

American Horticulturist



Steve Davis

Summer interns Mike Wild, Tim Sams, Robin Roughton and John Losey pause beside the River Farm Water Garden.

The 1984 AHS Summer Interns

Thanks to the enthusiastic support of over 1,000 Society members, River Farm benefited from the energetic care of four Summer Interns in 1984: Robin Roughton (College of William and Mary), John Losey (Oberlin College), and Mike Wild and Tim Sams (Old Dominion University). These young horticulturists fulfilled the exciting promise of the AHS Summer

Intern Program through their long, hot hours of challenging grounds work: they learned what horticulture is first-hand, enriched their formal educations immeasurably, and kept River Farm's 25 acres looking beautiful through the summer.

This year's Interns were featured in an article in *The Washington Post*. Mike Wild gave the Interns a new

motto (and new notoriety) by telling the *Post* reporter, who visited on a typically steamy day, "I love to sweat." After this phrase appeared in print, it became the unglamorous and thoroughly appropriate watchword of the 1984 Interns. From all of us at River Farm, thanks once again to the AHS members who made this year's program possible.

Society Presents 1984 Awards

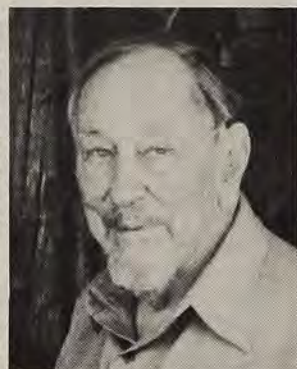
President Edward N. Dane presented the Society's annual awards Saturday, November 3, at the American Horticultural Society's Annual Meeting in San Antonio, Texas.

Former First Lady Mrs. Lyndon B. Johnson was presented with the Society's first National Achievement Award. Long known for her active participation in environmental and beautification projects, Mrs. Johnson is the founder of the National Wildflower Research Center in Austin, Texas. The primary object of the Center is to conduct basic scientific research on native and naturalized plants in an attempt to answer questions about their cultivation. A national information clearinghouse that will distribute information about wildflower products, projects, problems and research is also planned. In addition to her work with the National Wildflower Research Center, Mrs. Johnson is an active board member of the National Geographic Society, The National Park Service Advisory Council and the American Conservation Association.

The Society's coveted Liberty Hyde Bailey Medal was awarded to Elizabeth Scholtz, Vice President of Brooklyn Botanic Garden, Brooklyn, New York. From 1960 to 1971, Scholtz was in charge of the Garden's extensive Adult Education Program. Scholtz then served as Director of the Garden from 1971 until 1980. Her work with dye plants led to a *Plants & Gardens* handbook on the



Elizabeth Scholtz



Dr. Paul Bigelow Sears



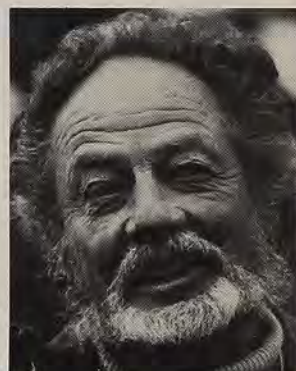
Margaret Kane



Jack E. Christensen



Rachel Snyder



Lawrence Halprin

subject, as well as a documentary film produced by the Botanic Garden, *Nature's Colors—The Craft of Dyeing With Plants*. A graduate of South Africa's University of Witwatersrand, Scholtz has also received honorary degrees from Pace University and Long Island University. In 1981, she was awarded Swarthmore College's distinguished Arthur Hoyt Scott Garden and Horticulture Award for having "devoted her career to inspiring people's interest in horticulture—from the smallest child to fellow professionals." Scholtz, a noted lecturer and author on horticultural topics, is also on the Visiting Committee of Old Westbury Gardens and the Board of Magnolia Tree Earth Center. Currently, she is Chairman of the American Association of Botanical Gardens and Arboreta Publication Awards Committee.

Dr. Paul Bigelow Sears was the recipient of the G. B. Gunlogson Medal, awarded each year to an organization or individual whose creative use of new technology has made gardening easier and more enjoyable. Emeritus Head of Yale University's Department of Conservation, 92-

year-old Sears is still actively studying restoration and preservation of the best grasses and grains for the central and western United States. He has recently rediscovered the use of grama grass, which is an excellent food for cattle, as well as a valuable ground cover in the desert Southwest. Sears has also had an important influence in developing native plants into useful horticultural subjects; his experimentation has spanned six decades. Sears is the recipient of eight honorary degrees and numerous awards.

The Amateur Citation was awarded to Margaret Kane, an avid horticulturist who has lived in the San Antonio area for over 15 years. An exceptional gardener, she has shared much of her knowledge with the public through a regular newspaper column and is active in her local garden club, the American Hemerocallis Society and the San Antonio Botanical Society.

Jack E. Christensen, Director of Research at Armstrong Nurseries, Inc., is this year's recipient of the Individual Commercial Citation. Christensen has helped develop numerous culti-

American Horticulturist

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vars of roses and fruit trees, including well-known All-America Rose Selections winners 'White Lightnin'', 'Mon Cheri' and 'Brandy'. He has also introduced numerous miniature roses. Christensen serves on the Board of Trustees of the National Association of Plant Patent Owners and is Chairman of the All-America Rose Selections Schedule Committee.

Lawry's California Center, a 15-acre complex in Los Angeles, California that includes the corporate headquarters of Lawry's Foods, Inc., is the recipient of the Corporate Commercial Citation. The gardens, found throughout the complex, are a renowned showcase for exotic plantings and colorful flowers. According to garden creator and AHS Board Member Georgie Van de Kamp, the plantings at Lawry's are designed to achieve the "informality of a restful, colorful garden, where the visitor can relax and dream, and appreciate the calm and serenity about him."

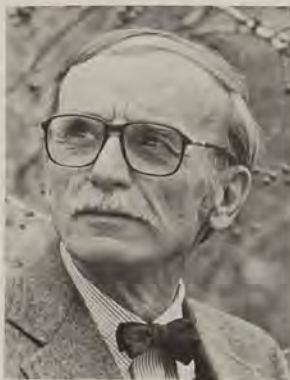
Rachel Snyder, recipient of the Horticultural Writing Citation, is the editor of *Flower & Garden Magazine*. An avid gardener, garden writer and lecturer, Snyder is a former director of the American Horticultural Society, a founding member of the Kansas Wildflower Society, and a member of numerous conservation organizations.

Lawrence Halprin was presented with the Landscape Architecture Citation in recognition of his many award-winning designs. His landscapes include Battery Park City, New York, New York; Seattle Freeway Park, Seattle, Washington; and Ghirardelli Square, San Francisco. He is also a noted author in his field, the recipient of numerous landscape awards, and an advisor to the National Endowment for the Arts.

The Local Horticulture Citation was awarded posthumously to Carroll Abbott, a remarkable individual who devoted much of his life to saving Texas' wildflowers. Author of *How to Know and Grow Texas Wildflowers*, he also established a family-operated wildflower mail-order business called Green Horizons. In addition to growing his own seeds, he collected hundreds of pounds of a wide variety of wildflower seeds from city parks, airports, ranches and highway rights-of-way. He was considered the premier seed dealer in the world in Texas species.



Lawry's California Center



Carlton B. Lees



Dr. Marion T. Hall



Lester P. Nichols

Carlton B. Lees was awarded the Society's Meritorious Service Citation in recognition of his lifelong commitment to horticulture. A former senior vice-president of the New York Botanical Garden, Lees has also served as Executive Director of the Massachusetts Horticultural Society and the Pennsylvania Horticultural Society, as well as a board member of the American Horticultural Society. A noted writer, lecturer, designer and photographer, he was instrumental in restoring the New York Botanical Garden's Enid A. Haupt Conservatory.

The Professional Citation was awarded to Marion T. Hall, Director of the Morton Arboretum in Lisle, Illinois. In addition to directing the 1,500-acre Arboretum, Hall is a Professor of Horticulture at the University of Illinois, and is on the board of directors of The Joyce Foundation. He formerly served as Chairman of the Natural Resources, Illinois Planning and Conservation League and as Director of Northeast Illinois Natural Resources Service Center.

Lester P. Nichols, recipient of the Scientific Citation, is best known for his annual survey of flowering crabapples. By collecting information on the disease resistance and performance of crabapple cultivars across the country, Nichols has been instrumental in promoting knowledge about disease-resistant plants. He is responsible for the availability of many of these cultivars in the trade. Nichols is Professor Emeritus of Plant Pathology Extension at The Pennsylvania State University. His articles have appeared in many scholarly publications.

Mr. and Mrs. C. Roy Boutard were awarded the Teaching Citation in recognition of their devoted service to the Berkshire Garden Center in Stockbridge, Massachusetts. Mr. Boutard has staged outstanding exhibits at the old New York Flower Show and at the Boston Spring Flower and Garden Show. Mrs. Boutard has directed an innovative teaching program for inner-city children in Pittsfield, Massachusetts.



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Plants Wanted

Members who are growing or who have access to any of the plants in this month's column are invited to help their fellow members locate seed, plants or cuttings of their "Plants Wanted" by writing directly to the addresses listed below.

Please send your "Plants Wanted" lists, including genus, species, common name and a brief description, to "Plants Wanted" in care of the Society. Please type or print neatly. We will publish them on a space-available basis.

• *Bactris gasipaes*, peach palm or pejiabay, a densely spiny, 60-foot palm with 12-foot fronds. Probably from Peru, and cultivated as an ornamental in Hawaii. *Maximiliana maripa* (formerly *M. regia*), cucurbit palm, inaja palm, a 60-foot palm from Trinidad and northeastern South America. Its 20-foot fronds are used for thatching. Pamela S. Bone, Urban Horticulture Advisor, 4145 Branch Center Road, Sacramento, CA 95827.

• *Chionanthus virginicus* 'Floyd', fringe tree, an upright selection of the species that was introduced by Professor Joseph McDaniel of the University of Illinois. Dr. David Wilcox, 5266 Lexington Road, Memphis, TN 38119.

• *Prunus* × *ivensii*, a small, vigorous, weeping crabapple with snow-white, fragrant flowers. Dee Hamilton, 2300 Delaware Avenue, Wilmington, DE 19806.

• *Hydrangea aspera* subsp. *sargentiana* (also listed as var. *sargentii*), a subspecies with broadly ovate leaves that are 12 inches long and velvety beneath. Cheryl Wetter, 6 Snug Hill Court, Potomac, MD 20854.

• *Scraphoglottis lurida*, piggyback orchid. Jean Schroder, 1543 Michigan Avenue, Salt Lake City, UT 84015.

• *Ipomoea*, morning-glories. Looking for a variety of cultivars from old seed catalogues, including 'Super Giant Gentian Blue', similar to 'Heavenly Blue' but darker in color; 'Super Giant Red Dawn', a deep rose with a white throat; 'Double Flowering Blue', star-shaped, 2½-inch, violet-

blue flowers with white edges; 'Candy Pink'; 'Cornell'; 'Madam Anna'; 'Royal Crown Mixture'; 'Sunrise Sere-nade Double Mixture'. **Melon**

'Zucca', a very sweet cultivar of melon. Mrs. H. Whittenburg, 6450 Heintz Road, St. Louis, MO 63129.

• *Allium agrigatum*, a species of ornamental onion. **Melenium** 'E-l-len Champion', a cultivar of sneeze-weed. Mr. C. D. Miley, 207 Old Land-ing Road, Ocean City, MD 21842.



Join Us in Los Angeles

Explore the amazing horticultural diversity of Los Angeles at the American Horticultural Society's 1985 Spring Symposium, March 20-23. We'll visit private gardens open only to AHS Spring Symposium participants, and we'll enjoy behind-the-scenes tours of the city's beautiful public gardens.

Los Angeles offers a wonderful variety of experiences for the gardening enthusiast—from the breathtaking camellia forest of Descanso Gardens to the Los Angeles County Arboretum's comprehensive displays of drought-tolerant plants. . . . from a tiny but glorious privately owned tropical garden to the formal-garden splendor of the Getty Museum. For special advance information about the 1985 Spring Symposium, please write to Robin Williams, AHS, P.O. Box 0105, Mount Vernon, VA 22121, or call her at (703) 768-5700.



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* **THE ABC'S OF HYDROPONICS**, Margot Schubert. Only book to feature the newest equipment. Do away with inefficient watering systems, crowded containers, unreliable water level indicators. Packed with 133 spectacular color photos, it covers: transplanting, adaptability, feeding, housing, pruning, lighting, common mistakes, etc. Best book available. 128 pp. *Paper \$7.95 retail, \$6.35 to AHS members.*

* **BONSAI: THE COMPLETE GUIDE TO ART AND TECHNIQUE**, Paul Lesniewicz. Truly magnificent! Combines 159 incomparable color photos, plus 200 illustrations with detailed text by Europe's top expert. Learn Bonsai styles, cultivation and training methods, general care, Chinese and indoor Bonsai and more including growing from seeds or cuttings, grafting, pruning, soil, problems, tools, etc. 192 pp. *Hardcover \$19.95 retail, \$15.95 to AHS members.*

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* **AN INTRODUCTION TO CACTI**, Danny Schuster. Everything you've wanted to know about cacti and more plus 125 spectacular color photos of cacti in bloom. Learn how to grow all varieties indoors and outdoors including light, temperature, moisture, soil, planting, etc. Bonus, over 30 genera covered with full descriptions of habitat, body, spines, flowers, propagation and species. 96 pp. *Paper \$8.95 retail, \$7.15 to AHS members.*

LEXICON OF SUCCULENT PLANTS, Hermann Jacobsen. Authoritative information on morphology, countries of origin, points of identification, arranged as a dictionary in one volume. Over 8600 species are covered, including rarities and problematic species, plus habitat studies, new information. 1,600 photos. 664 pp. *Hardcover \$37.50 retail, \$30.00 to AHS members.*



THE LORE OF FLOWERS, Neil Ewart, Illustrated by Nina O'Connell. With 44 pages of exquisite—and accurate—full-color paintings of common plants, and 22 pages of pen and ink drawings of many more, this romantic book tells the stories behind the flowers: their folklore, history, how they got their names. It also reveals the "language of the flowers," explaining their meanings and significance in times past. 192 pp. *Hardcover \$19.95 retail, \$15.95 to AHS members.*

Prepaid orders to the attention of Jeanne Eggemann, American Horticultural Society, PO Box 0105, Mount Vernon, VA 22121. Virginia residents add 4% sales tax. Postage and handling is an additional \$1.75 per book; 3 or more books shipped postage free. Make checks payable to the American Horticultural Society.

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Chrysanthemum Dolls Exhibited

Japanese chrysanthemum dolls, called *kiku-ningyos*, will be constructed and exhibited outside Japan for the first time in history this November. Nine of these life-size dolls will be featured at the New York Botanical Garden's Fourth Annual Kiku-Ka Ten: A Japanese Chrysanthemum Exhibition, to be held November 3 through 25 at the Garden's Enid A. Haupt Conservatory.

First created in Tokyo in 1804, chrysanthemum dolls are an intricate art form. They have become a very popular attraction at the chrysanthemum festivals held annually throughout Japan.

Three *kiku-ningyo-shi*, or Japanese chrysanthemum doll-makers, arrived in New York in October to begin construction of the dolls. Two of these craftsmen are 65 years old; the third, who has been declared a "living national treasure" by his government, is 85. There are only 26 qualified *kiku-ningyo-shi* in all of Japan.

The dolls are constructed of a bamboo frame covered by hundreds of blossoming, flexible-rooted chrysanthemums. The dolls' hands, feet and faces are made from sawdust formed into a paper-maché-like material. Accouterments such as pocket-books, shoes, sashes, scarfs and swords are added to the striking, life-like figures.

The nine dolls will be displayed in six separate scenes that depict different Japanese customs or fables. As part of the exhibition, the doll-makers will change the flowers on the dolls approximately once a week.

Five of the 11 glass galleries at the Enid A. Haupt Conservatory will be devoted to the Chrysanthemum Exhibition, an exact replica of the chrysanthemum festivals held throughout Japan. Ten thousand chrysanthemums in all will be on display. In addition to the dolls, chrysanthemum patterns, or *kiku*, will be exhibited. These "patterns" include single-stem, single-bloom and three-stem, three-bloom chrysanthemums, as well as plants trained into cascades, columns and bonsai. There will also be plants trained in the "thousand bloom" pattern, with each single-stem plant trained into branches that produce hundreds of blooms of



A doll-maker weaves chrysanthemum blooms into the bamboo frame of one of the Japanese chrysanthemum dolls that will be exhibited at the New York Botanical Garden's, Enid A. Haupt Conservatory, November 3 through 25.

the same size, all of which open simultaneously.

For more information on the dis-

play, write or call the New York Botanical Garden, Bronx, NY 10458, (212) 220-8700.

AHS 1985 Study Travel Tour Program

The American Horticultural Society is sponsoring an exciting program of horticultural explorations for the 1985 season. Plan to join fellow AHS members on one or more of these interesting garden-related tours. Use the coupon below to request information on any of these tours.

Virgin Islands Cruise (January 6-13) Tour St. John and the British Virgin Islands, and visit private gardens and famous landscaped resorts.

Carnival in Rio (February 1-22) Cruise to Brazil to experience Carnival in colorful Rio de Janeiro, and tour beautiful Brazilian gardens, including ones designed by Roberto Burle Marx. Tour Leader: Carlton Lees, Retired Vice-President of the New York Botanical Garden.

Barbados Exploration (February 22-March 1) Explore this small Caribbean island, and tour areas of botanical interest, including Welchman Hall Gully and Andromeda Gardens. Tour Leader: Everitt Miller, Former Director of Longwood Gardens.

Hawaii (March 4-16) Tour Hawaii's experimental gardens and arboreta, as well as unique nurseries, private gardens and estates. Tour Leader: Ernie Chew, Former Horticulturist of the San Diego Zoo.

Spring Gardens of the Southern United States (March 30-April 21) Visit the most beautiful gardens in New Orleans, Natchez, Savannah, Charleston and Atlanta during the spring blooming season. Tour Leader: Mildred Mathias, Emeritus Professor of Botany, UCLA.

Spring in the Mediterranean (April 8-24) Cruise the Mediterranean and stop at ports in Greece, Turkey and Yugoslavia during the height of the spring wildflower season. Tour Leader: Alfred Evans, Assistant Curator of the Royal Botanic Gardens, Edinburgh.

Belgium & Holland by Road & Waterway (April 21-May 4) Visit Brussels and the Royal Botanical Gardens, and see the Tulip Festival in Haarlem and the Floralties in Ghent. A barge trip on the canals of Holland during tulip time is also planned. Tour Leader: Richard Hutton, President of the Conrad-Pyle Company.

England & the Chelsea Flower Show (May 16-30) Tour public and private gardens in England during the spring blooming season, and visit the famed Chelsea Flower Show. Tour Leader: John Clayton, Retired Curator of Horticulture, Royal Horticultural Society.

Romantic France (June 1-10) Visit the gardens of Princess Sturdza and the Comte de Brogue's chateau in Normandy. Stop in Giverny for a visit to Monet's garden and house, and explore Paris.

Fabled Gardens of China (June 10-27) Explore the Chinese garden cities of Suzhou and Hangzhou, and visit the Ming Tombs and the Great Wall in Peking. Tour Leader: Edwin T. Morris, author of *Gardens of China*.

Tropical Ecology: The Amazon (June 26-July 15) This tour provides an in-depth look at the plant and animal life in remote, undisturbed habitats along the Amazon. This is a wilderness experience for the adventurous traveler only. Tour Leader: Mildred Mathias, Emeritus Professor of Botany, UCLA.

Gardens of Gertrude Jekyll (July—dates uncertain) Tour the gardens of Gertrude Jekyll during a mid-summer visit to England. Tour Leader: Carlton Lees, Retired Vice-President of the New York Botanical Garden.

South Africa (September 10-29) Tour the Drakensburg Mountains, Kruger National Park, Durban, Kirstenbosch and other public and private gardens. Tour Leader: Ernie Chew, Former Horticulturist of the San Diego Zoo.

Autumn in England (September 11-26) Visit the Royal Horticultural Society's Great Autumn Show, and tour the rolling, unspoiled English countryside. Tour Leader: John Clayton, Retired Curator of Horticulture, Royal Horticultural Society.

France (October—dates uncertain) Tour the vineyards and sample the wines of Burgundy and Bordeaux. Tour Leader: Rob DeFord, Winemaker of Boordy Vineyards, Maryland.

Autumn in the Orient (November 1-20) Visit private gardens in Japan, the temple gardens in Kyoto, autumn chrysanthemum festivals, and gardens in Taiwan and Hong Kong. Tour Leader: Robert Savage, frequent escort of Society tours.

YES! Please send me more information on the tours I have checked below.

- Virgin Islands Cruise
- Carnival in Rio
- Barbados Exploration
- Hawaii
- Spring Gardens of the Southern United States
- Spring in the Mediterranean
- Belgium and Holland by Road and Waterway
- England and the Chelsea Flower Show
- Romantic France
- Fabled Gardens of China
- Tropical Ecology: The Amazon
- Gardens of Gertrude Jekyll
- South Africa
- Autumn in England
- France
- Autumn in the Orient

Name _____

Address _____

City _____ State _____ Zip _____

Mail to: Robin Williams, American Horticultural Society, PO Box 0105, Mount Vernon, VA 22121.

Gardener's Dateline

NOVEMBER 3

Native California Plant Sale

Rancho Santa Ana Botanic Garden, Claremont, California. Hours: 8 a.m. to 2 p.m. Information: Education Department, Rancho Santa Ana Botanic Garden, 1500 North College Avenue, Claremont, CA 91711, (714) 626-1917.

NOVEMBER 3-4, 10-11

Exotica Seed Company Rare Fruit Tasting

Exotica Seed Company, 2508 B. Riviera Drive, Vista, California. Hours: 9 a.m. until dusk. Information: Exotica Seed Company, 2508 B. Riviera Drive, Vista, CA 92083, (714) 724-9093.

NOVEMBER 7-9

National Agricultural Career Show

H. Roe Bartle Exhibition Hall, 301 West 13th Street, Kansas City, Missouri. Information: Future Farmers of America, PO Box 15159, Alexandria, VA 22309, (703) 360-3600.

NOVEMBER 8-10

American Camellia Society Fall Meeting

Perry, Georgia. Information: American Camellia Society, Box 1217, Fort Valley, GA 31030, (912) 967-2358.

NOVEMBER 10-11

Plantation Days

Plantation Stableyards at Middleton Place, Charleston, South Carolina. Hours: 10:00 a.m. to 5:00 p.m. Admission: Adults \$6.00; Students \$4.00; Children 4-12 \$3.00. Information: Middleton Place, Rte. 4, Charleston, SC 29407, (803) 556-6020.

NOVEMBER 10

American Daffodil Society Fall Middle-Atlantic Regional Meeting

Annapolis, Maryland. Admission: \$30. Information: Mrs. Harris George, 614 W. Timonium Road, Lutherville, MD 21093.

NOVEMBER 14

Day-Long Conference: "Plant Potential: An Update on Trees and Shrubs for the Urban Environment"

New York, New York. Information: NY Dept. of Parks & Recreation, The Arsenal, Central Park, New York, NY 10021, (212) 360-8193 or 360-8194.

NOVEMBER 15-18

41st Annual National Chrysanthemum Society Meeting and Show

Union Plaza Hotel, Las Vegas, Nevada. In-

formation: Ms. Bonnie Sue Mulligan, 4271 East Twain Ave., Las Vegas, NV 89121, (702) 451-3394.

NOVEMBER 17-20

American Society of Landscape Architects 84th Annual Meeting and Educational Exhibit

Phoenix Civic Plaza, Phoenix, Arizona. Information: Linda Robertson, ASLA, 1733 Connecticut Ave., NW, Washington, DC 20009, (202) 466-7730.

DECEMBER 1

New York Botanical Garden Symposium—

"Integrated Disease and Pest Management: Focus on Horticultural Crops"

The New York Botanical Garden, Bronx, New York. Admission: \$75 for day-long seminar. Information: Education Department, The New York Botanical Garden, Bronx, NY 10458, (212) 220-8743.

Gardening Exhibit Opens



Springtime in the Country, a hand-colored wood engraving first published in *Harper's Weekly*, May 9, 1868.

The Strong Museum in Rochester, New York has a new exhibit, scheduled to run through January 1985, that will interest gardeners and garden historians alike. Titled "Gardening in America, 1830-1910," the three-part exhibit is designed to show how the Industrial Revolution, scientific discovery and the resulting increases in both middle-class spending power and leisure time helped make gardening popular. The first section of the exhibit examines our traditional perceptions of the garden. The second section explores how gardening was promoted by science and the Industrial Revolution as

America became a consumer-oriented society. Finally, the third section examines the various aspects of American gardening during this era. The exhibit includes approximately 250 items, including garden furniture, tools, advertising pieces, food processing tools, prints, photographs and other graphic materials.

For more information on the exhibit, write or call the Strong Museum, One Manhattan Square, Rochester, NY 14607, (716) 263-2700. A 96-page, illustrated catalogue of the exhibit is also available for \$9.95 per copy. To order, write the Strong Museum Shop at the above address.

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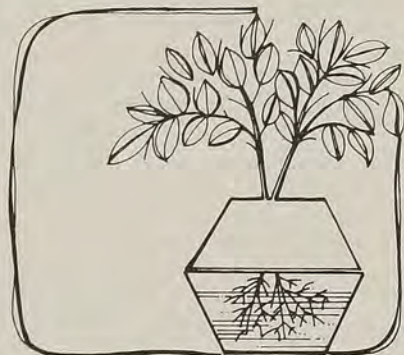
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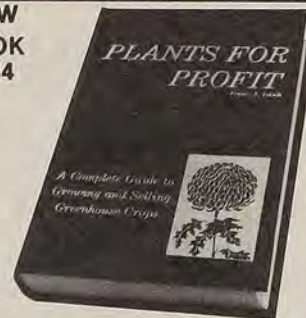
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Endangered Plant Update

The U.S. Fish and Wildlife Service has added six plants to the list of Endangered Species, and has proposed 11 species for listing as Endangered or Threatened.

Agave arizonica, Arizona agave, has been listed as Endangered. Fewer than 100 plants of *A. arizonica* are known to exist in the wild, and all of these are found only in a small area in the New River Mountains in central Arizona. The species is an attractive succulent that bears pale yellow, jar-shaped flowers. It is threatened by collecting for both private gardens and the commercial trade, as well as browsing by deer and cattle. Browsing is especially harmful because the animals eat the flowering stalks of the plant before they mature and distribute seed, and thus contribute to the poor reproductive success of the species. Critical Habitat was not designated for the species, because publication of the exact location of the plants would increase the threat of collecting and vandalism.

Cowania subintegra, Arizona cliffrose, has also been listed as Endangered. The flowers of this evergreen shrub are small and yellow or white. The leaves, twigs and flowers are covered with dense, short, white hairs. Arizona cliffrose is known from only two small populations (one in Mojave County and the other in Graham County, Arizona) totaling about 700 plants. The species is threatened by mining, road maintenance procedures, and browsing by cattle, deer and feral burros. Critical Habitat was not designated for the species to avoid increasing threats due to collection and vandalism.

Jatropha costaricensis, Costa Rican jatropha, is known from only one population of less than 50 individuals. The species, which has been listed as Endangered, is found only on steep, rocky limestone slopes along the Pacific coast of Costa Rica. It is threatened by dry-season fires, trampling by cattle and potential development.

Cereus robinii, key tree-cactus, is the largest of Florida's native cacti. This species, which has been listed as Endangered, grows in erect clumps that reach a height of approx-

imately 25 feet, and produces attractive white to green or purplish flowers. *C. robinii* is threatened by collection by hobbyists and commercial plant dealers, and, more importantly, by habitat destruction due to residential and recreational development. Because collection is a threat, Critical Habitat was not designated for the species.

Dyssodia tephroleuca, ashy dogweed, is a grassland species from southwestern Texas that has been listed as Endangered. Approximately 1,700 individuals of the species, along with other relict grassland species, survive on a single acre of private land in Zapata County. The leaves of this perennial species are covered with soft, wooly, ashy-white hairs and emit a pungent odor when crushed. In addition to grazing, ashy dogweed is threatened by vandalism and collecting. Because of the latter two threats, Critical Habitat was not designated.

Eriogonum pelinophilum, clay-loving wild buckwheat, is a small subshrub native to Colorado. Listed as Endangered, it is primarily threatened by grazing and land conversion for agriculture.

Amsinckia grandiflora, large-flowered fiddleneck, has been proposed for listing as an Endangered Species. An annual species with bright red-orange flowers borne in fiddlehead-shaped inflorescences, *A. grandiflora* is known from only one half-acre site in San Joaquin County, California. Very little is known about the ecology and life history of this plant, which has an unusual reproductive system that may contribute to the rarity of the species. Other threats include conversion of habitat to agriculture, and explosives testing in the area.

Townsendia aprica, Last Chance townsendia, is a perennial that grows less than one inch tall. Proposed as Endangered, this member of the sunflower family forms a dense, low mat, and produces three-quarter-inch flower heads with yellow ray florets. Only 220 individuals are known to exist. The species, which has never been abundant, occurs on heavy clay soil underlain by coal, and thus is threatened by off-road vehicles, oil

and gas exploration, and cattle grazing and trampling.

Cirsium vinaceum, Sacramento Mountains thistle, is a tall perennial species that bears many purple flower heads during July and August. Known only from 14 populations in the Sacramento Mountains in central New Mexico, the species is threatened by livestock, water development, competition with introduced plant species, road construction, logging and recreation. Most of the remaining plants are found in the Lincoln National Forest. The species has been proposed as Threatened.

Acanthomintha obovata subsp. *duttonii*, San Mateo thornmint, only exists in one small population near Redwood City, California. Although this subspecies was once found throughout San Mateo County, all other populations except the one have been destroyed by urban development, road construction and other development activities. The remaining population, which exists in a county park, is threatened by unauthorized and uncontrolled recreational activities, and there is also evidence that plants have been collected. San Mateo thornmint, which is listed by the State of California as an endangered species, has been proposed for a federal Endangered status.

Asclepias welsbii, Welsh's milkweed, is found only on the Coral Pink Sand Dunes in southern Utah. A perennial with oval leaves and cream-colored flowers, this member of the milkweed family grows only on sparsely vegetated sand dunes. Off-road vehicles and livestock grazing threaten the approximately 8,500 remaining individuals. Another threat to the species, which has been proposed as Endangered, is the fragile nature of its habitat; the dunes are easily destroyed by activities on adjoining lands.

Goetzea elegans, beautiful goetzea, is an evergreen shrub that is found in the semi-evergreen seasonal forests in the northern part of Puerto Rico. Only 59 individual plants of this species remain. Road construction, trimming of roadside vegetation and conversion of forest to pasture threaten *G. elegans*, which has been

proposed as Endangered. Blooming plants had not been observed from 1936 until recently.

Astragalus humillimus, Mancos milk-vetch, is a fragrant, lavender-flowered, mat-forming perennial currently found only in three populations on a single ridge in San Juan County, New Mexico. The species, which does not tolerate habitat disturbance well, is threatened by oil and gas well maintenance procedures, off-road vehicles and oil exploration. It has been proposed as Endangered.

Solidago spithamea, Blue Ridge goldenrod, is found only on high mountain peaks in North Carolina and Tennessee. This lovely goldenrod, which is known from only three populations, has been proposed as Endangered. The population decline of the species has primarily been caused by construction of observation platforms, trails, parking lots and roads on the mountain peaks where the species once thrived. Disturbance by hikers is also a problem.

Dicerandra immaculata, Lakela's mint, is a low-growing, dome-shaped shrub found only on the Atlantic coast between Vero Beach and Fort Pierce, Florida. Only 10 colonies of this lavender-rose- to purplish-flowered plant remain. The species is threatened by a fungal disease that affects the seeds, as well as by sand mining and commercial and residential development. *D. immaculata* has been proposed as Endangered.

Buxus vablii, Vahl's boxwood, is a native Puerto Rican species with only 40 individuals remaining in the wild. Urbanization, limestone mining and other kinds of potential habitat destruction threaten the existence of the species. *B. vablii* is an evergreen with dark, shiny, oblong leaves. It reaches a height of approximately 15 feet and has a very narrow ecological niche; it is restricted to ravines and ledges in semi-evergreen forests. The species, which is also threatened by collection, has been proposed as Endangered.

Erigeron maguirei var. *maguirei*, Maguire daisy, is a small, five-inch perennial that blooms in June. It is perhaps the rarest plant in Utah; only seven plants are known to exist. These plants are on land administered by the Bureau of Land Management and are threatened by oil and gas exploration, mineral claims and grazing.

Endangered Wildflowers 1985 CALENDAR

Help save our endangered wildflowers by purchasing the American Horticultural Society's 1985 Endangered Wildflowers Calendar. Funds raised from sales will be used to support conservation projects.

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Among the high quality of lecturers and staff on board of historians, artists, and scientists is Alfred Evans, Assistant Curator of the Royal Botanic Garden, Edinburgh, Scotland. A delightful gentleman, he has frequently cruised this area. Also accompanying our group is Harold Epstein, former Board Member of the American Horticultural Society and the American Rock Garden Society.

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Other Explorations in 1985 include Barbados, China, Spring and Fall England, Fall Orient, and Romantic France.

Nursery Source Guides Published

• **Nursery Sources for Native Plants.** The New England Wild Flower Society has published a 53-page guide entitled *Nursery Sources: Native Plants and Wild Flowers*. The guide, which lists over 193 nurseries in every region of the country except Alaska and Hawaii, indicates the percentage of plants sold that are propagated or collected from the wild, or that are obtained from unknown sources. The listings are divided into six regions for easy reference.

To order a copy of *Nursery Sources: Native Plants and Wild Flowers*, send \$3.50, including postage and handling, to New England Wild Flower Society, Department NS, Garden in the Woods, Hemenway Road, Framingham, MA 01701.

• **Seed and Nursery Directory.** The Rural Advancement Fund has published a directory of sources for traditional cultivars of vegetables, fruits, nuts and other plants. The 22-page *Seed and Nursery Directory* lists 37 companies that offer old vegetable cultivars. In addition, it lists several non-profit organizations that are involved in the fight to save old garden cultivars, as well as specialty seed companies and sources for native plants. Also included are a seed-saving glossary, a chart detailing how to harvest and save seed from common vegetable plants, information on seed banks and a suggested reading list.

To order a copy of the Rural Ad-

vancement Fund's *Seed and Nursery Directory*, send \$2.00, including postage and handling, to Seed and Nurs-

ery Directory, Rural Advancement Fund, PO Box 1029, Pittsboro, NC 27312.

Citrus Oil Kills Insects

Orange peels may be the insecticide of the future. Researchers at the University of Georgia's Coastal Plain Experiment Station at Tifton have found that citrus oil has tremendous insect-killing power. Thus far, it has been proven effective against fire ants, flies, fleas and wasps.

Although the researchers have not yet isolated the substance in citrus oil that kills insects, they have identified one of the citrus oil components. According to David C. Shepard, who is directing the studies, several other components are probably involved. Scientists have yet to determine how strong the oil is in its pure form, how much it will cost to produce, and what species of insects are vulnerable to the oil.

Crushed orange peels are not as potent as some insecticides now on the market. However, experiments indicate that the citrus oil fumes released from a scratched orange are enough to kill flies. One company that uses discarded orange peels to make industrial hand cleaner has discovered that the mixture of peels and fluid it obtains from juicing

factories can kill fire ants.

Researchers have focused their studies on oranges largely because of the fruit's availability; lemons, limes and grapefruits also contain citrus oil. [Editor's note: I found scratched lemon peels to be very effective in killing fungus gnats in a terrarium.]

—*Indoor Citrus & Rare Fruit Society Newsletter, Spring 1984*

Protect Sculpture

The Avant Gardener reports that Brookgreen Gardens in Murrells Inlet, South Carolina protects and preserves its stone and metal sculpture by washing it three times a year with a mild soap (such as Ivory) and a soft rag or brush, and then rinsing thoroughly. After drying, stone sculpture is treated with Hydrozo Clear, a water repellent available from Hydrozo Products (414 30th Avenue North, Myrtle Beach, South Carolina 29577). Metal sculpture is coated with Traffic Wax, made by the Johnson Wax Company.

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