

News Edition

VOL. 67 No. 5

MAY 1988

Effective Staking

Staking is one of the mainstays of the well-staffed public garden. For the home gardener, though, less is often better. After all, most plants can carry their own weight without breaking or sprawling recklessly all over the garden, and gracefully bending and curving stems can add a lovely natural look to the landscape. Plants in nature don't flop, and they do quite well without our help.

However, your favorite plant may be a tall, heavy-headed lily or one of a number of large-flowered plants, or you may yearn for a formal, orderly look with everything in its proper place. Your planting may be in a windy location, or perhaps your peonies are in bloom and you're awaiting with trepidation the arrival of the next violent thunderstorm. There are many reasons to stake, and various methods available to help get the job done. "Staking is definitely not an outmoded procedure," according to Robert S. Hebb, director of the Lewis Ginter Botanical Garden in Richmond, Virginia, and author of *Low-Maintenance Perennials* (Quadrangle/New York Times Book Company, 1975). "There are too many very popular plants, such as delphiniums, that have to be staked. If lower maintenance is strictly the aim you can choose a lower-growing cultivar of the plant you want, such as *Achillea* 'Coronation Gold' in place of 'Gold Plate', which tends to flop. But limited staking is

not really such a difficult task."

Landscape architect William H. Frederick, Jr., author of *100 Great Garden Plants* (Knopf, 1986), adds, "I'm not sure gardening is meant to be completely low-maintenance. If I like a plant I'll grow it, even if it needs staking. In order to really enjoy plants you have to make a kind of pleasurable commitment to gardening. If I weren't willing to do that, I'd shut myself up in a twelfth-story condo."

In choosing a staking method you'll want to balance effectiveness, degree of difficulty,



Supporting stems individually (this drawing is simplified to clearly show technique) is a most graceful and effective way to support plants.

cost, and obtrusiveness. It may be fairly easy to prop up your perennials, but if the plant ends up looking overwhelmed by its own supports, or if the stakes themselves don't do the job, you will have defeated your purpose. So keep your plant and its growth habit and idiosyncracies clearly in mind as you evaluate the following methods. And before you get started, consider other possible reasons for your plant's less-than-erect demeanor.

Staking may not be the best answer to the problem if your plant is too old or in the wrong location. A perennial that needs to be divided may grow tall and weak due to crowding; if it prefers infertile soil it may grow lanky and soft in fertile soil. A sun-loving perennial will grow taller and weaker—and thus need staking—if it's trying to grow in a shady location.

Plants placed too close together will also tend to grow tall and weak. Staking a sagging plant in the above circumstances may not be the preferred solution, but for plants that *will* lean and sprawl—or even break—without a little help from a friend, we present the following techniques.

Pea-staking

Pea-staking, a quaintly-named method widely used in English gardens but perhaps less familiar here in the United States, is a good staking approach for floppy, multiple-stemmed perennials such as coreopsis, he-

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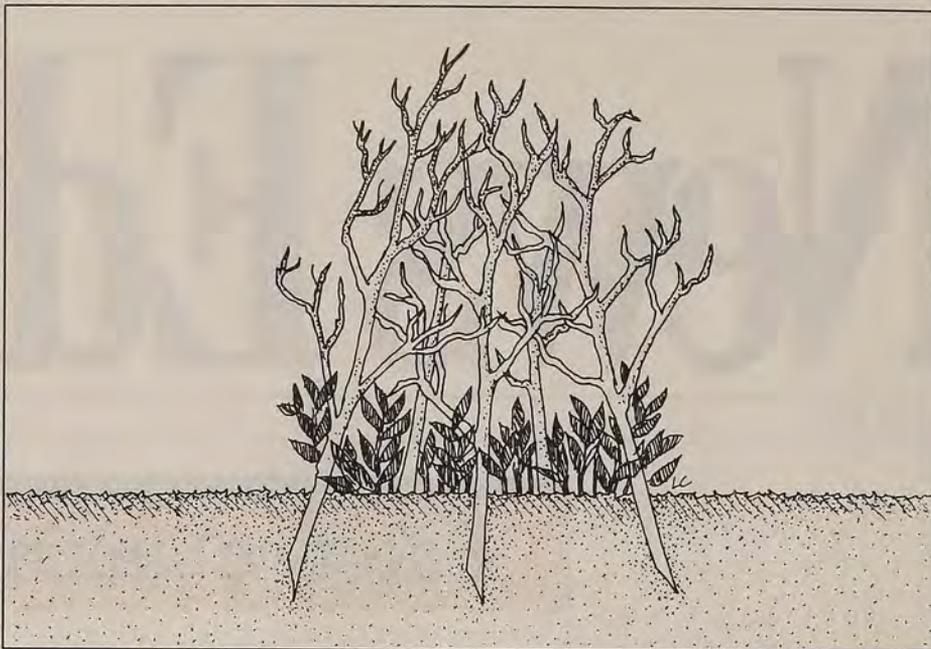
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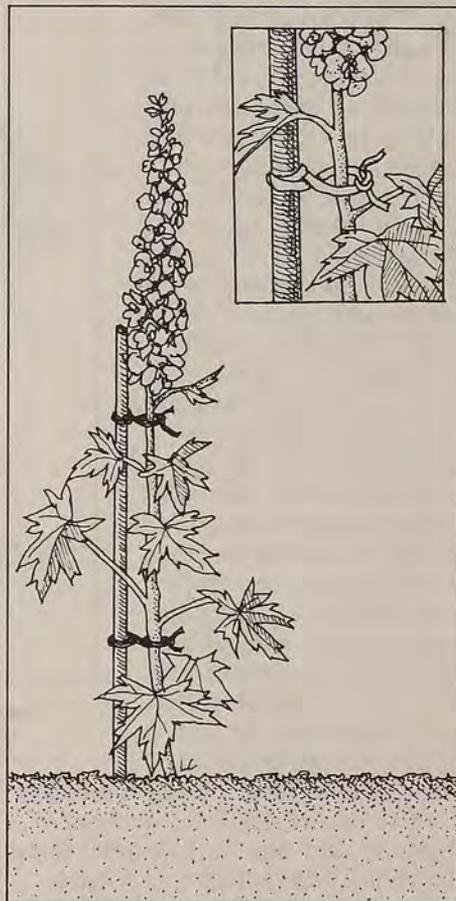
Pea-stakes are a favored British standby. They provide a sturdy and well-camouflaged support when your plant is grown.

lenium, some campanulas, tall hardy geraniums, or hardy asters. It is best done when plants are about six inches tall. Twiggy branches (choose twigs with a three-dimensional branching habit) are sharpened at one end and pushed into the ground around the sides of the perennial angling slightly toward the middle. Large clumps or groupings benefit from a few pea stakes positioned in the center as well, so that the plants are supported evenly from within. The twigs should be six inches shorter than the plant so that they will eventually be completely covered. According to Charles O. Cresson of W. Atlee Burpee Company, co-author with Jeff Ball of *The 60-Minute Flower Garden* (Rodale Press, 1987), plants staked in this way are extremely sturdy, even in rough weather.

The greatest difficulty involved with pea-stakes is the availability of twiggy brush. Cresson recommends birch, pin oak, budleia, or vitex, and cautions that some trees or shrubs such as privet or linden may be too brittle. Frederick uses the prunings from bamboo whose color, he says, blends well with foliage. One of the least obtrusive and most natural staking methods when done correctly, pea-staking deserves consideration for many perennials.

Single Stakes

For plants that have only a few stems with large, heavy flowers, such as delphiniums, dahlias, lilies, or the larger-flowered chrysanthemums, individual staking with round or square wood poles or bamboo canes is a popular method. Tying should begin when the stalk has fully elongated, just as buds



Single-staking methods should provide support without damaging the stem; a figure-eight-shaped knot works well.

are ready to open, unless the stems begin to lean or twist precariously before this. Green garden twine, soft string, or pliable wire embedded in plastic are used to secure the stems to the stakes (Frederick recommends

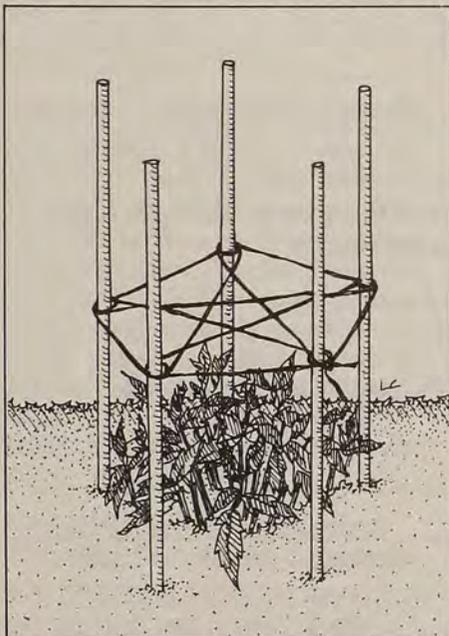
It may be fairly easy to prop up your perennials, but if the plant ends up looking overwhelmed by its own supports, you will have defeated your purpose.

jute for a more natural effect). Wrap the string around the stake, cross it forming a figure eight between the stake and the stem, bring both ends to the front of the stem, knot them, and cut the ends. The twist in the tie between stem and stake helps minimize damage to the stem; take care also not to tie too tightly, and don't use uncovered wire that might constrict or damage the stem.

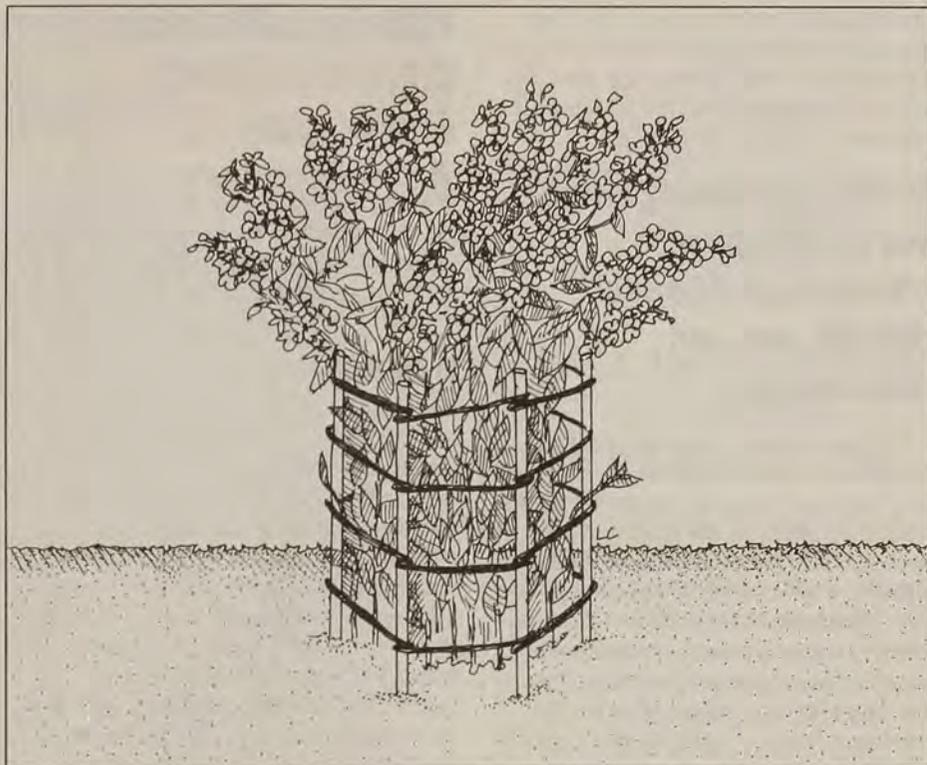
If you find that a single stout stake seems too rigid or overwhelming for your plant, use three or four smaller bamboo stakes around each stem, about two-thirds the height of the mature stalk (or below the blossom). Tie the twine around the stakes rather than around the plant itself, forming a kind of supportive "cage" that allows the plant some movement. Commercially available wire stakes, twisted at the top to hold the stem gently, are a faster alternative, though often not as effective.

Stake-and-Twine Methods

Perennials that grow in dense, leafy clumps—plants such as asters, bee balm, heliopsis, and Shasta daisies—can be effectively supported with a framework made of bamboo stakes and twine, though if you're not careful with this method your plants



This star-shaped construction, one of the stake-and-twine methods, can also be implemented on a taller plant by winding the twine through the stems.



Don't get carried away—your plants can end up looking strangled by an overenthusiastic staking treatment. Ideally, stakes should never overwhelm your plant.

may end up with a constrained look that fairly shouts, "Don't fence me in." A particularly artful alternative to a stick-and-twine "corral" involves surrounding the clump with four or more stakes set about eight inches apart. With twine, weave from opposite stake to opposite stake through the clump until you've connected all of the stakes in a star pattern. Do this right before the plant begins to loll, or just as the buds begin to show color. This technique, which supports the clump with a very natural look, is suggested by Cresson in *The 60-Minute Flower Garden*.

Lucy Tolmach, director of Filoli Gardens in Woodside, California, uses an approach adapted to the west coast: for plants such as sedum or phlox, she uses slender (½" x ½" to 1" x 1") redwood stakes with twine wound among them; the plants grow up through the twine.

Another method, seldom-used and a bit time-consuming but producing a very natural effect, involves placing a stake near the middle of a plant and running a string or piece of twine from the stake to each stem of the plant, tying the stem according to the natural growth habit of the plant. Done with an artful hand, this method may be the most graceful and natural-looking of all the stake-and-twine treatments.

Metal Rings and Linking Stakes

Bushy perennials such as peonies with large, heavy flowers do well with the sup-

Perennials That Don't Need Staking

Staking isn't inevitable; there are quite a few good tall perennial choices that generally do not need to be staked. Here are a few:

- Artemisia lactiflora* (white mugwort), 4-5'
- Dictamnus albus* (gas plant), 3'
- Arunco dioicus* (goat's beard), 5-6'
- Aconitum napellus* (monkshood), 3-4'
- Echinacea purpurea* (purple coneflower), 3'
- Filipendula rubra* 'Venusta' (queen-of-the-prairie), 4'
- Iris sibirica* cvs. (Siberian iris), 3-3½'
- Hemerocallis* cvs. (daylily), 3-6'
- Ligularia stenocephala* 'The Rocket', 4-6'
- Macleaya cordata* (plume poppy), 6-8'
- Perovskia atriplicifolia* (Russian sage), 3'
- Astilbe X arendsii* 'Professor Weilen' (astilbe), 3½-4'
- Liatris pycnostachya* (gayfeather), 3-4'
- Lythrum salicaria* 'Morden's Gleam' (purple loosestrife), 4'
- Delphinium X belladonna* (belladonna delphinium), 3'
- Miscanthus sinensis* 'Gracillimus' (maiden grass), to 6'
- Cimicifuga racemosa* (white snakeroot), 5-6'

port of circular metal frames, either commercially available ones or frames you construct yourself from heavy-gauge wire. The foliage of the peonies will fall to conceal the support.

In choosing a staking method you'll want to balance effectiveness, degree of difficulty, cost, and obtrusiveness.

Try linking metal stakes for speed and permanence; though these tend to be expensive, they can be used in various configurations, they penetrate the ground easily, and by design they preclude the need for string, although a bit of string will often improve their effectiveness. They will last from season to season and come in a variety of sizes. Metal linking stakes may not work if your lounging plant is a tall one, though: the plant may require a veritable jungle gym of metal stakes for adequate support.

Like gardening itself, staking is an art and a craft as well as a utilitarian chore, part of the creative challenge that makes gardening fun. So if that new plant that you've been eager to try looks like it might be a bit of a flop, try it anyway. With a little support, it may turn out to be a star.

—Kathleen Y. Riley, Editor

Colorado State University Extension Agent Barbara J. Hyde, an *American Horticulturist* reader, suggested the subject of this article. In a letter written in response to Elisabeth Sheldon's article, "Hardy Geraniums," (*American Horticulturist*, October 1987), she described a solution to Sheldon's lament about geraniums (cranesbills) "flopping open as they flower." She places a circle of chicken wire over the emerging shoots in spring; as the shoots grow through the wire she moves it upward to a height of about five inches and anchors it firmly in place with a pencil-sized stick about ten inches in length. The leaves unfurl above the wire, concealing it completely. According to Hyde, "Neither wind nor torrents of rain nor the weight of blooms will daunt the holding capacity of the wire." Hyde credits the idea to John Baumgardner, a cooperative extension horticulturist from Missouri.

AHS Seed Program Celebrates Tenth Anniversary

As the 1988 Seed Program concludes another successful year, members are asked to reflect on its ten-year progress and to join with AHS in considering ways to make the program even better in the years to come.

In the Beginning . . .

Since the program's beginning in 1978, the number of seed items offered has steadily increased, and requests have increased as well. In the program's early stages, AHS distributed a simple two-page foldout containing a list of seed items with a short description of each, accompanied by minimum information on germination requirements. Since this modest beginning, members have helped AHS improve and expand each yearly catalog by communicating their observations and suggestions. In 1988 the 16-page catalog offered over 140 seed items along with other helpful information. It was bound into the January issue of the "News Edition" of *American Horticulturist*.

Membership Participation

The seed program thrives today because of the continuing involvement of members. The seed we offer is provided by members across

the nation—from Bath, Maine, to Gallup, New Mexico. Those who have received the free seed have sent thousands of photographs and testimonials about plants they have successfully grown from our offerings. Over a ten-year period AHS has filled over 60,000 individual orders which involved handling some 350,000 packets of seed. We expect our final total from the 1988 program to reach 3,000 or more orders.

A member from Tacoma, Washington, who teaches in a country college, writes: "Our horticulture classes appreciate the seeds you offer each year. We have many trees and shrubs growing on our campus because of your program." A New Jersey member says: "Though I'm not the most sophisticated of gardeners (I use old milk cartons to start my seed in) I have had continued success with the annual and vegetable seed from your program. This year I might even try the more difficult woody plants you offer. I look forward to next year's program. Keep up the good work."

A Look to the Future

For the seed program to continue to improve, AHS needs members' comments on a broader scope. If you have ordered seed items in the past, please "fill in the blanks" on the following questionnaire and mail it back by June 15. Your own personal experiences and observations will be invaluable in planning for next year's program.

Seed Program Questionnaire

Q. What would you like to see changed or improved with regard to the seed items AHS offers? (Please specify.)

A. _____

Q. Do you feel that the native and exotic plants that grow in your region of the country are given adequate representation in the program?

A. _____

Q. In what ways do you think we can improve our seed program catalog?

A. _____

Name _____

Address _____

City _____ State _____ Zip _____

Please return by June 15, 1988, to: American Horticultural Society, Box 0105, Mount Vernon, VA 22121.

Gardener's Bookshelf



The Victory Garden Kids' Book.

This book, designed to introduce children to the love of gardening, offers step-by-step instruction based on a season of gardening. Part One, "How to Garden," offers an introduction to the important jobs of gardening; Part Two, "Kids' Crops," features advice on caring for thirty easy-to-grow plants. By Marjorie Waters. Houghton Mifflin Company, Two Park St., Boston, MA 02108. Publishers price: hardcover, \$21.95; softcover, \$12.95. AHS member price: hardcover, \$19.95; softcover, \$11.95. Code: hc, HOUGH 05720; sc, 05730.

How to Grow Vegetables Organically.

From the editors of *Rodale's Organic Gardening* comes this book of detailed how-to information on growing over 40 vegetables. Filled with reference charts and tips from organic gardening authorities from across the country, the book is a handy guide that takes the reader from planning to harvest in a series of carefully-outlined chapters. By Jeff Cox. Rodale Press, 33 East Minor St., Emmaus, PA 18049. Publisher's price: \$21.95. AHS member price: \$17.55. Code: RODAL 05750.

Natural Pest and Disease Control: Controlling Your Garden Organically.

In 1977, ill health forced Jim Hay to eliminate chemicals from his diet. He turned to organic gardening, concentrating on developing techniques for intensive cultivation in small growing areas. One of the results of



his research is this book, geared to the identification of garden pests and diseases without the use of harmful pesticides. If you're just getting started, this may not be the book for you, since it's sprinkled with British terminology, but for the advanced American gardener it provides a valuable and pleasingly organized supplement to other basic texts on organic gardening. By Jim Hay. Distributed by David & Charles, Inc., North Pomfret, VT 05053. Publishers price: \$13.95. AHS member price: \$11.15. Code: DAVID 05740.

The Mail Order Gardener.

This is a source guide to flowers, vegetables, trees, shrubs, tools, furniture, greenhouses, gazebos, and "everything else a gardener could wish for." It is clearly organized by subject and is handsomely illustrated with nineteenth-century woodcuts and drawings. Special boxed features offer unusual tips and ideas, such as gardening with children and growing giant vegetables. By Hal Morgan. Harper & Row, 10 East 53rd St., New York, NY 10022. Publisher's price: \$12.95. AHS member price: \$10.35. Code: HAROW 05760.

When ordering books from AHS, please include title of book and code number. Make checks payable to AHS, and please include \$2.50 per book for postage and handling. Virginia residents add 4.5% sales tax. Send orders to Robin Williams, AHS, P.O. Box 0105, Mount Vernon, VA 22121.



FALL INTO SPRING OCTOBER 20 - NOVEMBER 6, 1988

Forest primeval and living volcanos—cosmopolitan cities and peaceful farmland—this is New Zealand. There is no place on earth where so many different landscapes and sensations are contained in so relatively small an area.

This October the American Horticultural Society invites you to venture forth to the far reaches of the South Pacific to "Fall Into Spring" on both the North and South Islands of New Zealand and to see what man, as gardener, has contributed to his overwhelmingly beautiful natural surroundings.

In leading his fourth AHS tour, Dick Hutton will have as his local counterpart Mary Burnard, a native of Wellington, author of "Garden Heritage of New Zealand," garden consultant and professional photographer. With her assistance we have arranged visits to many private gardens rarely accessible to the public. We have also timed this trip to take full advantage of the extraordinary profusion of rhododendrons and azaleas for which New Zealand is justly famous.

Please join us on this exciting and surely-to-be-unforgettable journey as we **Fall Into Spring.**

For information on **Fall Into Spring** please check mail this coupon to:

Passages Unlimited, Inc.
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Wakefield, MA 01880
or Call 1-617-246-3575

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Gardener's Dateline

► **May 2-4. National Council of State Garden Clubs Convention.** Wyndham Hotel Greenspoint, Houston, Texas. Information: Mrs. Mildred J. Walters, Registrar, P.O. Box 55627, Houston, TX 7725-5627, (713) 461-2248.

► **May 2. Spring Sale of Herb Plants.** Sponsored by the Potomac Unit of the Herb Society of America. U.S. National Arboretum, Bladensburg Road and R St. NE, Washington, DC. Information: Mary Ann Jarvis, U.S. National Arboretum, 24th and R St. NE, Washington, DC 20002, (202) 475-4857.

► **May 4-6. Conference on Country Houses and Gardens of the Brandywine Valley.** Information: Philip Correll, Landscape Curator, Hagley Museum and Library, P.O. Box 3630, Wilmington, DE 19807 (302) 658-2400.

► **May 5-8. Azalea Society Convention.** Bethesda Hyatt Regency Hotel, Bethesda, MD. Information: Dr. Charles H. Evans, Chairman, 1988 Azalea Society of American Convention, P.O. Box 1843, Bethesda, Maryland 20817.

► **May 7-8. Geranium Festival.** Sponsored by the Los Angeles Branch of the International Geranium Society. Descanso Gardens, 1418 Descanso Drive, La Canada, California. Information: Los Angeles Branch International Geranium Society, 4610 Druid St., Los Angeles, CA 90032 (213) 222-6809.

► **May 7-8. Herb and Perennial Weekend.** Wrenwood, Route 4, Berkeley Springs, West Virginia. Information: Wrenwood, Box 361, Berkeley Springs, WV 25411 (304) 258-3071.

► **May 7-8. Wildflower, Plant, and Seed Sale.** Museum Courtyard, Brandywine River Museum, Chadds Ford, Pennsylvania. Information: John Sheppard, Brandywine Conservancy, P.O. Box 141, Chadds Ford, PA 19317 (215) 388-7601.

► **May 8. River Farm Spring Plant Sale.** 7931 East Boulevard Drive, Alexandria Virginia. Hours: 10 a.m. to 4 p.m. Information: Margaret Burke, AHS, P.O. Box 0105, Mt. Vernon, VA 22121, (703) 768-5700.

► **May 11-15. American Rhododendron Society Convention.** Fort Magruder Inn and Convention Center, Williamsburg, Virginia. Information: Barbara Hall, P.O. Box 864, Gloucester, VA 23061, (804) 693-4433.

► **May 14. Garden Walk: The Blooms of May.** Scott Arboretum of Swarthmore College, Swarthmore, Pennsylvania. Information: Scott Arboretum, Swarthmore College, Swarthmore, PA, (215) 328-8025.

► **May 15. Huntington Plant Sale.** Huntington Library and Botanical Gardens, 1151 Oxford Road, San Marino, California. Information: Botanical Division, The Huntington Library, 1151 Oxford Rd., San Marino, CA 91108, (818) 405-2160.



The 1988 Annual Meeting of the American Association of Botanical Gardens and Arboreta will be held at the Desert Botanical Garden in Scottsdale, Arizona, on May 11-14. This year's theme is "Understanding Our Past—Adapting for the Future."

► **May 18-22. Long Island Rhododendron Festival.** Old Westbury Gardens, Old Westbury, New York. Information: Old Westbury Gardens, P.O. Box 430, Old Westbury, NY 11568, (516) 333-0048.

► **May 19-21. Mordecai Garden Symposium.** Mordecai Square Historical Society, 1 Mimosa Street, Raleigh, North Carolina. Information: Mordecai Square Historical Society, 1 Mimosa Street, Raleigh, NC 27604, (919) 834-4844.

► **May 20-22. Historic Landscape Symposium.** Sponsored by the Fairfax County Park Au-

thority. Green Spring Farm, Annandale, Virginia. Information: Fairfax County Park Authority, 3701 Pender Drive, Fairfax, VA 22030, (703) 759-5241.

► **May 24-27. Chelsea Flower Show.** Sponsored by the Royal Horticulture Society. Chelsea Hospital Grounds, London, England. Information: Vincent Square, London, SW1P 2PE England, 01 834-4333.

► **May 28-29. Bonsai Society Annual Show.** Miller Hall at the World Forestry Center, 4033 S.W. Canyon Road, Portland, Oregon. Information: Chuck St. John, Show Publicity Chairman, 12360 S.W. Faircrest, Portland, OR 97225, (503) 646-9207.

► **May 28-June 3. Chicago International Festival of Flowers and Gardens.** Navy Pier, Grand Avenue and Lake Michigan, Chicago, Illinois. Information: Chicago International Festival of Flowers and Gardens, 600 N. McClurg Court, Chicago, IL 60611 (312) 787-6858.

► **June 2-12. Glasgow Garden Festival Grand International Show.** Glasgow, Scotland. Information: The Glasgow Garden Festival 1988 Ltd., 120 Bothwell St., Glasgow G2 7JP Scotland, 041-429-8855.

► **June 9-11. Horticultural Therapy Short Course.** K-State Union and Throckmorton Hall, Kansas State University, Manhattan, Kansas. Information: Dr. Richard Mattson, Department of Horticulture, Waters Hall, Kansas State University, Manhattan, KS 66506, (913) 532-6170.

► **June 10-12. Asian Plants for American Gardens Conference.** Longwood Gardens, Kennett Square, Pennsylvania. Information: Longwood Gardens Information Division, Kennett Square, PA 19348-0501, (215) 388-6741.

► **June 12. Scott Associates Garden Day.** Scott Arboretum at Swarthmore College, Wayne, Pennsylvania. Information: Josephine Hopkins, Scott Arboretum at Swarthmore College, Swarthmore, PA 19081, (215) 328-8025.

► **June 14-16. Symposium: The Roots of the Urban Forest Problem.** The Holden Arboretum, 9500 Sperry Road, Mentor, Ohio. Information: Paul C. Spector, Director of Education, The Holden Arboretum, 9500 Sperry Road, Mentor, OH 44060 (216) 946-4400.

► **June 16. Symposium: Victorian Gardens in America.** Morris Arboretum of the University of Pennsylvania, Philadelphia, Pennsylvania. Information: Agatha H. Hughes, Morris Arboretum, 9414 Meadowbrook Avenue, Philadelphia, PA 19118, (215) 257-5777.

► **June 19-22. International Herb Growers and Marketers Association Trade Show.** Baton Rouge, Louisiana. Information: Maureen Buehrle, IHGMA, P.O. Box 281, Silver Spring, PA 17575, (717) 684-9756.

Lighty to Speak at AHS

"Putting Native Plants into Perspective," a slide talk by Dr. Richard W. Lighty, director of the Mount Cuba Center in Greenville, Delaware, will be held at AHS headquarters at River Farm on May 21 at 3 p.m. Advance registration is required; for further information call (703) 768-5700. The talk is being sponsored by the American Horticultural Society and the American Society of Landscape Architects.

Enzymes: a growth miracle?

by Pat Branin
(Branin was the organic gardening columnist for the San Diego Union.)

Did you hear what happened on Frank's farm?

Some readers will remember a story published in the *San Diego Union* April 6 reporting a new soil conditioner made from enzymes. The first inkling I had concerning this product for gardening and commercial agriculture came from *Acres, USA*, a farmer's newspaper published monthly in Raytown, MO.

The editor and publisher, Charles Walters, Jr., gave permission to quote the story about Frank Finger, a biodynamic farmer near Larned, Kan., and his experiments with enzymes on his soybean and alfalfa fields.

The difference between an inkling of information and an in-depth probe is about the same as Mark Twain's definition of the difference between a lightning bug and lightning. So when the opportunity offered, I made a trip to Frank Finger's farm.

There I set foot on the first enzyme-treated soil I have ever knowingly trod upon. All of central and eastern Kansas looks like a beautifully planned and meticulously maintained park, and Frank Finger's farm seemed to have an extra glow of well-being.

To understand what agricultural enzymes are and what they do, you must first know what they are not. Enzymes are not a fertilizer nor a plant nutrient.

Used over a period of time, enzymes can relieve problems of shallow soil by penetrating hardpan and even marl. Finger demonstrated this on a field where he had hardpan near the surface. He pushed a 3/8 inch steel rod its full length of 36 inches into the ground without effort. This could be a boon to hundreds of thousands of acres of land in Southern California.

Agricultural enzymes also will detoxify soils that have been chemicalized to death with inorganic fertilizers, herbicides and pesticides. They also will adjust the acid-alkaline balance to a favorable pH 6.5 to 7, which nearly all plants prefer. Even high alkali soils can be restored to production.

They will cause heavy soils to flocculate (to loosen and break down) so the structure is loose and plants can develop a more massive root system and irrigation water or rain can penetrate more quickly, evenly and deeply.

Perhaps the most important thing of all that enzymes do is improve the soil's "cation-exchange" capacity. Cation-exchange means the release of the natural minerals and plant nutrients by unlocking them and converting them to a form the plant can use to make its food by photosynthesis.

No matter how bad your soil is, it is almost certain that you have considerable ancient minerals and trace elements which it needs but which are locked in by an imbalance caused by a lack of organic material and enzymes. By adding both to the soil, the enzymes supply the magic key to unlock

these things and thereby adjust the cation-exchange capacity.

Robert Herlocker of Girard, Kan. says: "I applied Nitron to 200 acres of soybean ground at the rate of 1/2 gallon per acre in two applications. They received approximately 1 1/2" of rain before harvest; the normal for this period is 5 inches. Even though these beans were hailed on, there was no ledging (bruising or loss of foliage), and the 200 acres averaged 35 bushels per acre."

Frank Finger's wife, Gay, takes care of the vegetable garden, shrubs and house plants:

"Last spring I sprinkled my row of carrot seeds with 1 1/2 gallons of water with 1/4 cup of Nitron added before covering the carrots. In five days the carrots were up so thick I had to thin them several times. We ate them through the season and mulched them when freezing weather came. We have been digging and eating them all winter."

Also, she has a cucumber story: "I accidentally over-treated one of my cucumber plants with a mixture of half water and half Nitron which I had intended to dilute; however, I watered the area deeply and that cucumber plant took over the whole patch. One day in July I picked 79 from it and picked 50 on each of three other days that week. I pulled up all my other cucumber plants to give this one room to spread."

There are many other stories about enzymes that border on fantasy. Perhaps I can tell about them later.

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Gardener's Q & A

Sharing problems and solutions is a vital element of gardening. This column is designed so that readers can share in the extensive horticultural research done by our Gardener's Information Service.

Q: When is the best time to plant or divide snowdrops (*Galanthus*)? I have been told that they can be planted immediately after flowering, but most bulb catalogs suggest a fall planting.
—S. B., Lowell, Michigan

A: Spring is the best time to spread snowdrops around your garden or into the gardens of others. Clumps should be lifted just after flowering when in full growth, divided into single bulbs, and replanted immediately before they dry out. Single bulbs will soon increase into clumps that can be divided.

Dried bulbs can be planted in the fall, as is true with most spring-blooming bulbs, but the results are not as consistent as when they are planted "in the green." Fall planting is necessary, however, where growing plants cannot be obtained in the spring.

Q: I have tried several times without success to establish a Franklin tree, *Franklinia alatamaha*, in the clayey loam soil of my property. Can you suggest another tree that is similar but will survive?—A.H., Bowie, Maryland

A: It's hard to match *Franklinia* for its attractive bark, late-summer flowers, rich fall color, and interesting fruit, all combined with a romantic history as well. However, it can be difficult to transplant due to disease susceptibility and other problems. To succeed with this tree you must have moist well-drained soil that is high in organic matter.

For those who have met with failure in the past, a good substitute is the sweetbay magnolia, *Magnolia virginiana*. It compares favorably with *Franklinia*, having bright green twigs, fragrant flowers produced from spring to fall, lustrous leaves with a silvery underside, and fruit typical of magnolias—

popping with bright red arils. When comparing fall color, sweetbay does fall short, but semi-evergreen leaves provide some interest in southern parts of the country.

Magnolia virginiana is also easier to please. Although it prefers a moist, acid soil, it will tolerate heavier soils and poorly drained sites and has few, if any, disease problems. Multi-stemmed or single trunked, its graceful habit makes it an excellent small patio tree, where the lemony-scented flowers can be appreciated on a summer evening breeze.

Native to the southeastern United States and coastal regions further north, sweetbay can be grown in gardens as far north as the lower part of USDA Zone 5. It may suffer from winter injury in some Zone 5 locations.

Q: I have a couple of bonsai trees and several houseplants that are very special to me. I am relocating to Nevada this summer and would appreciate some suggestions on moving these plants.—R. S., Bayport, New York

A: If you are driving out, the best way would be to take the plants with you in the car, caring for them en route and watering as necessary. If you are flying out and shipping your belongings, you will have to take special precautions—the moving van would not be a suitable place for plants.

The best option would be to construct special boxes and ship them via air in the same temperature-controlled area used for animals. Boxes should be constructed out of crate wood and made large enough to accommodate the crown of the tree. A slat-type treatment should be used for the sides to allow for air circulation. Soft foam (not styrofoam) should be placed on the bottom of the box and around the edges to absorb shock.

Water plants well and let them drain thoroughly. Apply moistened sphagnum moss over the soil surface and cover with plastic to preserve moisture. Do not cover the drainage hole. Secure the pots so that they do not slide around inside the crate, and leave the crown of the plant free. Carefully mark with "this side up" and provide special instructions for the airline.

Some houseplants could probably be moved the same way. Small plants could be packed in carry-on-size boxes that you could bring with you on the plane.—Laura E. Coit
Assistant Editor, Horticulture

Tips from the National Wildflower Research Center

Annie Paulson, a resource botanist at the National Wildflower Research Center in Austin, Texas, has these suggestions for potential wildflower gardeners:

"Put your wildflower glasses on and observe where a plant grows in nature, then try to duplicate that habitat as closely as possible. A plant that likes a rocky site may languish in a well-prepared border with a rich, wet soil. Too many people assume that because a plant is native to a particular state, it will grow anywhere in that state. This just isn't true, and gardeners who plant a woodland plant in a prairie habitat will experience a very low success rate.



The lovely *Erythronium americanum*, or trout lily, requires deep fertile soil and dappled shade, as found in its native woodland habitat.

"Remember that 'native' doesn't mean you can just stick the plant in the ground—even under ideal conditions—and walk away. Pay attention to the prevailing weather conditions when you plant your wildflowers. Dry autumn weather, for instance, may call for increased watering, a regimen that might not have been required in other years. The time you spend nurturing your plants will pay off handsomely in the long run. Believe it or not, there will come a time, once your wildflowers have become established, when you can step back a little, relax, and enjoy."

Founded in 1982 by Lady Bird Johnson, the National Wildflower Research Center is a national nonprofit organization dedicated to promoting conservation and the use of wildflowers and other native plants in planned landscapes. The Center offers its members a variety of services, including a Clearinghouse which serves as an information network for those with information and those requesting it. Files are maintained about wildflower projects across the country, and this is made available for others planning similar projects.

Fact sheets are available on a wide range of topics, many containing specific informa-

tion on each state. Sample fact sheets include sources of native plants for your state, recommended species for most states, roadside planting, and "how to plant" guides. To obtain information from the Clearinghouse write: Clearinghouse, National Wildflower Research Center, 2600 FM 973 North, Austin, Texas 78725. Members receive priority handling and free fact sheets; nonmembers must enclose a legal-size envelope with 66 cents postage for fact sheets.

The Center also sets up and coordinates research projects and offers seminars and

conferences for which members receive discounts. Its two publications, the twice-yearly Journal and the newsletter, which appears six times a year, cover the latest in wildflower research and keep members informed about Center projects and activities. The National Wildflower Research Center is 8,000 members strong and welcomes new members who are dedicated to wildflower conservation and education. For more information write: The National Wildflower Research Center, 2600 FM 973 North, Austin, TX 78725.



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This seven-day tour (please note that we have added two days to this tour since our previous announcement) will take us to some of the great houses, gardens, and museums of western New England, following along the breathtaking foliage trail from Stockbridge, Massachusetts to Shelburne, Vermont. Highlights of the itinerary include visits to The Mount, former home of Edith Wharton; Naumkeag, designed by Stanford White; and the Shelburne and St. Gaudens Museums. We will also visit the Berkshire Garden Center, one or two notable private gardens, and herb and dried flower farms. There will be an optional extension from Saturday, October 8 to Wednesday, October 12 in the Cambridge-Boston-Concord-Salem area, if enough participants express an early interest.

October 15-21

"Gardens of the Chesapeake"

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On October 15, Bob and Carolyn Lindsay (AHS Board President) will welcome Society members and friends aboard the M.V. *Nantucket Clipper* for a spectacular fall cruise through the gardens of the Chesapeake. Guests will see the gardens of Colonial Williamsburg, the private estate of Dr. and Mrs. Page Jett at Parkers Creek, Sotterly Plantation, the Paca house and gardens, and many other delightful locales, including Wye Heights Plantation, where we will be the special guests of Thomas G. Wyman. On the last evening, October 21, plan to unwind after an exciting week's adventure at a cocktail reception hosted by Mr. Pieter Oechsle, director of AHS.

October 20-November 6

"Fall Into Spring"

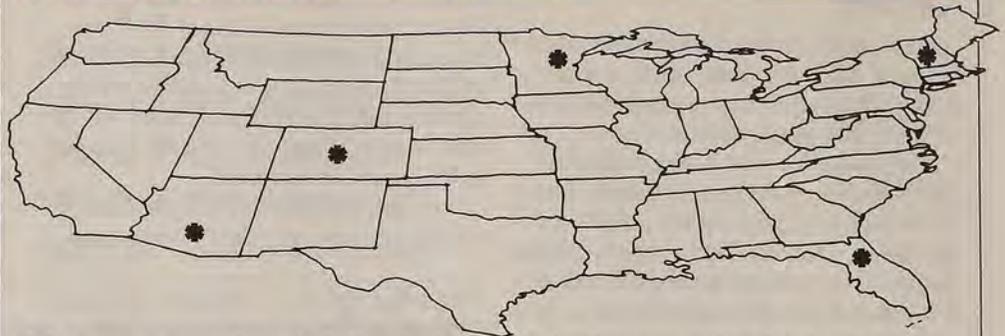
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Our third October trip is to the lovely island nation of New Zealand, with an optional extension to its illustrious neighbor, Australia. This trip, to be hosted by AHS Board member Dick Hutton, will depart October 20 and will conclude November 6 for those who do not pick up the Australia option. Highlights of the trip will be a visit to a specialized miniature rose nursery, a wildflower walk on the slopes of Mt. Cook, a tour of the grand old colonial homestead and gardens at Holmslee, and an afternoon spent in the garden of Ron and Mollie Coker.

Regional Notes



Time on your hands? Probably not—most busy gardeners never get to the end of their "to do" lists. But in case there's something that you may not have thought of, we've gathered a few comments from gardening experts across the country.

► Edward Bauton of the University of Vermont suggests that if you want to get a jump on your neighbors, warm up your soil the way commercial growers sometimes do—with clear plastic placed directly on the soil; then try modifying the environment around your plants with spun-bonded row covers. These products are now available in homeowner-size lengths at many garden supply stores.

► Jane McKinnon, an ornamental horticulture specialist at the University of Minnesota, cautions that "we can't be sure we won't have frost until the end of May. Even experienced gardeners here in Minnesota are sometimes guilty of planting too soon." Another suggestion: "Most Minnesotans don't seem to have thought of using pine needles for mulch, though they're both attractive and effective for plants that don't mind an acidic soil. They're especially effective when used around the half-high ornamental blueberries 'Northsky' and 'Northblue'. These are beautiful plants which provide bright red color in fall.

"Northern gardeners might also want to try the Canadian plum (*Prunus nigra*) 'Princess Kay', discovered in the wild in Itasca County, Minnesota by Bob and Catherine Nylund. Fragrant, white, fully double flowers appear in early May, prior to the emergence of leaves, and since very little fruit is

set, the flowers remain a few days longer than usual. This is an excellent choice for northern landscapes where a small ornamental flowering tree is desired."

► Dr. Bob Black of the University of Florida in Gainesville suggests that Floridians who are growing poinsettias outside might want to start pinching back their plants in May to encourage more compact growth and more abundant flowers. "Cut back shoots to 10 to 12 inches, leaving four leaves on each shoot. Keep doing this until September 10." May is also the time to select daylilies, while they are in bloom, and to plant or transplant them.

► Dr. James Klett of Colorado State University in Fort Collins, Colorado, advises that May 10-15 is the time to plant out annuals, and he cautions that a plant with good lateral branching is probably a better bet than one with an overabundant profusion of flowers, which could be a sign of a plant grown in a too-warm greenhouse environment. For new homeowners on the front range, May is the time to put down sod; before doing so prepare the soil (normally heavy clay in this region) by incorporating four to six inches of well-decomposed organic matter.

► Dr. Charles Sacamano of the University of Arizona at Tucson reminds gardeners that May is the time to adjust irrigation time-clocks in the lower elevations of the desert Southwest. May is also the time to fertilize citrus trees: apply 2½ pounds of ammonium sulfate per mature citrus tree, spreading evenly beneath the canopy to the drip-line, beginning one foot away from the tree. "If you don't have equipment to measure an amount this small," he advises, "just measure it by the pint—one pound equals one pint." This is also the time to plant and prune palms. "Many palms put out unsightly flowering stalks at this time of year, so you can eliminate these while doing your regular pruning."

AHS Bulletin Board

River Farm Update

The garden at River Farm experiences a continuing rejuvenation, as older plantings are removed and newer ones take their places, many of them interesting and unusual offerings from plantsmen around the United States. Among the newest additions:

► *Rhododendron yakusimanum* is an elegant smaller rhododendron whose dark evergreen leaves have a wooly or hairy underside, referred to as indumentum. The bright rose buds become a lovely white in full flower. The plant is frequently used in Japanese gardens, where its smaller size and mounded habit make it an attractive feature.

► *Rhododendron periclymenoides*, the pinxterbloom azalea, found a home in a shady spot just outside our maintenance building; several more shrubs of this delightful native settled in under the canopy of a young tulip tree, *Liriodendron tulipifera*. The pinxterbloom grows from four to six feet in height and bears fragrant flowers, ranging from pale pink to deep violet, on naked stems.

► *Chionanthus virginicus* var. *pygmaeus*, a smaller version of *Chionanthus virginicus*, the white fringe tree, has been planted in our nursery so we can observe the development of this obscure and curious plant.

► *Emmenopterys henryi*, a rare small tree that reaches a height of 30 to 80 feet, has been placed in a protected area; we're keeping our fingers crossed that it will adjust to its new environment. E. H. Wilson, the great plant collector, has described it as "one of the most strikingly beautiful trees of the Chinese forest."

We extend our appreciation to Eastern Plant Specialties of Colonia, New Jersey for providing these new plants.

AHS Spring Sale to Feature Ikebana



The AHS is delighted to host an exhibition of Japanese flower arranging by Mr. Mutsuo Tomito, of the Ohara School of Japanese Flower Arrangement, at its Annual Spring Sale to be held this year on Mother's Day, Sunday, May 8. The sale will feature exotic and unusual plants along with the traditional spring offerings. Arts and crafts for sale, gardening books and tools, and refreshments will also highlight the day. Sale hours are 11 a.m. to 4 p.m. Bring a blanket and picnic among the early spring blooms in the River Farm gardens.

River Farm Needs You

AHS headquarters at River Farm is seeking volunteers in a number of areas. Horticultural assistants, special events coordinators, publications assistants, and docents are needed. So come join the fun, and gain valuable skills as well. Contact the Volunteer Coordinator, AHS, 7931 East Boulevard Drive, Alexandria, VA 22308.



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What's New?

Just about everything, as even a quick glance at this issue of the *American Horticulturist* News Edition will tell you. The drawings of Horticultural Editor Laura E. Coit, featured in our lead article on staking and continuing throughout this issue, tell a good part of the story: we're aiming for a fresh new look that combines at-a-glance information with more extensive coverage of selected horticultural topics. We'll continue to bring you updates on events throughout the country and abroad, tips from regional experts, and a chance to "listen in" on our Gardener's Information Service, as well as news about specific plants and plant societies. So stay in touch, and we'll keep you posted on "news and views" of gardening across the country.

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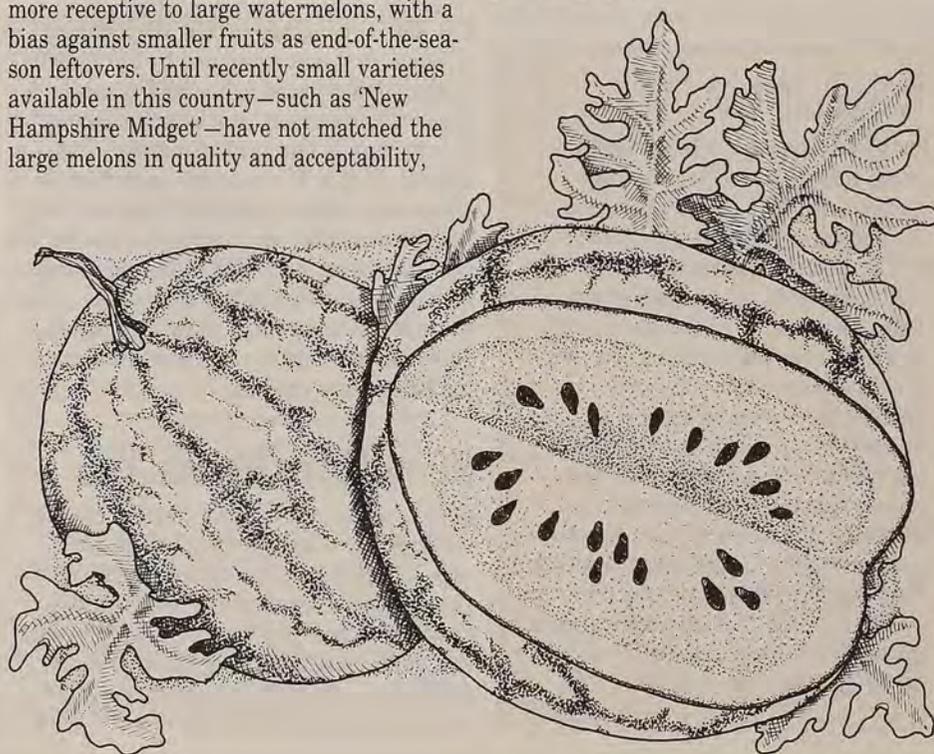
Members who are growing or who have access to any of the plants or seeds listed below are invited to help fellow members locate seeds, plants, or cuttings. Those who can provide such information should write directly to the persons listed below.

- ▶ *Dactyloctenium aegyptium*, terrestrial orchid with long spikes of rosy purple flowers, native to Algeria. Also *Dactyloctenium foliosum* and *D. majalis*. John H. Bergen, 1724 N. 14th, Coos Bay, OR 97420.
- ▶ *Rheum acuminatum*, Sikkim rhubarb, perennial herb native to China. Also *Rheum nobile*. Andrew L. Guthrie, The Pittsburgh Zoo, P.O. Box 5250, Pittsburgh, PA 15206.
- ▶ *Spiraea latifolia*, meadowsweet, deciduous shrub with pinkish flowers, native to northeastern North America. Also *Spiraea tomentosa*. Samuel Tete, 99 Hillside Park Drive, New Hyde Park, NY 11040.
- ▶ *Cornus alternifolia* 'Argentea' (syn. 'Variegata'), a variegated form of the pagoda dogwood. David Schanke, 2459 Sunrise Court, Green Bay, WI 54302.
- ▶ *Aralia cordata*, spineless perennial herb native to China. Robert J. Boklund, 612 Weller Ave., La Porte, IN 46305.

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"We're getting an excellent response, both here and overseas," says University of Florida plant breeder J. M. Crall, developer of two new small icebox-type watermelons currently being test-marketed by the United States Department of Agriculture in the United States and Europe. Though smaller melons predominate in Europe, the American home gardener has traditionally been more receptive to large watermelons, with a bias against smaller fruits as end-of-the-season leftovers. Until recently small varieties available in this country — such as 'New Hampshire Midget' — have not matched the large melons in quality and acceptability,

according to Crall, but the new cultivars 'Mickylee' and 'Minilee' show great promise and are evoking enthusiastic comment both for their fruit quality and for resistance to the diseases anthracnose and Fusarium wilt. The smaller melons are expected to be especially popular for smaller households and for consumers with smaller amounts of gardening space.



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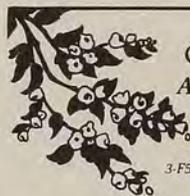
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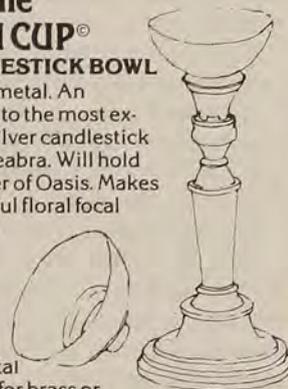
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Students work in all areas of the garden and receive weekly instruction on gardening techniques. Interns also have the opportunity to obtain the Virginia state pesticide applicator's license.

To apply, send a resume and letter of application to: Curator, AHS, 7931 East Boulevard Drive, Alexandria, VA 22308.

Gardening Hints for the Coming Season

W. Atlee Burpee & Co. offers these hints for the warm season ahead:

If you have a shady garden, try leafy crops like lettuce and other salad greens. They'll grow in partial shade with two to three hours of sun per day. Also try endive, spinach, parsley, and tarragon.

Mulching is a necessity in the spring and summer. Lay down a mulch such as compost, chopped leaves, salt hay, or shredded hardwood bark right after planting. The mulch will retain soil moisture, keep roots cool and smother weeds.

Water deeply once or twice a week. Hand watering is the least effective method—it's unlikely you'd have the patience to hold a hose long enough to give your garden a deep watering. For example, with a sprinkler it can take two hours or longer to effectively water a 25-foot by 25-foot plot. Drip irrigation devices, which control irrigation precisely, are even better than sprinklers. The water goes directly into the soil, so none is lost from evaporation. And drip irrigation is exact and uniform.

To prevent your tomatoes from developing cracks as the summer progresses, keep plants mulched and water at regular inter-

vals. Cracks usually occur after heavy rains or irrigation follow a dry spell. Taking the water up greedily, the tissue inside the fruit expands faster than the skin. Tomatoes with cracks are also more apt to rot on the vines.

While you're waiting for that first vine-ripened tomato, you may want to follow this hint from the Department of Food Science at the University of Georgia: place your store-bought tomatoes in a paper bag and leave them in a warm spot such as the top of the refrigerator for a few days. Add a ripe apple (it will give off ethylene gas, the substance used by commercial growers to speed ripening). This may help satisfy your yearning for summer fruit.

American Rose Society Releases 1988 Handbook

The American Rose Society has released its 1988 rose-buying guide, the *1988 Handbook for Selecting Roses*, obtainable by sending \$1.00 and a stamped, self-addressed envelope to: The American Rose Society, P.O. Box 30,000, Shreveport, LA 71130-0030. The handbook lists over 1,000 commercially-available roses and provides horticultural classification, color classification, and a numerical rating of how each rose grows.

U.S. National Arboretum New Introductions

Pueblo, the newest pyracantha introduced by the U.S. National Arboretum, is resistant to both fire blight and scab. Fire blight usually kills young pyracantha shoots, and scab defoliates the plant and disfigures the fruit. Pueblo's broad-spreading growth habit (it grows as wide as it grows tall) makes it ideal for barrier mass plantings for parks, highways, commercial developments, and large estates. Like other new low-maintenance pyracantha varieties recently introduced by the Arboretum, Pueblo sports cream-white flowers in May and profuse orange-red fruit from autumn to early winter.

Chippewa and Huron are the first landscape viburnums to combine a heavy red fruiting deciduous species with an evergreen species. Both have lush, heavy-textured, dark-green foliage; a massive, cream-white floral display in May; a brilliant red to purple autumn foliage from September to early December; and abundant, glossy red fruit from September until winter. These varieties may be used in the landscape as individual plants, or as a large, informal hedge.

—U. S. National Arboretum, Washington, DC
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