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Cures From the Earth

To the uninformed, using plants as medicine may conjure up images of snake oil salesmen, overpriced health food nostrums, or the dying and desperate slipping south of the border for a potion.

Nothing could be further from the truth. A quarter of U.S. prescription medicines contain plant-based ingredients. The Natural Products Branch of the National Cancer Institute has a \$2 million annual budget to explore for and test plants that may have potential for treating cancer and AIDS.

We've come a long way since the doctrine of signatures—when it was assumed that a plant shaped vaguely like a human organ would cure whatever ailed that body part. Although we don't understand how premodern healers selected their plant cures, we are learning that in many cases, their choices were right on target. Native Americans chewed on willow bark to ease pain; the bark contains salicylic acid, a compound chemically related to the active ingredient in aspirin. In other cases, a favored plant has a new use. Derivatives of mayapple, used historically for a liver cleanser, laxative, and cure for syphilis, are now used to treat venereal warts and for testicular and small-cell lung cancers.

The potential of plants for curing some of our most serious diseases has

served as a powerful argument for those who want to protect tropical rain forests. This fall, the world's largest pharmaceutical company announced a \$1 million agreement with a Costa Rican conservation group for the right to screen plants—as well as insects and microbes—from that country's forests for their potential use in medicines.

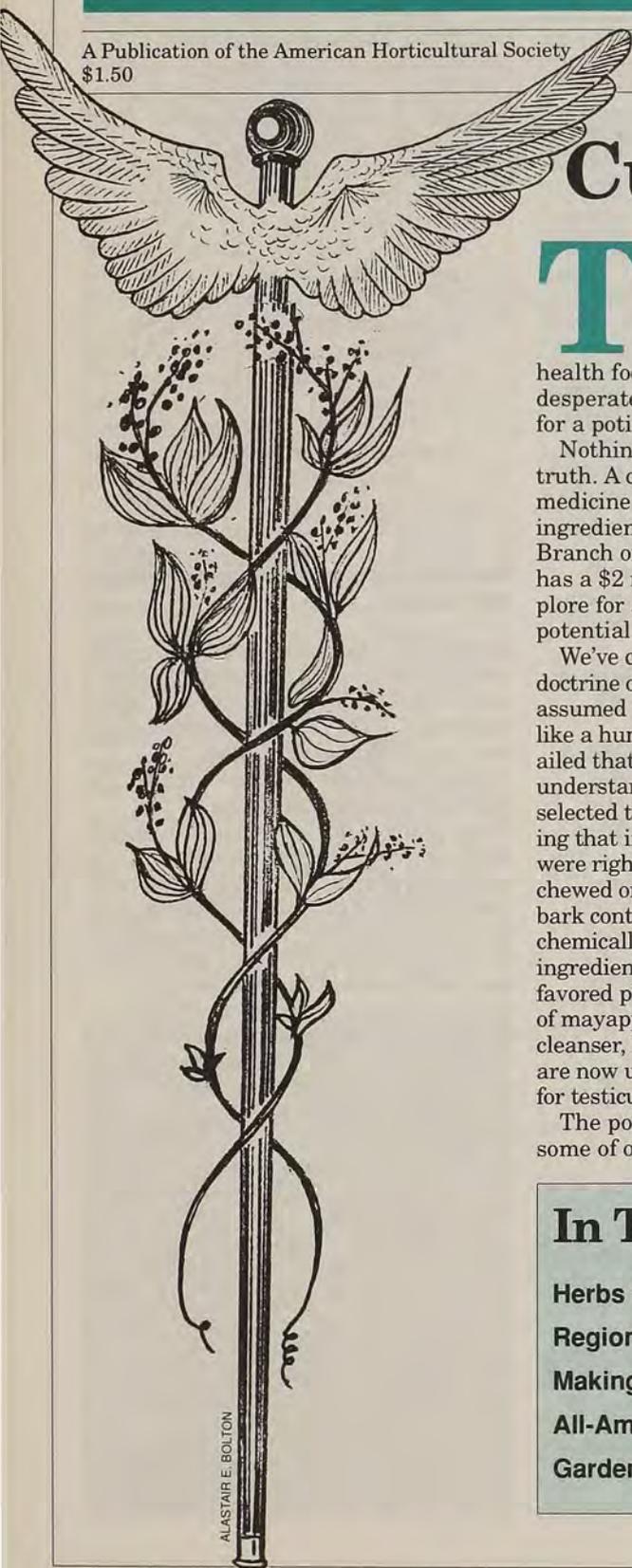
Plants can help us prevent as well as cure serious illnesses. A five-year, \$20.5 million "designer foods" project at the National Cancer Institute is investigating plants for anticancer properties, with the idea that these substances could be added to recipes as part of an anticancer diet.

In this issue, Steven Foster, author of numerous works on medicinal plants, describes some plants in current use as medicines, and offers a glimpse at why their use in the United States lags behind that of other countries. We also pass along recent research on the curative properties of common edibles such as onions and strawberries, and neglected comestibles like the prickly pear.

A word of caution: Many medicinal plants are toxic and many foods can be harmful when consumed in excessive amounts. Most of this research is preliminary, particularly in regard to what quantities or concentrations are beneficial without unpleasant or harmful side effects.

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Herbs for Health

The United States lags far behind other nations in tapping the medicinal qualities of plants.

By Steven Foster

If most gardeners think of herbs, most likely parsley, sage, rosemary, and thyme will come to mind. But would they think of woody ornamentals such as ginkgoes and yews as herbs? How about wildflowers such as purple coneflowers or passionflowers, or weeds such as sweet wormwood and St.-John's-wort?

Broadly defined, an herb is any plant used for culinary, fragrant, or medicinal qualities. About one-third of the more than a quarter million known species of flowering plants have been used for medicinal purposes at some point in history. At least 80,000 species can be documented as folk medicines worldwide. In temperate regions, 20 percent of the species can be considered medicinal plants. Hundreds serve as important sources of medicine in both modern and traditional health care systems.

According to Dr. O. Akerele, director of the World Health Organization's (WHO) Traditional Medicine Programme, up to 80 percent of the world's population relies on various forms of traditional medicine rather than modern Western-style medicine. Herbal treatments are as important as acupuncture in traditional Chinese medicine, which serves as much as 60



Passionflower provides Europeans with a mild sedative.

percent of China's rural population—not as folk medicine, but as primary health care. Over 500 different plants are "official drugs" of the 1985 *Pharmacopeia of the People's Republic of China*.

Since East Asia has been a major source of ornamental plants for the West, many of our garden favorites and noxious weeds are also Chinese medicinal plants. Forsythia (*Forsythia suspensa*) seed capsules, Japanese honeysuckle flowers and stems, balloon flower (*Platycodon grandiflorus*) roots, and the flowers of chrysanthemums (*Dendranthema* spp.) are all official source plants of Chinese medicines.

While most of us will not use mums to "dispel wind-heat" of an upper respiratory tract infection, a trip to an American physician or pharmacist may also result in a plant-derived treatment. It is estimated that as many as 25 percent of prescription drugs contain at least one plant-derived ingredient. A classic example is the heart-affecting glycosides of the highly toxic common foxglove. Vincristine and vinblastine, alkaloids from the Madagascar periwinkle, are used in chemotherapy for the treatment of Hodgkin's disease and childhood leukemia. Approximately 40 plant species are used to produce prescription drugs sold on the American market,



American ginseng is one of the few native medicinal plants cultivated in any quantity. It is also collected in the wild.

with a retail value in 1980 of \$8 billion. This figure does not include over-the-counter (OTC) drugs, drugs used exclusively in hospitals, and sales of traditional herbal products or products sold as "dietary supplements" in health and natural food markets in the United States. The value of OTC plant-derived drugs is substantial; about one-half of OTC laxative products, for example, contain plant-derived ingredients.

Plant-derived drugs would probably be even more prevalent if the costs of introducing new drugs were not so high. To bring a new prescription drug to the American market costs upwards of \$200 million (the estimated cost of a new drug application). To recoup that investment, pharmaceutical companies are given exclusive rights to market the product for up to 22 years. Therefore, plant drug research in the United States is largely limited to complex isolated chemicals or synthesized chemicals based on naturally occurring molecules. Pharmaceutical companies are interested only in plant-derived chemicals or "natural products" that can be patented.

Over 600 botanical products are sold in American herb markets. Primarily sold through outlets such as the more than 7,000 health and natural food stores in the United States, herb products are often sold as "dietary supplements." Herb products sold for health purposes in the United States sit in what might be described as regulatory purgatory. As dietary supplements, they are "foods" rather than "drugs." Product labels generally do not include information on the intended medicinal or health uses of the products. However, a new law, the Nutrition Labeling and Education Act of 1990, which will change the face of food labels in the United States over the next two years, also institutes a

Chamomile

Chamomile flower products, from the annual herb known as German or Hungarian chamomile (*Matricaria recutita*) are used internally by Europeans for the treatment of inflammatory conditions and spasms of the gastrointestinal tract and peptic ulcers. The tea is popularly used as a mild sleep aid, especially in children. Externally, preparations are used for irritations and inflammations of the skin, as well as the mucosa of the oral cavity and gums. Most of the world's supply is cultivated.

Purple Coneflower

Echinacea products, especially those derived from the common garden perennial purple coneflower (*E. purpurea*), are widely used in Germany as a nonspecific stimulant to the immune system to increase the body's own defenses, such as at the beginning stages of a cold or flu. Externally, products are used to help stimulate regenerative processes, restore damaged tissue, and for an indirect anti-infective influence.

According to Dr. Rudolf Bauer and Dr. Hildebert Wagner of the Institute of Pharmaceutical Biology, University of Munich, in Germany there are over 280 *Echinacea* products registered as medicinal herb products or phytomedicines. Currently, the above-ground parts of *E. purpurea* and *E. angustifolia* roots are subjects of official German monographs for phytomedicines. Products include ointments, liquid oral extracts, and injectable drugs. *E. purpurea* preparations are composed of the expressed juice of



the aerial part of the fresh flowering plant.

While the world's supply of *E. purpurea* is from cultivated material, most of the *E. angustifolia* on world markets is harvested from wild populations in the U.S. Great Plains.

mechanism for developing "acceptable health claims" for food products. Currently, if an herb product is sold as a "drug"—that is, labeled for medicinal use—it would be subject to a new drug application.

Despite these ambiguities, "the future of medicinal herbs in the United States has never looked better," says Mark Blumenthal, executive director of the American Botanical Council, an Austin, Texas-based nonprofit organization whose mission is to disseminate scientifically accurate information on herbs. "Public interest in herbs continues to expand. Consumers are obviously interested in natural medicines and in the concept of self-medication. Current FDA policy, whereby drugs are being switched from prescription to over-the-counter status, supports the idea that consumers obviously know how to read directions for self-medication. While not sold as 'drugs,' many herbal products sold in the American market are used by consumers for minor complaints such as digestive upsets, coughs, colds, headaches, menstrual cramps, and related conditions. Many medicinal herbs are also used in preventive ways."

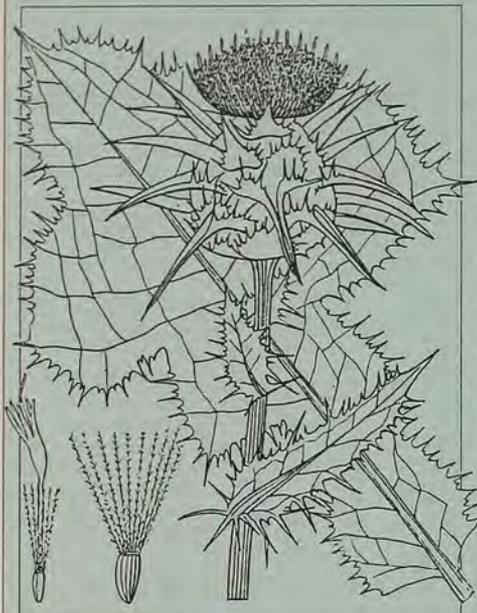
According to Blumenthal, herbal medicine is taken far more seriously in western Europe than in the United States. The medicinal plant market in Europe has estimated annual sales of

\$2.2 billion; 70 percent of those sales are in Germany alone. "Herbal medicine obviously belongs in the most advanced industrialized countries as evidenced by its place in modern Europe," says Blumenthal. "In Germany, for example, one-third of graduating physicians have taken courses in 'phytomedicine,' as herbal medicine is known in Europe. It is part of mainstream public health care in

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Saw Palmetto

Saw palmetto, know as "sabal" in the herb trade, is the fruit of *Serenoa repens*, a member of the palm family that is common in south Florida thickets. Fruit preparations are used in products in Germany, France, and Italy for the treatment of benign prostatic hypertrophy, a condition estimated to affect 50 percent of men over 50. The fruits contain a component that helps shrink the prostate gland, which can help eliminate the need for transurethral resection surgery. The fruit supply is currently wild harvested, though one grower has successfully brought the plant into cultivation.



Milk Thistle

Milk thistle extract is derived from the seeds of milk thistle (*Silybum marianum*), a European plant naturalized in California and other areas of North America. Components that are extracted from the seed and known collectively as silymarin are used as "live protectants" for the supportive treatment of chronic inflammatory liver disorders including hepatitis, cirrhosis, and fatty infiltration of the liver by alcohol and industrial chemicals. An injectable derivative of the seed is used in Europe for the treatment of poisoning from ingestion of the death cap mushroom (*Amanita phalloides*). The plant is cultivated on a commercial scale in Europe for seed production.

Herbs Continued from page 3

Germany. While many herb products in the United States are sold in health food stores, in Germany they are sold through pharmacies."

Germany's BGA, the equivalent of our FDA, has a system of "Standard Registrations" providing fixed rules and regulations for single-component medicinal plant products as well as medicinal combination teas. This gives manufacturers guidelines on labeling, quality control, and safety. The German BGA has also developed a series of "Therapeutic Monographs on Medicinal Products for Human Use." There are nearly 300 such monographs, which are periodically updated as new information on any aspect of a plant product, its intended medicinal use, or its safety, becomes available.

In the future, under the unified European Community (EC) economic system, the German phytomedicine regulatory system is expected to serve as the primary model for regulating medicinal plant products throughout Europe. EC phytomedicine regulations are expected to have a profound impact on the American herb market, both in the development of new regulations for product labeling and the use of North American plants as medicine sources. Europe is a far larger market for numerous medicinal plants indigenous to the United States than is the United States itself. This is the case with passionflower (*Passiflora incarnata*), used as a mild sedative; round-headed bush clover (*Lespedeza capitata*), used in diuretic preparations; and the fruits

of saw palmetto (*Serenoa repens*), used for benign prostatic hypertrophy.

A matter of growing concern is the conservation of medicinal plants that have traditionally been harvested from the wild. These finite resources may well be pushed to their limits by growing pharmaceutical markets worldwide, well-established health food markets for herb products in the United States, and the expanding well-developed market for phytomedicines in western Europe. A meeting on this issue, jointly sponsored by WHO, the International Union for the Conservation of Nature and Natural Resources, and the World Wildlife Fund, was held in Chiang Mai, Thailand, in March 1987. A result of the meeting was the Chiang Mai Declaration: "Saving Lives by Saving Plants," which recognized "the urgent need for international

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Medicinal Plant Organizations

The American Botanical Council (ABC) is a nonprofit educational organization headquartered in Austin, Texas. ABC publishes and disseminates factual information on herbs and herbal research, working to help increase public awareness on the historical role and current potential of plants in medicine. It publishes the quarterly *HerbalGram* in conjunction with the Herb Research Foundation (see below). For more information write to ABC at P.O. Box 201660, Austin, TX 78720-1660.

ABC's sister organization, the Herb Research Foundation (HRF), is a nonprofit educational organization whose main purpose is to research and disseminate information on medicinal herbs. HRF also sponsors safety reviews of herbs available on American herb markets. Annual dues start at \$35 and entitle members to scientific information from HRF files and a subscription to the quarterly *HerbalGram*. For more information write to them at 1007 Pearl Street, Suite 200, Boulder, CO 80302.

Those interested in the business aspects of herbs may wish to contact the International Herb Growers and Marketers Association (IHGMA), a trade organization serving the needs of herb businesses. They sponsor an annual international herb conference in conjunction with Purdue University's Department of Horticulture. For more information, write IHGMA, c/o Stygar Associates, 1202 Allanson Road, Mundelein, IL 60060.

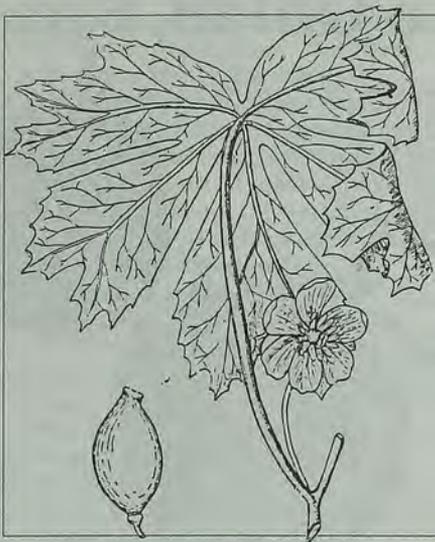
—Steven Foster

Feverfew

Feverfew preparations from the whole plant of *Tanacetum parthenium* (formerly *Chrysanthemum parthenium*) for use in treatment of migraine headaches have been the subject of a number of well-designed clinical trials in England. The preparations seem to reduce both the severity and the duration of migraines. Excellent improvement is documented in patients with a confirmed history of migraine headaches. The commercial supply of this common ornamental is cultivated.

Mayapple

Mayapple, including the American species *Podophyllum peltatum* and its Himalayan counterpart *P. hexandrum*, are sources of toxic podophyllotoxin, the starting material for a semisynthetic compound known as etoposide. In 1984 etoposide became an FDA-approved drug for testicular cancer, then in 1986 was approved for the treatment of small-cell lung cancer. A related chemical derivative, teniposide, is currently being researched for the treatment of childhood acute lymphocytic leukemia. Most of the podophyllotoxin supply is reportedly derived from the Himalayan mayapple, harvested from the wild in Asia. The plant is considered at risk of substantial decline, and is now monitored in international trade under the provisions of the Conven-



tion on International Trade in Endangered Species of Wild Fauna and Flora in order "to avoid utilization incompatible with its survival."

Chinese Cucumber

Trichosanthin is derived from a Chinese member of the gourd family, *Trichosanthes kirilowii*, ambiguously dubbed "Chinese cucumber" by the American press. It is currently a subject of clinical trials as a potential AIDS treatment (not to be confused with a cure). Early reports call it one of the most promising drugs for the treatment of AIDS as it prevents replication of HIV-infected blood cells and therefore helps to control the virus in the blood.

Also known as "Compound Q," the protein trichosanthin is highly toxic. It has been used as a chemical abortive in China. The supply comes from cultivated and wild plants in China.

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cooperation and coordination to establish programmes for conservation of medicinal plants to ensure that adequate quantities are available for future generations."

Approximately 140 species of wild-harvested American medicinal plants enter world botanical markets. About 60 species, many from the Eastern deciduous forest, are traded in American health and natural food markets. With the exception of American ginseng, passionflower, and purple coneflower (*Echinacea purpurea*), few American medicinal plants are cultivated in appreciable quantities. Very little research has been done on population dynamics of these plants and virtually nothing is known about how many plants of any given species can be taken each year on a sustainable basis. The need for data on the basic biology and horticultural aspects of wild-harvested medicinal plants is acute.

While medicinal plants are certainly the focus of a great deal of multidisciplinary research throughout the world, the United States is a third world

country when it comes to medicinal plant research. To get the latest scientific information on many American medicinal plants, one must turn to the German literature. The world is shrinking as trade expands

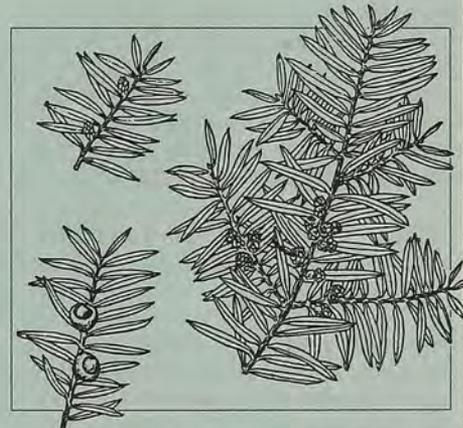
and borders evaporate. A balance will have to be struck between science and pseudoscience, conventional medicine and traditional medicine, regulation and consumer demands, plus conservation and the need for raw materials. ♦

Pacific Yew

Taxol, a drug derived from the bark of the Pacific yew tree (*Taxus brevifolia*), is currently in clinical trials as a potential treatment for ovarian cancer. It has also shown promise in the treatment of breast, lung, and skin cancers. The National Cancer Institute has been studying the substance since 1962. It appears to work by inhibiting replication of cancer cells.

The yews are scattered throughout the old growth forests of the Pacific Northwest, which are already a focus of environmental concern because they serve as the habitat for the spotted owl. The yews, which grow slowly to 25 feet, have been routinely burned as other trees were logged, because they were not commercially valuable as timber.

Taxol for the clinical trials is obtained by stripping the tree's bark, which kills the tree. As many as six trees are needed to treat one patient. No one is sure how many Pacific yews there are, but some conservationists predict that the supply could be exhausted by the turn of the century.



Taxol can also be made from the needles and branches of the tree, which not only doesn't kill it, but stimulates new growth. However, the federal Food and Drug Administration has not approved the purity of that form. Scientists hope that they will eventually be able to produce a synthetic form in the laboratory. Yew farms are another alternative; the Weyerhaeuser Company has begun growing the trees on its private land, according to the *New York Times*, but it will be several decades before those trees are mature enough to harvest for taxol.

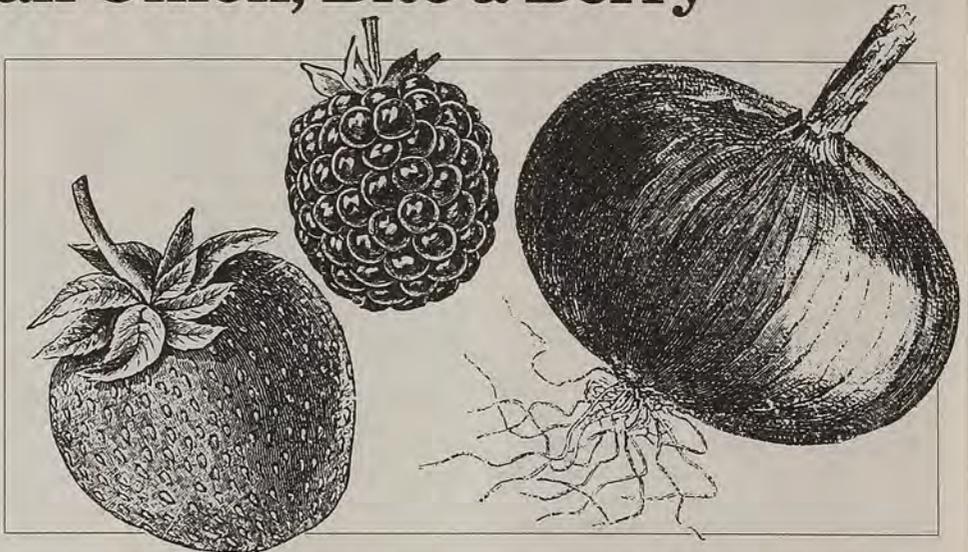
Steven Foster is the editor of Botanical & Herb Reviews, the associate editor of HerbalGram, published by the American Botanical Council and the Herb Research Foundation, and is the co-author of A Field Guide to Medicinal Plants. Foster also wrote most of the sidebar information on current medicinal uses of plants.

Munch an Onion, Bite a Berry

Strawberry and onion salads may never catch on, but including some of each in your diet may reduce your risk of cancer, according to scientists in Maryland and Texas. Consuming the onion and its relatives—garlic, chives, and scallions—reduces the incidence of stomach cancer, while strawberries, true berries, and apples inhibit the start of cancer caused by some chemicals.

Dr. Leonard Pike, a horticulturist with the Texas Agricultural Experiment Station in College Station, Texas, and Dr. Michael Wargovich, a cell biologist at the M. D. Anderson Cancer Center in Houston, are collaborating on a study of the onion. "Onions contain sulfur, which has been shown to inhibit certain types of cancer," says Pike. "Researchers have identified the sulfur compounds in garlic (see page 9) but not in the onion. We believe that since garlic and onion are in the same family, the same compounds will be there." Since garlic rarely produces seed, onions will be easier to breed for the trait.

It is the sulfur in onions that causes tears and lingering odors in the air and on the breath. When an onion is sliced or bitten, the sulfur vaporizes and floats up, irritating the eyes. But there are many sulfur compounds and some are more potent than others. To complicate matters, each onion variety may contain different compounds. "It seems that the more pungent an onion, the healthier for humans it is," Pike said. "But we want an onion that will not make you cry and smell on your breath for six hours."



In December, Pike began testing more than 150 types of onions to find out which sulfur compounds are present in each one. The onion selection contains commercially produced varieties and native species collected by Pike in the Soviet Union.

The researchers first treat the onion like it is being chewed and swallowed. Chunks of onion are whirled in a blender with a small amount of water for a few seconds. A lab technician withdraws onion vapors with a syringe. The gaseous specimen is placed in a gas chromatograph which draws a "picture" of each sulfur compound. This graphic description is recorded on a paper printout. The procedure is repeated with the juice from the onions using a liquid chromatograph.

Once Pike has identified the sulfur compounds in the onions, Wargovich will determine which of the chemicals identified are known to inhibit cancer. Then they will begin making crosses to breed that compound into an inoffensive bulb. Pike estimates that a new anticancer onion might take 10 years to come to commercial production.

An investigation conducted by the National Cancer Institute revealed that people in northeastern China and Italy who increased their consumption of onions, garlic, chives, and scallions had a lower incidence of stomach cancer than those who did not. The American Cancer Society estimates that there will be 23,800 new cases and 13,400 deaths from stomach cancer in the United States this year.

Hoxsey's Hoax?

Harry Hoxsey, a former Appalachian coal miner, may have been one of the most flamboyant and controversial herbalists of the 20th century, Michael Castleman writes in his book *The Healing Herbs: The Ultimate Guide to the Curative Power of Nature's Medicines*. Hoxsey, who had no formal medical training and received his high school diploma through correspondence, claimed that his family herbal remedy cured cancer. He began prescribing Hoxsey Cancer Formula in the 1930s and by the 1950s, Castleman writes, "his Dallas clinic was the world's largest privately owned cancer center with branches in 17 states."

Hoxsey was arrested for fraud more than 100 times in the 1930s.

But while the formula didn't work for everyone, the Dallas prosecutor who had him arrested could never find anyone who thought they had been defrauded. Eventually the Food and Drug Administration closed down Hoxsey's operation for violating federal drug-labeling regulations.

One of those for whom the formula didn't work was Hoxsey, who died of prostate cancer. Castleman notes that the Hoxsey formula is still available today at a clinic in Tijuana, Mexico, and recent studies show that his ideas weren't so far-fetched after all: nine of the formula's 10 herbal ingredients—barberry, buckthorn, burdock, cascara sagrada, red clover, licorice, poke, prickly ash, and bloodroot—have antitumor action.

Scientists are investigating many other herbs for their potential to either prevent or cure various types of cancer. Anise, apples, and dandelions have been used in herbal remedies. Other plants being evaluated for cancer-curing properties include alfalfa, celery seed, creosote bush, purple coneflower, feverfew, ginger, ginseng, golden-seal, mistletoe, parsley, psyllium, tarragon, turmeric, and valerian.

Many herbs have both cancer-causing and anticancer effects, and scientists aren't sure yet if the good or bad properties will prevail. Among these are allspice, angelica, basil, blackberry, boneset, clove, comfrey, cascara sagrada, maté, mullein, tea, raspberry, and common bearberry.

Meanwhile, in other research, Dr. John L. Maas, a plant pathologist for the U.S. Department of Agriculture's Agricultural Research Service (ARS), and Dr. Gary D. Stoner, director of experimental pathology at the Medical College of Ohio in Toledo, are testing strawberries for their potential in treating chemically induced cancers. Maas and Stoner began working on ellagic acid—which is found in considerable amounts in strawberries—at the request of the North American Strawberry Growers Association. Dr. Gene Galletta, a plant geneticist with ARS, and plant physiologist Dr. Shioh Y. Wang are also working with the strawberry association.

Stoner, who has been studying the compound since 1984, believes it's likely that the natural acid found in fruits could be effective against certain chemical carcinogens. The ellagic acid keeps potentially dangerous chemicals from breaking down into carcinogens, and may trap carcinogens formed by the body's own metabolism.

"We've known for some time that strawberry roots, leaves, and fruit contain organic ellagic acid," Maas continues. "We're now determining the genetics of the acid to find out how it's inherited so we can breed plants for higher levels."

Maas tested 40 strawberry varieties at the ARS Fruit Laboratory in Beltsville, Maryland. The compound is also found in blackberries, raspberries, blueberries, cranberries, and grapes and in various nuts, including Brazil nuts and cashews. Maas and his colleagues are also testing several types of apples for their ellagic acid content.

"Right now, we don't know what dietary intake of ellagic acid is needed to be effective," says Maas. "We know that in a strawberry there is a significant amount of ellagic acid per gram of tissue, but there's no way yet to know how much would be needed to produce the beneficial results." He estimates that there is about an ounce of the acid in 25 pounds of strawberries.

Purified ellagic acid is used medically to slow blood clotting. It appears to be effective against four classes of chemical carcinogens: polycyclic aromatic hydrocarbons, nitrosamines, aflatoxin, and aromatic amines. People are exposed to these carcinogens through smoking and consuming some cooked meats, moldy foods, and preservatives. Experimental evidence indicates that the acid:

- ◆ keeps a hydrocarbon found in tobacco smoke and in the atmosphere from inducing skin and lung cancer in animals and inhibits genetic damage in cultured human lung cells;

- ◆ inhibits a nitrosamine found in certain moldy foods from causing esophageal cancer in rats and inhibits genetic damage in cultured human esophagus cells;

- ◆ reduces genetic damage caused by aflatoxins—natural toxins found in moldy foods like corn and peanuts—in cultured human and rat lung tissues; and

- ◆ reduces the ability of acetylaminofluorene—a food additive—to induce liver cancer in rats.

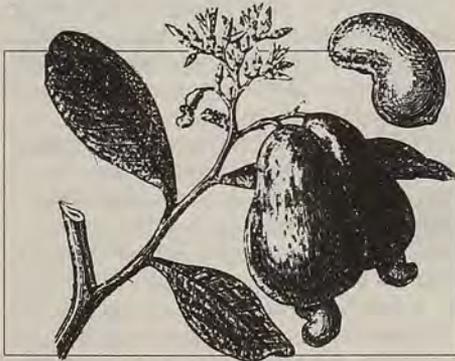
Although the ellagic acid hasn't been tested in humans, under these laboratory conditions it shows promise, Maas says.

Chew a Cashew

There's good news for nut lovers. A research report in the *Journal of Agricultural and Food Chemistry* says that oil from the cashew may be useful in fighting tooth decay.

Organic chemists Masaki Himejima and Isao Kubo extracted and tested 16 compounds from the cashew shell, which is a food industry waste product. In the mouth, some of the compounds not only killed *Streptococcus mutans*, a bacteria that causes tooth decay, but also appeared to interfere with the microbes' production of enamel-eroding acids and to fight plaque, Kubo told *Science News*.

The shell oil is nonedible, but the bacteria-fighting components are present in the nut and in the juice of the surrounding fruit. Residents of tropical countries eat the fruit—called cashew apple—with no ill effects.



Toothpaste and mouthwash are the two most promising uses; Kubo thinks the cashew compounds will be safe when mixed with either product. As a bonus, the cashew is a renewable resource and a potentially important product from tropical forests.

The substances also showed some effectiveness against *Propionibacterium acnes*, a bacteria that causes acne.

Materia Medica

Two essential resources for anyone interested in the use of medicinal plants are Michael Castleman's *The Healing Herbs* (Rodale, 1991) and Steven Foster and James Duke's *A Field Guide to Medicinal Plants* (Houghton Mifflin, 1990).

The bulk of *The Healing Herbs* is an encyclopedia of 100 common medicinal plants. Each entry contains information on historic and current uses, how to use the plant, safety, and culture. There are also chapters on the history of herbal healing, safety guidelines, storage and preparation, and sources and resources. This is one of the few such herb books that relay to the reader relevant research and experiments. The plants described include both wild and cultivated species, and those that are available in some processed form.

Foster and Duke's book is a "Peterson Field Guide" to 500 species of plants found in the Eastern United States with historic, current, or potential medicinal value. The size, layout, and use of black-and-white illustrations are the same as in other Peterson guides, and bound in the middle are 48 pages of color photographs. Mostly a guide for identification—with excellent botanical descriptions, drawings, and habitat and range information—*Medicinal Plants* also details plant uses and safety concerns and includes a handy index of medical topics.

Also excellent is the "Botanical Booklet Series" produced by the American Botanical Council. These eight-page booklets written by Foster describe the history, nomenclature, trade, use, and research of 12 medicinal plants—purple coneflower, Siberian ginseng, Asian ginseng, ginkgo, milk thistle, peppermint, valerian, chamomile, American ginseng, goldenseal, feverfew, and garlic.

Order *The Healing Herbs* (hardcover, \$22.90) and *A Field Guide to Medicinal Plants* (softcover, \$13.50) from *AHS Books*, 7931 East Boulevard Drive, Alexandria, VA 22308. Add \$2.50 postage for one book or \$4 for both.

Order the "Botanical Booklet Series" (\$1 each; all for \$9.95) from *American Botanical Council*, P.O. Box 201660, Austin, TX 78720.

Traditional Foods Combat Diabetes

The Pima Indians of the Sonoran desert have the highest rate of diabetes in the world. Type II (noninsulin dependent) diabetes afflicts about half of all Pimas over 35; several other Native American tribes have comparable rates. Studies of the Pima during the past two decades indicate that they have a genetic predisposition for Type II diabetes, which many feel is aggravated by the Westernization of their diet and an increased consumption of sugary and fatty foods. Some scientists believe that the mechanism that leads to obesity and diabetes with the Pima is a "thrifty gene" that converts excess food into stored fat. This genetic adaptation was crucial for their ancestors' life in the desert, enabling them to survive times of drought by gorging on wild and cultivated food in season. But now, with a nontraditional diet, the same gene backfires on them.

Native Seeds/SEARCH, a Southwestern plant conservation organization, thinks a solution to the diabetes problem may lie in the traditional foods that many Pimas have forgotten. The Tucson-based nonprofit is in the second year of a diabetes project designed to document the value of native desert plant foods for controlling blood sugar levels and to promote the use of these foods among health professionals and Pimas. Last year they sent six foods traditionally eaten by the Pimas—mesquite pods, 'Emory' oak acorns, white and yellow tepary beans, lima beans, and 'Tohono O'odham 60 Day' flour corn—to nutritionist Janette C. Brand at the University of Sydney in Australia. She prepared traditional Pima dishes and fed them to eight healthy nondiabetic Caucasians and found that they slowed carbohydrate digestion and significantly lowered insulin production and blood sugar levels. Further research showed that mesquite pods and acorns rank among the top 10 percent of all foods ever analyzed for their effectiveness in controlling blood sugar.

Studies suggest that the starches in traditional Pima foods are slow-release carbohydrates. These break down into simple sugars in the human body very slowly, which translates into lower glucose levels in the bloodstream. Western food staples like potatoes and white bread, on the other hand, contain a starch that breaks down relatively quickly. Also, many desert plants have an abundance of soluble fibers known as gums and mucilages; Brand and others believe that such fibers are so viscous that they form a physical bar-

rier between other carbohydrates eaten at the same time and the digestive enzymes that break them down. These carbohydrates are also converted into sugars more slowly, which again means lower glucose levels. A spoonful of tiny chia (*Salvia columbariae*) seeds in a glass of water turns into almost solid gelatin. Mesquite pods, cholla buds, prickly pear fruit, Indian wheat (*Plantago insularis* and *P. purshii*), and tansy mustard (*Descurainia tinnata*)—all a part of the traditional Pima diet—also contain this gel-forming fiber.

The greatest challenge of Native Seeds/SEARCH's diabetes project is to transform the Pima diets. According to Gary Paul Nabhan, project manager, the Pimas went off their traditional diets at the end of World War II. "By the 1940s, the native foods had really been reduced in the diet and the farming abandoned. And the modern food came in." Kevin Dahl of Native Seeds/SEARCH says that so far there has been a tremendous receptivity to the diabetes project. "One of the reasons we are hopeful is because we are dealing with foods that are within the memory of people of middle age

and were widely used by elderly people." Dahl also points to a cultural pride that makes the food attractive. "These are Indian foods, Pima foods, Tohono O'odham foods, Navajo foods."

To pass on the good word on traditional foods, Native Seeds/SEARCH representatives speak at conferences and health fairs, visit schools, and have put together an education kit for teachers, health workers, and community leaders. They have also assembled an array of relevant scientific articles and produced a video, "Desert Food is Healthy Food." And of course, they've compiled a pantry full of tantalizing and potentially life-saving recipes for delicacies such as mesquite tea, chia jello, prickly pear juice, tepary beans O'odham style, macaroni with teparies, and cool bean salad with cholla buds.

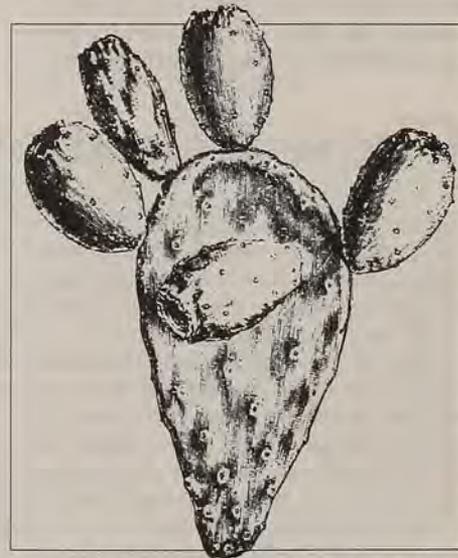
Standard membership dues for Native Seeds/SEARCH are \$18 and include a subscription to the quarterly Seedhead News and 10 percent discount on all items in their catalog. Write them at 2509 North Campbell Avenue, #325, Tucson, AZ 85719.

A Prickly Pear a Day . . .

Prickly pear as the healthy edible of the future? Although the fruit (tuna) and flat, fleshy pads (nopales) of *Opuntia* species are enormously popular foods in Mexico and South America, they have hardly caught on in the United States. At the beginning of the century, Liberty Hyde Bailey noted the paradox: "Although extensively cultivated for their fruit in many countries, where they furnish an important article of diet for four to five months each year, they do not as yet take a pomological rank with the horticulturist . . . opuntias flourish best in regions where experimental horticulture receives little or no attention."

It seems this neglect may soon end. Donald A. Hegwood, professor of agriculture at Texas A&I University, writes in a recent issue of *HortScience* that *Opuntia* species hold great potential as a horticultural crop because of their great adaptability and medicinal uses.

Although the prickly pear has yet to be fully assessed for its nutrition and human health potential, the nopales of *Opuntia* species have been used to treat diabetes in Mexico for the last decade.



Research has shown that the ingestion of broiled nopales before meals significantly reduced serum total cholesterol, beta cholesterol, and triglycerides for obese and diabetic patients. Blood glucose levels were also decreased. Peter Felker, project leader of the Center for Semi-Arid Forest Resources at Texas A&I University, says that

The Ginkgo: An Ancient Remedy

The medicinal uses of ginkgo have stood the test of time. "Good for the heart and lungs" is how Shen Nung described ginkgo in China's first herbal, *Pen Tsao Ching* ("the classic of herbs"), said to date from between 2800 B.C. to 250 A.D. Although Shen's observation lacks precision, it has been known since the late 1980s that ginkgo interferes with a substance called platelet activation factor (PAF). PAF is involved in many physiological processes, but particularly those related to degeneration caused by aging.

In a spring 1990 article in *The Herb Quarterly*, Michael Castleman reported a number of studies showing that ginkgo "increases blood flow to the brain, speeds recovery from stroke, improves memory and mental functioning in the elderly, and may be of value in treating Alzheimer's disease."

A research review published in Germany shows ginkgo effective for:

- ◆ improving blood flow to the heart and helping prevent heart attacks by reducing the risk of blood clotting in the coronary arteries;

- ◆ intermittent claudication, which is pain, cramping, or weakness in the legs caused by narrowing of arteries;

Mexicans are already processing prickly pears into pills to treat diabetics.

Prickly pear has recently attracted the attention of U.S. researchers, which Hegwood says may be due to the popularity of nopales and tunas among the rapidly increasing Hispanic population. Felker became aware of the plant's medical potential when a Mexican who had seen him making repeated collections of the fruit in the wild inquired if he had diabetes. Why haven't more scientists studied the prickly pear? "We have an ethnocentric bias—it hasn't been in our mindset. Scientists have lacked the cultural sensitivity to plants that aren't in the mainstream," says Felker.

There are some 300 species of *Opuntia* native to the Americas, from Massachusetts and British Columbia to the Strait of Magellan. They thrive in arid and semiarid regions and are found in the greatest quantities in the southwest United States and northwest Mexico, where they are often trees. The nopales are consumed fresh, added to cooked dishes, and used in salads. They are often peeled, cubed, and cooked like green beans. Tunas are eaten fresh or dried and are processed into candies and fermented drinks.

- ◆ macular degeneration, an age-related deterioration of the retina and a leading cause of adult blindness;

- ◆ cochlear deafness, believed to result from decreased blood flow to the nerves involved in hearing.

Traditional Chinese physicians have used ginkgo leaves to treat asthma and chilblains—swelling of the hands and feet caused by exposure to damp cold—and the ancient Chinese and Japanese used the roasted seeds as a digestive aid and to prevent intoxication, according to Castleman.

Peter Del Tredici, writing in the summer 1991 *Arnoldia*, says that ginkgo leaf extract is often prescribed today in Asia and western Europe to treat minor symptoms of aging—dizziness, ringing in the ears, and short-term memory loss—and to treat

the side effects of Alzheimer's and other major diseases.

Ginkgo is also used to treat asthma, he says, and has been effective in treating arthritis, airway hyperactivity, thrombosis, endotoxemia, gastrointestinal ulcers, and various eye, ear, and skin diseases. Studies indicate that it may be successful in preventing organ rejection and for treating allergies, high blood pressure, and kidney problems. But since the extract doesn't meet the purity standards of the Food and Drug Administration, it is only available in the United States as an herbal remedy.

The fruit of the ginkgo is notoriously foul-smelling. But the nut, while considered toxic to humans, is the part used in traditional Chinese medicine, says Del Tredici.

Glorious Garlic

Garlic has been used as both a food and medicine since the days of the pharaohs and the early Chinese dynasties, according to the American Botanical Council, and in the past 20 years, its clinical applications have been the focus of more than 1,000 scientific papers. Pliny the Elder (23-79 A.D.) said the plant was useful for treating animal bites, asthma, and toothaches. In *A Field Guide to Medicinal Plants*, Steven Foster and James Duke list more than 20 folk medicine uses, ranging from the treatment of coughs to diarrhea to pinworms and snakebite.

Garlic contains 33 sulfur compounds, and it is believed that some of those compounds, as well as ajoene, which is a combination of two of the compounds, are responsible for garlic's healthful effects. Yet scientifically, garlic is in "its early adolescence," Dr. David Kritchevsky, a scientist with the Wistar Institute in Philadelphia, Pennsylvania, recently told the *New York Times*. It has been difficult to conduct "blind" controlled studies of garlic because of its characteristic strong taste and smell. Some coronary patients who drank fresh garlic juice with milk complained of

smelling bad, feeling hot, a burning sensation when urinating, flatulence, and belching. Aged garlic extract may produce the same results as the fresh bulbs without these unpleasant symptoms. But using these different forms of garlic has made it hard for scientists to compare studies. Scientists hope eventually to develop garlic-derived substances without what Foster calls "the odiferous antisocial side effects."

Many studies have suggested garlic compounds for treatment of various circulatory system problems: high blood pressure, thrombosis, and myocardial infarction. Ajoene, it appears, can reduce blood clotting more effectively than aspirin. Garlic has also been shown to reduce cholesterol and triglyceride levels in blood.

In addition to its potential for lowering stomach cancer risk (see page 6), laboratory studies have shown garlic to inhibit the growth of mammary cancers in rats and slow melanoma cell growth in culture. In a very limited 1989 study of AIDS patients, Foster reports, garlic extracts appeared to increase immune system activity and to alleviate some of the symptoms of AIDS.



Regional Notes

Organic Trials in Florida

Gardeners trying to switch to organic methods are often faced with a bewildering jumble of suggestions, superstitions, family remedies, and complications (plant onions near carrots, and carrots near bush beans, but keep all beans away from onions). How to sift what's effective from what's simply eccentric? Help is on the way from the University of Florida, where results are beginning to come in from the four-acre Organic Research and Education Center, established in February 1990.

Several trials are running in a year-round model organic garden, in several five-by-10-foot organic growing boxes, and in an organic field section. These include tests of soil-enriching materials, companion plantings to repel and attract insects, succession planting, cover cropping, insecticidal oils and soaps, and mulching and other weed-inhibiting cultural practices. One-half acre is devoted to variety trials in which researchers will try to determine which varieties adapt best to organic cultural methods, and which are the most disease and insect resistant.

So far, they have determined that poultry manure is one of the best animal waste fertilizers, that the optimal rate of manure application is a half pound to a pound for each square foot, and that composted crab waste may not be as effective against nematodes as has been claimed. They have also found that composted oak leaves make one of the best soil amendments, producing yields comparable to manure-amended soil.

"This is the first effort by the University of Florida to hone in on organic gardening as a cultural practice. We're learning and we're teaching at the same time," says Jim Stephens, extension vegetable specialist at the University of Florida's Institute of Food and Agricultural Sciences and one of the directors of the Organic Research Center. The center plans to follow through on the research in progress, but there is also a bevy of future possibilities including research on recycled tire scraps as mulch, wood pulp by-products as a soil amendment, vegetable response to different types of homemade compost, and dead-chicken composting.



COURTESY OF THE MONTREAL BOTANICAL GARDEN

Looking across Dream Lake from Stone Mountain, visitors to the Montreal Botanical Garden can see the Pavilion of Infinite Pleasantness and Friendship Hall.

Montreal's Dream Lake

After more than three years of planning and construction, the Montreal Botanical Garden this summer opened a six-acre Chinese garden, *Meng Hu Yuan*, or the Dream Lake Friendship Garden.

Cooperative efforts between Shanghai and Montreal began in 1980, when the Canadian city hosted the Florales international flower exhibition, and the Chinese city presented the botanical garden with several penjing—the Chinese version of bonsai—to mark the occasion.

The garden replicates a style popular during the Ming Dynasty (1368-1644). A focal point is the "Dream Lake," which is 780 feet by more than 500 feet and from certain angles, reflects Montreal's Olympic Stadium. Plants around the lake include azaleas, irises, daylilies, peonies, and rhododendrons.

Visitors will enter the \$6 million garden through a courtyard enclosed by a whitewashed wall that is punctuated by half-moon and floral-shaped windows. A central pavilion, "Friendship Hall," was a half million dollar gift from the city of Shanghai. It was prefabricated there and erected on the Montreal site by Chinese technicians. Forty-eight Chinese craftspeople lived on the garden grounds for the last six months of 1990.

From the pavilion, guests can see the 30-foot Stone Mountain—fashioned from 3,000 tons of rock quarried from Ile Ste-Helene and featuring a stone stairway, cave, and waterfall—and other pavilions, such as the Stone Boat, Tower of the Condensing Clouds, and the Lotus Pavilion.

Plants chosen for this garden had to reflect the Chinese horticultural philosophy while being hardy in Montreal's climate. For this reason, there are many conifers, such as black pine, Chinese juniper, creeping cypress, and yews. Deciduous trees, intended to emphasize the passing of the seasons, include birch, magnolia, elm, flowering plum, ginkgo, golden rain, maple, oak, willow, and thorny elaeagnus. There will be three types of bamboos—black, fernleaf, and henon—and a number of tender plants, such as banana trees, sweet osmanthus, camellia, and nandina, which will winter in the botanical garden greenhouses.

Wendy Graham, landscape architect at the garden who served as the project coordinator, said its most rewarding aspect was the cross-cultural sharing of ideas—"the sharing of different techniques, traditions, and expressions."

IPM Center Set Up in Texas

Texas A&M University has set up a new research unit to study biologically based forms of pest control. The Center for Biologically Intensive Integrated Pest Management will research the effectiveness and the feasibility of IPM and facilitate cooperative research between scientists at Texas A&M and others around the world.

"We are not giving up on pesticides," says Dr. Ray Frisbie, director of the center, "but we will assume as a research hypothesis that we have no chemicals. Then we will exhaust all biological alternatives first."

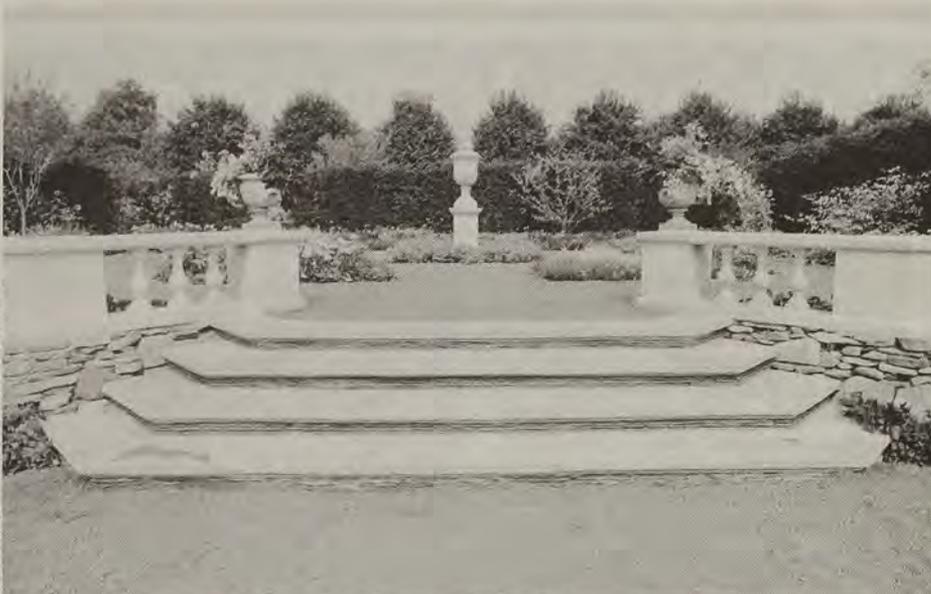
There is a need for more IPM, says Frisbie, not only because pests have become increasingly resistant to chemical pesticides and because of public concern over unsafe use of pesticides, but also because chemical pesticides are becoming less available. Costs to register new products and legislation requiring the reregistration of existing pesticides have become prohibitive for many manufacturers. About \$50 million is spent to bring a new product from discovery to market, says Frisbie, and the average reregistration costs \$7 million per product. "We believe there will be even fewer pesticides in coming years."

One of the first projects proposed for the center would test a method used in India to control the diamondback moth by planting one row of mustard for each 25 rows of cabbage. The technique, called trap cropping, would have two variations: stocking the mustard with parasites to eat the moths or spraying only the mustard with insecticide.

Atlanta's Tropical Collection Grows

The Atlanta Botanical Garden's Fuqua Conservatory has announced a major expansion of its tropical collection. Some 300 species of plants representing more than 50 different families were brought to the conservatory by Mindy McGovern, former curator of tropical collections, after a plant collecting trip to Ecuador. Although many of the species have not yet been identified, included in the cache are *Guzmania*, *Aechmea*, and other Bromeliaceae, Araceae, and Gesneriaceae.

McGovern was struck by the urgency and importance of collecting as many species as possible. "I left all my clothes there, so I could fill my suitcase with plants," she said. "Their native habitats are being cleared faster than the plants can be inventoried and researched."



COURTESY OF THE CHICAGO BOTANIC GARDEN

A formal daisy garden is one of the many features of Chicago's new English Walled Garden.

Chicago Opens Walled Garden

In September, the Chicago Botanic Garden opened an English Walled Garden, a \$2.8 million expansion designed to demonstrate the different forms of English garden design. "This garden will give us another landscape setting to exhibit the best plants for the Chicago area," says Kris Jarantoski, assistant director of the botanic garden. "The English Walled Garden is another style of landscape with formal design, lush plantings with many flowers, perennials and mixed borders. It is something uncommon in Chicago where flowers and shrubs aren't usually mixed together."

Designed by English landscape designer John Brookes, the garden is divided into a variety of garden

"rooms," each with a distinctive feature or purpose. The largest and most open garden room is the vista garden patterned after the garden at Great Dixter in Northiam, Sussex, England. A checkboard garden, with silver artemisia and boxwood, leads to the 19th-century cottage garden replete with fruits, vegetables, fruit trees, flowers for cutting, and scented flowers for potpourri. The most intimate garden is the courtyard garden, which showcases a bluestone and brick floor and an 18th-century lead cistern donated by the Art Institute of Chicago. The English garden also features an allee, a pergola, a formal daisy garden, and an extensive perennial border.

According to Ron Determann, superintendent of the conservatory, the plants collected are highly endemic to one region in northwest Ecuador, some occurring only in a single valley. "Ecuador is one of the most richly diverse plant habitats on Earth," he says. McGovern's collection is especially important because of the pressure put on the flora by development. Determann predicts that many of the species will vanish within the next decade.

The Fuqua Conservatory features more than 6,000 species of tropical and desert plants from around the world.

McGovern was one of 20 plant enthusiasts on a trip organized by Betty Feurstein of Memphis, Tennessee, whose company, Adventures Unlimited, has hosted plant-collecting expeditions to Ecuador for the last 10 years.



COURTESY OF THE ATLANTA BOTANICAL GARDEN

Mindy McGovern, left, with Fuqua greenhouse manager Becky Brinkman.

Making a Difference

A Tree 'Exhibit'

A Boston civic group and the Arnold Arboretum have cooperated in bringing a collection of unusual trees to the heart of the city's financial district. Bob Weinberg, president of the Friends of Post Office Square, felt that a park the group had developed above a parking garage needed some mature trees. Arboretum director Bob Cook, asked if he would make some available on "permanent loan," was intrigued by the idea of extending a small part of the arboretum into the city.

Each year the arboretum removes some trees from its collection. A tree may not meet the arboretum's current scientific standards; its origin might not be substantially documented; its parentage might be in question; or the tree may be an unnecessary duplicate taking up much needed space. "Although falling short of our scientific standards, they may still be exceptional trees, truly works of art," Cook wrote in *Arnoldia*, the arboretum's quarterly magazine.

In April the arboretum planted six trees in the park. They were chosen by Gary Koller, the arboretum's assistant director of horticulture, and Craig Halvorson, a landscape architect with the Halvorson Company and designer of the park. The trees include:

- ◆ a 40-foot Norway spruce that was a duplicate in the arboretum's collection;

- ◆ a 35-foot Eastern white cedar (*Thuja occidentalis*) that doesn't conform to the published description—it was originally described as the dwarf cultivar 'Filiformis';

- ◆ a 25-year-old hybrid *Quercus rubra* grown from seed from an uncertain parent—the mother is *Q. rubra* 'Maxima' but the father is unknown and probably not a red oak;

- ◆ two giant arborvitae that came from undocumented wild sources; and

- ◆ a downy birch (*Betula pubescens*) grown from seed collected in Poland in 1964 that came to the arboretum under an incorrect name.

The 1.7-acre park is above a 1,400-car, seven-level underground parking garage and features 112 trees and over 125 species of plants. Several of the plants—including Sargent crabapple (*Malus sargentii*), hardy kiwi vine (*Actinidia kolomikta*), China fleece vine, witch hazel (*Hamamelis x intermedia* 'Arnold's Promise'), and climbing hydrangea



A downy birch on permanent loan from the Arnold Arboretum is moved to Boston's Post Office Square Park.

(*Hydrangea anomala* var. *petiolaris*)—were first introduced to the American landscape by the arboretum.

The 119-year-old Arnold Arboretum was the first in North America and is a leader in exotic plant introductions.

Post Office Square Park is a project of the City of Boston and the Friends of Post Office Square, a civic corporation composed of 20 Boston firms and other

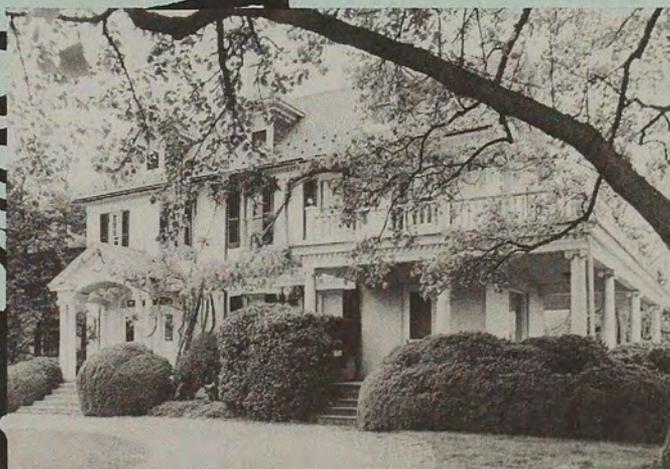
individuals. The group was formed in 1983 and contributed \$1 million to launch the park. Proceeds from the parking garage are given to Boston's park trust fund and used to maintain the city's neighborhood parks.

For more information write Friends of Post Office Square, Inc., 50 Federal Street, Boston, MA 02110.

A Report
to
Members & Friends
of the
American
Horticultural Society



1990-1991
Contributions





1990-1991 Contributions

The Development Office of the American Horticultural Society is pleased to present this report of Annual Giving to the Society, which covers the fiscal year, July 1, 1990 to June 30, 1991. On behalf of the Board of Directors and Staff of the Society, we gratefully acknowledge the many gifts and contributions totaling \$326,193 that enabled the Society to meet its budgetary needs for operating expenses, programs and services during a period of national economic recession.

This report lists Special Gifts, 1990-1991 Annual Appeal Gifts (including the Board Challenge), Matching Gifts, Intern Program Support, Memorial Gifts, Garden Club Support,

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For all these outstanding gifts of support, our sincere thanks. Your contributions have **truly made a difference** in our ability to continue the proud tradition of the American Horticultural Society—to educate, inform and inspire gardeners throughout the world to become better, more successful, more environmentally responsible gardeners.

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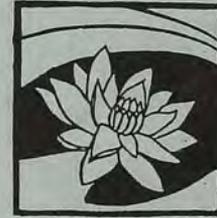
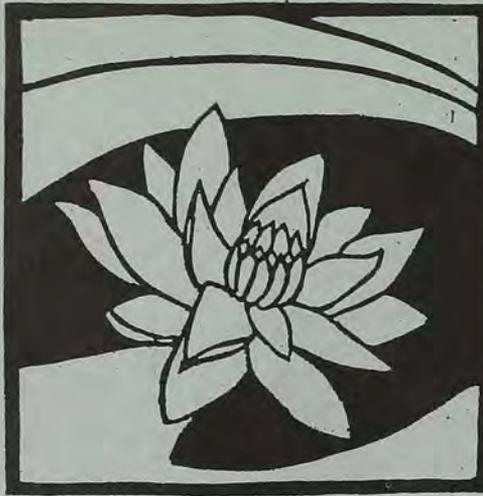
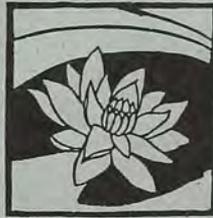


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Alexandria Council of Garden Clubs, project to restore the foundation plants by the main house at River Farm
 November 1990-July 1991

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 Mount Vernon House & Garden Club
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Restricted Gift for River Farm Signage

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With grateful thanks to those dedicated volunteers who work tirelessly in the AHS gardens and grounds, Gardeners' Information Service, administrative offices, and during special events at River Farm.

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And, a very special thanks to the hundreds of Birmingham, Alabama, volunteers who assisted Beverley White Dunn and Mary Katherine Blount, Chairpersons for the 1991 April Annual Meeting, in Birmingham, Alabama.

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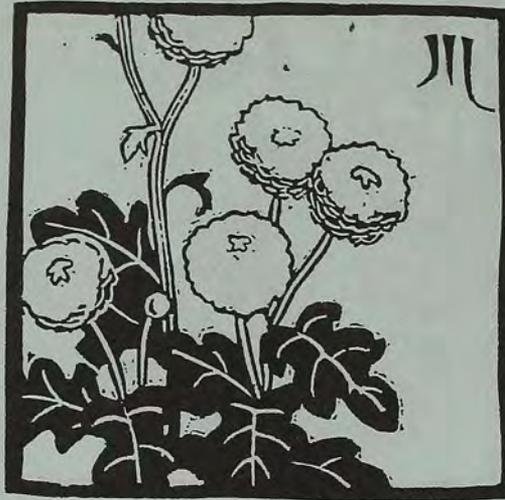
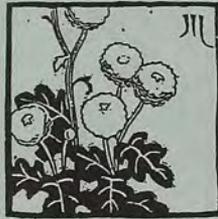
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*Nikon House, Rockefeller
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Seven AAS Winners Named for '92

The seven plants named to wear the All-America Selections (AAS) label in 1992 include one herb, one vegetable, and five flowers. All trial entrants must be grown from seed.

Flower Award Winners

Flowers are tested at 32 outdoor gardens across North America and are judged on their beauty and color.

◆ *Canna* 'Tropical Rose' is the first canna grown from seed that is genetically similar to canna from roots or rhizomes. The two-and-a-half foot plant features pastel rose blooms and wide, arching leaves. 'Tropical Rose' is a perennial, but in Zone 9 or higher it can be treated as an annual.

◆ AAS recommends *Salvia coccinea* 'Lady in Red' "for people who enjoy the concept of a wildflower meadow garden, but do not have two acres of land." Its muted red, tubular flowers are similar to those of *S. splendens*, but are arranged in separate whorls on the flower spike.

◆ *Verbena* 'Peaches & Cream' flowers in unusual shades of apricot and

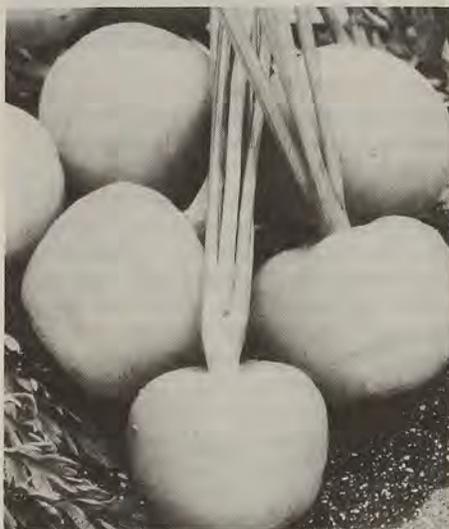


Canna 'Tropical Rose'.

salmon. This verbena is said to be heat tolerant and to flower all summer without pinching or pruning. AAS warns that growing this 10- to 12-inch tall verbena from seed may present a challenge to the home gardener.

Bedding Plant Award Winner

Bedding plants are first tested in the greenhouse and then planted outside for evaluation all summer. Flowers are judged again at the end of the summer.



'Thumbelina' carrots.

Bedding plant winners must be durable and flower vigorously. Entrants are tested at 20 locations.

◆ *Dianthus* 'Ideal Violet' comes in violet and deep purple, shades rare for this genus. Each blossom is one inch to one-and-a-half inches wide with a small white center. This annual is both heat and cold tolerant. AAS says that with proper nutrients and water, 'Ideal Violet' will spread 12 to 14 inches and reach 12 inches tall.

Bedding Plant and Flower Winner

This is the last year plants will be able to win both the bedding plant and flower awards. New AAS rules will allow plants to be entered in only one category beginning with the 1993 trials.

◆ *Vinca* 'Pretty In White' features glossy leaves and white blossoms that are one inch to one-and-a-half inches

Title Withdrawn

Vinca 'Pretty In Pink' has lost its title as a 1991 All-America Selections winner because of production problems. The grower, Denholm Seeds, has been unable to germinate enough of the plants to meet AAS qualifications. Seed companies must be able to produce a specified quantity of seeds with a minimum germination rate. A 1990 winner, *Cosmos* 'Ladybird Scarlet', also lost its AAS designation because of production problems.

wide with overlapping petals. 'Pretty In White' is supposed to be heat, drought, and severe weather tolerant and fairly free of disease and insect problems. It needs full sun and warm soil and air to grow, so AAS warns gardeners not to rush transplanting it into the garden. Plants will reach about 12 inches tall and a foot wide.

Vegetable Winners

Vegetables and herbs are tested at 27 outdoor locations. Plants are judged on garden performance and the quality and quantity of the edible portion of the plant.

◆ The round-rooted carrot 'Thumbelina' is easily grown from seed. It produces sweet carrots within 60 to 70 days from sowing. 'Thumbelina' is easily grown in a window box, hanging basket, or patio container as well as in the traditional vegetable garden.

◆ Most dill plants can reach four to six feet tall and tend to fall over in severe weather. Since 'Fernleaf' dill grows only 10 to 14 inches tall it is suitable for small gardens or patio containers. 'Fernleaf' is easy to grow from seed.

■ LANDSCAPE ■ DESIGN ■ IN AMERICA

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Call (212) 220-8720 or FAX (212) 220-6504,
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Gardeners' Q&A

Q: *Can you tell me how to dry gourds so the color and design can be preserved? When I have tried this in the past, they have only shriveled and turned brown.*

B. P., Seattle, Washington

A: Gourds dry best if left to fully mature on the vine. Mature gourds are dry to the touch and hard, and the attached stems will appear brownish and withered. Leave the stem on the gourd after picking. It will stay attached if you cut the stem rather than try to twist it off by hand.

When gourd colors begin to fade, place them in a dry, well-ventilated area for about two to three weeks. Check each day for any sign of mold, and wipe it off with a dry rag.

When the gourds feel lighter and their seeds rattle, the next step is to soak them in warm water until their skin is softened.

The softened skin can be scraped off with a knife. After the skin is removed, rub a steel wool pad over the gourd to smooth the surface and remove any remaining skin. Place the gourds in a dry, well-ventilated area for another two to three weeks. When dry, they will be ready to be shellacked, waxed, carved, or painted. If waxing gourds, use ordinary floor wax to apply a light finish. Waxing will not change the appearance of the gourd as much as shellac will. Some craftspeople use woodburning tools to make decorative patterns on the gourds.

Q: *Are there any special kinds of gardening tools for handicapped or elderly gardeners that would be easier for them to use than regular tools? If so, what companies supply them?*

L. T., Boulder, Colorado

A: Karen Smith-Haas, a registered horticultural therapist and director of horticultural therapy at the Holden Arboretum, recommends a number of special tools and devices that can make gardening accessible, easier, and safer for people with disabilities.

For people who must garden in wheelchairs or seated positions, there are lighter weight "enabling tools" with extended reach handles. Often this kind of tool will have an interchangeable end so it can be used for different

garden tasks. The extended-handle tools help people who have difficulty bending; attaching a dibble allows them to make seed or bulb holes in outdoor beds. There are also extended-reach flower-cutting tools that allow a gardener to cut a flower and retrieve it from several feet away. Hand forms, which are bicycle-type grips, can be purchased separately and attached to the handles of extended-reach or regular tools.

For gardeners who can bend, but need help getting up and down from the ground, there is the "Easy Kneeler." This device has a padded flat surface that rests on the ground with easy-to-grip handles extending up on either side. There are also kneeler-type aids with wheels, often referred to as "garden scoots." These enable the gardener to move along the side of a bed without standing up to move the kneeler.

For people with arthritis or who for other reasons can't lift much weight and need a wide gripping area, a soup spoon or larger serving spoon with its handle wrapped in pipe insulation can be used to pot plants. The foam padding is simply wrapped around the spoon handle and attached by duct tape on either end.

A brand of tools called German Hand Tools have bright orange polyethylene "dimple grip" handles that are easier to grip than most, and the bright colors make them easier for a visually impaired person to see. These come in three extension sizes of 15, 30, and 38 inches.

For people who are unable to reach hanging baskets, pulley systems available from garden centers or home improvement stores allow them to be raised and lowered like window shades.

Write to the following sources for more information:

Walt Nicke Company, P.O. Box 433, 36 McLeod Lane, Topsfield, MA 01983, (508) 887-3388. German hand tools and hand forms.

Gardener's Supply Company, 128 Intervale Road, Burlington, VT 05401, (802) 863-1700. Easy Kneeler, enabling tools, and cushioned knee pads.

Alsto's Handy Helpers, Route 150 East, Galesburg, IL 61401, (800) 447-0048. Easy Kneeler, Garden Scoot, and knee pads.

Enrichments for Better Living, 145 Tower Drive, P.O. Box 579, Hinsdale, IL 60521. Foam padding and pipe insulation wrapping for building up tool handles.

Q: *Several of my conifers suffered winter damage last year. I would like to try using an antidesiccant spray this year to protect them. Can you give me some information on antidesiccant applications?*

J. L., Newburgh, NY

A: Antidesiccants are emulsions of either wax, plastic, or latex that are sprayed on the above-ground parts of a plant to form a protective film. This film seals the plant's pores and prevents excessive moisture loss from drying winter and early spring winds or sun. Many evergreens suffer desiccation damage when roots are unable to supply moisture to the plant because the ground is frozen or very dry. Broad-leaved evergreens such as boxwood and holly are especially vulnerable. Others that frequently sustain cold-weather damage are junipers, pines, yews, and hemlocks.

Damage or death can frequently occur in the spring when air temperatures begin to warm, but the ground is still frozen. Those living in Zone 7 and north may want to consider using antidesiccants which, by reducing stress to plants in the winter, are felt to make them stronger and healthier year-round. In addition, having their pores sealed minimizes salt damage to evergreens planted along highways and streets where road salt is applied.

Antidesiccants should be applied before the onset of severe winter weather. They can be reapplied about once or twice more throughout the winter at monthly intervals, especially if snow cover is light, since snow acts as a protective covering. The initial spray should be given in late November or early December (depending upon geographic location) and then again in late January and February if severe weather persists and the ground is excessively dry. The protective coating will disappear in the spring when new growth resumes. Burlap wrappings can be used along with antidesiccants for maximum winter protection. The sprays are available in aerosol cans for smaller plantings, and in gallon concentrates to mix with water to spray larger areas. Wilt-Pruf is the trade name of one of the most widely used antidesiccants.

Another way to minimize desiccation damage to evergreens is to plant wind-sensitive junipers, yews, pines, and hemlocks near a wind-protected area like the east side of a building or fence.

Antidesiccants can prolong the life of Christmas trees if the trees are sprayed before they are cut.

Q: *Can you suggest some different kinds of greens to grow this winter for winter salads? I have a cool greenhouse with a southern exposure.*

K. H., Bardstown, Kentucky

A: You may want to try growing various oriental salad greens that grow quite well even during the winter as long as greenhouse temperatures do not go below freezing. Chinese mustard greens (*Brassica juncea*) are delicious greens with a less pungent taste than most American mustard greens. They can be eaten raw for a salad or cooked like spinach.

Chrysanthemum greens (*Chrysanthemum coronarium*) are a type of garden vegetable that looks like a chrysanthemum flower plant. The young, tender shoots are cooked and served as a side dish or combined with other greens in a salad.

Ornamental cabbage (*Brassica oleracea* var. *capitata*) has been known to tolerate temperatures as low as 14 degrees although it can't take many consecutive nights below freezing. It becomes more beautiful when exposed to cold weather, turning lovely shades of pink, red, and green. The cabbage leaves can be used for shredding, boiling, or as a decorative salad green.

Pak choy (*B. rapa* var. *chinensis*), a white cabbage, also tolerates temperatures well below freezing. Its leaves can be used for cooking and salads.

Headed Chinese cabbage (*B. rapa* var. *pekinensis*) is a cooking or salad green that has a mild mustard flavor. Mizuna greens (*B. rapa* var. *nipposinica*) are similar to endive and are a delicious addition to other greens in a salad.

To maximize the sunlight received by your winter greens, space out the plants more than you would in the spring and be sure to remove all dirt or film from the greenhouse glass. You may want to add a layer of polyethylene over the greenhouse for better insulation. A styrofoam curtain or blanket can be placed over the plants on particularly cold nights. Seeds should be started indoors and then moved to the greenhouse after they are established.

People without greenhouses or grow frames can grow all of the above plants

in a sunny windowsill as long as the room temperature stays above freezing.

Sources for oriental vegetables for winter gardens include:

Kitazawa Seed Company, 1748 Laine Avenue, Santa Clara, CA 95051. Catalog free.

Sunrise Enterprises, P.O. Box 330058, West Hartford, CT 06133-0058. Catalog \$2.

Q: *How can I make sure my Christmas cactus will bloom by Christmas, and not earlier? When and how can I root cuttings of this plant?*

P. K., Wichita, Kansas

A: To make sure your Christmas cactus blooms by Christmas, it should be left outside as long as possible in the fall before there is danger of a frost. Leave it outside until night temperatures begin to drop below 40 degrees. Once the plant is brought back inside, it will develop flower buds that should bloom around the holiday season.

If your cactus plant is blooming a month or so before Christmas, your problem may be that you have a Thanksgiving cactus (*Schlumbergera truncata*) and not a Christmas cactus. The true Christmas cactus is *S. bridgesii*. Christmas cactus has rounded

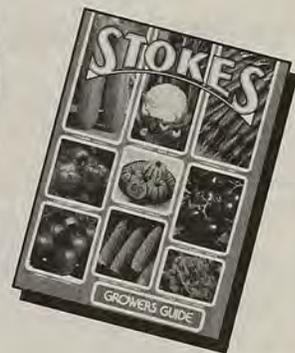
leaf segments, while Thanksgiving cactus has much more clawlike or saw-tooth points on the leaf segments.

It is easy to propagate the Christmas cactus. Prepare a rooting medium by mixing equal parts coarse builder's sand (not beach sand), peat, and perlite. Take cuttings anytime after the plant has finished flowering. Using a clean knife, take a tip cutting of two to three leaf segments in length. Stick these cuttings in the well-moistened rooting medium, and make a plastic "tent" for the cuttings by placing straws or sticks in the container and then covering it with a plastic wrap. Place the cuttings in a warm bright area, but not in direct sunlight. Keep the medium well moistened. After two to three weeks, give the cuttings a gentle tug. If there is some resistance, a root system has formed, and it can be repotted to its permanent container. Repot the cutting in a growing medium of equal parts peat, perlite, garden soil, and a soilless house plant mix. Water only when the soil surface is dry.

—Maureen Heffernan
Gardeners' Information Service

Need advice? Call the AHS Gardeners' Information Service toll free at (800) 777-7931 from 11 a.m. to 3 p.m. EST Monday through Friday.

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AHS Bulletin Board

Welcome Winter

When the River Farm gardens have lost their summer splendor, it's time to come inside and use their bounty to celebrate the holidays, and learn skills to make your next growing season more rewarding. Join us in November and December for any or all of the following special events. To learn more about our flower arranging classes, compost lectures, or holiday open house, call or write AHS.

◆ November 2. Joe Keyser, American Horticultural Society director of programs, continues his series of Back-yard Composting Lectures held the first Saturday of each month. 10 a.m. Admission: \$5. Call for reservations.

◆ November 12 and 13. "Woodland Wonders," a class sponsored by International Design Symposium (IDS) and AHS. "Traditional Designs Using Natural Materials" will be presented on November 12; "Natural Materials for a Contemporary Setting" will be presented on November 13. Classes include a lecture, demonstration, and workshop. Each 10 a.m. to 4 p.m.

Poster for Sale

Ohio artist Carol Happ's exhibit of wildflower paintings at River Farm has come to an end, but members and friends may still purchase the exhibit's commemorative poster.

The poster features a print of Happ's watercolor of Peter's Mountain mallow (*Iliamna corei*), a symbol of all of America's endangered native plants. Peter's Mountain mallow is a perennial, 20 to 36 inches tall with hollyhock-shaped rose or light pink flowers. The blossoms are one to two inches across and appear in late July and August. Peter's Mountain mallow, which has been listed as endangered since 1986, is found in a single population of four plants near the summit of Peter's Mountain in Virginia. The site is now owned and protected by the Nature Conservancy.

Happ became fascinated with American endangered wildflowers after reading *Where Have All the Wildflowers Gone?* by Dr. Robert H. Mohlenbroch. Shortly after that she began to specialize in painting endangered plants. Happ paints the wildflowers in

session is \$75 and includes supplies and lunch. Call for reservations.

◆ December 7. Back-yard Composting Lecture. 10 a.m. Admission: \$5. Call for reservations.

◆ December 7. AHS Holiday Open House. The Alexandria Council of Garden Clubs will sponsor the annual holiday sale of Christmas trees, poinsettias, and boxwood wreaths at River Farm from 10 a.m. to 3 p.m. Trees, poinsettias, and wreaths must be pre-ordered; local members will receive an order form in the mail. Proceeds will be used for the grounds at River Farm. Holiday crafts and refreshments will also be available for purchase. Free.

◆ December 10 and 11. "Christmas at Home," a flower arranging workshop sponsored by IDS and AHS. "Arrangements and Decorations for a Country House" will be presented both days. Each class includes a lecture, demonstration, and workshop. Each 10 a.m. to 4 p.m. session is \$75 and includes supplies and lunch. Call for reservations.



their natural settings and uses thin glazing coats of various oil colors mixed in a beeswax medium to achieve her effects of color, light, and shade.

To order the poster, send \$15.00 plus \$3.75 for shipping and handling to: Mallow Poster, American Horticultural Society, 7931 East Boulevard Drive, Alexandria, VA 22308.

Challenge Update

In the past two months, four individuals and two organizations have contributed \$2,250 in response to the challenge issued by Board Member Mary Katherine Blount. She has pledged \$25,000 to the Society if an equal amount is raised by members and friends. Blount's contribution will be used to hire a horticulturist who will oversee, develop, and beautify the gardens and grounds at our River Farm headquarters. The matching funds will be used to purchase much-needed gardening supplies and equipment.

Contributions have been received from Board Members Josephine Shanks, Billie Trump, Helen Fulcher Walutes, and Katy Moss Warner and from the Friends of River Farm and the Pohick Garden Club in Mount Vernon, Virginia.

A resident of Montgomery, Alabama, Blount received the Women of Achievement award there in 1988 and the First Friend of the Montgomery Council on Aging award in 1989. Blount also serves on the boards of the Landmarks Historical Foundation, Auburn University School of Nursing, Judson College, and the Board of Regents of Kenmore in Fredericksburg, Virginia.

To contribute to the challenge grant please send your gift to M. K. Blount Challenge at the AHS address.

Mrs. Benjamin P. Bole Jr., 1909-1991

Nancy A. Bole, an AHS Board Member for 13 years, died of cancer September 14 at her summer home in Maine. She was Board Member from 1975 to 1983 and was chairman of the Horticultural Awards Committee. She rejoined the Board in 1985 and served until her term expired this year. She grew vegetables and ornamentals at her home, Hanging Rock Farm, in Mentor, Ohio. She was a long-time member of the Garden Club of America and served as its vice president from 1974 to 1976. Bole initiated AHS's Bole Memorial Medals. The gold and silver awards have been given to exhibitors at regional plant society shows in recognition of horticultural excellence.

Letters

In your September issue, you wisely point out the futility of trying to legislate lawns in or out of fashion. The sensible compromise is social pressure to adhere to a community standard of acceptability.

If community consensus holds that there must be at least a small lawn out at the sidewalk, homeowners who hate lawn work can comply, with the rest of the front yard in well-cared-for trees, shrubs, perennials, or annuals. The key is "well-cared-for": There is no excuse for demanding that you be allowed to offend the community standard whether your

excuse is laziness, "too busy," or your desire to show your independence by being the neighborhood oddball.

My condominium association has converted much of our common front lawn into flowering shrubs as a water conservation effort. Most of us have gradually reduced the lawn area in our back yards to gain more space for flowers and shrubs. Today, in our case, there is no lawn left at all. But these changes have come about as a community-accepted change, not by legislation.

Dr. Joseph E. Howland
Reno, Nevada



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Help AHS Grow

As a nonprofit organization, the American Horticultural Society truly needs the energy, time, and commitment of its valued members to help it grow and succeed.

If you would like to work with AHS on a project within your state, please check your area of interest below. In the coming months, we will contact you to arrange a meeting and outline tasks that you and others in your area of interest can undertake. A modest commitment of 10 to 20 hours of your time during a year will strengthen AHS enormously.

With your help, AHS will bring more public awareness of the importance of horticulture to our nation, forge a strong network with other horticultural entities, and assist you to implement sound horticultural programs in your community.

Yes, I'd like to work to help AHS grow within my community or home state area. My area of interest is:

- Recruiting AHS members
- Contacting media or conducting public relations for AHS
- Contacting gardening or horticultural groups and companies to introduce AHS
- Organizing fun and creative fundraising projects
- Organizing and planning an AHS educational program
- Participating in AHS Annual or Regional Meeting planning
- Working on projects to restore and preserve River Farm
- Becoming an active member in an AHS members' forum group that works to keep AHS vital
- Other (please name your interest) _____

Name: _____

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Return this form to:
Frank L. Robinson
Executive Director
American Horticultural Society
7931 East Boulevard Drive
Alexandria, VA 22308

Gardeners' Bookshelf



Seed to Seed

Suzanne Ashworth. *Seed Saver Publications, Decorah, Iowa, 1991. 222 pages. Black-and-white photographs. Publisher's price: softcover, \$20. AHS member price: \$17.*

Seed to Seed: Seed Saving Techniques for the Vegetable Gardener has one of the most attractive covers I have ever seen—a colorful collage of corn, bean, squash, and pumpkin seeds. And it only gets better inside. This book will encourage everyone with a favorite type of vegetable to try saving seed from year to year.

The first part discusses technical aspects of seed saving. Pollination and flower structure are explained with easy-to-follow directions. The differences between self-pollinated, insect-pollinated, and wind-pollinated plants are expertly covered. Instructions on how to artificially pollinate each type of plant are included along with tips on plant isolation and hand-pollination. Finally, seed harvesting, cleaning, and storage techniques are outlined and sources of seed-saving supplies are listed.

Over 150 pages are devoted to 160 different vegetables, arranged by family. Included are botanical relationships and specific details for success with each of the plant families. The seed storage viability information is most welcome. The section on

cucurbits evolves into an outstanding explanation of the different species. I was particularly pleased to find the various species of squash carefully described since I have always had trouble distinguishing *Cucurbita pepo* from *C. maxima* and *C. mixta* from *C. moschata*. Each of the species is further divided into cultivars. There are more than 35 different types of acorn squash listed and the same is true of crookneck and scallop.

The David Cavagnaro photographs add great depth and dimension to the text, though I've seen a number of them in color and was a little disappointed that all of the photos in this work were black-and-white. The bibliography offers a well-rounded introduction to the literature.

Seed to Seed is an invaluable reference for the beginner or the experienced saver of seeds.

—Keith Crotz

Keith Crotz owns and operates American Botanist Booksellers in Chillicothe, Illinois.

Flowering Earth

Donald Culross Peattie. *Indiana University Press, Bloomington, Indiana, 1991. 260 pages. Black-and-white engravings. Publisher's price: hardcover, \$27.50; softcover, \$10.95. AHS member price: hardcover, \$23.40; softcover, \$9.30.*

Nature lovers of a generation previous to my own probably need no introduction to Donald Culross Peattie, who served as a roving editor for *Reader's Digest* and wrote articles for such popular publications as *Atlantic Monthly* and *Sunset*. But while his last two books, on the natural histories of trees, are still in wide circulation, this gem, first published in 1939, has long been out of print.

Its rescue is timely. Environmentalists may doomsay and scientists may terrify, but Peattie evokes awe of what he calls "the green kingdom"—including its algae, lichens, and fungi—and a fierce desire to protect it.

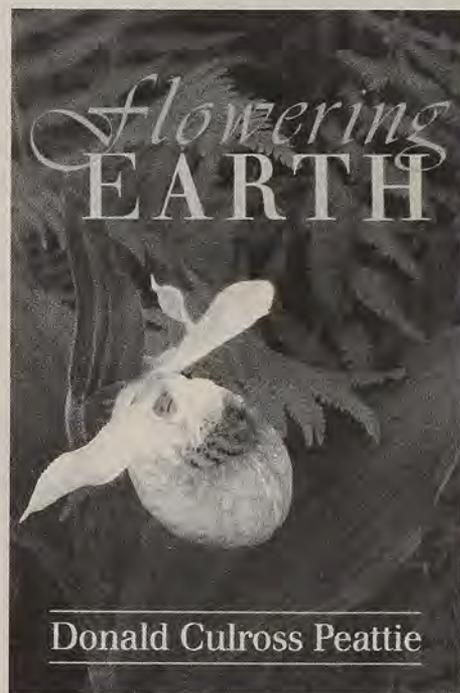
The publishers describe this book as part natural history, part biography, and part philosophical reflection. It begins with his entry into the world of botany at Harvard, and ends with his reflections on death. It traces the evolution of plants from micro-organisms to angiosperms, and

explains the workings of chlorophyll and the nitrogen and carbon cycles.

But one can open the book at random and discover writing of the sort that makes you want to ring up a friend and read passages out loud. Favorites include his descriptions of looking through a microscope for the first time and seeming to descend into a forest of algae "as a falling aviator must"; and of the sleeping seed, which he compares to "the fabulous mystics of India who swallow their tongues and so by ceasing to live with any show of life, live on for years as men dead."

An afterword by Peattie's son Noel describes what it was like to live in the incredible California garden, *Quien Sabe*, that the family rented by sheer accident, and how even that paradise was touched by the events of war. The introduction by Charles Heiser, distinguished professor emeritus at Indiana University, comments that some aspects of the book are out of date: Plants are no longer collected in vascula, for instance, but in plastic bags. More noticeable than any antiquated science, however, is the lack of botanical names. At least twice, Peattie makes reference to fear of Latin; such a popular, adept writer could have done a lot to dispel that fear.

That Peattie walked such a fine line between botany and sentiment without



tottering over the edge into mawkishness is a marvel; in only a couple of instances does he lose this balance.

Perhaps his style could be compared to that of the late movie director Frank Capra, who was making his best movies when Peattie was writing his books. Even contemporaries made fun of what they called "Capracorn," and it's a rare artist who unleashes such unabashed sentiment into today's cynical world.

But in proofreading Peattie's last chapter for the October *American Horticulturist*, I reread his prose repeatedly, and like the final scene in Capra's "It's a Wonderful Life," it never failed to move me, with its reminder of how short a time is allotted to each of us in which to enjoy the simple pleasures of the flowering earth.

—Kathleen Fisher, Editor



Botanical art from the early 1900s inspired Ferris Cook to create the illustrations in *Garden Dreams*. This vase of flowers illustrates an essay by Louise Beebe Wilder.

Garden Dreams

Illustrated and edited by Ferris Cook. Stewart, Tabori & Chang, New York, 1991. 103 pages. Color illustrations. Publisher's price: hardcover, \$19.95. AHS member price: \$17.50.

Within the pages of *Garden Dreams*, nine garden writers, both famous and obscure, share their visions of the perfect garden. Vita Sackville-West yearns for a "courtyard flagged with huge grey paving stones. . . . In this courtyard should grow all kinds of low plants between the flags, encouraged to seed themselves freely." Louise Beebe Wilder reminisces about a white garden she happened upon in Wales: ". . . it has lingered in my mind as indeed 'such stuff as dreams are made on,' and one of the loveliest gardens I ever saw." And Allen Lacy describes his dream garden—Root Glen, the real life garden of Grace Root, in Clinton, New York—and recounts his first encounter with the "dowager empress": "Somewhere in the middle of our fourth vermou, Grace was no longer 'Mrs. Root,' and she was telling me about the time she and her late husband went to Turkey and collected wild tulip seeds for the Glen."

I am not familiar with some of these writers, including Samuel Parsons, Marion Cran, and Josephine Nuese, and since Cook doesn't include biographical information, they remain just names on a page. The copyright information at the beginning of the book offers the sources of the essays and the years they were written, but

this is only a vague clue to the identities of the authors (and the reference to Henry Mitchell's essay, "A Garden in the City," doesn't mention that it originally appeared in *American Horticulturist*). I would like to know more about Nuese, who begins by writing: "When I am an old, old woman with long grey moustaches, a baggy tweed suit, stout boots and a cane, (what do you mean, when?) I shall have a whole garden of primroses. All kinds." She ends with the advice, "Buy just a few to start with, then begin raising your own from seed, and before you know it you will be launched upon the primrose path which, as everyone will tell you, leads to the skids."

Cook's illustrations are based on those appearing on the covers of garden books published between 1894 and 1930. She includes the history of these illustrations and the artists who created them, and a source list. I wish she had included as much information about the authors of the essays.

—Mary Beth Wiesner, Assistant Editor

Trees for American Gardens

Donald Wyman. Macmillan Publishing Company, New York, 1990. 501 pages. Black-and-white photographs and illustrations. Publisher's price: hardcover, \$50.00. AHS member price: \$42.50.

Manual of Woody Landscape Plants

Michael A. Dirr. Stipes Publishing Company, Champaign, Illinois, 1990. Black-and-white illustrations. Publisher's price: hardcover, \$43.80; softcover, \$32.80. AHS member price: hardcover, \$37.20; softcover, \$27.90.

Two classics on woody plants have been updated and should be on the "must" list for your reference library.

Donald Wyman has added 200 species and cultivars to his 1951 standard *Trees for American Gardens*. One of the most useful aspects of this volume is the 39 lists identifying trees with unique characteristics, or which are adaptive to specific growing environments.

Michael Dirr's fourth edition of *Manual of Woody Landscape Plants* is a meaty exploration of several thousand taxa, full of significant data, personal observations, and clear illustrations. The chapters on plant morphology and the glossary of taxonomic terms are handy and thorough. His work is a vast resource.

—Frank L. Robinson
Executive Director

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Gardeners' Dateline

Mid-Atlantic

♦ **Nov. 14. Landscape Design in America.** Symposium. National Wildlife Federation, Vienna, Virginia. Sponsored by the New York Botanical Garden. Information: Education Department, New York Botanical Garden, Bronx, NY 10458-5126, (212) 220-8720, or Fax (212) 220-6504, Attn: Mr. Katz.

♦ **Nov. 15. Tour of the Annual Chrysanthemum Show: "Autumn Follies."** United States Botanic Garden, Washington, D.C. Lecture by Wayne Amos. Information: Public Programs Office, (202) 226-4082.

♦ **Dec. 27. Tour of the Annual Poinsettia Show: "Whistle Stop Holidays."** United States Botanic Garden, Washington, D.C. Lecture by Kathe Koumoutseas. Information: Public Programs Office, (202) 226-4082.

North Central

♦ **Nov. 23-Jan. 5. Holiday Poinsettia Show: "Christmas Delight."** Foellinger-Freimann Botanical Conservatory, Fort Wayne, Indiana. Information: Foellinger-Freimann Botanical Conservatory, 1100 South Calhoun Street, Fort Wayne, IN 46802, (219) 427-1267.

♦ **Nov. 27-Dec. 8. Wonderland of Wreaths.** Exhibit. Foellinger-Freimann Botanical Conservatory, Fort Wayne, Indiana. Information: Foellinger-Freimann Botanical Conservatory, 1100 South Calhoun Street, Fort Wayne, IN 46802, (219) 427-1267.

♦ **Dec. 5-7. Tree Care Industry Expo '91.** Trade Show. Ohio Center, Columbus, Ohio. Information: TCI, P.O. Box 1094, The Meeting Place Mall, Route 101, Amherst, NH 03031, (603) 673-8952, Fax (603) 672-2613.

Northeast

♦ **Nov. 5-8. New York State Turf and Grounds Exposition.** Rochester Riverside Convention Center, Rochester, New York. Information: (800) 873-TURF or (518) 783-1229.

♦ **Nov. 9. Color in Your Garden.** Symposium. Cummings Arts Center, Connecticut College, New London, Con-

necticut. Cosponsored by Connecticut College Arboretum and Wilcox Park, Westerly, Rhode Island. Information: (203) 439-2140.

♦ **Nov. 12. Landscape Design in America.** Symposium. New York Botanical Garden, New York City. Information: Education Department, New York Botanical Garden, Bronx, NY 10458-5126, (212) 220-8720, Fax (212) 220-6504, Attn: Mr. Katz.

♦ **Nov. 16. Landscape Design in America.** Symposium. Arnold Arboretum of Harvard University, Cambridge, Massachusetts. Sponsored by the New York Botanical Garden, Bronx, New York. Information: Education Department, New York Botanical Garden, Bronx, NY 10458-5126, (212) 220-8720, or Fax (212) 220-6504, Attn: Mr. Katz.

Northwest

♦ **Nov. 19-20. Alaska Greenhouse and Nursery Conference and Polar Grower Trade Show.** Fairbanks, Alaska. Information: Cathy Wright, Alaska Division of Agriculture, SR Box 7440, Palmer, AK 99645, (907) 745-4119.

South Central

♦ **Nov. 7. Ninth Annual New Orleans Horticultural Symposium:**

"Tree Selection and Maintenance." Longue Vue House and Gardens, New Orleans, Louisiana. Cosponsored by the Louisiana Cooperative Extension Service and the New Orleans Metro Area Horticulture Committee, Inc., Foundation. Information: Dan Gill, Louisiana Cooperative Extension Service, P.O. Box 24006, New Orleans, LA 70184-4006, (504) 482-9081.

Southeast

♦ **Nov. 7-9. Third Annual Fall Orchid Show: "Orchid Harvest."** Winter Park, Florida. Cosponsored by the Central Florida Orchid Society and the National Bank of Commerce. Information: (407) 876-2625.

♦ **Nov. 9. Garden Design Series.** Walking tour of Vieux Carre Gardens. Crosby Arboretum, Picayune, Mississippi. Tour leader: Christopher C. Friedrichs, New Orleans landscape architect. Information: (601) 261-3137, (601) 799-2311, or (601) 798-6961.

♦ **Nov. 17-21. Landscape and Grounds Management Annual Conference.** Wyndham Harbour Island Hotel, Tampa, Florida. Cosponsored by the Professional Grounds Management Society and the Associated Landscape Contractors of America. Information: PGMS Headquarters, 10402 Ridgland Road,

Millions of Mums

The ninth annual Chrysanthemum Festival at Cypress Gardens near Winter Haven, Florida, will feature more than two million blooms: 620 cascades, 30 poodle baskets, three bonsai mum trees, 42 basket-and-ball forms, 48 columns, 18,000 potted mums, and an arch over the entrance to the festival. Some blooms will drape the ledges of a 40-foot waterfall, and others will cascade over the walls of an Italian-style fountain. Cypress Gardens personnel spend seven weeks transferring the chrysanthemums from the greenhouse to the site of the festival, which is being held November 16 to 30. For more information, call (800) 338-MUMS.



COURTESY OF CYPRESS GARDENS

Suite 4, Cockeysville, MD 21030, (301) 667-1833.

♦ **Nov. 18-21. Professional Lawn Care Association of America's 12th Annual Conference: "Meet the Challenge."** Tampa, Florida. Information: PLCAA, 1000 Johnson Ferry Road N.E., Suite C-135, Marietta, GA 30068-2112, (404) 977-5222, Fax (404) 578-6071.

♦ **Nov. 21-24. Landscape Maintenance Association Seminar: "Great '90s-91."** Holiday Inn, Sabal Park, Tampa, Florida. Keynote Speech by Katy Moss Warner, Walt Disney World Horticulture, on "Creating Magic: Maintaining the Gardens at Walt Disney World." Information: Landscape Maintenance Association, P.O. Box 728, Largo, FL 34649, (813) 584-2312, Fax (813) 581-4341.

♦ **Nov. 23. "20th Century Gardens."** Lecture. Atlanta Botanical Garden, Atlanta, Georgia. Cosponsored by the Royal Oak Foundation. British landscape designer John Brookes will present the lecture and sign books. Information: Atlanta Botanical Garden, Piedmont Park at the Prado, Box 77246, Atlanta, GA 30357, (404) 876-5859.

♦ **Dec. 1-Jan. 15. First Annual Poinsettia Festival: "Color It Crimson."** Cypress Gardens, Florida. Information: (800) 237-4826 (outside Florida) or (800) 282-2123.

♦ **Dec. 7-8. Joseph Manigault House Tour.** Charleston, South Carolina. House decorated by the Garden Club of Charleston. Information: Mrs. Charles T. Brown, 112 Waterfront Plantation Drive, Charleston, SC 29412, (803) 795-1865.

♦ **Dec. 7-29. Trees of Christmas: "Hark the Herald Angels."** Exhibit. Tennessee Botanical Gardens and Fine Arts Center, Cheekwood, Nashville, Tennessee. Sponsored by the Horticultural Society of Davidson County and Third National Bank. Information: Carol, (615) 353-2150.

♦ **Dec. 8-29. Festival of Trees.** Masee Lane Gardens, Fort Valley, Georgia. Sponsored by the American Camellia Society. Information: Michelle H. Allen, Masee Lane Gardens, One Masee Lane, Fort Valley, GA 31030, (912) 967-2358 or (912) 967-2722.

Southwest

♦ **Nov. 16-17. "Home for the Holidays."** Flower Show. Albuquerque

Garden Center, Albuquerque, New Mexico. Sponsored by the Uptown Garden Club of Albuquerque, New Mexico. Information: Petra Himes, 8423 Menaul N.E., Albuquerque, NM 87112, (505) 298-0832.

West Coast

♦ **Nov. 9-10. Japanese Flower Arrangement Show.** Los Angeles State and County Arboretum, Arcadia, California. Sponsored by the Los Angeles Branch of the Sogetsu School of Ikebana. Information: (818) 821-3222.

♦ **Nov. 10. "Mr. Huntington's Garden: Present State and Future Plans."** Lecture. Huntington Botanical Gardens, San Marino, California. Lecture by James Folsom, director of the Huntington Botanical Gardens. Information: (818) 405-2282.

♦ **Nov. 12-17. Fifth National Urban Forest Conference.** Biltmore Hotel, Los Angeles, California. Organized by the American Forestry Association, USDA Forest Service, California Department of Forestry and Fire Protection, and TreePeople. Information: Fifth National Conference, P.O. Box 2000, Washington, DC 20013.

♦ **Dec. 5. Behind-the-Scenes Tour and Plant Sale.** Huntington Botanical Gardens, San Marino, California. Information: (818) 405-2282.

♦ **Dec. 7-8. Camellia Show.** Los Angeles State and County Arboretum, Arcadia, California. Sponsored by the Pacific Camellia Society. Information: (818) 821-3222.

♦ **Jan. 14. Landscape and Nursery Expo '92 Trade Show.** Sacramento Community Convention Center, Sacramento, California. Cosponsored by California Landscape Contractors Association/Sacramento Valley Chapter and California Association of Nurserymen/Superior Chapter. Information: Landscape and Nursery Expo, P.O. Box 160244, Sacramento, CA 95816-0244, (916) 442-4470, Fax (916) 442-4564.

International

♦ **Nov. 7. Gardens for Peace.** Dedication Ceremony. Royal Botanical Garden, Madrid, Spain. Dedication of the third garden in the international network of Gardens for Peace. Information: Nancy Wood, (404) 355-2197, Fax (404) 351-6918.

TRAVEL/STUDY TRIPS FOR THE AHS GARDENER

JANUARY 25-FEBRUARY 1, 1992 GARDENS OF THE VIRGIN ISLANDS

An exceptional exploration voyage to the British and U.S. Virgin Islands on board the *Nantucket Clipper*. Ports of call include St. Thomas, St. John, Tortola, Virgin Gorda, and Peter Island. This unique program is being led by former AHS President Carolyn Marsh Lindsay and Bob Lindsay and AHS Board Member Andre Viette and Claire Viette. Participants will see the gardens of the Lindsays and the Viettes' parents and private homes and gardens of their personal friends, including the spectacular gardens of AHS member Paulina du Pont Dean, whose gardens were featured in the December 1989 *American Horticulturist*. The small size of the yachtlike *Nantucket Clipper* makes it possible to sail into isolated bays, quiet anchorages, and deserted beaches known only by experienced yachtsmen who are intimate with these waters.

FEBRUARY 19-MARCH 3, 1992 EGYPT AND NILE CRUISE

Explore the earliest of the Western civilizations and the life-giving influence of the Nile River. The itinerary includes Cairo, Luxor, and Abu Simbel as well as a five-day cruise on the Upper Nile from Luxor to Aswan on board the *Nile Goddess*. Visit numerous historic gardens, including the Manial Palace Gardens in Cairo and the botanical garden on Lord Horatio Herbert Kitchener Island at Aswan. Program leaders are AHS Board Members Helen Fulcher Walutes and Mary Katherine Blount.

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

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We at the American Horticultural Society are often asked to refer individuals for significant horticultural positions around the country. We are not in a position to offer full placement services to candidates or employers. However,

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Your satisfaction with our member service is very important to us. If you have a question or problem concerning your membership, please contact the Membership Department for assistance.

You can help by giving complete information when you call or write. Please refer to the five-digit number that is on the mailing label on your magazine or News Edition. The number helps us to identify quickly your membership record for corrections.

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as a service to our members, both jobseekers and employers, we would be very glad to receive résumés and cover letters of individuals seeking job changes and employers seeking candidates. All responsibility for checking references and determining the appropriateness of both position and candidate rests with the individuals. AHS's participation in this activity is only to serve as a connecting point for members of the Society. Inquiries and informational materials should be sent to: Horticultural Employment, American Horticultural Society, 7931 East Boulevard Dr., Alexandria, VA 22308.

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PUBLICATIONS

HORTUS—a quarterly gardening journal from Britain, addresses itself to intelligent and literary-minded gardeners whose interests extend beyond the garden wall. \$50/year. For information, write GREEN SHADE, INC., Desk C, P.O. Box 547, Cape Neddick, ME 03902.

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Cascading Chrysanthemums

If this fall's chrysanthemum festivals have you hankering for pots of cascading mums, the October issue of *Greenhouse Manager* shares some tips for growing them from Gary Smith, nursery manager of Cypress Gardens in Florida. Smith warns that his timetable must be interpreted very broadly, since growth and bloom time will be affected by many climatic factors.

Smith chooses his cultivars in March, and provides those plants with at least 16 hours of light per day to halt early blooming; a grow light set to come on at 10 p.m. and go off at 2 a.m. is ideal. As the plant grows, the main stem should be tied to a stake, and any lateral shoots pinched out every 10 days. Water moderately, and feed each week with a liquid 20-10-20 fertilizer.

Smith repots his plants every four to six weeks. When the stems are two to three feet long, he plants three in a row at the edge of a seven-gallon container, bends them down, and ties them to a wire frame with twist ties. (The pots need to be elevated, of course.)

At this point, the days will be long enough that the chrysanthemums don't need night lighting and can be moved outside. Keep pinching lateral shoots until about eight weeks before you want the mums to bloom. Smith continues pinching until late August or

early September to be ready for Cypress Gardens' November festival. Gardeners in more temperate zones will want to stop pinching the plants considerably earlier. Fertilizing can cease when colors begin to show.

Ginger Shoots

For an interesting addition to your windowsill herb garden, Chip Tynan of the Missouri Botanical Garden suggests ginger root. Buy a plump root from the produce section of your grocery, and plant it just under the surface of a well-drained soil mix in an eight-inch pot. Keep it slightly damp until shoots appear, then water and fertilize along with the rest of your herbs. You can harvest the root when the shoots die next fall.

Tarragon Taste-alike

Love the taste of fresh tarragon? Want to have it available on your kitchen sill all winter long?

Tarragon isn't easily grown indoors, but there's a substitute that is. Elvin McDonald, secretary of the American Horticultural Society who writes a syndicated column on indoor gardening, suggests that gourmet gardeners try growing *Tagetes lucida*. That's right, a marigold. Called "pericon" by the Zapotec Indians of southern Oaxaca, Mexico, its leaves are very different



COURTESY OF ELVIN MCDONALD

Tagetes lucida in bloom.

from the African or French marigolds grown in the garden. Except for serration along the edges, they look like those of tarragon. "To me, the taste is virtually identical," says McDonald.

Both *Tagetes* and true tarragon, *Artemisia dracunculoides*, are members of the composite family. *Tagetes lucida* bears small, marigold-type flowers, so may provide blooms indoors as well as flavorful foliage.

McDonald made seeds available to his readers, and still has some available for members of the American Horticultural Society. For seeds and instructions for growing them indoors, send \$1 and a stamped, self-addressed business-size envelope with "*Tagetes lucida*" written on the back flap to Elvin McDonald Reader Service, 225 East 57th Street, New York, NY 10022.



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