springs Road, Santa Barbara, CA 93105-4532, (805) 682-3449. The manual costs \$4. Robert Kourik has also written a useful gray water manual; it is available for \$6 from Edible Publications, P.O. Box 1841, Santa Rosa, CA 95402.



Give Your Garden the Latest News

Every week, you bundle up your newspapers and drop them off at a recycling station. That's the best retirement plan for your old reading, right? Not necessarily. Recycling might be robbing you of valuable top soil. Newspaper recycling programs still have a long way to go, which is not surprising since over a third of the entire municipal waste stream is made up of paper (see chart on page 3). Thus far, programs have been hampered by the glut of waste, a bottleneck in the deployment of recycling technology, and the higher cost of recycled paper. Instead of sending your newspapers off into this congested recycling stream, you might divert them into the garden.

Some gardeners are "recycling" newspaper by using it as compost or mulch. The paper itself is mainly just cellulose and lignin, which makes it an excellent source of carbon, the main organic constituent of soil.

But others worry about the health effects of toxic materials present in newsprint ink. Some colored inks contain heavy metals, like barium, manganese, lead, and cobalt. In sufficient concentrations these are dangerous to both plants and animals, but the occasional cartoon strip is not likely to poison your compost heap. As the editors of the 1992 *Rodale Book of Composting* put it, "If only a few colored-ink items are mixed in with newsprint, there should be no cause for concern." In any case, most newspapers have switched from metal-based to soy-based inks for their color printing, according to Danny Collins, production manager for the Raleigh, North Carolina, *News and Observer* newspaper (see sidebar on page 7). You might find out what type of ink your local newspaper uses for color printing, or you could skirt the problem entirely by excluding colored newsprint from the compost.

A group of carcinogens, the polycyclic aromatic hydrocarbons (PAHs), occurs in both black and colored inks. But a study done for the Maine Waste Management Agency in 1991 concluded that PAH levels in newsprint ink are too low to pose a health risk. The study found that wheat grown in newspaper compost had only slightly higher PAH levels than the "background" levels observed in wheat



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Over half of our solid waste still ends up in landfills.

grown in peat. And the highest recorded level still fell well within the exposure standards set by the U.S. Occupational Safety and Health Administration.

If you want to start putting your paper in the garden, the simplest approach is to chop it up thoroughly and dump it into the compost. You can send it through a chipper/shredder or just attack it with a large knife. Either way, make sure the job is thorough, because intact sheets of paper are pretty inert and you'll end up with a landfill instead of a compost heap.

Once the paper is cut up, it can be treated as you would treat leaf litter or any other dry, high-carbon organic. The trick is to "cook" it by adding high-nitrogen material, such as table scraps, grass clippings, or manure. (Chicken manure is especially good for this.) Nitrogen is important because it's the other main nutrient for the microorganisms at work in your heap. Joseph Keyser, who directs the composting program at AHS, explains that a lack of nitrogen will prevent the carbon-rich material from breaking down. If you add compost like that to the soil, Keyser says, you will actually deprive your plants of nutrients because soil microbes will "steal" nitrogen from the

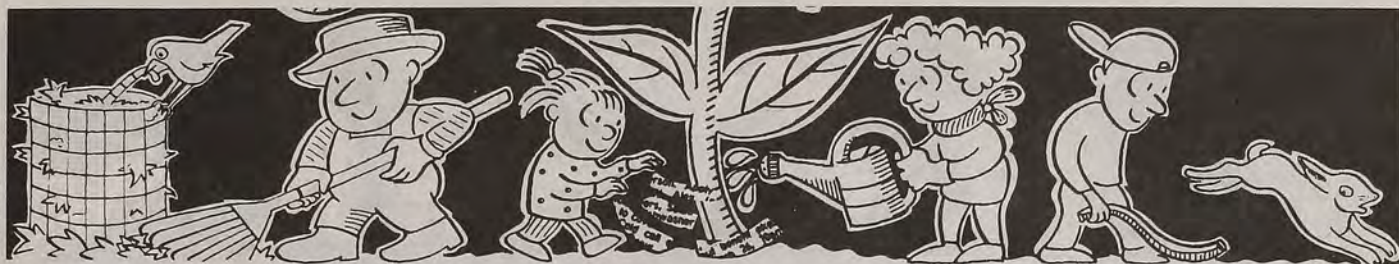
plants in order to finish their composting job. "Even after compost appears to have finished," Keyser adds, "we recommend that people allow it to cure for about a month if they plan to use it as a soil amendment. Of course you can use it immediately as a mulch."

And newspaper is proving to be an excellent mulch. Two years of testing at Ohio State University showed shredded newspaper to be as effective as wheat straw in retaining soil moisture and suppressing weeds. The paper degraded well, and crop yields were actually slightly higher than with the straw mulch. Research at the University of Vermont showed chopped newspaper, sandwiched between layers of plastic sheeting, to be as effective at moderating winter temperatures as straw or microfoam used in the same manner. Shredded paper does have one disadvantage as a mulch: it's mobile. But you can prevent the wind from undoing your work by soaking the paper.

Some researchers are looking at more unusual ways of growing with newsprint. At the U.S. Department of Agriculture's Soil Dynamics Lab in Auburn, Alabama, for instance, scientists are using newsprint to compensate for the hard clay subsoils characteristic of the Southeast. By filling four-foot deep trenches with a mixture of 50 percent soil, 40 percent shredded newspaper, and 10 percent chicken litter, the scientists create enormous subterranean "sponges." Each foot of depth stores the equivalent of an inch of rain.

At the University of Minnesota, wood science professor Elmer Schmidt has worked out a system for growing oyster mushrooms (*Pleurotus* spp.) on bales of newspaper. (See "Members' Forum," *American Horticulturist* News Edition, May 1991.)

Schmidt began researching the idea in 1990, by showing that it's possible to raise the mushrooms in four to six weeks on bales of shredded newspaper. He is currently trying to determine yields and costs of production. Since the mushrooms digest the cellulose and lignin in the newsprint, the used bale should compost more readily—a possibility Schmidt also plans to test. Schmidt says the system may be suitable for the home gardener, and he reports that the newspaper mushrooms taste fine.



Community Compost Pioneers

Karen Summers, horticulturist at the Cloister on Sea Island, Georgia, had a problem: what to do with the yard and garden trimmings her work crews were collecting from hundreds of private homes and cottages on the island resort, its two golf courses, and the sprawling hotel and recreational complex itself. Transporting the trimmings to a mainland landfill, she knew, would be prohibitively expensive.

The solution, of course, was composting—recycling those nutrient-rich materials into mulches and soil amendments for the Cloister's award-winning gardens.

The approach Summers eventually took to composting is just one among many being used by private institutions, farms, municipalities, arboreta, and other groups around the country that are turning to composting as a cost-effective—and even profitable—environmental alternative to landfilling and incineration.

With approximately 20 percent of the solid waste stream made up of yard trimmings (grass, leaves, and brush), a figure that frequently jumps to 25 to 50 percent during active growing seasons, local and state agencies view composting as an important element in their overall recycling programs.

Sea Island, as a private concern, was limited in the space and capital that could be invested in an ongoing program. An innovative relationship with Volume



Usable material being screened out of the Cloister's finished compost.

Reduction Services (VRS) of Jacksonville, Florida, provided the answer. In early 1993, Summers began working with Carl Dalton, manager of VRS, under a lease arrangement that brought several expensive pieces of composting equipment (tub grinders, loaders, and trammel mills) to a centralized site a mile across a causeway on St. Simon's Island. There, for several weeks, VRS personnel ground the piles of trimmings accumulated by Summers' work crews, arranged them in long piles, or windrows, for decomposi-

tion, while screening already-composted windrows for usable materials. After grinding everything on location, VRS departed for another client's location, to return in about a year's time to repeat the composting process.

The Sea Island program is adaptable by towns and counties across the country who simply cannot afford a large capital investment. The VRS equipment alone would have cost close to \$600,000.

Composting programs employed by other communities and groups vary according to population, budgetary factors, geographic location, and type of materials on hand. Some jurisdictions, like Montgomery County in Maryland, have committed significant resources to developing a large-scale composting program capable of easily accepting over 100,000 tons of yard and garden trimmings and producing a highly valued compost product marketed as Leaf-gro. Their flagship Dickerson Composting Facility is a 270-acre site with a 47-acre asphalt pad where a host of specialized equipment is used to turn and shred materials on a weekly basis, as well as screening, curing, and drying the product. Montgomery County has further established a full-scale approach that includes home composting initiatives and free community compost bins for townhouse developments.

Continued on page 8

Today's News, Tomorrow's Mulch

In a novel approach to recycling, the Raleigh, North Carolina, *News and Observer* has been offering its back issues as mulch. The *News and Observer* collects subscribers' used papers, then returns them, shredded and baled, to local gardeners, or to anyone else who is interested, for one dollar per bale. The program saves space at local landfills, and that saves the city money. But these savings have not been passed on to the paper, which has been funding the project on its

own. So far the mulch is not making a profit. Last year, the program took in about \$40,000 but spent about \$200,000, according to Danny Collins, the paper's production manager. But that hasn't stopped the paper from expanding its program, and Collins hopes to break even eventually. The *News and Observer* recently opened a new recycling center and expects to redistribute 14 percent of its total newsprint consumption this year.



Recycling *Continued from page 7*

Smaller communities like Wellesley, Massachusetts, use a simple approach that requires less up-front investment and effort. Residential yard trimmings are simply organized into windrows using a front-end loader and bulldozer and are turned once a year. The finished product is made available to area residents for their gardens.

In Davis, California, only leaves are collected—which eliminates concerns about odors and nitrate run-off from “green” materials—and windrowed with front-end loaders. As in Wellesley and many other communities, the finished material is provided to residents for free, which city officials view as an excellent public relations gesture.

Another common solution is a public-private venture. This spares municipalities the cost of processing materials while allowing the compost contractor to generate revenues by producing a high-quality product. Some of these contractors are area nurseries, which are their own best market for the composted materials. Westfield, New Jersey, separates brush and woody material from their other yard trimmings and sends it to a facility managed by Alternative Disposal Systems,

a private contractor, which uses it to produce varied grades of mulch. Separating out woody materials requires only a modest amount of space and a tub grinder (a large chipper with a rotating hopper), which is frequently portable.

Many smaller institutions, such as the University of Pennsylvania, rent these flatbed-mounted units for seasonal use. Chipped brush produces very little odor, requires no turning, and, when made available to the public, is frequently picked up as soon as it is generated. This is now one of the most common “disposal” methods for Christmas trees.

One of the most ingenious arrangements being developed across the country involves urban-rural partnerships where farmers charge a modest amount per truck to pick up leaves from urban and suburban areas. Using conventional agricultural equipment, the farmer blends the high-carbon materials with nitrogen-rich manure, producing a natural compost product for his fields. The compost added to the soil will effectively retain moisture and nutrients, reduce soil erosion, and curtail the contamination of water sources through leaching and run-off. This compost-enriched soil will also improve crop health and yields, enhance the soil's nutrient-efficiency, and reduce the farmer's dependency on synthetic

nutrients and pesticides. If a surplus exists, the farmer also has the option of reselling compost back to parks departments or private contractors.

Community and large-scale composting in many ways mirrors the experience of the home composter, whose expenses can be great or little, and whose investment of time and effort can pay for itself in a rich, finely screened product—or in a simple mulch. Regardless of the size of the operation, the essential fact is that composting is the oldest and most significant form of recycling.

—Joseph M. Keyser

AHS Director of Programs

Kids and Composting

Educators around the country are developing curricula to introduce children to composting in connection with recycling or gardening education programs.

Large programs may be established by a state for all its schools, as Mississippi is doing, or developed by independent school districts, as Burlington, Vermont, started to do a few years ago.

But there are plenty of opportunities for teachers to create their own projects. A four-page overview of activities, “Kids and Composting,” can be obtained from Gardener's Supply Company, 128 Intervale Road, Burlington, VT 05402.

An environmental experiment kit designed to teach students about biodegradability is available in limited quantities from the Keyes Fibre Company. This kit has been approved by the National Science Teachers Association and is free if requested on school stationery. Write to Chinet Environmental Experiment, Department Compost, P.O. Box 290, Holmdel, NJ 07733. Include a street address and daytime phone number.

A compilation of classroom activities involving recycling, composting, and soil science is the recently released *Worms Eat Our Garbage*, by Mary Appelhof and others. *Worms* takes students in grades 4 to 8 on a tour through the living surface of our world, bringing into play topics ranging from ecology to mathematics to vermicomposting and on through hundreds of activities and experiments. It includes resource materials and teachers' guidelines. *Worms Eat Our Garbage* is available for \$19.95 (plus \$2 shipping) from Flower Press, 10332 Shaver Road, Kalamazoo, MI 49002.

—J. M. K.

Virtues of the Unloved and Obscure

Scientists and gardeners alike are finding new uses for some unlikely plants.

Invasive weeds, if they decompose quickly, are an unending source of composting material. Some gardeners have found a gold mine of sorts in kudzu (*Pueraria lobata*), the exotic vine that is choking parts of the Southeast.

Water hyacinth (*Eichhornia crassipes*) is another invasive exotic that clogs waterways in the deep South. Dried and chopped, it can be used as a soil amendment, instead of peat. Water hyacinth is (regrettably) a renewable resource, but there is controversy over the effect that peat harvesting has on bogs.

Another substitute for peat is chopped, composted alfalfa. You might not want to set aside space to grow alfalfa, but if you live in an agricultural area, you could buy some—it will be a lot cheaper than peat.

The root of the buffalo gourd is being promoted as a substitute for wood fuel in

deforested parts of the developing world. Also called the fetid wild pumpkin, *Cucurbita foetidissima* is native to the American Southwest. Its large taproot can be dried and burned. The root burns cleaner than wood and more slowly, which makes it a more efficient fuel, according to Wayne Bragg and Gene Shultz, the two scientists behind the idea. Shultz and Bragg have formed an organization, Enable International, to advocate the use of root fuels in the developing world. If you're in the market for firewood, you might try it yourself.

Seeds of the buffalo gourd can be ordered from Native Seeds/SEARCH, 2509 North Campbell Avenue, #325, Tucson, AZ 85719, (602) 327-9123. Contact Enable International at 1 South Elsie Hills Road, Elsie, IL 62028. If you don't have a local source for kudzu or water hyacinth, consider yourself lucky.



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AMERICAN HORTICULTURAL SOCIETY

1993 ANNUAL MEETING ▲ OCTOBER 8 TO 11

DISNEY'S VILLAGE RESORT LAKE BUENA VISTA, FLORIDA

Our Annual Meeting is AHS's event of the year, when we honor our Annual Award winners, undisputed leaders in horticulture from across the country. Chosen for high achievement in plant breeding and development, landscape design, horticultural therapy, communications, plant conservation, and new technologies, this year's winners will present a series of lectures during our 48th Annual Meeting at Disney's Village Resort.

Our 1993 Program, designed especially for AHS members, also includes two special horticultural tours at the WALT DISNEY WORLD® Resort:

▲ EPCOT® Center will be our living classroom during the "Gardens of the World" Program. Horticulturists will highlight specific plants and gardening techniques and explore the importance of landscape themes during this 3½-hour walking field trip.

▲ During "Planting Ideas: The Art and Science of Gardening at the WALT DISNEY WORLD Resort," we'll explore the 120-acre WALT DISNEY WORLD Nursery and Tree Farm for an up-close look at the extensive horticultural operations at MAGIC KINGDOM® Park.

We expect a great deal of interest in this year's Annual Meeting. If you're planning to attend, please fill out the coupon at right and mail it as soon as possible.

☐ Yes! I'm interested in attending the 1993 Annual Meeting at Disney's Village Resort.

☐ I'm interested in information about the AHS Young People's Program at the Annual Meeting.

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime Phone: _____



MAIL TO: 1993 AHS Annual Meeting, Dept. N, 7931
East Boulevard Drive, Alexandria, VA 22308-1300.

Gardeners' Q&A

Q: Can you suggest low-growing evergreen plants to use as ground covers on top of a sandmound septic system?
T. D., Ambler, Pennsylvania

A: A wide range of landscape effects can be achieved with ground covers, perennials, and/or shrubs in a sandy, damp situation such as this. Moneywort (*Lysimachia nummularia*) is a ground cover that adapts easily to moist, sandy sites, creating a one- to two-inch green carpet. It has bright yellow flowers in summer and grows from Zones 4 to 8. A gardener's evergreen mainstay, *Liriope muscari*, could be combined with the moneywort for foliage contrast. *Liriope* has grasslike foliage up to 18 inches tall and produces lilac flowers in summer. Creeping St. John's-wort (*Hypericum calycinum*) is another low-growing evergreen or semi-evergreen perennial that would add an element of interest. Generally not growing above 12 inches, St. John's-wort roots wherever branches touch the ground. This tough plant produces yellow flowers from summer to frost and grows from Zones 6 to 9.

A low-growing densely branched shrub such as *Cotoneaster dammeri* would rapidly provide a more durable evergreen cover not more than one foot high. Showy red berries last from summer into winter. This cotoneaster is hardy in Zones 5 to 8. Another shrub, winter jasmine (*Jasminum nudiflorum*), can form a mound up to 10 feet high, but generally will flop over, spreading green stems with yellow winter flowers. It is hardy from Zones 6 to 9.

Finally, there are many suitable clump-forming grasses and sedges that might be perfect turf substitutes over the sandmound. Ribbon-grass (*Phalaris arundinacea picta*) is a spreading perennial grass that grows to 3 feet and is hardy from Zones 4 to 9. Bowles golden sedge (*Carex elata* 'Aurea') has golden yellow leaves and brown flower spikes to 16 inches in spring. This sedge is hardy from Zones 5 to 9.

Q: I like to cook Asian dishes and would like to start growing more of the ingredients. Can you suggest some sources for oriental vegetables?
C. A., Washington, D.C.

A: Many of the popular seed catalogs listing all types of garden plants offer at least a few selections of oriental vegetables. Suppliers having a broader selection

include: Japonica Nursery, P.O. Box 236, Larchmont, NY 10538; Kitazawa Seed Company, 1748 Laine Street, Santa Clara, CA 95051-3012; and Tsang and Ma International, 1556 Laurel Street, San Carlos, CA 94070.

An oriental seed catalog (written in English and Chinese) is available for \$2 from Sunrise Enterprises, P.O. Box 330058, West Hartford, CT 06133-0058. Sunrise also has a series of instruction sheets for growing and cooking their wide range of vegetables. Another bilingual catalog is put out by Evergreen Y.H. Enterprises, P.O. Box 17538, Anaheim, CA 92817-7538. This company has a broad selection of seeds and many helpful books.

To locate specific vegetable types, consult the *Complete Vegetable Gardener's Sourcebook* by Duane Newcomb and Karen Newcomb, (Prentice Hall, 1989). *Grow Your Own Chinese Vegetables*, by Geri Harrington, has helpful information on locating, growing, and cooking oriental vegetables. It is available from Garden Way Publishing, Pownal, VT 05261.

Q: How can I get a list of endangered plants in my state?
M. S., Schenectady, New York

A: As gardeners' concerns for native plant (and animal) habitats continue to grow, it is reassuring to find that more information on conservation is being compiled by a variety of organizations.

The U.S. Fish and Wildlife Service will send a free endangered wildlife handbook including 12 pages on plants at risk. For this publication write to the U.S. Fish and Wildlife Service, Publications Unit, 4401 North Fairfax Drive, 130WEB, Arlington, VA 22203 or call (703) 358-1711. For answers to specific questions, write to the Fish and Wildlife Service's Division of Endangered Species at 4401 North Fairfax Drive, Room 452, Arlington, VA 22203, or call (703) 358-2171.

The Natural Heritage Program for each state is overseen by the Nature Conservancy, headquartered at 1815 North Lynn Street, Arlington, VA 22209. To tap into the Nature Conservancy's resources on endangered plants, call the headquarters at (703) 841-5361 and ask how to get in touch with your state's Natural Heritage Program. (The New York number is (518) 783-3932).

Finally, the Center for Plant Conservation at the Missouri Botanical Garden in St. Louis has compiled a plant conserva-

tion directory. This resource puts at your fingertips comprehensive state-by-state listings of key public and private conservation organizations. Call the CPC at (314) 577-9450 with specific questions or to order a copy of the directory send \$15 to: Center for Plant Conservation, Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166.

Q: Is there a green manure crop I can plant in early summer to plow under in August for a cool weather planting?
E. R., Kansas City, Kansas

A: Green manures are an excellent alternative to more common soil amendments, even in smaller gardens. Spring-planted crops that work well for plowing under late in the growing season will suppress weed growth, slow erosion, and prevent excessive leaching. Agricultural mustards (*Brassica* spp.) fit into this category of green manures, and have the added benefit of pulling minerals to the soil surface with their deep taproots. Buckwheat (*Fagopyrum esculentum*) will accumulate phosphorus for use by later planted vegetables. Annual rye grass (*Secale cereale*) is another cover crop suitable for planting in the spring.

Leguminous green manures suitable for spring planting will fix nitrogen in the soil, making it available to subsequent plantings. The widely adaptable (and edible) bell bean (*Vicia faba*) will tolerate diverse soil conditions, while alfalfa (*Medicago sativa*) needs a well-drained, neutral soil. The red clover (*Trifolium repens*) is a fast grower, also needing a well drained soil. Alsike clover (*T. hybridum*) is more tolerant of heavy, wet, acid soil.

When growing these spring-sown green manures, it is important to till the soil deeply, breaking clumps into a fine texture. All of the above selections should be allowed to grow to their pre-bloom stage, roughly until they are four to six inches tall. At this point the crop should be turned over and mixed into the soil. Cool weather crops that will benefit from the improved nitrogen and organic matter in the soil can then be planted. Good fall vegetable selections include cauliflower, lettuce, turnips, and broccoli, just to name a few.

Ecology Action, at 5798 Ridgewood Road, Willits, CA 95490, includes other green manure crops in its Fall/Winter *Bountiful Gardens Newsletter*.

—David Wagoner
AHS Horticultural Intern

Children's Gardens Take Shape at River Farm

A highlight of our National Children's Symposium in August will be a tour of the 13 specially designed children's gardens now beginning to take shape in the two-acre demonstration garden area at the American Horticultural Society's River Farm headquarters.

Maureen Heffernan, AHS education coordinator, and Connie Pearson, a northern Virginia garden designer, launched the design project in September. All symposium participants will see the gardens during a lunch-time visit August 14, the final day of the three-day event. Heffernan hopes that the gardens will be visited—and played in—by hundreds of children and their parents this spring and summer, while River Farm is open on weekends (see page 14). The gardens are to be completed June 1, with an official opening day June 19, and are to remain in place through late October.

The goal is to inspire parents, grandparents, professional garden designers, educators, and others to accommodate children's interest in nature and need to be among plants. "Better yet," said Heffernan, "we hope they will get the

children to take charge and design their own garden spaces." Three groups of area school children have designed three gardens for this project: a butterfly garden, a Persian carpet garden, and a rainbow garden. Local elementary and high school students are working alongside professional designers and AHS staff and interns to install the gardens.

"These gardens will encourage children to play, dream, explore, discover, and fully use all of their senses."

—Maureen Heffernan

"The American Horticultural Society believes that if we are to ensure future generations of gardening enthusiasts, it is essential to interest children in horticulture when they are quite young," Heffernan notes. "These gardens will

encourage children to play, dream, explore, discover, and fully use all of their senses. They have been designed with a 'please touch, taste, smell, feel, and listen' attitude."

Pearson, of Pearson Design Associates, coordinated the gardens portion of the 1992 Decorator Showhouse at River Farm. She encouraged landscape professionals to participate in this new project by noting that baby boomers are adding gardening pursuits to their other family and home-based projects. "The gardens will be a natural forum for professionals to show wonderful opportunities to these family markets."

Yet it was clear from the comments that designers made about their projects that their inspiration went far beyond marketing potential. They—along with the teachers, volunteers, and donors involved with the project—clearly believe it is essential for all children to be given beautiful, enchanting, mysterious, and intellectually stimulating natural play and study areas. Some of their comments, and their designs, appear on this and the next three pages. Look for others in our July and September News Editions.

Thomas Arnold's Colonial Sundial Garden

"A child's garden is not just a place to plant things," says Thomas F. Arnold of Landscape Design, Ltd., in Alexandria, Virginia. "It is a place to go, and to stay awhile."

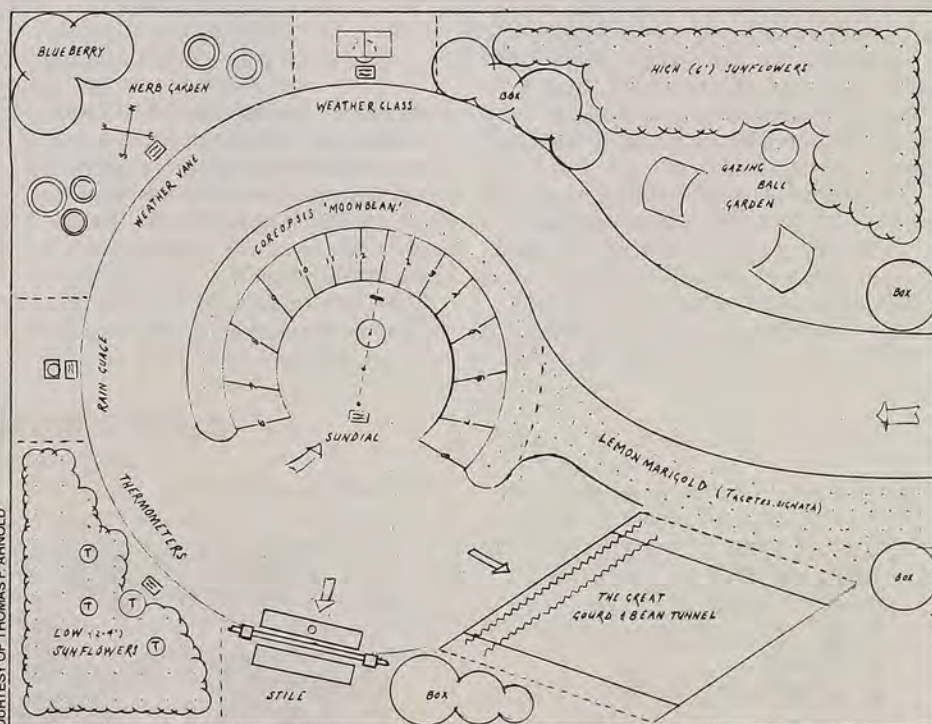
"Imaginary games don't fit in neat rows."

—Thomas Arnold

Arnold observed that most garden books in the children's section of the library encourage the child to make a vegetable garden—one you can see down by the back fence. Such gardens are nice, but not really *fun* for very long.

"There should be a place to sit, with some degree of enclosure. A path or paths make it more fun," he says. "Imaginary games don't fit in neat rows."

When Arnold thought about what other things can be done in a garden, the weather, a gardener's close companion for good or ill, came to mind. Visitors to his children's garden will enter through a stile and will experience the weather from a



colonial perspective by interacting with a sundial and checking current conditions with a weather vane, thermometers, and a rain gauge.

Two benches will let them admire sunflowers—in keeping with the theme—or see themselves reflected in "gazing

balls." Other plantings will also be sun-colored. A selection of herbs and the simple general structure of the planting arrangements will reflect the period when George Washington owned River Farm. Even leaving the garden will be fun, through a "great gourd and bean tunnel."

The Grove, From DLM

"A place to hide and not be seen!" "A tree to climb and to sit under!" "No grass and not too many places where you can't walk." "A bridge to a magic place!" "A rock or soft ground to sit on . . . no benches!" "Something to tunnel under or hide behind."

These were some of the comments that Emily Davidson, Andrea Lybecker, and Emilie McBride received when they asked a group of children to describe through words or drawings what they would include if they could design their own gardens.

"Children need beautiful, private spaces where they can have their own personal experiences with nature."

—DLM Designs

The Grove is designed to provide parents with ideas they can incorporate in a small area of their property, whether in a new development with only a few small pines or trees on each lot, or an older suburban back yard filled with large shade trees, overgrown shrubs, and some weeds in the back corners.

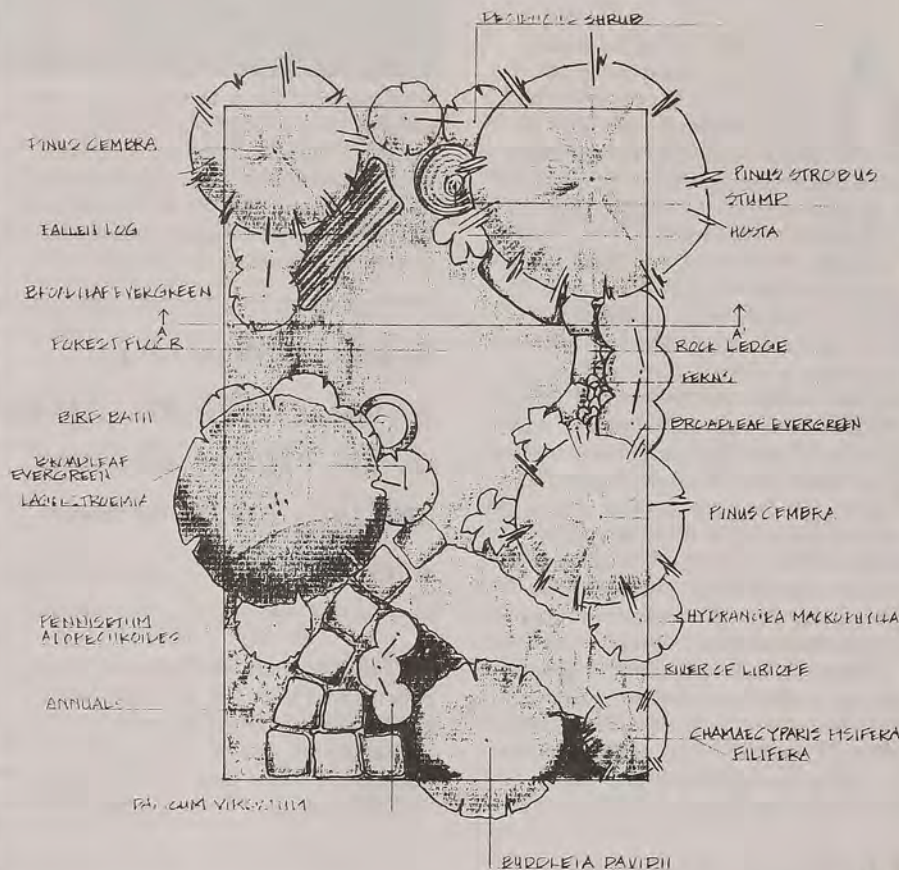
The garden area will include a meadow of flowers, a butterfly bush, tall grasses that will move in the wind, and a "creek" of rippling liriope. Visitors will walk down a steppingstone path and cross a bridge to the Grove itself. They will be

welcomed by the sound of wind chimes to an area enclosed by pines, a multi-stemmed flowering tree such as crape myrtle, and medium-sized evergreen shrubs. A rock ledge will invite leaning; a floor of pine straw will be a soft and fragrant place to sit.

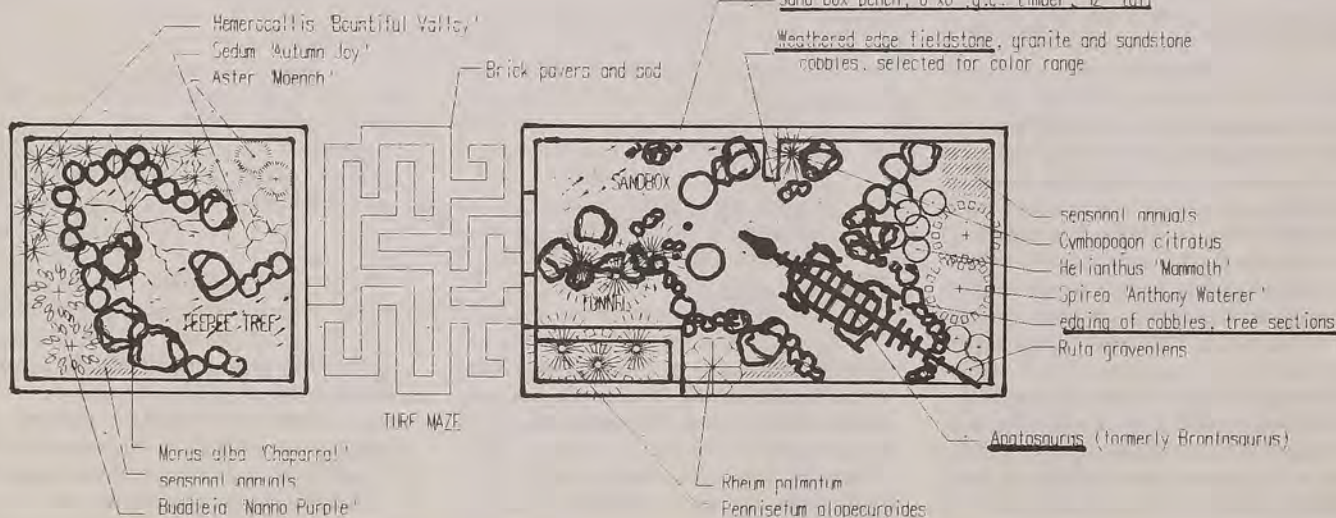
"The Grove reflects our belief that children need more than swing sets, or

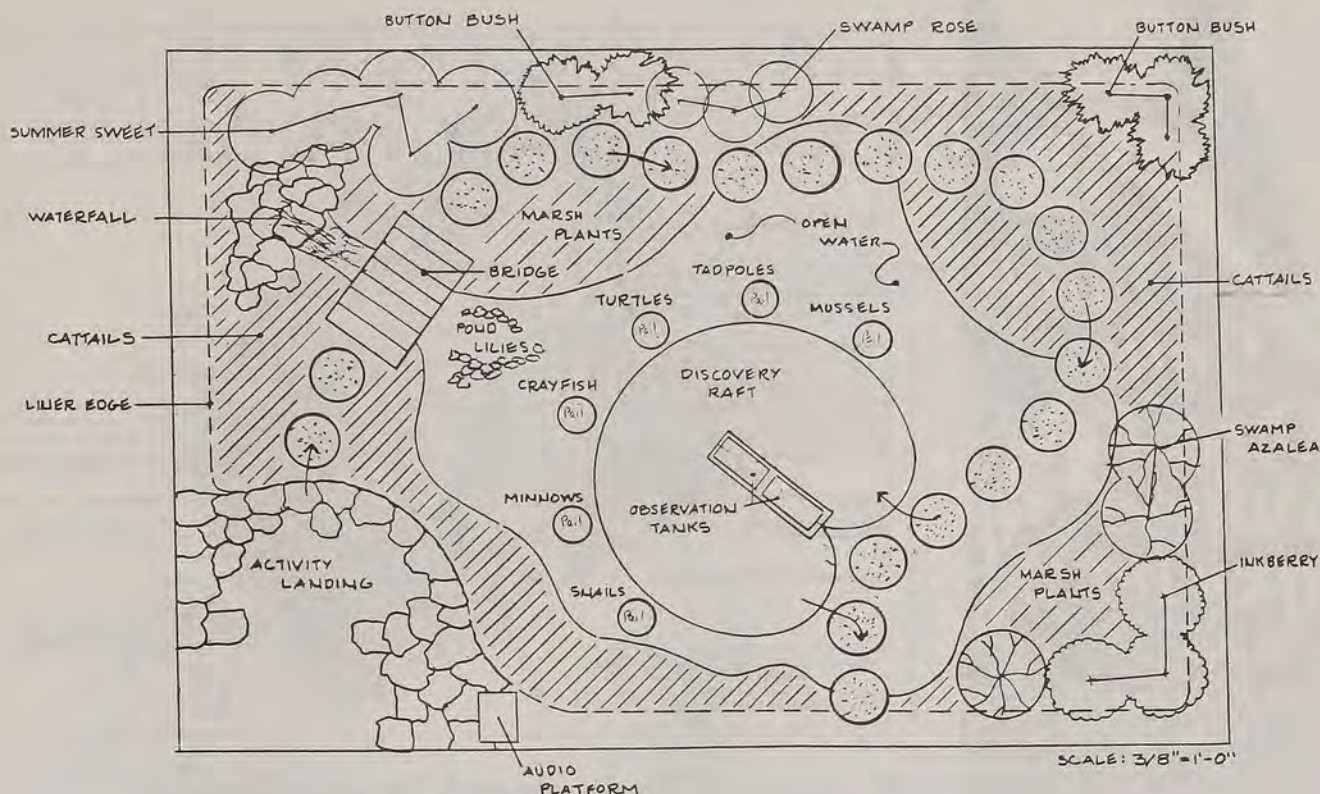
opportunities to garden with friends and relatives, or guided educational nature tours," write the designers. "They also need beautiful, private spaces where they can have their own personal experiences with nature. These intimate encounters will inform their imaginations, teach them to honor nature, and inspire them to create the green groves of tomorrow."

COURTESY OF DLM DESIGNS



TURF MAZE





Kibbe Turner's Discovery Pond

H. Kibbe Turner of Wildlife Habitats in Gaithersburg, Maryland, has designed a Children's Discovery Pond to introduce children of all ages to a vital, thriving pond environment—a mini-ecosystem designed to appeal to all five senses.

A path of stepping stones will lead visitors from an "Activity Landing" into marshland, where they will find themselves surrounded by cattails and

other native plants. Children can follow the sound of a waterfall across a bridge over a running stream. The path will lead them past marsh flowers and bushes they can touch and examine, to the "Discovery Raft," a moored float that provides access to pond animals, such as snails, fish, turtles, and crayfish. The Discovery Raft's two observation tanks will allow hands-on contact with the pond's inhabitants.

Five students from Project Achievement, an after-school program at Carl Sandburg Intermediate in Alexandria, Virginia, are helping to plan, construct,

and maintain the pond. The students, who designed and built an ecosystem in their school's courtyard in 1992, brought their own perspective and experience to the project. One wanted to "give children a chance to meet Mother Nature face to face." Another hopes visitors will "experience new things like eating cattail roots," and yet another suggested placing lights at the bottom of the open water pond, both to illuminate it and to keep raccoons away from its inhabitants.

The students recorded an audio tape of marsh sounds to play for visitors, and will perform skits on the Activity Landing.

John Snitzer's Imagination Garden

John Snitzer, of Snitzer Landscaping in Dickerson, Maryland, believes we will bring children into the garden by capturing their imaginations and giving them opportunities for creative play and learning. "Once they are there, we can surround them with plants and give them a window on nature," he says.

Snitzer is careful to make a distinction between a garden play area and a playground. "A garden is a natural place," he observes. "A playground is a space imposed upon the land. In a garden, the materials are nature's; the play patterns are determined by the children, not by a manufacturer. Garden colors are subtle earth tones of stone and gravel, not the neon colors of equipment."

His garden will have three sections. A sandbox, overlooked by a dinosaur, will contain plants, shells, and driftwood pieces to examine, and tools for digging. The "Teepee Tree" will offer a more contemplative location, under the branches of a weeping mulberry. Connecting them will be a maze of turf and brick pavers, suitable to become imaginary highways or a game board. From either the sandbox or the maze, children will be able to crawl through a foliage tunnel.

"In a very small space," says Snitzer, "a children's garden can contain plants that attract a wealth of wildlife." This may not be wildlife that an adult gardener would necessarily appreciate. But children will enjoy the titanic battle that occurs

between predator and prey when ladybug beetles arrive among the aphid population on the new growth of *Spiraea* 'Anthony

"A garden is a natural place. A playground is a space imposed upon the land."

—John Snitzer

Waterer'. And they will love the colors of the tiger swallowtail caterpillars attracted to plantings of parsley and rue.



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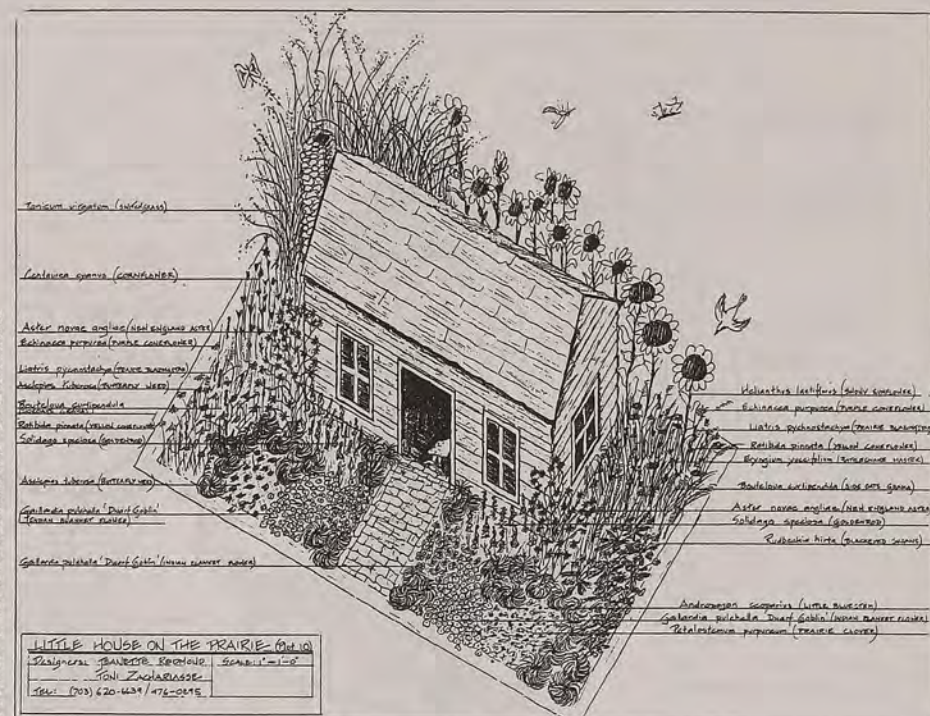
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COURTESY OF JEANETTE REDMOND AND TONI ZACHARIASSE



Redmond-Zachariasse's Prairie House

"Our intent," say Jeanette Redmond of Oakton, Virginia, and Toni Zachariasse of Reston, "is to excite children and their elders about the possibilities of gardening with native plants."

What better way to make them feel at home, they reasoned, than to build an endearing Little House on the Prairie, where they could show visitors those same plants that Laura Ingalls Wilder, her family, and their Native American neighbors lived among?

can make a prairie garden," the designers say, since all the plants seen will survive in almost any warm, sunny location.

"Father's Weekend" Celebration

The American Horticultural Society will hold a special open house the weekend of Father's Day to celebrate the public opening of the 13 new children's gardens at our River Farm headquarters.

Families are encouraged to come out and explore the gardens between 10 a.m. and 5 p.m. June 19 and 20. Professional horticulturists and garden designers will be on hand to conduct garden tours, provide copies of their designs, and offer other suggestions and tips for gardening with children.

Visitors are encouraged to bring a picnic lunch and enjoy the rest of the sweeping gardens and grounds at River Farm. Soft drinks and light refreshments will be available. Admission for adults is \$3. Children under 12 are free.

For more information call (800) 777-7931 or (703) 768-5700.

"Our intent is to excite children and their elders about the possibilities of gardening with native plants."

—Jeanette Redmond and Toni Zachariasse

Some of these plants will have funny and memorable names, like rattlesnake-master and black-eyed Susan. The children will learn which plants attract birds and butterflies and why, that certain plants have amazing medicinal properties, and which plants and grasses can be dried and enjoyed inside.

"The children will realize that they, too,

The American Horticultural Society

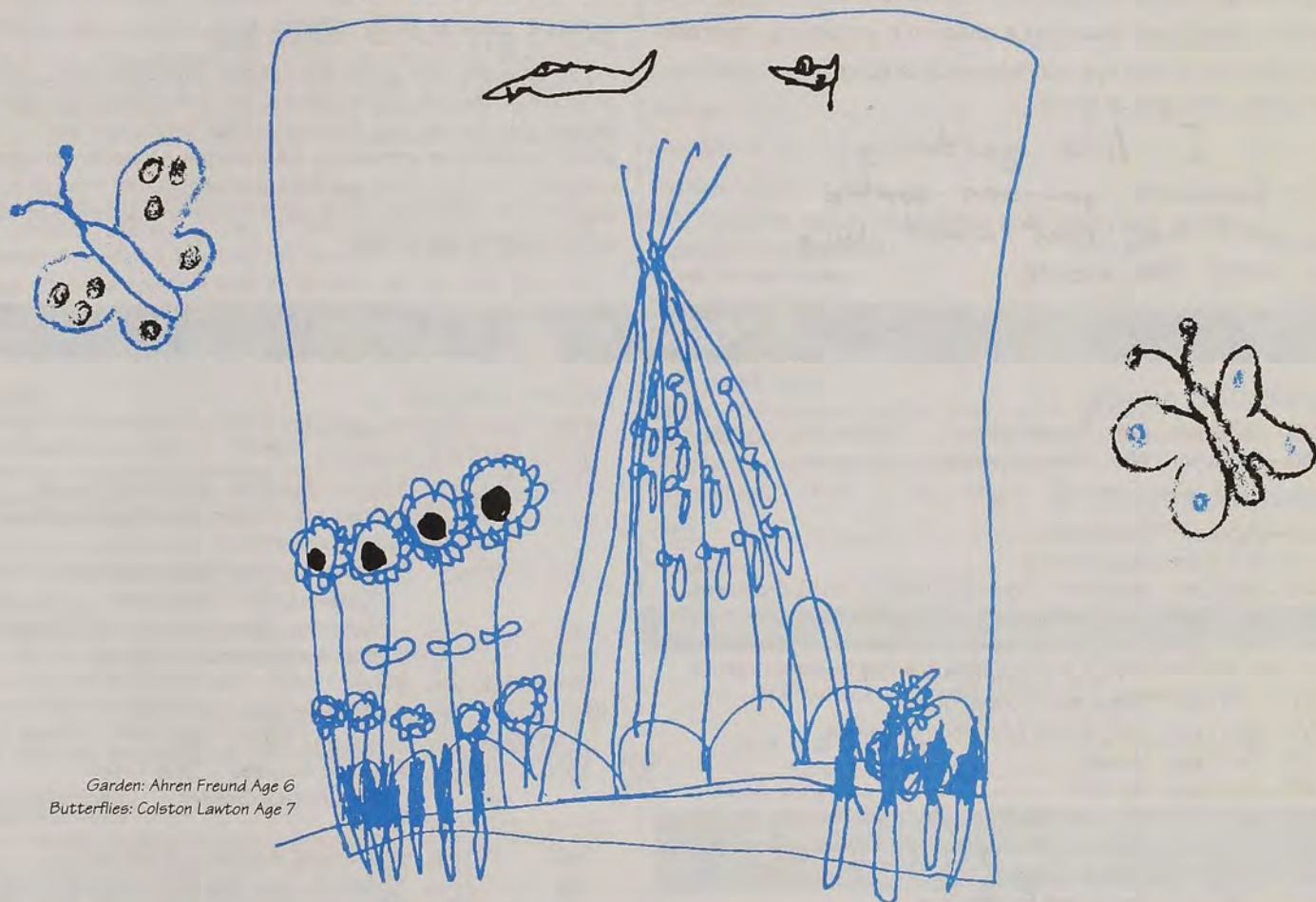
PRESENTS

"Children, Plants, and Gardens: Educational Opportunities"

AUGUST 12-14, 1993

**National 4-H Conference Center
Chevy Chase, Maryland**

*A National Symposium to Help Create More Educational Gardening Programs
for Children in Pre-K Through 8th Grade.*



Garden: Ahren Freund Age 6
Butterflies: Colston Lawton Age 7

**Learn About the Plants, Educational Programs, and Garden Designs that
Capture the Interest of Children**

- | | |
|--|----------------------------|
| * Major Keynote Speakers | * Panel Discussions |
| * Workshops | * Children's Presentations |
| * Tours of Children's Gardens at Schools,
Public Gardens, and Community Sites | * Exhibits |
| | * Social Events |



Founded in 1922, the American Horticultural Society is an educational, non-profit, 501 (c)(3) organization that recognizes and promotes excellence in American horticulture. The Society strives to inform, educate, and inspire people of all ages to become successful, environmentally responsible gardeners through the acquisition and dissemination of reliable horticultural information.

The American Horticultural Society invites you to attend an international gathering of education innovators dedicated to bringing children, plants, and gardens together in wonderful new ways.

PRESENTATIONS

Through keynote addresses, workshops, and exhibits, over 60 presenters will explain:

- * Using the garden as a living classroom for interdisciplinary education
- * Teaching science and environmental education through gardening
- * Designing school and community gardens for children
- * Building collaborative relationships between schools, public gardens, businesses, and community groups to create gardening programs for children
- * Fund raising and financing a children's gardening program
- * Horticultural therapy techniques and programs for children with special needs

*I like gardening
because you can explore
and learn more about plants
and the earth.*

Deborah Schoelwer Age 8

GARDEN TOURS

Participants will see children's gardening programs in action when we tour Washington, D.C., area youth gardens including one at the U.S. National Arboretum. A very special lunch and tour of the new children's gardens at River Farm, the historic headquarters of the American Horticultural Society, is also scheduled. These gardens include: Dinosaur Footprint Garden, Persian Rug Garden, Wildlife Habitat Garden, Butterfly Garden, "Little House on the Prairie" Garden, Colonial Herb Garden, Teepee and Maze Garden, Colorwheel and Topiary Garden, Frog Pond Garden, a Secret Grove Garden, and a Sunflower House Garden.

WHO SHOULD ATTEND

Pre-K through 8th grade educators, horticulturists, community program youth educators, landscape designers/architects, public garden educators, and any interested adult who wants to learn about creating or enhancing educational gardening programs for children in schools, public gardens, and community programs. Professionals and other interested adults from a wide range of fields are encouraged to participate.

PROGRAM AGENDA

WEDNESDAY, AUGUST 11

- 5:00 - 7:30 pm Early Registration
- 7:30 - 9:00 pm Welcoming Reception

THURSDAY, AUGUST 12

- 7:00 - 8:30 am Breakfast
- 7:30 - 8:30 am Registration
- 8:45 - 9:00 am Welcome - George C. Ball Jr., AHS President
- 9:00 - 10:00 am Keynote Address - Dr. Roger Hart
"Affection for Nature and the Promotion of Earth Stewardship in Childhood"
- 10:00 - 10:30 am Break and Exhibit Time
- 10:30 - 12:00 pm Concurrent Workshop Sessions
- 12:00 - 1:00 pm Lunch
- 1:00 - 2:00 pm Exhibits
- 2:00 - 3:00 pm Keynote Address - Dr. Mark Plotkin
"Science Education for Children Through Ethnobotany"
- 3:00 - 3:30 pm Break and Exhibit Time
- 3:30 - 5:00 pm Concurrent Workshop Sessions
- 5:00 - 6:30 pm Free Time
- 6:30 - 7:15 pm Reception and Book Signing
- 7:15 - 8:30 pm Dinner
- 8:30 - 9:30 pm 10-Minute New Idea Forum

FRIDAY, AUGUST 13

- 7:00 - 8:00 am Breakfast
- 8:00 - 8:15 am Welcome
- 8:15 - 9:15 am Keynote Address - Dr. Mark Francis
"The Art, Design, and Meaning of a Garden for Children"
- 9:15 - 10:15 am Keynote Address - John Jeavons
"Growing With Living Soils: Teaching Children About Soil, Compost, Biodiversity, and Nutrition"
- 10:15-10:30 am Break
- 10:30 - 12:00 pm Concurrent Sessions
- 12:00 - 2:00 pm Lunch and Exhibit Time
- 2:00 - 2:45 pm Keynote Address - Jane Taylor
"In a Child's Garden . . . Imagination Grows"
- 2:45 - 3:00 pm Break
- 3:00 - 4:30 pm Concurrent Workshop Sessions
- 4:30 - 6:00 pm 10-Minute New Idea Forum/Exhibit/Free Time
- 6:00 - 7:00 pm Reception and Book Signing
- 7:00 - 8:00 pm Banquet Dinner
- 8:00 - 8:30 pm After Dinner Entertainment: Larry Johnson
"Garden Storytelling and Music"
- 8:30 - 9:00 pm Slide Presentation - Sharon Lovejoy
"Long Straight Rows are Such a Bore! Gardens Shouldn't Be a Chore!"
- 9:00 - 9:15 pm Acknowledgments

SATURDAY, AUGUST 14

- 7:00 - 8:00 am Breakfast
- 8:00 - 9:00 am Keynote Address - Anne Lusk
"Let's Build 108,000 New Garden Classrooms for Children"
- 9:00 - 12:30 pm Tours of Area Youth Gardens
- 12:30 - 2:00 pm Lunch and Tour of Children's Gardens at River Farm
- 2:00 - 3:00 pm Return to 4-H Conference Center



Butterfly: Colston Lawton Age 7
Flowers: Sara Ellis Age 7



ABOUT OUR KEYNOTE SPEAKERS

DR. ROGER HART is the Director of the Children's Environmental Research Group at the Graduate School of the City University in New York. Dr. Hart will argue that "Gardening offers direct experience in earth stewardship at a scale that children can understand."

DR. MARK PLOTKIN is Vice President for Plant Conservation at Conservation International and a world renowned plant ethnobotanist. He is a leading advocate for biodiversity, tropical rainforest conservation, and the author of numerous articles and books on ethnobotany.

DR. MARK FRANCIS is a Professor of Landscape Architecture at the University of California at Davis. Trained in landscape architecture at University of California Berkeley and Harvard Graduate School of Design, his research and design practice has focused on making designed and natural places richer and more meaningful for children.

JANE TAYLOR is the Curator of the Michigan 4-H Children's Garden. This garden is one of the country's most outstanding examples of using children's ideas about what they want to see and do in a garden.

JOHN JEAVONS is the Director of Ecology Action in Willits, CA. Mr. Jeavons is known internationally as the leading researcher and developer of small-scale food production techniques using biointensive gardening. His food-raising methods are being used in over 100 countries and by such organizations as UNICEF, Save the Children, and the Peace Corps.

ANNE LUSK is Chair of Vermont Trails and Greenways Council, Vice Chair of American Trails, and member of the National Recreational Trails Fund Advisory Committee. Ms. Lusk is the country's leading advocate for building school greenways and using them as dynamic "outdoor discovery classrooms" for study and recreation.

LOCATION

The National 4-H Conference Center is in Chevy Chase, Maryland, on the outskirts of Washington, D.C., one mile north of the District of Columbia line. The center is 14 miles from Washington National Airport. Transportation between the airport and the Conference Center can be arranged anytime by calling Airport Shuttle at (800) 525-1111 at least three hours before flight arrival. The one-way shuttle fee is \$17. The Center has free parking and is convenient to public transportation.

PROGRAM FEE

If received before July 1, 1993, registration is \$165 with a \$90 student rate. To receive the student rate, current proof of official full-time student status must be sent in with the registration form. After July 1, registration is \$185. Late student registration is \$100. Registration includes: lectures, workshops, garden tours, and **ALL MEALS** on August 12 and 13, and breakfast and lunch on August 14. The registration fee does not include lodging.

CANCELLATIONS

A full refund, less \$25 for processing expenses, will be made if requested prior to August 1, 1993. No refunds will be made after August 1.

CONTINUING EDUCATION UNITS (CEU'S)

Symposium participants attending the entire program can earn 1.8 CEU's through George Washington University. Transcripts will be sent upon confirmation of attendance. The CEU fee is \$25.

OFFICIAL AIRLINE

AHS Symposium participants can take advantage of special discount rates from American Airlines. To obtain the discount rate, please make your travel reservations in advance with Adelman Travel Agency and identify yourself as a Children's Gardening Symposium participant. Call Adelman Travel at (800) 448-7851 from 8 a.m. to 6 p.m. EST.

REGISTRATION CONFIRMATION

Your registration will be confirmed by mail. Please notify AHS at (800) 777-7931 if you do not receive a confirmation or if you have any questions or special needs.

LODGING

The primary hotel accommodation for the symposium will be at the **NATIONAL 4-H CONFERENCE CENTER**. As room space at the center is limited, early lodging registration is strongly advised. Rates are \$71 per room for single occupancy and \$82 per room for double occupancy. Rates

include all taxes. Participants can check in anytime after 3 p.m. on August 11. Check out time is noon August 15. To reserve a room at the conference center, please complete the lodging form, and return with full payment to the AHS.

Our overflow hotel, **THE HOLIDAY INN**, 8120 Wisconsin Ave., Bethesda, Maryland 20814, is located two miles from the Conference Center. At the beginning and end of each day's sessions, vans will shuttle participants between the hotel and the conference center. To reserve a room at the Holiday Inn, call the hotel directly at (800) 638-5954 and give group number 8578 to receive a discount rate. Reservations must be made before July 21. Limousine service is available between National Airport and the hotel. Make limousine reservations in advance directly with the hotel and also give the group number 8578 to receive a discount rate. The hotel has free parking and is three blocks away from D.C. MetroRail service.

SYMPOSIUM REGISTRATION FORM

"Children, Plants, and Gardens: Educational Opportunities"

AUG. 12-14, 1993 • National 4-H Conference Center • Chevy Chase, MD
Please use photocopies for additional registrants.

Name: _____

Title: _____

Organization: _____

Address: _____

City, State, Zip: _____

Daytime Telephone: (_____) _____

REGISTER EARLY! Program fee is discounted for advance registrations postmarked . . .

	BEFORE JULY 1, 1993	AFTER JULY 1, 1993
Advance Registration	\$165	\$185
Student Advance Registration (with official proof of current full-time status)	\$ 90	\$100

OPTIONAL FEES

CEU's - Certification Fee for Continuing Education Units \$25

AHS MEMBERSHIP FEE - Join AHS now at a special half-price rate.

(Regular new memberships are \$35.00/year) Now Only \$17.50

Payment by: ☐ Check ☐ MasterCard ☐ VISA TOTAL \$ _____

Card #: _____ Exp. Date: _____

Signature: _____ Date: _____

FOR MORE INFORMATION PLEASE CALL (800) 777-7931

Please return completed **SYMPOSIUM REGISTRATION** and **LODGING** Forms with **SEPARATE** payments to:

AHS Children's Symposium,

7931 East Boulevard Drive, Alexandria, VA 22308-1300.

Phone: (800) 777-7931, Fax: (703) 765-6032.

4-H CONFERENCE CENTER LODGING RESERVATION FORM

Please reserve a room at the 4-H Conference Center for:

Name: _____

Roommate Name: _____

Address: _____

City, State, Zip: _____

Daytime Phone: (_____) _____

Arrival Date: _____ Departure Date: _____

☐ Single Occupancy \$71/night

☐ Double Occupancy \$82/night

Full payment must accompany this form for space to be reserved.

☐ Check enclosed for \$ _____

☐ VISA ☐ MasterCard

Card #: _____ Exp. Date: _____

Signature: _____ Date: _____

WORKSHOP PRESENTATIONS

In addition to the keynote speakers, the Symposium will feature 47 different 30-minute workshop presentations on August 12 and 13.

Presenters are coming from all over the United States, including Alaska and Hawaii, and from England and Germany, to present information and ideas on specific programs, plants, garden designs, and educational curricula that can make gardening fun and educational for children.

THURSDAY AUGUST 12, 10:30 am–Noon

ROOM I: HORTICULTURAL EDUCATION PROGRAMS AND CAREER INFORMATION

"Practical Resources for Garden-Based Education: The NYC Experience"—Dr. Stuart Lowrie, Director, Operation Greenthumb, New York.

"Educational Programs Offered by the National Junior Horticultural Association"—William Fountain and Dr. Joe Maxson, Coordinators, NJHA

"Kids, Horticulture, and the Career Decision-Making Experience"—Dr. Lois Berg Stack and Dr. Leonard Perry, University of Maine

ROOM II: SCIENCE AND ENVIRONMENTAL EDUCATION THROUGH PLANTS AND GARDENING

"Accommodating Multiple Intelligences Through Gardening"—Dr. Stephen Drown, Ohio State University

"School Habitat Gardens for Teaching Science and Environmental Education"—H. Kibbe Turner, Owner, Wildlife Habitats, Inc.

"Developing New Plant Awareness Curricula"—Nina Danforth, Children's Education Coordinator, Massachusetts Horticultural Society

ROOM III: SOLVING PROBLEMS THROUGH YOUTH GARDENING PROGRAMS

"Overcoming Objections to Youth Gardening Programs"—Holly Kennel, Extension Agent, Seattle, Washington

"A Garden Play Area for the Students and Neighbors of an Independent School in Harlem"—Josephine Bush, Landscape Designer

"Philadelphia Green's Youth Program"—Eugene Reeves, Pennsylvania Horticultural Society

ROOM IV: PRE-SCHOOL AND KINDERGARTEN GARDENING PROGRAMS

"Gardening at the Day Care Center"—Linda Naeve, Extension Agent, Iowa State University

"Kindergarten Gardens"—Marion Lardner, Kindergarten Teacher

"Together We Can Do It—Parent Participation Brings Nature to Asphalt"—Esta G. Kornfield, Teacher and Parent

THURSDAY AUGUST 12, 3:30–5:00 pm

ROOM I: SCIENCE AND ENVIRONMENTAL EDUCATION THROUGH PLANTS AND GARDENS

"Discover Life Lab Science"—Gary Appel, Director, Life Lab, Santa Cruz, California

"Inquiry Learning Through Indoor Gardening: Grow Lab Five-Year Highlights"—T. Parsons and E. Pranis, National Gardening Association, Burlington, Vermont

"National Wildlife Federation's Backyard Wildlife Habitat Program"—Craig Tufts, Director, Urban Wildlife Education, Alexandria, Virginia

ROOM II: HANDS-ON HORTICULTURAL CURRICULUM PROGRAMS

"Garden Earth Program"—Maureen O'Brian, Program Specialist, State Botanical Garden of Georgia

"Urban Reforestation and Environmental Education With Children"—Mary White and Lisa Muentener, Isles, Inc., Trenton, New Jersey

"Tree-mendous Programs for Schools and Beyond"—Mindy Maslin, Pennsylvania Horticultural Society

ROOM III: DYNAMIC PUBLIC GARDEN YOUTH PROGRAMS

"Critical Elements of Effective Field Trips to Botanical Gardens"—A. Jenkins Farmer III, Graduate Student, Center for Urban Horticulture, Seattle, Washington

"From Seed to Sprout: Curriculum Materials in Plant Science"—Mary Carroll, Education Director, Santa Barbara Botanical Garden

"Bringing the Wonder of Plants to Children Through Museum-School Partnerships"—Anne Reichel, Chicago Botanic Garden

ROOM IV: GARDENING PROGRAMS FOR INTERDISCIPLINARY EDUCATION

"A Living Library as a Garden of Diversity"—Bonnie Sherk, Founder of Living Library, New York City

"Plants, Gardening, and Gardens in Children's Comics—An Educational Opportunity?"—Joachim Wolschke-Bulmah, Dumbarton Oaks, Washington, D.C., and Dr. Gert Grueing, University of Fine Arts, Berlin, Germany

"G.A.R.D.N. Gardeners and Readers Develop Naturally"—Dr. N. Jurenka, Dr. R. Blass, and Anne Polkingharn, Central Washington University, Ellensburg, Washington

FRIDAY AUGUST 13, 10:30 am–Noon

ROOM I: INTERNATIONAL EXAMPLES

"The Best Children's Gardens in the World"—Nanine Bilski, National Projects Director, America the Beautiful Fund, Washington, D.C.

"Gardens in Japanese Schooling"—Lorisa Mock, Graduate Student, Longwood Gardens, Kennett Square, Pennsylvania

"The Aquatic Environment: Bringing Water Features into Gardens for Teaching"—Phillip Swindells, Swindells Associates, North Yorkshire, England

ROOM II: GARDEN DESIGNS FOR SCHOOLS

"Schoolyard Ecosystems: A Guide for Planning, Installing, Maintaining, and Using"—Dr. D. Donelin and Dorothy Turner, Gainesville, Florida

"Storybook Models and Other Ideas for Designing Children's Gardens"—Herbert Schaal, FASLA, EDAA, Inc., Fort Collins Colorado

"A Far North Garden Program"—Janice Hanscom and Felicia Leipzig, Denali Elementary School, Fairbanks, Alaska

ROOM III: MULTI-CULTURAL AND COMMUNITY YOUTH GARDENING PROGRAMS

"Traditional African-American Gardens: Learning from Our Grands"—Dr. Richard Westmacott, University of Georgia, Athens

"The Success Garden and Greening of Urban America"—William Swindler, Director, Success Garden, New York City

"The Cabrini Green Gardening Program"—Jack Davis, Director, Cabrini Green Public Housing Project, Chicago, Illinois

ROOM IV: GARDEN ART, CRAFTS, AND STORIES FOR CHILDREN

"Wildflower Customs, Crafts, and Games"—Margaret Wetterer, Writer, Educator, Folklorist, Huntington, New York

"Art + Garden + Families = Wave Hill's Family Art Project"—Noah Baen, Artist, Naturalist, New York City

"Topiaries, Totems, and Tales in the Garden"—Pat Hammer and Bob Hyland, Strybing Arboretum, San Francisco, California

FRIDAY AUGUST 13, 3:00–4:30 pm

ROOM I: FINANCING PROGRAMS AND INDOOR GARDENING PROJECTS

"Indoor Herb Gardening With Children"—Mary Dunn, Teacher, Thorndike, Maine

"Financing a Children's Gardening Program"—Susan Reynolds, Teacher, Mill Valley, California

"A Child's Rainforest Garden"—Douglas Spender, Cornell Plantations, Cornell, New York

ROOM II: GARDENING SUPPLIES AND DESIGN

"The Dirt on Kid's Gardening Supplies"—Jeff Minnich and Drew Williams, Campbell and Ferrara Nursery, Alexandria, Virginia

"Circles, Squares, or a Triceratops—Designing Practical, Age Appropriate Gardening Programs"—Brian Holley, Education Director, the Teaching Garden, Royal Botanical Garden, Hamilton, Ontario, Canada

ROOM III: COLLABORATIVE GARDENING PROGRAMS

"Schools, Nonprofits, and Other Community Resources—A Winning Combination"—E. McCurdy and J. Kline, Garden Center of Greater Cleveland

"The Challenges of a Volunteer-based School Gardening Project"—Amy Haake, Partnership Instructor, Missouri Botanical Garden

"Money for the Asking: Funding Your School Gardening Program"—Frances Rosiak, Teacher and School Garden Coordinator

ROOM IV: HORTICULTURAL THERAPY PROGRAMS FOR CHILDREN

"Designing for Learning Outdoors"—Lynn Morten, Landscape Designer, Eryl Morton Gardens, Victoria, British Columbia, Canada

"The CERES Project From the Ground Up"—Melanie Milliorn, Executive Director, Heads, Heart, and Health, Arizona

"Teaching Natural Science in the Garden"—Nancy Bamberger, Horticultural Therapist, North Carolina Correctional Institute for Women

AHS Bulletin Board

Walutes Named Executive Director



KATHLEEN FISHER

Helen Fulcher Walutes, a former teacher who returned to school for a law degree after raising three children, was named executive director of the

American Horticultural Society, effective in February. A member of the Society's Board of Directors, she had served as Vice President before being named acting director in January 1992.

Walutes, 50, was born in Lynchburg, Virginia, and earned her bachelor's degree in education from Madison College (now James Madison University). After graduation she taught high school mathematics in the Washington, D.C.,

area for two years prior to her marriage to attorney and developer Ronald Walutes, who died in 1991. After her children were grown, she earned her J.D. from George Mason University School of Law in 1986. She is an associate member of the Virginia bar, but did not practice law prior to taking the AHS position.

Walutes says that as a farmer's daughter, there was a point in her life when she wanted nothing more to do with soil and plants. "But over the years, my interest in horticulture, and the purposes for which I'm involved in it, have grown and changed." She now describes herself as a "retired vegetable gardener," whose plot of two-thirds of an acre was made less than pleasurable by the exploding local deer population.

She has a keen interest in gardens as they relate to historic homes and helped restore the garden of the Lee-Fendall

House in Old Town, Alexandria. Today, as a grandmother of four, her interest in horticulture is focused on its potential contributions to preserving and restoring the environment.

In regard to her new position, she says, "I'm proud to be associated with so many thoughtful gardeners, who have an impressive range of interests and concerns. It's a joy to open my mail! I would like to meet as many of our members as possible and I hope that they will make a visit to River Farm part of any trip they take to Washington."

Use Your 'RAP' Benefit

One of the most valuable yet often overlooked of AHS's membership benefits is the Reciprocal Admissions Program. RAP grants members free or discounted admission to arboreta, gardens, and conservatories throughout the United States and Canada. AHS members may also receive discounts on classes, lectures, and gift shop items and free parking and guided tours.

In addition to many exceptional gardens, RAP destinations include zoological parks with botanical collections, historic horticulture displays, museum and art gallery gardens, and National Trust for Historic Preservation sites.

RAP had its genesis in 1990, when AHS Program Director Joseph M. Keyser merged a metropolitan Washington, D.C., gardens admissions program with a fledgling national cooperative based at the Dallas Arboretum. AHS became the administering institution of RAP and first offered it as an AHS membership benefit in 1991. As director, Keyser continues to expand the program. The current RAP brochure lists 120 active gardens; response to recent mailings indicates that the number could approach 200 before the end of the year.

The Society encourages members to take full advantage of this benefit. To use your RAP privileges, simply present your membership card at any of the gardens listed in the brochure. RAP brochures are mailed to new and renewing members, but if you are a member and would like an updated or replacement brochure, send your request with a SASE to AHS, Reciprocal Admissions Program, 7931 East Boulevard Drive, Alexandria, VA 22308-1300.

Earn a Free Membership

This month the American Horticultural Society begins enlisting the aid of current members in increasing our ranks. The "Member-Get-a-Member" campaign will reward members who introduce others to the Society with free extensions of their own memberships.

AHS will send a specially designed Member-Get-a-Member kit to any active member interested in the program. The promotional materials will help to recruit new members by detailing the benefits of membership, including *American Horticulturist* magazine and News Edition, toll-free Gardeners' Information Service, discounted Horticultural Book Service, Annual Free Seed Exchange, Horticultural Employment Service, and Reciprocal Admissions Program. But the active members will be the heart of the new program. "No one knows the value of AHS membership like our members do," says Membership Director Darlene Oliver. "So we hope they will want to share that experience with others—and extend their membership in the bargain."

Signing up one new AHS gardener earns two free months of membership, two people gains four free months, and six will get the member recruiter a full year. There is no limit to how much free membership can be accumulated. As an added bonus, those who sign up five new members will get a limited edition AHS

lapel pin and anyone who signs up 10 people or more will receive special recognition in a future issue of *American Horticulturist* News Edition.

Call us toll free at (800) 777-7931 to receive your Member-Get-a-Member kit or if you have questions about the program.

Now We're Open on Saturdays!

From now through the month of August, AHS's River Farm headquarters will be open to the public on Saturdays, 11 a.m. to 4 p.m. Members and nonmembers alike can visit the historic 27-acre estate, extensive gardens and collections, and colonial mansion on the Potomac River. An AHS staff member and volunteers will be on hand to answer questions.

The Saturday openings commenced on April 3 in response to a popular demand for weekend accessibility. Due to additional expenses incurred by the Society, a \$3 donation is suggested. As usual, River Farm will be open Monday through Friday, 8:30 a.m. to 5 p.m.

River Farm is four miles south of Old Town, Alexandria and the Capitol Beltway, off the George Washington Memorial Parkway. For more information, call (703) 768-5700.

Regional Notes

A Northwestern Tree in Trouble

One of America's native pines is disappearing. The whitebark pine, *Pinus albicaulis*, grows in the mountains of the Pacific Northwest, from western Montana and Wyoming to the coast, and in adjacent areas of Canada. Reaching 70 feet, it is a five-needle pine related to white pines. In his *Natural History of Western Trees*, naturalist Donald Culross Peattie calls its white bark "so striking in a Pine that one can hardly believe at first that it is natural."

A pioneer species on dry, rocky sites, the pine was formerly a dominant tree at higher elevations. But its numbers have been dwindling for decades, and mature stands are now a rarity in much of its original range. Kate Kendall, an ecologist at Glacier National Park in Montana, estimates that the die-off exceeds 90 percent at Glacier and throughout much of the Pacific Northwest.

The die-off probably has several causes. Some scientists blame the policy of suppressing wildfires, which has tended to favor other species, particularly lodgepole pine, at the expense of the whitebark. A related factor may be the pine beetle, which does especially well in the mature lodgepole stands that fire control has helped to create. The beetle populations periodically reach epidemic proportions, and these infestations may take an additional toll of the whitebark.

But Kendall, who has studied the whitebark pine since 1977, thinks the beetle is just administering a coup de grâce. "Blister rust is the real baddy," she says. Native to Europe, blister rust is believed to have been introduced to this continent by Gifford Pinchot, founder of the U.S. Forest Service. Because he had little confidence in American nurseries, Pinchot dispatched some white pine seeds to be raised in Germany. When the stock returned, in 1910, it was infected. Kendall says the rust is not a critical danger to the eastern white pine, but it is murder on the western five-needle species.

The presence of rust explains not only the die-off in Glacier, but also the whitebark's relative health in the southernmost part of its range. "The rust spores need a fog bank to spread," Kendall says. Wyoming may be too dry for the disease; the pine is still thriving in Yellowstone National Park. But Kendall is uncertain about the future of even Yellowstone's extensive stands, since they may be taking incremental losses. The



RILEY MCCLELLAND

"Ghost forests" are haunting evidence of the whitebark pine die-off.

whitebark doesn't produce an appreciable cone crop until it is about a century old. "And with a species that slow-growing," she says, "even these stands could get nicked and dined to death."

The whitebark plays a key role in the ecology of the mountains. In the southern part of its range, its seeds are an important food for both black and grizzly bears. The bears make a meal of the pine nuts by uncovering squirrels' caches. To the north, where the pine has largely disappeared, evidence of its former importance to bears is mostly anecdotal. But Kendall thinks it's still compelling. "The old-timers," she says, "would speak of hiking up into the mountains and hearing groups of bears chewing the pine nuts."

The grizzly bear is listed by the U.S. Fish and Wildlife Service as threatened, which means that its status is a matter of concern, but it is not in immediate danger of extinction. Some grizzly experts argue that its listing should be upgraded to endangered. The grizzly has disappeared from 98 percent of its original range in the lower 48 states, and the loss of an important food source in its remaining habitat is a grave concern to bear ecologists.

Another unusual aspect of the whitebark's ecology is its dependence on a bird, the Clark's nutcracker, for its reproduction.

Kendall explains that because the pine's seeds are large and wingless, they would never get out from under the canopy without the bird's help. The nutcracker collects the seeds—it has a sublingual pouch that can store about 100 of them—and it buries them in caches, just as squirrels do. The bird tends to site its caches in just the right places and at just the right depth for germination.

Despite the pine's precarious situation, the Fish and Wildlife Service has thus far refused to consider it as a candidate for listing. Listing the pine might be a useful step in conserving it, because the government would then be obligated to study the die-off and to try to find ways to bring the tree back. The service argues that listing is unnecessary, because some of the pines are resistant to blister rust. But according to Kendall, the number of rust-resistant whitebarks is very low—less than one in 10,000. Kendall says that it is difficult to find money for the study and conservation of the whitebark because it is not a commercially important species.

Although it was introduced in 1852, the whitebark is as rare in the nursery trade as it is in the wild. *The Hillier Manual of Trees and Shrubs*, a standard horticultural manual published by Hillier Nurseries in Winchester, England, lists a single cultivar for the species: a shrub called 'Noble's Dwarf'. On this side of the Atlantic, Weston Nurseries in Hopkinton, Massachusetts, offers nursery-propagated stock from two whitebark clones. But the pine's rugged looks limit its appeal, according to Wayne Mezitt, Weston's president. Mezitt says the whitebark looks a bit like Korean pine (*P. koraiensis*) or limber pine (*P. flexilis*). "It's an unusual plant," says Mezitt, "and 95 percent of our customers don't want an unusual plant."

If you are interested in buying some of Weston's whitebark pines, you will have to visit the nursery or arrange for shipping, since Weston has no mail-order business. Call Weston at (800) 322-2002 or (508) 435-3414. If you are interested in protecting the wild whitebark pine, the Great Bear Foundation, an organization devoted to protecting the grizzly bear, suggests that you write the U.S. Fish and Wildlife Service and ask that the pine be studied and listed as threatened. Write the service at 18th and C Streets N.W., Washington, DC 20240.

A New Shrub Find in California

A recently discovered California plant may soon be gracing American gardens. Last May, botanists Dean Taylor and Glen Clifton were exploring forested slopes near Lake Shasta when they realized that one of the shrubs dominating the understory was new to them. The Shasta snow wreath, as it is now called, proved to be new to botany in general. Resembling a spiraea, the shrub has been assigned to the rose family, Rosaceae, and given the scientific name *Neviusia cliftonii*.

The genus *Neviusia* has only one other member, *N. alabamensis*, the Alabama snow wreath. Though rare, the Alabama snow wreath is known to occur over a large swath of the Southeast, from Arkansas to western Georgia, according to Barbara Ertter, an expert on the rose family. Ertter co-authored the new plant's formal description, which appeared in last December's issue of *Novon*, a journal published by the Missouri Botanical Garden. The snow wreaths' closest relatives are two east Asian ornamentals, each the sole member of its genus: *Kerria japonica* (Japanese rose) and *Rhodotypos scandens* (jetbead or white kerria).

Ertter says this distribution, in which an American native's closest relations are east Asian, fits a well-established pattern for plants that were widespread during the Eocene epoch, 58 to 36 million years ago. The nearest relative of the tulip tree, for example, is Chinese. And California's famous redwoods are closely allied to another Chinese tree, the dawn redwood (see "A Tree History: The Dawn Redwood," *American Horticulturist*, October 1992). In the case of the snow wreaths, the recent discovery of a 50 million-year-old *Neviusia* fossil in British Columbia has confirmed the pattern.

Like its cousin, the Shasta snow wreath is rare but not in imminent danger of extinction. Three wild populations are now known, all near Lake Shasta. Its habitat is the understory of mixed forest, consisting mainly of Douglas fir, big leaf maple, and oak. Poison oak is common in the area and Ertter thinks that may help explain how the snow wreath went unnoticed for so long. The plant's natural range may be limited by its preference for limestone, which is uncommon in the area.

The Alabama snow wreath is a

candidate for the endangered species list, maintained by the U.S. Department of the Interior's Fish and Wildlife Service. Ertter does not know if its cousin will also be proposed. "There is an interest in using other approaches," she says. The site where the plant was first found is privately owned; the other two sites, discovered a month after the first, are on U.S. Forest Service land. Ertter thinks all three areas can be protected without resorting to the list.

The Shasta snow wreath is already being propagated by several botanical gardens, including the Strybing Arboretum in San Francisco and the University of California Botanical Garden at Berkeley. In St. Louis, the Missouri Botanical Garden is growing the Alabama snow wreath and is trying to sprout seeds of its California cousin. Ertter hopes the California Native Plant Society will offer cuttings to the public, as it has done with some other natives. "We're hoping," she says, "that it will have ornamental potential." Given the Shasta snow wreath's handsome relatives, that seems like a good bet.

Biocontrol for a Florida Invader

The remedy for what some authorities call the Everglades' most serious threat may be sitting in a U.S. Department of Agriculture (USDA) quarantine facility in Gainesville, Florida. The Australian weevil, *Oxyops vitiosa*, is tiny but it has a big appetite for the melaleuca tree.

The melaleuca (*Melaleuca quinque-neria*) is one of the South's most celebrated horticultural disasters. Native to Australia, it was introduced into south Florida at the beginning of the century and remained a popular ornamental as late as the 1960s. It was imported as a timber source and an ornamental, but the tree's main mission was to dry up the sawgrass swamps and replace them with forests.

The plan worked too well. Freed from the insects and diseases that keep it in check in Australia, the melaleuca spread rapidly through south Florida wetlands, crowding out native plant communities. The tree can reach heights of 100 feet and it sucks up water four times as fast as Everglades sawgrass. But despite its phenomenal thirst, it burns with nearly explosive force. One melaleuca fire in 1985 was so intense it took three months to extinguish.

Fire is part of the melaleuca's strategy. Its leaves contain a flammable oil and its outer bark is dry as tinder, while its inner bark is saturated with all that water. A fire will kill the neighboring vegetation, but not the melaleuca. A few days after the burn, the tree releases prodigious

quantities of seed. A single 30-foot tree can produce over 20 million seeds a year. The melaleuca may now cover as much as 1.5 million acres of south Florida. It is believed to be spreading at the rate of 52 acres a day.

The melaleuca could not be subdued by "hack and squirt" crews, who chop down the trees and spray herbicide over the stumps. So several years ago, a consortium of conservation groups and government agencies approached Ted Center, a USDA entomologist, with the idea of importing a few of the tree's native enemies. After screening some 400 possibilities in Australia, USDA scientists brought the weevil to Florida last July. It is currently being tested to make certain that it won't eat anything besides the melaleuca if it is released.

Thus far, the weevil has not attacked plants unrelated to the melaleuca and the tree has no close relatives here. But the bug has shown a slight interest in two native members of Myrtaceae, the family to which the melaleuca belongs. Gary Buckingham, the USDA entomologist who is supervising the testing, doesn't think this is likely to be a problem. He explains that bugs in confinement will often eat something that they would never touch in the wild.

Center, who is coordinating the project, says it's still too early to gauge the weevil's potential. "But based on what it does in Australia," he says, "it should be effective." The weevil feeds on the tree's



WILLEY C. DUREN

Florida's melaleuca stands are so dense they crowd out most native plants.

new growth, thereby reducing the amount of seed set, and it sometimes kills seedlings outright. Scientists had hoped that the bug would adapt itself to fit changes in its host's behavior. In Australia, the melaleuca produces new growth only once a year, but in Florida, it grows constantly. So far, however, there is no evidence that a year-round food supply will speed up the weevil's life cycle. But Buckingham doesn't plan an exhaustive study before putting the weevil to work. "Nobody's ever studied this insect before. We want to get something out into the field," he says, "and then resolve these questions."

Members' Forum

Horticulture in Russia

My American friend John Bristol sent me a copy of *American Horticulturist*, which acquainted me with the American Horticultural Society. I am writing to share some information about horticulture here in Russia.

I live in the Rostov region in the south of the European part of Russia, similar in latitude to the northern states of the United States. The terrain is a wavy plain with the highest hills in the north and a well-developed river-gorge system. The main river is the River Don, which flows into the Azov Sea.

Average winter temperatures in our steppe zone are cold, minus 4 to 5 Celsius [28 degrees F], with snow and rain. Summers are warm and dry with average temperatures of 19 to 23 Celsius [66 to 73 degrees F]. The growing season starts in early March.

About 80 percent of the land is used for agriculture. Water and wind erosion is common because most of the land is ploughed up and the pastures are not used wisely. Wheat is the primary crop. Sunflowers, corn, and barley are also grown.

The most typical cereals of our steppes are *Festuca valesciaca*, *Stipa lessingiana*, *S. capillata*, *Koeleria cristata*, and *Agropyron desertorum*. The grass contains different species of *Astragalus*, *Medicago*, and *Phlomis* and *Iris pumila*, *Artemisia*

austriaca, *Achillea millefolium*, *A. nobilis*, *Salvia stepposa*, and *S. tesquicola*.

Trees grow only in the gorges and floodlands of rivers or in groves or forest belts planted by the people. The famous Russian soil scientist V. V. Dokuchaev and like-minded persons started to plant forest belts in 1892 to protect our fertile soil from wind and drought, to hold water and snow on the fields, and to shelter birds, animals, and useful insects.

There is currently a high interest in home gardening for several reasons. Among these is the increasing cost of food. Fruits and vegetables are very expensive. The prices have risen 20 and more times, but salaries, only three or four times. About 90 percent of our people are below the line of poverty. To economize, we have to take care of our gardens. Fruits and vegetables from the home garden are also fresher and of better quality than any from shops or markets.

The most popular fruits are apples, pears, cherries, apricots, and plums. We grow raspberries, gooseberries, red and black currants, and strawberries. Today there is great interest in wild plants—black ashberries, sea buckthorn, guelder rose—because of their pharmaceutical properties. The most common vegetables are potatoes, tomatoes, onions, cucumbers, beets, cabbages, peppers, carrots, aubergines, and vegetable marrows.

There are some societies of gardeners in Rostov, each with an agronomist. These societies provide consultations for members and sell fertilizers, fungicides, and insecticides. At our two great city bazaars in spring there are large selections of young trees and bushes and seedlings

Update

Beanbag Redux

If our March story about Beanbag, the deer-chasing terrier of the Morris Arboretum, inspired you to invest in a canine to keep the pests out of your own garden, you may want to reconsider. (See "Midwest Arboreta Take Aim at Deer" in the March Regional Notes.)

Judy McKeon, chief horticulturist at the Philadelphia arboretum, called to tell us that Beanbag had been retired before our article appeared. Last fall, at the end of Beanbag's second year of policing the arboretum rose garden, "we realized he wasn't working," she said. Not that he was loafing on the job; he had just become too familiar to the local deer to scare them away any longer.

Beanbag has retired from his sentry duties to become McKeon's family pet, and the arboretum is now trying to raise \$75,000 to erect deer fencing.

Wild Foods Association

The address listed in the March issue for the National Wild Foods Association is that of its treasurer. The group's president, Edelene Wood, suggested that those who would like to join the group or learn more about its activities instead contact her, at 3301 Hemlock Avenue, Parkersburg, WV 26104, or call (304) 428-9590.

Wood said that the group's biggest event is its annual Nature Wonder Weekend the third week of September. This year's event will mark the 25th anniversary for the group, which was organized on a local level in 1968 by the wild foods author Euell Gibbons. The national organization was formed after his death.



Marina Donchenko shows the height of her phlox.

for sale. Certainly now they are much more expensive, but buying them will be more economical than buying fruits and vegetables at the market.

The main gardening tools are spades, spading forks, garden hoes, and rakes. Some years ago there was an exhibition of American agriculture in our city. I visited it with my friends, and all of us were amazed by the compact tractors, rotary tillers, and other machines available to American farmers and gardeners.

The Rostov State University has its own botanical garden, which receives many seeds and plants from all over the world, including the United States. But an individual person can't exchange plants or seeds with somebody from abroad. The scientists of the botanical garden do research in gardening. They also have a nursery and sell their produce.

In Novocherkassk, in the Rostov region, there is a good Research Institute of Viticulture and Wine-making. They've selected many good varieties of grapes. Some kinds are resistant to phylloxera. This "sunny" fruit is very unusual and very much appreciated by our people. Our warm sunny summer is very good for growing grapes.

We also have some periodicals with articles about horticulture—*Rural Dawns*, *Personal Farm*, and *Agricultural Life*. Some gardeners publish notices of seeds and saplings for sale or exchange. There are some programs on TV and radio devoted to the problems of gardeners.

Near our house we have a garden. It isn't great—about 400 meters square—but we have enough work to do. Certainly, my father is the main gardener among us. We grow vegetables—potatoes, tomatoes, cucumbers, beets, and peppers. We have apricots, apples, pears, plums, cherries, walnuts, raspberries, red and black currants, gooseberries, black ashberries, and grapes. The apricot tree gives me the most pleasure, in spring with its beautiful blooms and in July with its beautiful rosy fruit about two inches in diameter.

Tomatoes and potatoes take the most space, time, and trouble. We can't find a radical measure to defend our potatoes from the Colorado potato beetle. We need varieties of potatoes that are resistant to this "uninvited guest from America." With tomatoes and cucumbers, we struggle with molds.

We have a small ornamental garden with phlox, peonies, roses, and lilies. Our spring started in March with narcissus and tulips.

Thank you for letting me tell you a little bit about horticulture here in Russia. Certainly the horticulturists of our two great countries could have many common ways of cooperation. *Marina Donchenko*
Rostov-on-Don, Russia



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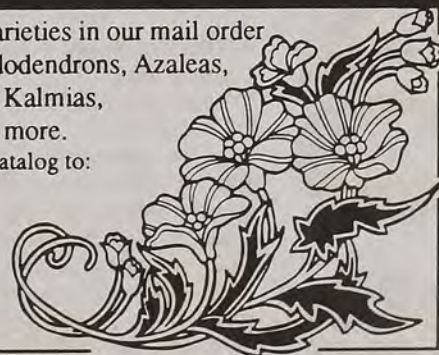
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NEW RELEASES

The Cut-Flower Garden

Theodore James Jr.

Hardcover. Retail price: \$30. AHS price: \$24.95.

Book code: MAC 405

The Cut-Flower Garden is a month-by-month planning and cultivation guide, aimed at providing flower arrangers with a steady harvest of flowers and greenery through the entire year. Theodore James Jr. accurately describes plants useful for arrangements that are in bloom or fruiting at any given time. He also covers the art of flower arranging, as well as how to harvest flowers and condition them to guarantee maximum vase life. Finally, entries are included on perennials, annuals, bulbs, and flowering trees and shrubs—everything that will yield the greatest bouquet of flowers and greenery. 1993. 160 pages.

The New Houseplant

Elvin McDonald

Hardcover. Retail price: \$40. AHS price: \$34.

Book code: MAC 407

The New Houseplant makes sense of the astounding variety of plants that can now be grown indoors and explains how to maximize their beauty in the home and office. From growing tips to selection and arrangement to organic troubleshooting techniques, McDonald covers it all in this soon-to-be classic indoor gardening reference. 1993. 288 pages.

Down-to-Earth Natural Lawn Care

Dick Raymond

Softcover. Retail price: \$16.95. AHS price: \$13.99.

Book code: GAR 200

Down-to-Earth Natural Lawn Care teaches homeowners how to work with nature to install and maintain a healthy, beautiful lawn. Raymond explains to readers how to do the right thing at the right time to ensure that their lawns flourish all season long and for years to come. Applicable to all sections of the country, Raymond's book includes a year-round maintenance schedule. 1993. 176 pages.

Successful Small Food Gardens

Louise Riotte

Hardcover. Retail price: \$21.95. AHS price: \$18.50.

Book code: GAR 201

Now everyone can enjoy the pleasure and incomparable quality of home-grown produce, even those of us whose garden space is limited to a small area. *Successful Small Food Gardens* addresses the many special needs of the small-space garden including simple landscaping methods; companion

plants and succession planting; raised beds, container growing, and hanging gardens; water and drainage techniques; ways to increase soil quality; dwarf fruit and vegetable varieties; edible flowers, herbs, and shrubs. This book will help make your small food garden your most rewarding garden ever. 1993. 200 pages.

Success With Rhododendrons and Azaleas

H. Edward Reiley

Hardcover. Retail price: \$29.95. AHS price: \$24.95.

Book code: TIM 512

In *Success With Rhododendrons and Azaleas*, Reiley shares his personal experiences in successfully growing rhododendrons and azaleas, as well as specific details on the techniques he has developed over many years as a grower. It also includes technical information on dealing with diseases and insects, derived from a number of state university experimental stations. A particularly useful feature is the inclusion of lists of recommended species and cultivars for a wide range of climates. 1992. 314 pages.

The Evening Garden

Peter Loewer

Hardcover. Retail price: \$25. AHS price: \$21.25.

Book code: MAC 406

For the many people who have time to care for and enjoy their gardens only at night, *The Evening Garden* looks at the hundreds of plants that bloom and/or release their fragrance in the evening hours. Peter Loewer begins by explaining why these flowers behave as they do (most are pollinated by night-flying moths and bats), then moves on to the history of the moonlight or all-white gardens, listing dozens of beautiful bloomers, including orchids, bromeliads, annuals, perennials, wildflowers, water lilies, cacti, tropical vines, and trees. Loewer also introduces us to the insects of the night garden. 1993. 288 pages.



Hemerocallis DAYLILIES

WALTER ERHARDT



Hemerocallis: Daylilies

Walter Erhardt

Hardcover. Retail price: \$29.95. AHS price: \$24.95.

Book code: TIM 513

Every aspect of the cultivation and history of daylilies is covered, including information on botanical characteristics, modern hybrids, cultivar selection, propagation, cultivation, and control of pests and diseases. Diane Grenfell, vice-president of the British Hosta and Hemerocallis Society, has edited the text to bring it fully up-to-date. 1992. 196 pages.

Ornamental Shrubs, Climbers, and Bamboos

Graham Stuart Thomas

Hardcover. Retail price: \$49.95. AHS price: \$41.95.

Book code: TIM 511

Ornamental Shrubs, Climbers, and Bamboos covers thousands of species, their hybrids, and cultivars in alphabetical order. The emphasis is on the garden use of shrubs, and the information is targeted to the needs of the gardener: size, evergreen or deciduous, color of flower, scent, season of flowering, autumn color, and methods of propagation are given in an ingenious "Line of Facts" for easy reference. 1992. 544 pages.

Stonescaping

Jan Kowalczewski Whitner

Softcover. Retail price: \$17.95. AHS price: \$14.95.

Book code: GAR 202

Using stone in the home landscape is a time-honored tradition. Gardeners can create beautiful effects by incorporating stone into many garden features, including paths, steps, walls, terraces, ponds, pools, and rock gardens. *Stonescaping* features 20 basic design plans focused on different varieties of stone gardens, including herb, cottage, and low-maintenance. 1992. 168 pages.

The Encyclopedia of Ornamental Grasses

John Greenlee

Hardcover. Retail price: \$27.95. AHS price: \$23.95.
Book code: ROD 003

For gardeners who've discovered that grasses are exciting plants with four-season landscape interest, *The Encyclopedia of Ornamental Grasses* is the complete reference to identifying and using them in bold new ways. 1992. 192 pages.

Your Backyard Wildlife Garden

Marcus Schneck

Hardcover. Retail price: \$24.95. AHS price: \$19.95.
Book code: ROD 002

An essential guide for nature lovers, gardeners, and back yard naturalists, *Your Backyard Wildlife Garden* offers practical, easy-to-follow instructions for recreating wildlife habitats. From site evaluation to selection of plants for food and cover to identifying wild visitors, Schneck has packed the pages with helpful tips and sage advice. 1993. 160 pages.

A Country Garden for Your Backyard

Marny Smith and Nancy DuBrule

Hardcover. Retail price: \$26.95. AHS price: \$22.95.
Book code: ROD 006

A Country Garden for Your Backyard shows readers that a beautiful garden need not demand hours of their limited time. All readers will be inspired by the wealth of useful information that this how-to guide provides and by how easy it is to create a country garden. 1992. 256 pages.

Stearn's Dictionary of Plant Names for Gardeners

William T. Stearn

Hardcover. Retail price: \$29.95. AHS price: \$24.95.
Book code: STE 300

Professor William T. Stearn provides the meaning and origin of over 6,000 botanical names, selecting those most likely to be encountered by gardeners and horticulturists, all with a wealth of detail and information. Also included are 3,000 vernacular names, cross-indexed to each botanical name. 1992. 384 pages.

The Gardener's Dictionary of Horticultural Terms

Harold Bagust

Hardcover. Retail price: \$29.95. AHS price: \$24.95.
Book code: STE 301

The Gardener's Dictionary of Horticultural Terms will guide its readers through the maze of technical horticultural terms. Thousands of words are clearly and concisely defined. Enthusiasts, both professional and amateur, will find this an extremely helpful aid in successful gardening. Contains

over 2,900 entries and over 1,200 explanatory diagrams. 1992. 320 pages.

Miniature Orchids

Jim and Barbara McQueen

Softcover. Retail price: \$24.95. AHS price: \$20.95.
Book code: TIM 514

Miniature orchids have a special attraction for orchid growers with limited space. If given some time outdoors in good weather, many miniatures can be grown to perfection on bright windowsills or in sunny rooms. However, miniature orchids offer more than just spatial economy: theirs is a special charm, which frequently outshines that of their larger relatives in brilliance of color, diversity of shape, delicacy of perfume, and elegance. 1992. 192 pages.



Easy Care Shade Flowers

Patricia A. Taylor

Softcover. Retail price: \$14. AHS price: \$11.90.
Book code: SIM 022

Gorgeous color for low-maintenance shade gardens is no longer an elusive dream, thanks to Patricia A. Taylor's *Easy Care Shade Flowers*. Taylor has included dozens of color pictures and charts, providing gardeners with choices of plants and plans that will produce colorful beds bursting with blues, yellows, whites, pinks, reds, and purples. Tables throughout the text group flowers by season of bloom, color, and foliage size. 1993. 169 pages.

The Living Art of Bonsai

Amy Liang

Hardcover. Retail price: \$35. AHS price: \$29.75.
Book code: STE 302

Over 100 full-color photographs showcase the author's conviction that bonsai is a fine art. Here you will see the sculptor's hand at work, and that of the artist, and even the woodcarver, though the creation emerges as a living plant. "The Living Art of Bonsai in-

cludes a gallery of breathtaking bonsai photos, basic styles, group planting, plant physiology, cultivation, propagation, transplanting and repotting, and training and dwarfing—in other words, everything the bonsai grower needs to know." *Booklist*. 1992. 288 pages.

Martha Stewart's Gardening: Month-by-Month

Martha Stewart

Hardcover. Retail price: \$50. AHS price: \$41.95.
Book code: RAN 250

Set in Martha Stewart's own six-acre suburban garden, her book celebrates the joys of the garden throughout the seasons, from spring's first buds and summer's bright colors to fall's satisfying harvest and winter planning. Stewart shares her gardening agenda each month: planning and ordering in January, preparing tools in February, germinating seeds in March, and on through the year. Also included are seed sources, appropriate fertilizers, natural pesticides, and plant varieties, as well as a glossary listing common names for each botanical name. 1992. 360 pages.

Gardening With Color

Mary Keen

Hardcover. Retail price: \$30. AHS price: \$24.95.
Book code: RAN 251

"Playing with color and form in the garden is the nearest that most of us will ever get to painting," writes Mary Keen, "and compared with applying paint to canvas, growing plants is easy. Out of doors, living compositions arrange themselves into perfect pictures, requiring no more than inspired censorship on the part of the gardener." 1992. 144 pages.

The Naturalist's Garden, 2nd Edition

Ruth Shaw Ernst

Softcover. Retail price: \$15.95. AHS price: \$13.25.
Book code: GLO 100

Why do beautiful butterflies and delicate, hovering hummingbirds select certain gardens? It's all in the design and planting. With *The Naturalist's Garden*, any back yard can come alive, even in the dead of winter. Revised in 1993. 240 pages.

Efficient Vegetable Gardening

Paul Doscher, Timothy Fisher, and Kathleen Kolb

Softcover. Retail price: \$14.95. AHS price: \$12.25.
Book code: GLO 102

For vegetable gardeners in the United States and Canada who are short on time and tight on space, here is a comprehensive reference brimming over with tips for growing vegetables. The book is particularly valuable for

urban gardeners. *Efficient Vegetable Gardening's* eight chapters are titled: How to Plant Raised Beds; The Garden Plan; Healthy Soil; Building Intensive Garden Beds; Planting; Efficient Management; Cold Weather Gardening; and History. 1993. 240 pages.

Wildflower Folklore

Laura Martin

Softcover. Retail price: \$16.95. AHS price: \$13.25.

Book code: GLO 103

Those who love wildflowers can indulge themselves in the engaging tales found in this two-color, paperback reissue of a favorite. The legends and myths, as well as medicinal, pioneer, and Native American uses, will intrigue and surprise readers who may have known only by sight some of the 105 North American wildflowers covered. Its botanical information and accurate illustrations will satisfy even the most knowledgeable naturalists. 1993. 256 pages.

REFERENCE

The Organic Gardener's Handbook of Natural Insect and Disease Control

Barbara W. Ellis and Fern Marshall Bradley

Hardcover. Retail price: \$26.95. AHS price: \$22.50.

Book code: ROD 018

The Organic Gardener's Handbook of Natural Insect and Disease Control contains entries on vegetables, fruits, herbs, annuals, perennials, and ornamentals. There is information on preventing problems along with symptoms of and solutions for major pests and diseases. Detailed illustrations show just how to diagnose problems. 544 pages.

The Rodale Book of Composting

Grace Gershuny and Deborah Martin

Hardcover. Retail price: \$21.95. AHS price: \$18.65.

Book code: ROD 021

The Rodale Book of Composting is the bible of composting for beginning and experienced composters alike. It includes extensive plans, options, tables, graphs, and valuable insights and "... covers the decomposition phases of the plant life cycle in intricate, yet readable detail." —*Washington Post*. 432 pages.

Wyman's Gardening Encyclopedia

Donald Wyman

Hardcover. Retail price \$55.00. AHS price: \$46.75.

Book code: MAC 666

Updated and expanded, *Wyman's Gardening Encyclopedia* contains a

wealth of information on planning, planting, and maintaining any kind of garden. With nearly 1,300 pages, 10,000 articles, 206 drawings, and more than 100 photographs, Wyman has assembled one of the most complete, comprehensive, one-volume gardening sourcebooks on the market today. 1,221 pages.

Rodale's Chemical-Free Yard and Garden

Fern Marshall Bradley

Hardcover. Retail price: \$26.95. AHS price: \$22.95.

Book code: ROD 023

Five of North America's foremost gardening and farming experts have assembled hundreds of proven, all-natural remedies for common garden problems to create one handy reference guide, *Chemical-Free Yard and Garden*. Learn just how easy it is to care for your yard and garden without the use of harmful chemicals. There is also a comprehensive guide to safe, organic products to help readers keep up with this rapidly expanding field. 464 pages.

The Grafters Handbook, 5th Edition

R.J. Garner

Softcover. Retail price: \$17.95. AHS price: \$14.95.

Book code: STE 100

Now available in paperback, this classic celebrates over 40 years as the premier grafter's sourcebook. *The Grafters Handbook* teaches readers how to propagate plant varieties, substitute one part of a plant for another, and join selected plants for their special properties. Garner also includes information on repairing damage to overgrown stock, invigorating fragile or sluggish plants, as well as procedures for bud, inlay, side, and bench grafting. Precise line drawings complete the guide. 324 pages.

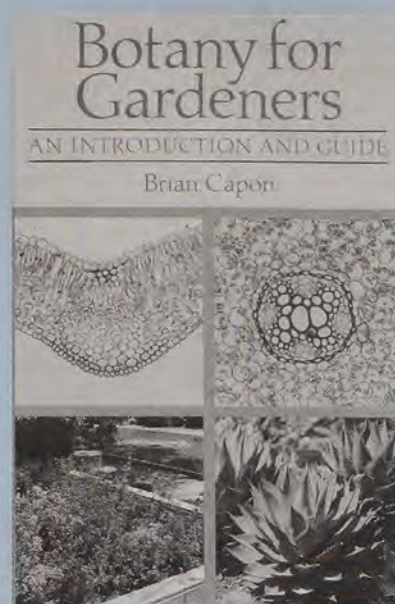
North American Horticulture: A Reference Guide, 2nd Edition

Thomas M. Barrett

Hardcover. Retail price: \$75. AHS price: \$65.

Book code: MAC 123

Compiled by the American Horticultural Society, the completely revised and expanded *North American Horticulture* is the most comprehensive directory of U.S. and Canadian horticultural organizations and programs. Thousands of organizations and programs are arranged in 28 categories, including: conservation organizations; international registration authorities; national governmental programs; horticulture education programs; botanical gardens, arboreta, conservatories, and other public gardens; plant societies; and community gardens. 427 pages.



Botany for Gardeners

Brian Capon

Hardcover. Retail price: \$29.95. AHS price: \$24.95.

Book code: TIM 010

Despite their obvious love of plants, many gardeners have not taken the logical step of learning more about them through the study of botany, perhaps fearing that the subject is too complex and technical. Brian Capon, professor of botany at California State University, has taken this into consideration and has provided the perfect introduction with *Botany for Gardeners*. It is written in layperson's language specifically for gardeners and horticulturists. 220 pages.

American Horticultural Society's Encyclopedia of Garden Plants

Christopher Brickell

Hardcover. Retail price: \$49.95. AHS price: \$42.50.

Book code: GAR 006

A comprehensive, up-to-date, and lavishly guide to garden plants, this extensive encyclopedia includes over 8,000 plants, 4,000 of which are featured in exquisite full-color photographs. Written by a team of plant experts, the *American Horticultural Society's Encyclopedia of Garden Plants* is designed to be the gardener's bible; a standard work of reference for every gardening bookshelf. 608 pages.

Hortica

Alfred Byrd Graf

Hardcover. Retail price: \$250. AHS price: \$210.

Book code: ROE 400

Hortica is an extensive guide to plant identification. Alfred Byrd Graf has gathered a comprehensive selection of illustrations featuring choice ornamentals, as well as useful plants and edible fruit. Plants are photographed

Gardeners' Dateline

Mid-Atlantic

♦ **May 1. Festival of Herbal Delights.** U.S. National Arboretum, Washington, D.C. Information: Pat Johnsen, (703) 978-6485 or Cassie Yates, (703) 481-5523.

♦ **May 8. Herb Fair and Sale.** Oatlands Plantation, Leesburg, Virginia. Hosted by the Goose Creek Herb Guild. Information: Merri Nelson, (703) 478-8747.

♦ **May 8-9. Mother's Day Herb and Perennial Show and Sale.** Wrenwood, Berkeley Springs, West Virginia. Information: (304) 258-3071.

♦ **May 14-16. Spring Wildflower Symposium.** Wintergreen Resort, Wintergreen, Virginia. Information: Lorrie Knies, (804) 325-2200, ext. 992.



This 200-year-old, 12-story windmill, known as De Zwaan—Dutch for “the swan”—is among the most prominent landmarks in Holland, Michigan. The windmill was dismantled and transported from the Netherlands to the namesake U.S. city in 1965. Founded in 1847 by Dutch immigrants, Holland is celebrating its annual “Tulip Time Festival” from May 5 to May 15. The festival will feature parades, live music, klompen dancers, and over eight miles of tulip-lined lanes. For more information, call the Tulip Time Office, (800) 822-2270.

♦ **May 19. Garden Club of Mathews Flower Show.** Piankitank Ruritan Club, Hudgins, Virginia. Information: Tucker Preston, (804) 725-9362.

♦ **May 22-23. The 45th Annual Rose Show.** Coliseum Mall, Hampton, Virginia. Sponsored by Virginia Peninsula Rose Society. Information: Virginia Kostyal, (804) 596-6452.

♦ **May 22-23. Art Mart and Garden Tour.** Waterford, Virginia. Information: Waterford Foundation, Waterford, VA 22190, (703) 882-3018.

North Central

♦ **May 1-2. May Fair Annual Plant Sale.** Wegerzyn Horticultural Center, Dayton, Ohio. Information: (513) 277-6545.

♦ **May 1-July 18. Early Summer Show of Annuals and Foliage Plants.** Foellinger-Freimann Botanical Conservatory, Fort Wayne, Indiana. Information: (219) 427-1267.

♦ **May 7. Twilight Tree Walk.** Morton Arboretum, Lisle, Illinois. Information: (708) 719-2465.

♦ **May 9. Mother's Day Blossom Walk.** Dubuque Arboretum and Botanical Gardens, Dubuque, Iowa. Information: (319) 556-2100.

♦ **June 12-20. Eighth Annual Rose Festival.** Boerner Botanical Gardens, Milwaukee, Wisconsin. Information: (414) 529-1870.

♦ **June 25-27. North American Lily Society 46th Annual Show.** St. Louis, Missouri. Information: Linda Smith, (314) 578-5583.

Northeast

♦ **May 1-Sept. 15. Fragrance Through the Ages.** Exhibit and lectures. Rodef Shalom Biblical Botanical Garden, Pittsburgh, Pennsylvania. Information: Irene Jacob, (412) 621-5475.

♦ **May 5-6. Annual Spring Plant Sale.** Brooklyn Botanic Garden, Brooklyn, New York. Information: Lois Carswell, Lucille Plotz, or Betsy Kissam, (718) 941-4044.

♦ **May 13. The 54th Annual Herb Sale.** Kimbertown, Pennsylvania.

On the Farm

Take time out for a spring fling at AHS's River Farm headquarters, where we'll celebrate the rites of spring, then welcome summer. Call (703) 768-5700 for information about these special events.

From May 12 to June 21, see “Nature's Gift,” an exhibit of dramatic color photographs of flowers by Maryl and selected work by other local photographers.

From June 24 to August 2, the paintings of California watercolorist Sharon Hinckley will be displayed. Hinckley will also be on hand for AHS's popular annual Daylily Day, June 26. Experts will discuss notable cultivars and how to grow them and a selection of daylily plants will be on sale.

Sponsored by the Philadelphia Unit of the Herb Society of America. Information: Mrs. Edward S. Madara Jr., (215) 664-2738.

♦ **May 15. May Gardener's Market.** Montgomery Pinetum, Cos Cob, Connecticut. Information: Liza Haywood, (203) 869-9242.

♦ **May 29. Connecticut Iris Society Show.** Edgerton Garden Center, New Haven, Connecticut. Information: Rebecca Wong, (413) 786-5344.

♦ **June 5. Plant Sale.** Tower Hill Botanic Garden, Boylston, Massachusetts. Information: (508) 869-6111.

♦ **June 12. The 19th Annual Plant Sale.** Garden in the Woods, Framingham, Massachusetts. Information: (508) 877-6574.

♦ **June 12. Strawberry Festival and Plant Sale.** Orleans, Massachusetts. Information: (617) 255-2658.

♦ **June 13. The 37th Annual Rose Show.** Planting Fields Arboretum, Oyster Bay, New York. Sponsored by the Long Island Rose Society. Information: Robert Ardini, (516) 773-7936.

♦ **June 13. Ferns, Flowers, and Mushrooms.** Sunday Walk Series. Bartlett

Arboretum, Stamford, Connecticut.
Information: (203) 322-6971.

♦ June 26. City Gardens, Country Flowers. Newport, Rhode Island. Information: Hill Association, (401) 848-0696.

Northwest

♦ May 13-15. Council on Botanical and Horticultural Libraries 25th Annual Meeting. Elisabeth C. Miller Library, Center for Urban Horticulture, Seattle, Washington. Information: (206) 543-0415.

♦ June 10-11. The 105th Annual Spring Rose Show. Portland, Oregon. Presented by the Portland Rose Society. Information: Jane Anders, (503) 246-6438.

South Central

♦ May 13-16. Art in Bloom. Exhibit. New Orleans Museum of Art, New Orleans, Louisiana. Information: (504) 488-2631.

♦ May 22-23. Cactus Show and Sale. Botanica, the Wichita Gardens, Wichita, Kansas. Information: (316) 264-0448.

Southeast

♦ May 2-4. Menninger Sunbelt Tree Conference. Lake Buena Vista, Florida. Sponsored by the Florida Nurserymen and Growers Association. Information: Linda Van der Zee, (407) 345-8137.

♦ May 3-4. Wildflower Festival and Native Plant Sale. Reflection Riding Arboretum and Botanical Garden, Chattanooga, Tennessee. Information: (615) 821-9582.

♦ May 8. Spring Safari. Tour. Marie Selby Botanical Gardens, Sarasota, Florida. Information: Spencer Ketchum, (813) 366-5731.

♦ May 8. Wild Edibles. Workshop. Callaway Gardens, Pine Mountain, Georgia. Information: (404) 663-5187.

♦ June 26-27. Fourth Annual Tour of Ponds. Atlanta, Georgia. Information: Karla Sperling, (404) 975-0277.

♦ June 30-July 3. Paradise: the Meaning of Gardens. Annual Meeting of the American Association of Botanical Gardens and Arboreta. Orlando, Florida. Information: (215) 688-1120.

Southwest

♦ May 7-8. Plant and Used Book Sale. Denver Botanic Garden, Denver, Colorado. Information: (303) 331-4000.

♦ May 8-9. Iris Society Show. Albuquerque

Garden Center, Albuquerque, New Mexico. Information: (505) 296-6020.

♦ May 29-30. The Good Earth Festival. Environmental Exposition. Memphis Botanic Garden, Memphis, Tennessee. Information: (901) 685-1566.

♦ June 5. Chatfield Arboretum Free Day. Chatfield Arboretum, Littleton, Colorado. Information: (303) 973-3705.

West Coast

♦ May 8. Private Gardens of Pacific and Presidio Heights. Tour. San Francisco, California. Sponsored by the Strybing Arboretum Society. Information: (415) 661-1514.

♦ May 8-9. Geranium Show. Descanso Gardens, La Canada Flintridge, California. Information: (213) 681-2201 or (818) 793-7397.

♦ May 16. Annual Benefit Plant Sale. The Huntington, San Marino, California. Information: (818) 405-2141.

♦ June 5. Designer Grasses for the Landscape. Workshop. Santa Barbara Botanic Garden, Santa Barbara, California. Information: (805) 563-2521.

♦ June 5-6. Fuchsia Show and Sale. South Coast Botanic Garden, Palos Verdes Peninsula, California. Information: (310) 544-6815.

♦ June 12. Grasses. Class. University of California Botanical Garden, Berkeley, California. Information: (510) 642-3352.

♦ June 26-27. Gladiolus and Flower Arrangement Show. Los Angeles State and County Arboretum, Arcadia, California. Information: (818) 821-3222.

International

♦ May 25-28. Chelsea Flower Show. Royal Hospital, Chelsea, England. Tickets are available in U.S. from Keith Prowse, 234 West 44th Street, Suite 100, New York, NY 10036, (800) 669-8687.

♦ June 3-6. Fourth World Flower Show. Toronto, Canada. Information: (416) 932-1971.

♦ June 18-20. The Urban Garden: Oasis in the City. Symposium. University of Victoria, Victoria, British Columbia. Information: Ron Pal, Registrar, 451 Creel Road, R.R. 6, Victoria, British Columbia, V9B 5T9, (604) 474-3322.



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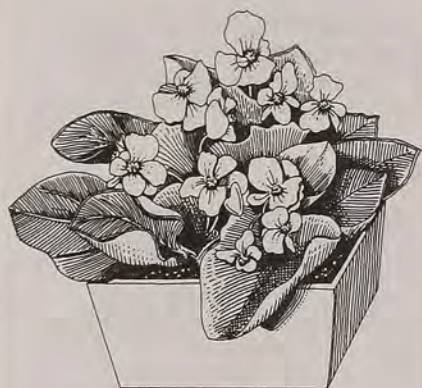
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Pennsylvania Society Announces Gold Medalists

Two dogwoods, two viburnums, a maple, and a cryptomeria are this year's winners of the prestigious Gold Medal Award from the Pennsylvania Horticultural Society.

The two dogwoods are among six hybrids of our native *Cornus florida* and the Asiatic *C. kousa* bred and selected by Elwin R. Orton Jr. of Rutgers University. Orton was the 1992 winner of the American Horticultural Society's Scientific Award. All of his hybrids are highly resistant to dogwood borer and relatively

resistant to the fungus that causes dogwood anthracnose.

One of the award winners is 'Rutban', which has been trademarked as Aurora. Its bracts, which are overlapping and rounded, appear at the same time as the leaves begin to unfold in spring, about a week after the native dogwood has finished blooming. Because of its upright habit, it is especially attractive when its lower limbs are pruned to give it a more treelike shape.

'Rutlan', trademarked as Ruth Ellen, has pointed bracts that, rather than overlapping, form a cross shape. They appear five to seven days earlier than those of 'Rutban', and the tree is much more horizontal in habit.

Both are vigorous growers, flower heavily, and are expected to perform well in USDA Zones 6 to 8.

Both of the viburnum winners are deciduous, and both were selected by the late Donald Egolf of the U.S. National Arboretum.

Viburnum dilatatum 'Erie' is a selection of the linden viburnum propagated from seed collected in Japan. It has masses of creamy white flowers in mid-May, and medium green leaves that turn red, orange, and yellow before falling in autumn. Its berries turn from orange to reddish purple and then coral after the first frost. Hardy in Zones 5 to 8, it needs a companion linden viburnum for the best fruiting.

Egolf selected *V. × burkwoodii* 'Mohawk' in 1953 and introduced it in 1966. It has profuse red buds that open to white petals with red blotches and a spicy clove fragrance. The dark green leaves turn orange-red in fall. Like 'Erie', it can grow to six feet. It resists bacterial leaf spot and powdery mildew and is hardy in Zones 4 to 8.

Acer griseum, the paperbark maple, was introduced to this country from

China by plant explorer Ernest Wilson around the turn of the century, but is infrequently seen in home gardens. It's ideally suited to that use because it only grows to 20 or 30 feet. Its cinnamon-colored bark makes it a standout in winter. The autumn foliage is red to yellow. It does well in Zones 5 to 8.

The sixth winner is yet another Asian native, *Cryptomeria japonica* 'Yoshino', which at maturity also exhibits peeling bark. The cultivar resists the browning summer needles and occasional dieback that are problems common to the species. Outstanding features include its conical shape, fine-textured blue-green foliage, and graceful drooping branchlets. It was introduced into this country in 1861.

Clearly, winners of the Pennsylvania Horticultural Society's Gold Medal Awards need not be newly introduced plants. They are woody ornamentals that in the opinion of the judges are beautiful, tough, and deserve wider use by home gardeners.

A list of sources and previous winners is available from the Pennsylvania Horticultural Society, 325 Walnut Street, Philadelphia, PA 19106, (215) 625-8250.

Landscape Plants From U.S. Arboretum

Available from the U.S. National Arboretum, in honor of its 65th birthday, is a 72-page book, *Landscape Plants for the Twenty-First Century*. The book describes 65 trees and shrubs that the arboretum has introduced, all of which are now available in the trade, and contains 30 color photographs. It is available for \$9, including shipping and handling, by writing to Friends of the National Arboretum, 3501 New York Avenue N.E., Washington, DC 20002.

Veronica Named Plant of the Year

A veronica discovered nearly half a century ago and thought to be lost until 1977 is the Perennial Plant Association's (PPA) Plant of the Year for 1993.

Veronica 'Sunny Border Blue' was named by Bob Bennerup, owner of Sunny Border Nurseries, Inc., in Kensington, Connecticut. In 1947 he imported from England several selections of *V. spicata* and *V. longifolia* because they had flowers of a darker violet-blue than any he had seen before. The one he named for his nursery caught his eye because it had rounded leaves and bloomed for nearly three months.

The plant was rediscovered 16 years ago by Ron Chiabotta of Potomac Nursery in Potomac, Maryland, in a display garden in Westminster, Maryland.

The plant, which is hardy from USDA Zones 3 to 8, is 18 to 24 inches tall when in bloom, and is not choosy about soil pH. It performs best in full sun and with some regular deadheading.

Veronica 'Sunny Border Blue' has been widely distributed since its rediscovery, and gardeners should be able to obtain it through local PPA-affiliated garden centers.



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