

AMERICAN HORTICULTURIST

JUNE 1982



THIS GEICO PREFERRED RATE REQUEST FORM IS BROUGHT TO YOU BY AHS FOR YOUR BENEFIT.

Send to: GEICO PREFERRED, GEICO Plaza, Washington, D.C. 20076

If student away at school, give distance from home

Name _____ miles _____
 Address _____ Apt. # _____
 City _____ State _____ Zip _____
 Phone () _____
 Name of current insurance company _____
 Date present insurance expires Mo. _____ Yr. _____ Employer _____ Yrs. _____
 Title / Grade _____ Yrs. _____
 If in present occupation less than 2 yrs. or retired, give former occupation: _____
 Years at current address _____ Previously insured by GEICO: Yes No

	CAR 1	CAR 2	CAR 3
Year & Make (Buick, Dodge, etc.)			
Model (Skylark, Omni, etc.)			
Body type: 2 dr., Sta. Wag., etc.			
No. of cylinders			
Est. Total Mileage			
Est. Annual Mileage			
Days per week driven to work, school or depot			
One way distance			
Is car used in business except to/from work?*			
Car location if different than mail address: City/State			

List All Drivers	Relation (Self)	Birthdate			Marital Status	M or F	Occupation	Percent of Use			Driver Training		Years Driving	Accidents in Past 5 years*		Traffic Convictions in Past 3 Years*		License Suspension*	
		Mo.	Day	Yr.				Car 1	Car 2	Car 3	Yes	No		Yes	No	Yes	No	Yes	No

*For accidents, traffic convictions, or license suspension, give dates and complete details, including cost of damages, on a separate sheet. Check for information on Homeowners Insurance Boatowners Insurance . Auto insurance not available in New Jersey or Massachusetts.

718

MEMBERS ONLY

HERE'S HOW AHS MEMBERS CAN TAKE FULL ADVANTAGE OF GEICO PREFERRED LOW-COST AUTO AND HOME INSURANCE.

As a society member, you are entitled to extra consideration for advantages like these:

LOW RATES FOR QUALIFIED DRIVERS.

GEICO PREFERRED insures those members of preferred groups—like AHS whose driving records are better than average. Better drivers cost GEICO less. And these savings result in low rates.

GUARANTEED ONE-YEAR RATE ON YOUR AUTO POLICY AS WRITTEN.

Many auto insurance companies now offer only 6-month auto policies. But as long as you don't change the conditions of your policy, GEICO PREFERRED rates are guaranteed to remain the same for a full year—so you don't risk having your rate increased after just 6 months.

LOW-COST HOME INSURANCE TOO.

Just check the appropriate box at the bottom of the coupon, and you will also receive free information on low-cost insurance for homeowners, renters and owners of condominiums. Your application will receive special consideration.

YOU CAN CUSTOMIZE YOUR OWN COVERAGE.

The coverages GEICO offers vary by state, but you have many options in putting together your car and home insurance packages, both in the amounts and kinds of protection. You also get a wide choice of convenient payment plans. GEICO auto insurance is not available in New Jersey and Massachusetts. Homeowners insurance is not available in New Jersey and Mississippi.

YOU GET GEICO PREFERRED TREATMENT.

All member inquiries receive prompt, preferential service by a GEICO PREFERRED Insurance Counselor.

**FOR A FREE RATE QUOTATION
 CALL TOLL FREE 1-800-368-2734
 In Maryland Call Collect (301) 986-3500**

Your AHS membership entitles you to special consideration for low-cost auto and home insurance. Good drivers, find out how much you may save. For a free rate quotation, call today. Or mail this coupon. No obligation. No salesman will call.

Judy Powell
EDITOR

Rebecca K. McClimans
ART DIRECTOR

Barbara W. Ellis
ASSOCIATE EDITOR

Steven H. Davis
Jane Steffey
EDITORIAL ASSISTANTS

Irene Polansky
PRODUCTION ASSISTANT

H. Marc Cathey
Gilbert S. Daniels
HORTICULTURAL CONSULTANTS

Gilbert S. Daniels
BOOK EDITOR

Louise Baughn
Cindy Weakland
ASSISTANTS TO THE EDITOR

May Lin Roscoe
BUSINESS MANAGER

Dorothy Sowerby
EDUCATIONAL PROGRAMS
COORDINATOR

Connie Clark
MEMBERSHIP SUBSCRIPTION
SERVICE

John Simmons
Chromagraphics Inc.
COLOR SEPARATIONS

C. Lynn Coy Associates, Inc.
55 Forest Street
Stamford, CT 06902
(203) 327-4626
ADVERTISING REPRESENTATIVE

Replacement Issues of AMERICAN HORTICULTURIST
are available at a cost of \$2.50 per copy.

The opinions expressed in the articles that appear in
AMERICAN HORTICULTURIST are those of the
authors and are not necessarily those of the Society. They
are presented as contributions to contemporary thought.
Manuscripts, art work and photographs sent for possible
publication will be returned if they are accompanied by a
self-addressed, stamped envelope.

AMERICAN HORTICULTURIST is the official
publication of The American Horticultural Society, 7931
East Boulevard Drive, Alexandria, Virginia 22308, (703)
768-5700, and is issued monthly. Membership in the
Society includes a subscription to AMERICAN
HORTICULTURIST. Membership dues start at \$20.00 a
year, \$12.00 of which is designated for AMERICAN
HORTICULTURIST. Copyright © 1982 by The
American Horticultural Society. ISSN 0096-4417. Second-
class postage paid at Alexandria, Virginia and at
additional mailing offices. Postmaster: Please send Form
3579 to AMERICAN HORTICULTURIST, Mount
Vernon, Virginia 22121.

Member of Society of National Association Publications

AMERICAN HORTICULTURIST

VOLUME 61 NUMBER 6



Rhododendron 'Edwina Mountbatten', one of several lovely types of Exbury azaleas Martha Prince discusses in her article on page 22. Photograph by Martha Prince.

President's Page: Sink or Swim in the Gene Pool?	2
Strange Relatives: The Myrtle Family by Jane Steffey	4
Book Reviews by Gilbert S. Daniels	6
Seasonal Reminders: Fern Propagation by David R. Longland	8
Thai Monastery Gardens by Charles Marden Fitch	12
Iris by Ann Branch Dasch	14
Selected Table Grapes by D. C. Paschke	21
Exbury and Its Azaleas by Martha Prince	22
A Man Who Loves Roses by Pamela Harper	28
Pronunciation Guide	35
Source List	36
American Gardens: A New Hampshire Woods in the City by Margaret A. Hensel	38
Gardener's Marketplace	42

On the Cover: *Iris sibirica* 'Dewful'. Photograph by Pamela Harper. For more about these lovely spring/summer perennials, turn to page 14.

SINK OR SWIM IN THE GENE POOL?

A French nursery catalogue of 1829 listed 2,562 cultivars and species of roses. Probably less than 50 of those plants can be found anywhere today—the rest are gone. They are not in botanic gardens or in commercial catalogues. Is this an irreparable loss, as some people are claiming, or is it simply the inevitable result of the horticulturist's constant effort to improve the plants we grow?

We all know about the great areas of the world's forests that are being cut down to make room for expanding agriculture. And there is no question in anyone's mind about the numbers of species that are rapidly becoming extinct because of this—probably in the tens of thousands, many of which have not even been recorded by science before they disappear. What plants we are losing, which might have been of great value to man, either as agricultural or horticultural material, we will never know. International efforts to protect endangered species are no doubt helping the survival of a few plants, but nothing is being done, and it seems certain that nothing will be done, to protect or even to record thousands of species that disappear under the tracks of the bulldozer.

When the wild plants that man is destroying are combined with the agricultural and horticultural cultivars that are constantly going out of fashion, the number of plants that disappear permanently from the face of the earth each year is truly devastating. Is there anything we can do about it, and should we do anything about it?

As in all things, it seems to me, reason must be applied to answer this question. Certainly, nations have every right and, in fact, a responsibility, to preserve their flora from the depredations of man. But a "dog-in-the manger" approach is not reasonable. The prohibition against taking plants out of a country while the bulldozers roll without restriction within its borders makes no sense at all. I've written about this problem in prior editorials, so I'll say no more at this point.

What I'm writing about today is the problem of preserving cultivars—cultivated varieties of plants created by man or carefully selected by man from a chance mutation in nature. Prior to 1900, more

than 2,000 varieties of peas were commercially available. Today there are probably less than 100. Is this a significant loss and can something be done about it? There are people who feel that all cultivars should be preserved, and in some plants of great agricultural importance such as rice and wheat, this is what is being done. Private and government seed storage facilities maintain stocks of viable seed of all possible cultivars of selected species to create a gene pool from which future plant breeders can draw genetic material. These storage facilities are limited however, and such storage is not a passive thing. You don't simply put a packet of seed in a refrigerator and forget it. Seeds have a limited life span under even the best of storage conditions. To maintain a viable stock, stored seed must be tested at regular intervals, and from time to time a new crop must be grown to harvest a new supply of fresh seed. There are finite limits to the number of cultivars that can be preserved in this way.

Another way to store plant genetic material is to maintain a growing specimen of the plant. Many botanic gardens do this for specialized collections of plants such as lilacs or cherry trees. But here again there are practical limits to the numbers of cultivars that can be handled. And not all horticultural species are represented in such collections, which brings me back to the 2,562 roses in the French nursery catalogue. Can we and should we try to preserve all of these cultivars? I believe the numbers themselves provide part of the answer. It simply is not physically possible to perpetuate every plant that man creates. If we tried to do it we would soon find ourselves "drowning" in the gene pool. Some common sense and expert opinion must be used to decide what should be saved. The "experts" won't always make the correct choice, but a knowledgeable selection should be based not only on aesthetic values, but also on a knowledge of potential disease and pest resistance and climatic adaptability. For many non-commercial collectors' plants, the "expert" is the knowledgeable amateur. Government seed storage facilities and scientific botanic gardens are doing their best to preserve the plant materials in which they special-

ize. Beyond that, the amateur gardener can do his bit by growing the plants of his special interest and keeping his documentation in good shape so that he knows what cultivars he is growing. A pretty plant without a label is rarely worth saving.

The amateur plant specialist often has a remarkable collection of his favorite plant growing in his yard or greenhouse. Such private collections should not be overlooked when considering the preservation of cultivars. The argument that the amateur does not have the continuity that botanic gardens can provide is not really valid. Individual researchers with varied interests come and go in the scientific institutions, and their plants usually go with them. Plants die in botanic gardens just as readily as in your yard.

What I'm saying is that we should do our best to preserve the gene pool for our cultivated plants, but that practical consideration must be given to selecting those plants that best deserve the limited means of preservation. There is only so much available space. After all, if the dinosaurs hadn't become extinct, would mammals ever have developed?

Gilbert T. Daniel

IN MEMORIAM

Tom Stevenson, who for many years was editor of *News & Views*, died in April at the age of 83. Known throughout the Washington area as garden editor for the *Washington Post*, Mr. Stevenson was also instrumental in the development of the Society. He wrote many book reviews for the Society's magazine and newsletter and served as an editorial consultant to both publications. He was also the recipient of the Society's Garden Writing Citation in 1978. The Society extends its condolences to Mr. Stevenson's family. His is a presence that will be greatly missed in the gardening world.



THE TIMELESS BEAUTY OF THE DIAMOND ROSE CAPTURED IN TIME BY BULOVA.



**FREE BONUS,
LIMITED OFFER,
MONEY-BACK GUARANTEE.**

An exclusive for rose lovers.

With the same pride, joy and limitless care you spend cultivating, protecting and refining your roses, Bulova has designed and created the *Diamond Rose*, captured the delicate beauty of your favorite bloom, then transformed their design into fine jewelry, combining it with the ultimate in modern time-keeping excellence.

We proudly present it to you, backed with Bulova's fine name and reputation. If you love roses, you'll cherish the *Diamond Rose*.

Limited Offer — With Special Bonus. Order Early to Avoid Disappointment

The *Diamond Rose*, will be shipped on a first come, first serve basis. This "heirloom quality" timepiece is a limited edition. Once it is sold out, it will never be reproduced again.

With all orders received not later than July 31, 1982, you receive absolutely FREE an EVERLASTING WOOD ROSE. It's hand-crafted of wood, with softness of bloom, true-to-life color and scent of the American Beauty Rose that's difficult to tell from the real thing. In its own handblown crystal bud vase, it becomes a marvelous decorator accent — valued at \$15. And it's yours FREE with purchase



of the *Diamond Rose*. But you must order early to avoid disappointment.

A Genuine Diamond. A Quartz Movement. One-Year Written Warranty.

The deeply embossed rose is finished with highly burnished edges, embellished by a genuine, 12-faceted, hand-set diamond resting like a dew drop on a delicately engraved petal. The total design is topped by Bulova's Dura-Crystal® which is specially treated for clarity and sharp focus.

This mastercrafted timepiece boasts a technologically advanced Quartz movement, accurate to within one minute per year. Which gives you the added advantage of a trouble-free, precise movement that never needs winding. Combine this with Bulova's written, one-year limited warranty, and you've got a uniquely personal but practical timepiece, one you'd expect to pay much more for at a fine jewelry store.

Costs less than you think. With choice of strap or bracelet.

Strap or bracelet is a matter of personal taste. The gilt rose dial is matched to an earthen-tone, satin-smooth authentic calf strap with golden buckle, at only \$118.50 each.

The silver dial has been created with integral, tapered mesh bracelet at just \$137.50 each. Each is plus \$5 postage and handling.

Money-Back Guarantee.

Call Toll Free.

To protect your *Diamond Rose* when you aren't wearing it, it will be delivered to you in an elongated, Pink Parfait velvet case. (Also ideal for an elegant gift presentation.)

You may keep it for a full 30 days. Wear it. Admire it. Check its beauty and accuracy. Should you decide to return it, your money will be refunded, including postage and handling. And the hand-crafted EVERLASTING WOOD ROSE is yours to keep anyway.

To assure your purchase, and to make an early reservation you may call us toll free at **1-800-453-3232 — Ext. 32...** or fill in and mail the coupon today. Major credit cards will be honored. Order early and you'll be right in style for the summer rose season. Allow 4 weeks for delivery.

But, order before July 31 to make certain you receive your FREE BONUS GIFT.

The *Diamond Rose* is a wonderful gift, too. But act quickly while they last.

**The Diamond Rose
P.O. Box 717
Darien, CT 06820**



I want to order
(check preference)

The Bulova Dia Rose w/strap
quantity @ \$118.50 each

The Bulova Dia Rose w/bracelet
quantity @ \$137.50 each

I enclose check or money order for _____

(Add \$5 postage and handling) NY State residents add appropriate sales tax.

Charge my purchase to: American Express
 MasterCard Visa Print Clearly

Card Number _____

Expiration Date _____

(Signature if ordering by credit card)

Name _____

Address _____

City _____

State _____ Zip _____

*This is a Limited Offer, Free Bonus,
Money Back Guarantee.*

AH682



THE MYRTLE FAMILY

Imagine a continent where 95 percent of the forests consist of just one kind of tree. Can this be? It can, indeed. Australia is the continent and eucalyptus is the tree.

The eucalypts are the dominant feature of the vegetation of Australia, accounting for approximately three-quarters of the total vegetation. There are about 500 species, which range in size from dwarfish shrubs called mallees to luxuriant trees of giant size. *Eucalyptus regnans* is the tallest hardwood in the world. The tallest of the softwoods, generally conceded to be the giant redwood of California, has not been authenticated as exceeding *E. regnans* in height. All the eucalypts are fast-growing evergreens belonging to the Myrtaceae, the myrtle family.

There is an irresistible appeal in the story of the eucalypts, not only to Australians but

also to many others intrigued by the versatility of this group of trees and shrubs now distributed worldwide in tropical or subtropical climates. The story begins in 1770 at the time of Captain Cook's first voyage to the Pacific. On the shores of Botany Bay on the east coast of Australia, the ship's botanist, Sir Joseph Banks, and his assistant, Carl Solander, collected the first eucalyptus specimen known to science, *E. obliqua*. It was not until 1789, however, that a botanical description was written and the name *Eucalyptus* was pro-



Eucalyptus ficifolia. Illustration by Kathleen Crawford.

posed for the genus by a French botanist. The name is derived from two Greek words, *eu* meaning "well" and *kalypto*, "I cover," in reference to the lid, or operculum, which seals the flower in its bud stage. This operculum distinguishes eucalypts from all other Australian flora.

The trees very early acquired the name "gum trees," which they have retained ever since. Many eucalypts exude a quantity of reddish substance much resembling gum, soft and sticky when fresh, rather sweet to the taste, and a hard, crumbly lump when

dry. It was this material, observed by inquisitive explorers, that prompted the common name gum tree. It is a misnomer, for no gum in the strict sense of the word is obtainable from any species. The correct term to apply to their resinous exudations and accretions is kino. Kino of eucalypts contains tannin and also has astringent properties useful in certain pharmaceutical applications.

Since their discovery, the variety, adaptability and usefulness of eucalypts have caused them to be widely planted throughout the world. Results of scientific investigations into their uses have exerted considerable influence upon the Australian economy and contributed much to the economy of other countries. Of approximately 500 species, over 70 are in cultivation in the United States. Indeed, much of the Southern Cali-

fornia skyline is dominated by gum trees. The first of them reached the United States in 1856. A Mr. Walker of San Francisco is credited with having brought seeds of 14 species from Australia. The first species widely planted was *E. globulus*, Tasmanian blue gum, which proved to be thoroughly at home. Over the years enormous numbers of blue gum were planted in expectation that it would be suitable as a source of sawn timber, a hope that was not realized.

Its great adaptability and its rapid growth

are important characteristics of the eucalyptus, especially in countries with poor forest resources and an urgent need for domestic sources of timber and fuel. Eucalypts can survive major disasters such as bush fires; they produce enormous quantities of seeds that can colonize on bare ground without shelter; and most species have subterranean organs called lignotubers that enable the tree to produce new shoots even if it has been destroyed above ground.

The quality of timber, coupled with rapid growth rate, regenerative powers and often great size, make *Eucalyptus* the most valuable source of hardwood in the world. The timber has many construction and industrial uses; the range of incidental uses seems unlimited, whether for furniture, railway sleepers, musical instruments, pulp for paper and fiberboard, mine props, tannin extracts, or perhaps only for firewood needed in bakeries or for firing kilns for pottery production.

Volatile or essential oils are present in the leaves of all species. Leaves are the only commercially important source of eucalyptus oil, which is obtained by a process of steam distillation. Although oils occur to some extent in bark, flower buds, flowers and young fruits of some species, fewer than 20 species have been exploited commercially. The oil industry began in Australia in 1852, and eucalyptus oils have since been produced in most of the countries where eucalypts are grown (although it has been discontinued as uneconomic in California). The oils produced can be grouped into three classes: medicinal, industrial and perfumery oils.

In Australia eucalypt flowers provide the main source of nectar and pollen for bees, and the quality of honey produced compares favorably with first-class honey produced elsewhere in the world from other plants. Twenty-one species have been listed as yielding honey in California, but there is great variation in quality from species to species.

Eucalyptus leaves are the exclusive diet of the koala, the endearing marsupial endemic to Australia. This marsupial is noted for his wholesome and pleasant smell, probably derived from the oil in his leafy diet. The koala is very discriminating in his choice of foliage, although he can live for quite a long time on the leaves of one particular species; for example, *E. viminalis* is the staple diet of the Victoria koala for at least 10 months of the year.

The leaves of several species, particularly those possessing a sweetish taste, are eaten by sheep, cattle and horses. *E. albens* is regarded as being one of the best for fodder.

Aborigines of Australia collected the astringent sap of some species as a substitute for drinking water in arid regions. They also ate the powdered roots of *E. dumosa* and others. *E. microtheca* is the "coolabah" immortalized in the song "Waltzing Matilda"; the seeds of this species were

Of approximately 500 species of Eucalyptus, over 70 are in cultivation in the United States. Indeed, much of the Southern California skyline is dominated by gum trees.

ground between millstones by aborigines and eaten raw or cooked in hot ashes.

Although widespread planting of the trees was prompted by economic considerations (and for such related uses as windbreaks, shelterbelts, roadside plantings, or draining swampy regions), the value of eucalypts for ornamental purposes has not been fully appreciated, even in their country of origin. A number of species are notable for their brilliantly colored flowers. Shapely crown, distinctive bark types, curiously shaped or sculptured buds and fruits, and glaucous foliage are additional features of landscaping potential.

Having no petals, the color of the flowers depends on the color of the prominent stamens—white or cream, or pink, red, scarlet or yellow—furnishing a glorious display in bloom. The fruit that follows is a woody capsule different in size and shape depending on the species and containing both fertile and infertile seeds usually of minute size.

E. globulus, Tasmanian blue gum, the most prevalent exotic type, is a handsome ornamental with large, dark-green, glossy, adult leaves that contrast with the very glaucous juvenile leaves and stems. It is a valuable shade and shelter tree often used for windbreaks and highway planting. It withstands marked extremes of temperature and drought. *E. globulus* 'Compacta' is a compact horticultural variety from California.

E. ficifolia, red-flowering gum, flowers profusely; sometimes the whole outside of

the crown is covered with masses of flowers ranging from brilliant scarlet to pink or cream.

E. tetraptera, commonly called square-fruited mallee, is an ornamental plant of about 12 feet, with large, scarlet, solitary, drooping buds and red or pink filamentous stamens. The fruit is large, scarlet and four-winged.

E. pyriformis, commonly called pear-fruited mallee, is a highly ornamental plant about 15 feet tall, with somewhat glaucous leaves, large, pendant, ribbed buds, crimson, pink or yellow filaments and large, ribbed fruits.

A very striking characteristic of eucalypts is that the trees develop different leaves at different stages of the life cycle. In the early phase, juvenile leaves lie opposite and often clasp the stem (sessile) or lack a leaf stalk. In the mature stage the leaf arrangement is alternate on the stem and the leaf hangs vertically and has no distinct upper and under side. The silver dollar tree or "blue spiral" (*E. pulex*) used by florists and flower arrangers is an example of a plant with glaucous, sessile, juvenile leaves.

These fascinating, colorful and valuable eucalypts are the most important genus of the Myrtaceae, the myrtle family. It is a large family concentrated in tropical or subtropical regions of America and eastern and southwestern Australia. *Hortus Third* lists 38 cultivated genera, all woody plants ranging from straggling shrubs to the lofty *Eucalyptus*. Altogether, there are approximately 80 genera and 3,000 species in the family. Myrtle family leaves are leathery, evergreen, usually opposite and typically entire; they are dotted with subepidermal glands containing oils resulting in the aromatic nature of the plants. Flower petals are sometimes so much reduced as to be virtually absent. It is the prominence of the abundant, filamentous stamens that accounts for the ornamental quality of blooming plants. The fruit is a fleshy berry, often edible, or a dry capsule.

Besides the well-known eucalypts, the myrtle family can boast of a number of other useful and ornamental members. Among these is *Myrtus*, on which the family name is based. It is a genus of about 100 species from the Old and New World. *Myrtus communis*, the true myrtle mentioned in the literature of the ancients, was a familiar species in the Mediterranean region during the period in which botanical

Continued on page 32

BOOK REVIEWS

IN AND OUT OF THE GARDEN.

Sara Midda. Workman Publishing Co. New York, New York. 1981. 127 pages; hardbound, \$14.95. AHS discount price, \$12.20 including postage and handling.

The author and illustrator of this delightful little book is also the compositor and the book designer, because all of the text is part of the many excellent watercolor drawings that go to make up this work. Random thoughts and practical suggestions in the text are illustrated with very competent and decorative drawings. Three major gardening categories into which the work is organized are the vegetable garden, the orchard and the herb garden. Without page numbers or an index, this is a book that is meant to be browsed through. Great fun for any gardener and a wonderful gift suggestion.



"What was Paradise but a garden?"
Illustration from *In and Out of the Garden*
by Sara Midda. Workman Publishing
Company.

CACTI AND SUCCULENTS

MAMMILLARIA—A COLLECTOR'S GUIDE.

John Pilbeam. Universe Books. New York, New York. 1981. 165 pages; hardbound, \$40.00. AHS discount price, \$35.00 including postage and handling.

THE COMPLETE HANDBOOK OF CACTI AND SUCCULENTS.

Clive Innes. Van Nostrand Reinhold Co. New York, New York. 1981. 224 pages; paperbound, \$11.95. AHS discount price, \$10.80 including postage and handling.

The many species of *Mammillaria* have always been among the most popular of cacti grown by the collector and the general gardener. The last authoritative review of the genus was Craig's *Mammillaria Handbook* published in 1945. Since that time, new species, extensive field work and botanical studies of the earlier species all have resulted in considerable reorganization and nomenclatural change within the genus. John Pilbeam has brought all of this information together in an excellent monograph of the genus *Mammillaria*. This new book is an essential reference work for the serious cactus grower. All species

are illustrated and described, and all former or invalid names are referred to the currently correct nomenclature.

The Complete Handbook of Cacti and Succulents is an unfortunate title for an excellent book by an author who is well known for his expertise in these plants. *The Comprehensive Handbook . . .* would have been a more correct title. Clive Innes gives good cultural information and descriptions for most of the genera and many of the more common species of succulent plants. Not all species are illustrated, but the abundant photographs clearly illustrate the many varied forms of cacti and succulents the author discusses. The plants are dealt with in four major chapters: epiphytes, North America, South America and the Old World. Because of the broad coverage of succulent genera, this book would be useful to even the more advanced specialist for quick reference and will serve as a basic guide to the less specialized grower. Highly recommended for anyone interested in growing cacti and succulents, and very good value for the money.

FOUR ON SOUTH AFRICA

KIRSTENBOSCH.

Brian Rycroft (Photography by Ray Ryan). Howard Timmins Publishers. Capetown, South Africa. 1980. 137 pages; hardbound, \$47.50. AHS discount, \$41.35 including postage and handling.

MOUNTAIN SPLENDOUR—THE WILD FLOWERS OF THE DRAKENSBERG.

R. O. Pearse. Howard Timmins Publishers. Capetown, South Africa. 1978. 239 pages; hardbound, \$37.50. AHS discount, \$32.85 including postage and handling.

WILD FLOWERS OF TABLE MOUNTAIN.

W. P. U. Jackson. Howard Timmins Publishers. Capetown, South Africa. 1977. 120 pages; hardbound, \$37.50. AHS discount, \$32.85 including postage and handling.

WILD FLOWERS OF THE FAIREST CAPE.

W. P. U. Jackson. Howard Timmins Publishers. Capetown, South Africa. 1980. 132 pages; hardbound, \$47.50. AHS discount, \$41.35 including postage and handling.

The native flora of South Africa is undoubtedly one of the most varied and beautiful anywhere in the world. For a visitor, a firsthand encounter is an unforgettable experience, and for a gardener in the warmer portions of the United States, the plants of South Africa present an opportunity to add hundreds of species of startling beauty to the garden. All four of these books are exquisitely produced collections of colored photographs. They do not repeat one another, but rather, each extends the presentation of the one preceding it.

Kirstenbosch is the national botanic garden of South Africa, but unlike most such institutions, it limits itself to the study and presentation of the native South African flora rather than the flora of the world.

Bryan Rycroft is the Director of Kirstenbosch, and he tells the story of the garden's history, its scientific work and its beautiful collection of living plants—all, of course, illustrated with superb color photographs.

Mountain Splendour presents the flora of the Drakensberg mountain range in Natal on the eastern coast of South Africa. *Wild Flowers of Table Mountain* deals with unusual plants found on the mountain overlooking the city of Capetown. And finally, *Wild Flowers of the Fairest Cape* extends the study of the Table Mountain flora to include all of the Cape of Good Hope, which lies to the south of Capetown and separates the Atlantic from the Indian Ocean. Although all three of these works are primarily picture books, the accompanying text describes the natural growing conditions of each plant in sufficient detail so that the interested gardener can easily translate the information in terms of the growing conditions in his own yard.

If you are interested in growing the plants of South Africa, these books will give you something to think about, and if you or a friend are planning a visit to that part of the world, I can't think of a better introduction to the floral splendor that awaits you.

TWO ON SOLAR GROWING

HOME SOLAR GARDENING.

John H. Pierce. Van Nostrand Reinhold, Ltd. Toronto, Canada. 1981. 164 pages; paperbound, \$8.95. AHS discount price, \$8.40 including postage and handling.

GROWING FOOD IN SOLAR GREENHOUSES.

Delores Wolfe. Doubleday & Company, Inc. Garden City, New York. 1981. 192 pages; paperbound, \$10.95. AHS discount price, \$10.00 including postage and handling.

Solar is an "in" word that carries great promises of fuel savings by harnessing the energy of the sun. When referred to greenhouses, it usually means a structure that receives most, if not all, its heat directly from the sun and contains some means of storing excess heat for use when the sun is not shining.

In *Home Solar Gardening*, the author attempts to describe energy self-sufficient structures and how they work. Although it appears to be a do-it-yourself book with

diagrams of greenhouses, porches and hot beds that you might build yourself, the book is seriously lacking in sufficient detail or engineering background to serve as more than a general introduction to solar heated structures. The economics of various energy storage systems are discussed in only the most general way, so that the true cost of materials will come as a great shock to anyone depending on this book as his sole guide to the subject. Possibly useful as a first introduction to the subject, I cannot recommend this book to anyone who is seriously considering the construction of a solar heated greenhouse.

Growing Food in Solar Greenhouses has nothing at all to do with a solar heated greenhouse. It is a reasonably good introduction to greenhouse growing, but the "solar" portion is limited to the use of the word in the title. Organization of the text is by the months of the year and what to do in the greenhouse for that month. For the beginning vegetable gardener who wants to extend his growing season, this book might be of help, but plan on calling upon the services of an oil company or public utility for heat.

VIOLETS.

Roy E. Coombs. Croom Helm, Ltd. London, England. 1981. 142 pages; hardbound, \$17.00. AHS discount price, \$14.25 including postage and handling.

For most of us today, violets are a lovely weed. The number of cultivars generally available are few, and a bunch of violets is no longer common as a cut flower bouquet. At the end of the 19th century, and for the first third of this century, it was quite a different matter. Large quantities of violets were grown commercially, and hundreds of cultivars were available for growing in the garden or greenhouse. Coombs has written a history of the cultivated violet that includes many descriptions of cultivars unavailable today. If a cultivar has been offered in recent catalogues, however, the source and data are noted. One brief chapter is devoted to cultivation, but this book is primarily a history of a once popular flower that deserves more attention in our modern gardens.

THE IRIS.

Brian Mathew. Universe Books. New York, New York. 1981. 202 pages; hardbound, \$40.00. AHS discount price, \$33.50 including postage and handling.

Brian Mathew is a botanist at the Royal

Botanic Gardens, Kew, specializing, among other plants, in the genus *Iris*. Thus this excellent review of all the species of *Iris*, while written for the gardener, has the authority of an author who is a scientific expert in the field. Being also a keen gardener, Mathew bases the cultural information on his own experience in growing these plants. (The American reader will have to transpose instructions for growing in Surrey, England to the climate of his own section of the United States.) As the most up-to-date description of all the species of *Iris*, this book should be a basic reference work for anyone interested in growing these plants. ●

—Gilbert S. Daniels

Gilbert S. Daniels is the President of the American Horticultural Society.

ORDER FORM

- | | |
|---|---------|
| <input type="checkbox"/> In and Out of the Garden | \$12.20 |
| <input type="checkbox"/> Mammillaria | 35.00 |
| <input type="checkbox"/> The Complete Handbook of Cacti and Succulents | 10.80 |
| <input type="checkbox"/> Kirstenbosch | 41.35 |
| <input type="checkbox"/> Mountain Splendour—The Wild Flowers of the Drakensberg | 32.85 |
| <input type="checkbox"/> Wild Flowers of Table Mountain | 32.85 |
| <input type="checkbox"/> Wild Flowers of the Fairest Cape | 41.35 |
| <input type="checkbox"/> Home Solar Gardening | 8.40 |
| <input type="checkbox"/> Growing Food in Solar Greenhouses | 10.00 |
| <input type="checkbox"/> Violets | 14.25 |
| <input type="checkbox"/> The Iris | 33.50 |

Enclosed is my check for _____ books

For the total amount of _____

Please allow six weeks for delivery. Discount price includes postage. Virginia residents add 4% sales tax.

Mail to: Dorothy Sams
American Horticultural Society
P.O. Box 0105
Mount Vernon, Virginia 22121

Ship to: _____

Street: _____

City: _____

State: _____ Zip: _____

FERN PROPAGATION

Many gardeners and fern fanciers have met with discouraging results when they attempt to propagate ferns from spores, but if fern enthusiasts follow only a few simple steps, they will be rewarded with a multitude of ambitious "sporelings." This article concerns those ferns native to temperate North America, but the techniques described work equally well for true ferns from other regions of the world, whether temperate or tropical.

To understand the hows and whys of germinating fern spores, one should be familiar with the basics of a typical fern life cycle. This cycle consists of two generations: the first, the gametophyte generation, gives rise to male and female sex cells called gametes, which must unite to produce a fertilized egg or zygote. The fern body that bears the gametes is called the prothallus. This "first body" is a green, heart-shaped plant that lays flatly against the soil and attains a length and breadth of about one-quarter inch. The gametes are produced in specialized structures on the underside of the prothallus: the egg-bearing archegonia and the sperm-producing antheridia. Moist soil, occasionally gently flooded, is a prerequisite for fertilization. Adequate moisture allows the free-swimming sperm to move into the soil, through which one or more will migrate to neighboring archegonia, usually on other prothallia. The physiology of the prothallus is such that the sperm and eggs mature at different times. This time gap reduces the chance of self-fertilization or inbreeding, which is often detrimental to a species. Each prothallus can produce only one zygote, and this event marks the beginning of the second generation, the sporophytic. One is most fortunate to discover a prothallus in the wild as it is tiny, relatively scarce and only occurs in moist, sheltered micro-niches.

The zygote, or beginning sporophyte, is a separate individual, and after it grows its first leaf and root, the prothallus withers and dies. The sporophyte, the plant we typically think of as the fern, is much larger, leafier and more complex in form than the prothallus. The sporophyte produces the spores, which in turn, upon germination,



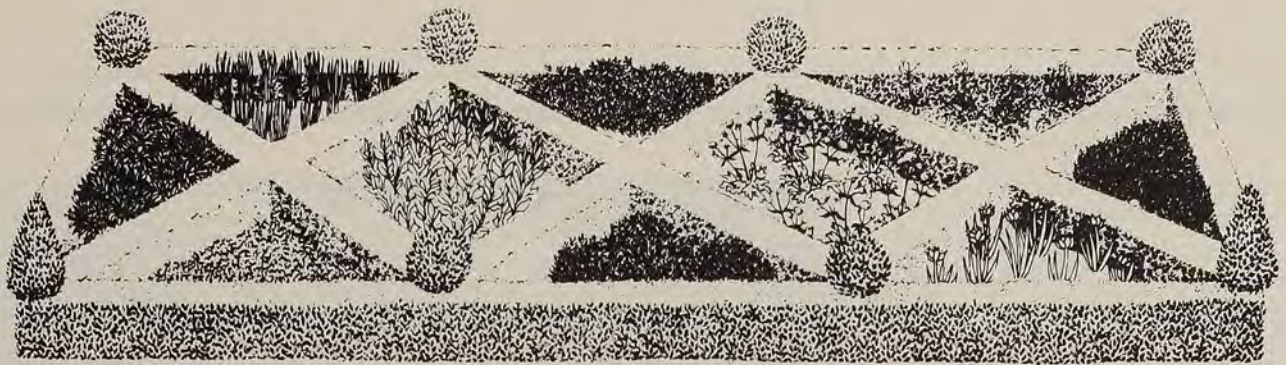
John A. Lynch

Fronds of the marsh fern, *Thelypteris palustris*, are semi-dimorphic. The frond on the left is fertile, but the one on the right is not.

produce the prothallia. Only certain leaves (fronds) of the sporophyte develop spores and as such are termed fruiting or fertile. Leaves that do not bear spores are sterile. Ferns whose fertile and sterile fronds appear markedly different are dimorphic, meaning "two-formed." Sensitive fern, ostrich fern and cinnamon fern are examples. Ferns with fertile and sterile fronds similar in appearance are monomorphic or "one-formed," as are the maidenhair, hayscented and marginal shield ferns. Ferns having fertile and sterile fronds only slightly dissimilar are semi-dimorphic, as typified by Christmas fern or ebony spleenwort. Monomorphic and semi-dimorphic ferns

bear their spores on the underside of the fronds. All ferns produce spores in clusters or sori, the arrangements and shapes of which are often used in fern identification.

The chances of a spore landing on a site suitable for germination and subsequent growth are few indeed. However, the sporophyte usually produces hundreds of thousands, even millions, of spores in one growing season, so the opportunity for reproduction is increased. Spores are microscopic and are easily carried great distances by wind. They are *not* seeds. A seed is a highly advanced dormancy structure containing an embryo and food supply; a spore consists of only one cell.



Handbooks for hale and hearty gardens— new from Van Nostrand Reinhold!

NEW! FUCHSIA LEXICON

Ron Ewart

Since the first specimens were brought from South America in the mid 1700's, fuchsia plants have enjoyed increasing popularity. **Over 2,000 species** of the charming fuchsia plant are vividly described in this colorful guide. A professional horticulturist with 25 years' fuchsia-growing experience discusses coloring, foliage, growth habits, history, and cultivation. Growing considerations explained here range from watering and necessary sunshine to training methods. **Vibrant photographs** of lush fuchsias highlight the descriptions. **280 pages, 6 1/4 x 9 1/2, 200 color photographs, \$29.95**



NEW!

THE HILLIER COLOR DICTIONARY OF TREES AND SHRUBS

H.G. Hillier

Crystal-clear descriptions and cultivation tips for 3,500 woody plants can now be yours! This full-color reference—brought to you from the experts at the world-famous Hillier Arboretum in Hampshire, England—offers over 600 photographs that illustrate distinctive characteristics of various trees and shrubs. It explains how to use these plants most effectively when designing a new garden or adding to an old one. You'll find time-saving guidance on tree and shrub selection as well as top-notch advice on pruning. **323 pages, 6 x 8 1/2, 600 color photographs, \$19.95**



NEW! DESIGNING WITH PLANTS

Richard L. Austin

This stimulating guide to landscape architecture and ornamental horticulture shows you how to use trees, shrubs, ground covers, and grasses to create aesthetically pleasing environments, improve an area's safety, protect the balance of wildlife, and prevent soil deterioration. Richard Austin explains the physical and psychological factors that you must consider when defining a space, reinforcing a design, framing good views or screening out undesirable ones, controlling movement, or creating interesting sound patterns through plant placement. **192 pages, 11 x 8 1/2 oblong, 100 line drawings, \$17.95**

NEW!

HOW TO GROW WILDFLOWERS AND WILD SHRUBS AND TREES IN YOUR OWN GARDEN

Hal Bruce

Native American plants—from Butterflyweed to Water Oak—are extensively examined in this vividly illustrated handbook. You'll find step-by-step directions on how to care for these *natural* plants in cultivated gardens. Horticulturist Hal Bruce explains the soil, moisture, and sunlight requirements of numerous wildflowers and wild shrubs. He gives you tips on how to select plants of long lasting brilliance...how to find the right trees for particular growing conditions...and how to best nurture seeds, seedlings, and cuttings. **300 pages, 7 1/2 x 8 1/2, 34 color photographs, 33 line drawings, \$9.95 paper**



ORCHID CARE

Walter Richter

Grow exemplary orchids by tapping this wealth of expert information on their housing, potting, feeding, and propagation. Walter Richter provides you with essential botanical data while vividly describing this most beautiful member of the plant kingdom. "Superb illustrations. Details the fine points of care."

—*The New York Times*. **216 pages, 6 1/2 x 9 1/2, 157 illustrations, 67 line drawings, \$9.95 paper**



MAIL COUPON BELOW FOR FREE-EXAMINATION COPIES



Van Nostrand Reinhold
Mail Order Service
7625 Empire Drive, Florence, KY 41042

Send me the book(s) checked below for 15 days **FREE** examination. After 15 days, I'll pay the purchase price plus local sales tax and handling or return the book(s) and **OWE NOTHING.**

_____ (22283-1) Fuchsia Lexicon	\$29.95
_____ (23653-0) Hillier Color Dict. of Trees and Shrubs	\$19.95
_____ (21056-6) Designing with Plants	\$17.95
_____ (21319-0) How to Grow Wildflowers and Wild Shrubs and Trees in Your Own Garden	paper \$9.95
_____ (26873-4) Orchid Care	paper \$9.95

Name _____
Address _____
City _____ State _____ Zip _____

Offer subject to credit department approval Prices subject to change.

A7285

Fertile fronds may be collected from July through September when the sori are a deep, rich, brown color. If need be, the fronds can be kept between sheets of newspaper and stored at 60-70° in a dry room.

Any well-drained, moisture-retentive, clean soil mix is suitable for germinating spores. A mix of one part Michigan peat (strained through a one-eighth-inch mesh sieve) to one part perlite serves well. Place this medium in a seed flat that is two to three inches deep and that contains a one-inch bed of drainage material such as peastone. Firm the soil medium and level it with a tamping block so that its surface is one-half to one inch below the rim of the flat. Set the flat in a bath and allow it to soak up water from below. (Bottom watering is the only method to be used for soaking the medium. Watering from above will wash soil about and upset spores. The level of water in the bath should be one-half to one inch below the soil surface in the flat.) After several minutes, remove the flat and allow it to drain.

At this point, scrape the spore clusters from the fronds with a sharp knife onto a piece of clean, white paper. They will appear as a fine brown powder; take care to shelter the "powder" from air currents, however slight. This includes breathing.



John A. Lynch

The author in his workroom examining fern propagation trays.

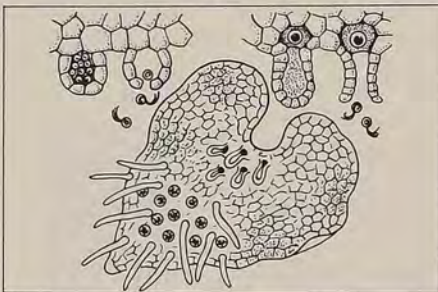
Fold the paper into a V-shape and hold it six to 12 inches above the flat. Tilt the folded paper slightly, and tap it gently while moving it in a circular motion over the soil medium. Sprinkle the powder as thinly and uniformly as possible so that the later formed prothallia will have ample growing room. It is extraordinarily easy to sow too many spores in a flat, and when germi-

nation takes place the overcrowding that occurs will demonstrate the problem. Ten cubic millimeters of spore powder are quite sufficient for a four-by-six-inch flat. After sowing, resoak the flat in a water bath. If sowing more than one kind of fern, be sure to use separate flats and sheets of paper for each kind of spore. Label your flats. Young sporophytes are very difficult to identify.

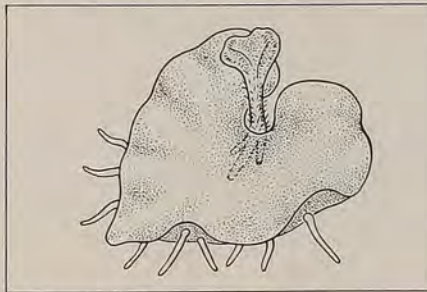
Now cover the flat with a pane of glass to maintain the high humidity that facilitates spore germination. The glass should be turned twice weekly for ventilation; water twice per month or as needed. Bottom watering causes the gentle flooding needed by the prothallia for fertilization. Place the flat in a bright, north window and keep the temperature between 55° and 75° F. Germination will occur anytime from two weeks (netted chain fern) to three months (some wood ferns) after sowing, at which time you will notice a green tint on the soil mix. Out of this green coloration many prothallia will assume their heart shapes. The first sporophyte leaves will appear from one to four months after germination, depending upon species and temperature.

It is important that materials used for sowing the spores be clean. Although many growers recommend sterilizing containers and growing media for spore germination, I find that washing the materials (containers, glass, labels, etc.) in soapy, hot water is sufficient. Commercial sterilized media such as Redi-earth are at least as good as the "home mix" previously men-

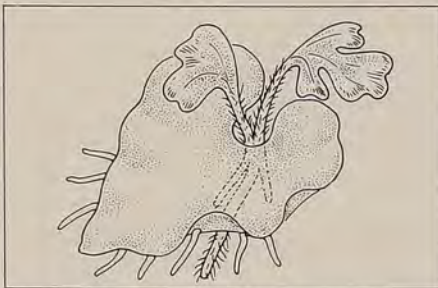
What to Look for When You Sow Fern Spores



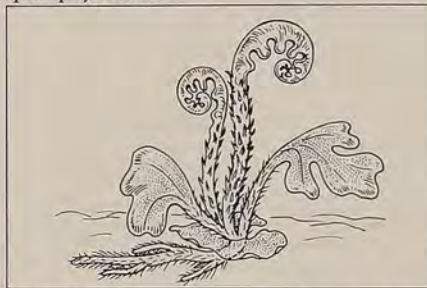
Prothallus



Prothallus with newly emerging sporophyte frond



Gametophyte and sporophyte generations



Sporophyte growing on its own roots after gametophyte has died.

A fern prothallus, also called a gametophyte, is a very small, flat, somewhat heart-shaped plant. Once fertilized, it gives rise to the familiar fronds of the spore-bearing or sporophyte generation and then shrivels and dies.

Illustrations by Alice R. Tangerini

tioned. The reason for pronounced cleanliness is to prevent contamination in the container by fungi and/or algae. If the humidity within the enclosed container or flat becomes excessive, as when ventilation is neglected, fungi or algae may appear. Their spores are sometimes introduced with the sowing of the fern spore. Fungal infection is often quite serious and should be treated with a fungicide such as Semesan. Such infection is usually characterized by the presence of hazy, white mold and/or the sudden, localized browning-out of a group of prothallia. Algal contamination is generally much less serious than fungus. The thin, light-green carpets (not to be confused with freshly germinating spores!) can most often be controlled by scraping them out with a small instrument or toothpick. Both kinds of contamination will diminish with more frequent ventilation of containers.

When the first leaves of the sporophytes have fully expanded (one-eighth to one-quarter inch across), they must be transplanted to a new flat containing the same soil mix. As the fernlets are quite fragile at this stage, you must exercise care in lifting and separating them from the soil. A small knife or scapel makes handling easier. Soak the plants immediately before and after each transplant to reduce shock. Plant the sporelings one inch apart in their new flat, which must again be covered with glass. Provide water and ventilate as before. Add a pinch of soluble fertilizer (Transplantone or Hyponex) to the soaking bath every third watering to accelerate growth. One month after transplanting, the glass should be removed *gradually*—one-eighth inch every two or three days—to acclimatize the plants to the drier outside atmosphere. Watering will necessarily become more frequent due to increased evaporation from the exposed plants and soil. Keep in mind that whenever any change is imposed upon the plants, be it light intensity, temperature, moisture, soil pH or fertility, it must be done *gradually* to avoid shocking the plants.

When the fernlets begin touching one another, they are ready for their second transplant, again into another flat or into two-inch pots. The plants will require about 10 times more space with each transplant, so space them accordingly. Remember to water before and after moving. The ferns may now be watered gently from above and set outdoors in the shade, assuming there is no sharp difference in temperature.

Allow six to eight weeks hardening off for winter, and apply a generous layer of loose, fluffy mulch (shredded composted leaves) around the ferns for protection against freezing and thawing.

As a general rule of thumb, ferns raised in this manner are ready for outdoor planting eight to 20 months after sowing.

Recommended books on the subject include *The Fern Grower's Manual* by Bar-

bara Joe Hoshizaki. New York: Knopf, 1975; *The Gardener's Fern Book* by F. Gordon Foster. Princeton, N.J.: Van Nostrand, 1964; *The Home Gardener's Book of Ferns* by John Mickel. New York: Holt, Rinehart and Winston, 1979. ☉

—David R. Longland

David R. Longland is the horticulturist at the New England Wildflower Society's Garden in the Woods in Framingham, Massachusetts.

Energy-efficient Elegance

A Lord & Burnham greenhouse takes energy from the sun and makes it work for you.

It is functional as well as beautiful. It warms your home. It gives you a window on your world, an elegant way to add valuable living space, a perfect place for you and your plants to grow.

You can choose from over 200 models, window size to room size.

Send coupon and see.



Allow 4 weeks for literature to arrive.



LORD & BURNHAM

Division Burnham Corporation
CSB 3181, Melville, NY 11747

"the greenhouse people since 1856"

- Send **FREE** "Greenhouse Living" educational guide.
 Also send beautiful new color catalog and greenhouse accessory brochure for which I enclose \$2.

Mr. _____ City _____
 Mrs. _____
 Ms. _____
 Address _____ State/Zip _____

2008

Thai Monastery Gardens

TEXT AND PHOTOGRAPHY BY CHARLES MARDEN FITCH



Golden roofs, colored tiles, intricate carvings and mother-of-pearl decorate Thailand's splendid temples, but gardens give them peaceful grace. Perfumed flowers, brilliant foliage and cool shade from sacred bodhi trees create a spiritual setting in even the humblest wats (monasteries).

Buddhist teaching emphasizes a simple life, with few possessions for monks at the monastery, yet Thai monks are rich indeed with splendor from tropical plants. Being surrounded with living beauty and fragrance contributes to a tranquil mind, fostering spirituality in even the most casual visitor. Living amid colorful plants and cool greenery encourages monks in their daily search for understanding and peace. As a naturalist and horticulturist, I find the Thai wat gardens to be outstanding collections of unusual tropical plants imaginatively arranged to complement the monastery buildings.

In Thailand temple plantings are done with unusual exotic varieties and select native species from rich Southeast Asian habitats. Gardens and plants blend harmoniously with the magnificent monastery architecture, and what might on paper seem to be an overabundance of color or an aesthetic affront turns out to be inspirational.

Gardens and lovely plants are most beautifully described in an account of Buddha's "Land of Bliss." This brief paragraph could well be referring to some Thai temple garden: "At different places on the margin of the lake there are pavilions decorated with gold and silver, lapis lazuli and crystal, with marble steps leading down to the water's edge. At other places there are parapets and balustrades hanging over the water and enclosed with curtains and networks of precious gems, and in between there are groves of spice trees and flowering shrubs."¹

ABOVE: Potted butterfly palms provide decoration and green delineation between an earthen path and a main building at Wat Saen Fang in Chiangmai, Thailand. Butterfly palms (*Chrysalidocarpus lutescens*) thrive in containers.

BELOW LEFT: Younger monks at Buddhist temple monasteries are in charge of grounds. Here a group of monks at Wat Jediluang in Chiangmai, northern Thailand, sweep the courtyard in front of a dormitory house.

BELOW RIGHT: Succulent *Sansevieria trifasciata*, originally from Africa, repeats the rhythm of Thia temple decorations at Wat Majimawat in Songkla, Southern Thailand. A pleomele shrub grows ever higher in the center of sansevieria plants.

Temperate climate gardeners grow some of the tropicals featured in Thai monastery landscapes, so a visitor from a cooler country will find a few familiar forms in flower and foliage. Perhaps influenced by a combination of climate, culture and love, familiar "house plants" grow to unusual size at the wats, flourishing in their golden surroundings until they become almost unrecognizable to people from chilly lands. Horticulturists, however, will recognize and appreciate the outstanding plants to be enjoyed in Thai temple gardens.

Although each wat has a unique planting, and no general landscape plan can be seen throughout Thailand, there are certain plants that are often encountered. Most significant is the ubiquitous bodhi tree, *Ficus religiosa*, a sacred, tall-growing shade tree with graceful leaves shaped almost like a romantic heart, each tipped with a thin point from which rain and dew drip.

According to the history of Buddha's life, it was a bodhi tree that sheltered Prince Siddhartha during his final stages of enlightenment. "*The Holy-One directed his steps to that blessed Bodhi-tree beneath whose shade he should accomplish his search. . . . Mara (the evil one, Lord of the five desires) uttered fear inspiring threats and raised a whirl-storm so that the skies were darkened and the ocean roared and trembled. But the Blessed One under the Bodhi-tree remained calm and feared not.*"²

The bodhi tree, and often volunteer seedlings coming up on some crumbling monuments, is a sacred part of each monastery landscape, but color and fragrance stem from other species. The brilliant croton shrub, *Codiaeum variegatum*, provides a rainbow of hues even during tropical downpours. Some of the most dramatic crotons grow at Wat Suan Dork and Wat Chedi Luang in the northern city of Chiangmai.

The desert rose, *Adenium obesum*, a succulent shrub from Africa, is often planted in wat courtyards. This fragrant, flowered, everblooming shrub is prominent at one entrance to Wat Po, the monastery of the Reclining Buddha in Bangkok, where it shelters an antique statue. A related tree, the frangipani, (cultivars of *Plumeria rubra* and *P. obtusa*) has similar flowers in yellow, peach and white, but in greater abundance. Unlike the desert rose, the plumerias are not really succulents but rather grow into small trees with an abundance of deep-green foliage to set off their great clusters of fragrant flowers.

Monastery plantings vary from peaceful



ABOVE: Long-lasting, deep-yellow flowers on an evergreen vine make the allamanda a popular tropical plant, here used to decorate a monastery garden at Wat Phra Singh in the northern Thai city of Chiangmai.

BELOW: Wat Tramit, temple of the Solid Gold Buddha in Bangkok, Thailand, where buddhist worshippers decorate the altar with orchids and fragrant joss sticks. Shoes must be removed outside the temple.

through lively to theatrical, each garden functioning like a boat, floating the traveler closer to meditative goals in a spiritual sea.

For all their important contributions the Thai temple gardens cost relatively little to create and maintain. Thailand's tropical climate fosters lush growth, most of the plants propagate easily by division or cuttings, and favorite varieties are quickly duplicated for new plantings. Similarly, temple lay members can contribute living plants for wat gardens, as they daily contribute cut-flower offerings. The humidity, heavy rainfall and tropical heat, which gradually destroy temple buildings, only help gardens to grow. Indeed, many an old monument and temple have been encouraged to return to earth by temple tree seedlings growing in the moist masonry. Most wat gardening hours are spent trimming, pruning and controlling the abundant growth, or planting new varieties to further beautify Buddha's earthly school.

The lotus, *Nelumbo nucifera*, a sacred flower for Buddhists that symbolizes purity, beauty and birth of loveliness, is occasionally cultivated in wat ponds. The lotus is featured in a description of Buddha's Pure Land: "*In this Pure Land there are many fragrant lotus blossoms, and each bloom has many precious petals, and each petal shines softly in unspeakable beauty. The radiance of these lotus blossoms brightens the path of Wisdom . . .*"³

Cut lotus blooms decorate altars in the main temples (bots) throughout Thailand. Seasonal flowers of many kinds join fragrant incense and rare orchids to form long lasting decorations on temple altars, bringing the beauty of wat gardens indoors to the very seat of prayer and meditation. Thailand's unique monastery gardens perform an important role in fostering Buddhist concepts, especially a peaceful mind and an all-embracing love for every living thing. ☸

1. *The Teaching of Buddha*, 29th edition, (Tokyo: Bukkyo Dendo Kyokai, 1977), p. 111.

2. Paul Carus, *Gospel of Buddha*, (Tucson: Omen Communications, Inc., 1972, reprint of translations from Pali), p. 29.

3. *The Teaching of Buddha*, 29th edition, (Tokyo: Bukkyo Dendo Kyokai, 1977), p. 105.

Charles Marden Fitch is a professional photographer and horticulturist. His books include *The Complete Book of Miniature Roses*, *The Rodale Book of Garden Photography* and *All About Orchids*.

Iris

BY ANN BRANCH DASCH

According to the ancient legend, Iris was the mythical messenger of the Greek gods who carried their messages from Mount Olympus to the mortals below. As she flew through the skies, the trail she left was the rainbow. A feather that fell to earth from her gilded and multicolored wings rooted and became the rainbow flower, iris.

The mythical miss must have been the original jet setter, because members of the Iridaceae are found on every continent and subcontinent, but the genus *Iris*, with over 200 species and thousands of named cultivars, has its native habitat in the northern temperate zone. Among the latter are forms discussed here—irises that add vibrant rainbow dimensions to American gardens.

Iris can mean a four-inch harbinger of spring (miniature dwarf bearded), a towering, waxy giant (spuria), a flat-faced summer bloom (Japanese) or an autumn stalk (rebloomer) to compete with chrysanthemums. Colors? Name your favorite hue, copper to chartreuse or pastel pink to “black.”

Most irises are lusty and easily grown perennials that tolerate varying climates and cultural conditions. Through much of the year, virtually January to December in a few areas, irises can add color from the rock garden to the pond to the perennial bed. There is an iris suited to almost any need and condition.



Jerry Harpur

The types of iris available today are much more extensive than they were just a few years ago, and there are species for every garden habitat. Beardless iris shown here are massively displayed and delightfully at home in a garden in England.

BEARDED LADIES

Bearded irises today are a distinct departure from the old purple diploid grandma's "flag." All have three upper petals called standards and three lower petals called falls, the latter decorated with a hairy beard. Both standards and falls are of proportionate size and held with starchy, architectural precision. The most spectacular rainbow goddesses are the tall bearded irises, over 28 inches in height, and the most popular with the public.

Bearded irises, in general, require only fair soil, adequate drainage, sun and regular garden culture to flourish. The American Iris Society classifies the bearded iris by size, and most catalogues conform to their scheme. The smaller forms, which include the miniature dwarf bearded (up to eight inches, and sometimes as small as three inches) and the standard dwarf bearded (eight to 15 inches), are especially useful in the rock garden.

The medium-sized irises merit special consideration. The blooming season for the intermediate bearded iris (15 to 27 inches) falls between the small, early irises and the later blooming tall bearded. Border bearded are just that—smaller versions to join the tall bearded in their peak sea-

son. They range from 15 to 27 inches in height, as do the miniature tall bearded, which bloom at a similar peak season. The miniature tall bearded are slimmer, small-scale versions of the tall bearded and are sometimes called table irises for their easy adaptation in flower arrangements.

Lusty, wide-petalled elegance is featured in the superb, modern tall bearded. These irises have been developed to add extra color patterns to the traditional solid selves, bitones, bicolors, blends and marked plicatas (folds). Today one may see borders, halo patterns, amoena plicatas and more. For 1979, the American Iris Society booklet of registrations and introductions listed about 800 new irises created by over 200 hybridizers—the largest number were tall-bearded, as usual.

Several iris classes, most particularly tall-bearded, have remontant (reblooming) strains to their credit. Many are advertised to rebloom and add an additional season to the iris each year. Note, however, that rebloomers which grow in coastal or southern California may not rebloom in colder areas. Hybridizers are working on this attribute since new varieties of rebloomers offer greater potential. Why does an iris rebloom? One reasonable opinion

is that its genetic strains dictate such rapid growth and reproduction that it literally cannot wait for the next spring to bloom again. It would be impossible to list rebloomers here that would be ideal for every climate, but it is worthwhile to read catalogs and consider trying some.

BEARDLESS RAINBOWS

What could be more romantic and graceful than a clump of wirey-stemmed Siberian irises, *Iris sibirica*, dancing in a late spring breeze? Recent advances will surprise those who have not seen modern Siberians. Ever since 'White Swirl' offered its genetic brilliance, broader and showier Siberian cultivars are being introduced every year. Most are violet, blue, purple or white, but recent innovations have included pinkish and yellow tones.

Siberian irises are delightfully versatile and easy to grow, once established. They may receive similar culture to tall bearded and grow in soils from pH 5 to 8, but they enjoy a moderately acid soil—no problem in much of the nation. They can stand wet feet or a lack of water as well as other garden perennials.

Note the comment above, "once established." Careful planting and initial cul-



'Hall of Fame', a bearded iris.

Pamela Harper



Pamela Harper

Iris sibirica 'Dewful'.

ture are imperative for beardless forms such as Siberians, Louisianas and Japanese. Plants are shipped with moist roots and are kept that way until planting—as soon as possible! Regular watering until becoming established is another must.

JAPANESE IRIS

A prime acid lover is the Japanese iris, *I. kaempferi*. These exotic creations come in dwarf and huge sizes, with three, six or peony-style petals and with flattened flower form. Some blooms may reach eight to 12 inches in diameter under ideal cultural conditions.

Japanese irises are described as acid-lovers, needing 5.5 pH soil and acid fertilizer. This is almost an understatement of their sensitivity. Planted near a fresh concrete foundation or a newly repaired pond they are doomed from leaching. Lime is fatal. Roots kept moist during shipping may be planted in special acid beds or potted.

The latter method makes it easy to sink the pot to the rim in a pond or wading pool, since spring and summer water determines whether the flower will reach maximum size. Sink pots in the ground during cold weather. Japanese irises can be grown in flower beds, but remember

Louisiana irises, like the Japanese, bloom after the tall bearded and extend the iris season into summer. They are happiest with acid conditions and lots of water during the growing season.

their thirst. Also, potted water culture will prevent problems with garden pests, except for thirsty dogs and wayward toddlers.

LOUISIANAS, SOUTHERN (AND NORTHERN) BELLES

Every garden benefits from the graceful touch of the rainbow goddess with the southern accent, the Louisiana iris. These types are the result of natural interbreeding and deliberate hybridization among three species native to the Mississippi Delta, *I. fulva*, *I. giganteaerulea* and *I. brevicaulis*. Blooms in this group range from three to eight inches in diameter on stems from 18 inches to five feet tall. Modern varieties are brilliant and lusty, but some still bear a snakey stem that is a work of art. The closest to true red in this genus is still found

in *Iris fulva* and its descendants—a resplendant terra cotta. The luscious pinks, blues, creams and yellows are equally appealing.

Louisiana irises, like the Japanese, bloom after the tall bearded and extend the iris season gracefully into summer. Reflecting their southern bog heritage, they are happiest with acid conditions and lots of water during the growing season. Modern Louisianas have been found hardy in many northern states (about U.S.D.A. Zone 7), as well as their home territory, but mulch is suggested to maintain moist conditions and prevent sunscald of the rhizome.

Careful shipping, prompt planting and initial care are important, but once established, many Louisianas are prolific growers. The best known and elderly variety 'Dorothea K. Williamson', a doyenne in rich purple, spreads to weedlike proportions and has inspired many growers to buy other Louisianas.

SELECTED GODDESSES

Choosing the "best" iris depends on one's personal taste. In general, a beginner would do well to consider winners in American Iris Society competitions. The general membership is polled annually in a Sym-



Iris kaempferi 'Geisha Parasol'.

Pamela Harper

posium to select the top 100 tall bearded irises. To reach this list means that an iris has been in commerce long enough to be widely distributed and has succeeded by thriving in hundreds of American gardens.

The top ten winners for 1981 are listed below.

1. **'Stepping Out'**, a continuing superstar, is a white-ground plicata bordered and dotted with pansy violet.

2. **'Mystique'**, a 1975 introduction, won the top award from the AIS Judges in 1980 as well, the Dykes Memorial Medal. It is a bicolor with pastel blue standards and rich, blue-purple falls.

3. **'Bride's Halo'** sparkles in white with all petals wearing a one-eighth-inch applique of gold.

4. **'Mary Frances'** glows lustily in mellow, blue-orchid self, its falls centered with white and a white beard tipped yellow.

5. **'Kilt Lilt'** is a plicata with standards of apricot and gold over falls in maroon and old gold dotting into a white center.

6. **'Going My Way'**, a 1972 plicata introduction, offers a deep-violet trim over snow white.

7. **'Lemon Mist'**, an aptly named variety, is luscious, bubbling, cool yellow, and still growing in popularity at age 10.

8. **'Shipshape'**, a massive' medium-intense blue, was introduced in 1969.

9. **'Debby Rairdon'** dates back to 1965 and stays popular with harmonious white and cream tones.

10. **'New Moon'**, 1968 vintage, is a smooth, ruffled lemon yellow that is widely used as a parent.

Each year approximately 2,000 accredited AIS judges receive a ballot with irises eligible in virtually every form for specific awards for which they have qualified. Standards for judging are based upon prescribed characteristics and are meant to produce winners that are of meritorious quality for growers. The following top winners are in classes discussed in this article.

The Knowlton Medal, given to border bearded irises, was awarded to **'Brown Lasso'** in a landslide of votes. It is a fine performer with butterscotch standards and light-violet falls lassoed with a band of deep brown.

The Sass Medal, intermediate bearded class, went to **'Appleblossom Pink'**, a luscious pink featuring a white area on the falls.

The Cook-Douglas Medal for standard dwarf bearded irises was garnered by the

variety **'Mrs. Nate Rudolph'**, a pale, gray-blue tinged with gold, featuring lavender beards.

The Caparne Award, given to a miniature dwarf bearded iris, went to **'Nuggets'**, a charmingly tiny and brilliant solid yellow.

The Williamson-White Award to the top miniature tall bearded was garnered by **'Panda'**, gracefully bearing mid-violet standards and deeper falls lit by white beards.

The Payne Award for a Japanese iris was voted to **'Purple Parasol'**, a rich, velvety purple with yellow signal areas and darker, purple stylearms.

The Debaillon Award, given to the top Louisiana, was won by the enormously popular **'Ann Chowning'**, a wide-petalled, deep red with contrasting orange-yellow signals.

The Morgan Award for Siberians went to **'Ruffled Velvet'**, with red-purple standards atop darker ruffled falls. Ruffles are a recent innovation in this class. ❁

Ann Branch Dasch is the editor-in-chief of the *Bulletin of the American Iris Society* and a former director of that organization. She has grown iris both in Virginia and in California, where she now lives.



Pamela Harper

'Shrimp Creole', a Louisiana iris.



Selected Table Grapes

BY D. C. PASCHKE

Since much before World War I, I have been interested in growing dessert table grapes on my farm in the large Lake Erie grape-growing belt. I also have a farm market, so I grew very interested in finding better cultivars of grapes to sell. Grape testing became a big hobby of mine. I began to make yearly visits to several Agricultural Experiment Stations that have grape breeding programs, and each year on my fall visit I found new and better plants being hybridized. This is my "fun." The cuttings I took home to test on my farm were unnamed, with only the breeding numbers used by hybridizers to keep track of their crosses. In this way I was able to get a head start on trying out the newest cultivars long before they could be released to the public. Although not all of the test plants make good, now and then a star is developed, and how it shines.

The large crowds of visitors who come here each fall to see our 12 acres of garden chrysanthemums have learned to look forward not only to the beautiful mums but also to trying the new grape cultivars they find here. They enjoy expressing their opinions about their favorites. This is my chance to describe a few of mine, and, I hope, encourage more gardeners to try growing their own table grapes.

This fall at my fruit stand a lady picked up a bunch of the new 'Canadice' dessert grapes, ate a few berries and asked to buy a large basket of them. Unfortunately, we had to tell her that we could only sell them in small packages since our supply of this new cultivar is still limited, and we wanted to give as many people as possible a chance

'Canadice' is a new table grape cultivar whose berries are seedless and whose vines are more productive than an old favorite, 'Delaware'. 'Canadice' is as winter hardy as 'Concord'.

to try them. Another new cultivar that has been very well received is 'Festivee', from Canada. The quality of these new grapes is very close to those grown in California and sold in supermarkets across the country. These new plants produce hard, meaty fruit with a great deal of eye appeal on vines that are almost as winter hardy as the old standby, 'Concord'. Home gardeners with enough space for a vine or two should consider trying some of these outstanding new table grape cultivars. But, before I describe a few of my favorites, let me mention a few of the basic cultural requirements for growing grapes.

Grape vines are sun lovers by nature, and they like to be grown on an old-fashioned arbor or trained on a wire trellis placed in a sunny spot. There are many different ways to trellis and train a grape vine. Before you decide which system is best for your garden, make a trip to the local public library or write one of the information sources listed on page 37 of this issue to gather more information about the different methods.

Grapes need to be pruned annually, and this is done in the late winter. As a general rule all but 50 or 60 buds should be trimmed away during the process. This winter pruning is very important if your vines are going to produce good quality fruit. An unpruned vine will quickly clog itself with old, dead wood and will only produce small, poorly developed clusters of grapes. A good book or pamphlet on grape growing or viticulture will tell you how to prune your new vines during the early training stages and how to prune to promote maximum harvest through the years. Grapes bear their fruit on buds that arise from one-year-old wood, so it is important to prune correctly to ensure a constant "supply" of new wood if the vines are to bear every year.

Continued on page 34



Exbury and Its Azaleas

TEXT AND PHOTOGRAPHY BY MARTHA PRINCE

Exbury is a magic word. Say it to a gardener anywhere and you will get a quick and happy response. The word may mean a few treasured, large-flowered azaleas to a gardener with a small plot (glowing orange, perhaps, or subtly shaded pink). It may mean some of the finest rhododendrons in existence to those enthusiasts living in our Pacific Northwest. It may mean a beauty-filled class in a flower show. Or, it may mean a dream. This is

what it has meant to me for at least 15 years. Here on Long Island few of the rhododendrons from Exbury are reliably hardy, but virtually all of the Exbury azaleas are ours to choose, grow and enjoy. I wanted to see for myself from whence these dazzling flowers came. Last May my long-held wish came true, and I found myself in an out-of-the-way corner of Hampshire, England.

Exbury Gardens, the "child" of Lionel

de Rothschild and now of his eldest son, Edmund, first intrigued me for the elegance of the confections hybridized there. Most of our native American deciduous azaleas (Luteum subseries) had been used, and these have always been my special love.

I think a bit of botanic history is in order here. The early plant explorers on our shores were usually commissioned by interested connoisseurs in Europe to find "new" treasures to adorn foreign gardens. Among



OPPOSITE: *Rhododendron* 'Surprise'.
ABOVE: *Rhododendron* 'Kathleen'. LEFT:
This stone bridge, surrounded by massive
rhododendrons, has become a "trademark"
for Exbury. It is at this English garden that
some of the loveliest azalea hybrids in the
world have been developed.

the early plants and seeds crossing the Atlantic, eastward, were our flame azalea (*Rhododendron calendulaceum*) and our pinxterbloom (*R. nudiflorum*, now *R. periclymenoides*). Some years ago I wrote an article for another publication on the flame azalea, as its story is so romantic and drama-filled. Although probably discovered and collected in Georgia by the Bartrams of Philadelphia and sent to England, it vanished, traceless, from English collections. Its reintroduction to Europe was, rather accidentally, to the Botanic Gardens in Ghent, Belgium. Andre Michaux, Botanist to the King of France (Louis XIV) sailed from Charleston in 1796 with plant specimens. Our tough, though lovely, *R. calendulaceum* first survived a shipwreck off the coast of Holland. Next, as the French Revolution was engulfing Europe, the plants somehow reached Ghent instead of Paris. In search of more information about this strange journey, I had a most enjoyable, if confusing, correspondence with the Hortulanus of the Botanic Garden. I understood the name to be "Director of Horticulture" in Flemish-Latin, and our letters were in three languages (or at least his were; I could make neither head nor tails of the Flemish words). He had record books dating back to the beginning of the nineteenth century. Evidently Napoleon, enraged at the attitude of the people, once threatened to burn the Gardens in retaliation. Poor innocent plants. The next chapter of the azalea story began in 1825; a Ghent baker named Mortier began the hybridization of our deciduous azaleas. His horticultural successors added other pollen to the "recipe," and the exciting transformations progressed. Our spice-scented *R. viscosum* and our *R. flammeum*, (formerly *R. speciosum*) were mingled with the bright-yellow azalea from the Caucasus, which gave its name to the whole sub-series, *R. luteum*. The Ghent azaleas still exist as a distinct class, with many named clones. They are smaller in flower than later hybrids, more delicate in appearance, and fragrant.

Anthony Waterer, owner of England's famed Knap Hill Nursery, carried the project onward. It was from Waterer's son, Anthony, Junior, that Lionel de Rothschild obtained his first collection of deciduous azaleas. In many books Exbury azaleas are listed as a strain of Knap Hill azaleas. This is correct, I suppose, but Rothschild added the Chinese luteum, *R. molle*—the true one, grown from seed collected in Yunan in 1924 by Dr. Joseph Rock. Waterer had supposedly added *R. molle*, too, but at a time when the species and hybrids of it were quite confused. I don't know the lo-

cation of any available plants of *R. molle* for you to see, although it was introduced by the U.S.D.A. Plant Introduction Section in '24, '47 and '54. There is a beautiful close-up photograph of it in a new Japanese book on the rhododendrons of Yunan, but as I don't read Japanese I cannot tell you the book's name, author or publisher. I obtained my copy from the Rhododendron Species Foundation. The azalea pictured bears an obvious family resemblance to some of Rothschild's and is spectacularly handsome.

Now that I have explained my first interest in Exbury ("my" azaleas leaving America so long ago and coming back in gorgeous new dresses), let us return to England in May. My husband and I were lucky indeed that Edmund de Rothschild shares my interest in American azaleas. In the garden he even has a charming grouping of our *R. vaseyi*, a non-luteum that refuses to hybridize with anything. He had read my article, "Our Native Treasures—Eastern American Azaleas," here in *American Horticulturist* (April 1978) and wrote with an invitation to visit. The public is admitted to Exbury Gardens during the blooming season, but not until 2:00 p.m. In my enthusiasm I wanted to arrive at sun-up.

"Mr. Edmund," as he seems to be called by his staff (his father was always "Mr. Lionel"), suggested we stay at the Montagu Arms, an inn in Beaulieu (pronounce it Bewley, please) and arranged for our room. I think we had the most delightful room there—an eyrie with views across the rooftops of the tiny village to green hills and sheep and placid water (I am not sure if our view was the Beaulieu River or a pond). English inns don't have "lifts," and I counted 41 red-carpeted steps to climb. The view was the reward. This is the New Forest of England—new at the time it became the private hunting preserve of William the Conqueror. Wild ponies roam among the yellow-flowering gorse and even meander down village streets. We seemed to have arrived in another century, or a fairy tale, before we even glimpsed Exbury.

Of course we read up on the Rothschilds and Exbury—garden and plants—before we went to England. There is a fine book, *The Rothschild Rhododendrons*, by Phillips and Barber (Dodd, Mead, New York). We also met the Managing Director of Exbury, Douglas Harris, for an after-dinner drink in a sitting room at the inn, and we talked of what we most wanted to see and do on our one very special day in the gardens.

Lionel de Rothschild bought Exbury in 1919 and spent three years repairing and

restoring the house and grounds. It is not an old house by English standards (early nineteenth century), but there were some fine old trees amid the underbrush. Cedars of Lebanon swoop their black-laced branches near the house, massive New Forest oaks shade many of the azaleas, and Wellingtonias (the English name of our giant redwood, *Sequoiadendron giganteum*) reach skyward. Lionel planted many magnolia species, our pink dogwood (*Cornus florida* 'Rubra'), and other choice trees. The garden he laid out slopes gently to the quiet Beaulieu River on the west side of the house, with three little ponds meandering downward in tiers.

Exbury is, of course, a very large garden but suggests, rather, a series of intimate ones. It is a plantsman's garden, not a landscape architect's. There are no fountains, no allées, no walls, no steps. "Mr. Lionel" was a banker in London during the week, and when in his garden he wanted to visit every corner. The paths (all but one) are of green-velvet grass, but wide enough for his motor car! He was personally involved in all his gardening projects. He might have a pollen-parent plant loaded in the car and then dash about, doing his own pollinizing. It is astounding that Exbury, a private garden with a weekend owner, could have registered more rhododendrons (including azaleas) than any other grower, professional or commercial, but it's true. There are more than 450 registered plants, and those only the cream of the seedlings raised. Rothschild was no dilettante. He was knowledgeable, serious, energetic, selective and dedicated. One charming little story perhaps reveals best his appreciation of the genus *Rhododendron*. In the garden of his friend, Lord Wakehurst, one of the first plants of *R. calophytum* in England finally bloomed; Wakehurst, the future Lord Aberconway, and Lionel walked round and round the plant, doffing their hats to the new blossoms.

Lionel died in 1942 and did not live to see and select many of Exbury's finest hybrids, but his son Edmund inherited his discerning eye. Lionel never saw 'Crest', perhaps the finest yellow, broad-leaved rhododendron in the world. Edmund's is now the guiding hand. World War II took its toll on the garden, in enforced neglect and in the loss of Lionel's prized orchids. The British Navy took over the house, and Normandy invasion plans were laid here. Today's quiet garden seems such an unlikely place to have known war.

After the War, Edmund and his wife did not move into the big house but into the smaller home of Edmund's early childhood. It is part of the estate and opens



ABOVE: An unnamed, new Solent hybrid azalea.
LEFT: *Rhododendron* 'Edwina Mountbatten'.



Rhododendron 'Sunte Nectarine'.

onto the gardens at the lower end. Edmund, too, is a banker in London and Exbury is a weekend retreat. Many large gardens succumbed to the exigencies of the post-war world or were given over to the National Trust. Exbury Gardens, however, are still private, reclaimed and cared for as though the terrible years of crisis never existed. Today a nursery, one of the largest, is the mainstay of the Garden's upkeep. In no way, however, does the commercial aspect of Exbury intrude on the Garden itself. I want to repeat that. I have heard people say they won't bother to include Exbury in an itinerary, because it is "too commercial." *It is not.* A visitor may be quite unaware that the nursery exists. It is true that the Gardens were larger before the War; an arboretum has reverted to farmland. In recompense, Lionel's plantings are more sumptuous in maturity, and new plantings were in progress even as we were there. It is most obviously a much-loved garden, as well as a beautiful one.

On our long-awaited "Day at Exbury" we rushed breakfast to join the friendly and smiling Mr. Harris. We had our first taste of the Garden as "Mr. Lionel" often saw it—from automobile windows—as we were driven over the damp, grass paths. This overall view of what-was-where was most helpful. Camera in hand, we then explored on foot. I am an ambler in a garden, and a very slow one; each lovely flower deserves a close look. I wanted to photograph everything! There are many fine species (a hybridizer would *need* them), and the very best of the hybrids produced by his rhododendron friends in Sussex, Cornwall and Scotland. There are also many of the early "standbys" Lionel had first set out, such as 'Ivory's Scarlet'. Here in New York we can grow few of Rothschild's own rhododendron hybrids—"Bow Bells", 'Idealist', 'Naomi' and 'Damozel' comprise almost the whole list, and they are not always bud-hardy. Our 'Bow Bells' is perhaps three feet tall, after 15 years. It was exciting to see the mountainous piles of blossoms it has at Exbury.

Of more practical use to most of us in America are Rothschild's deciduous azaleas (there are evergreen Exbury hybrids, too, mostly from *R. kaempferi*). I will add only a word or two about rhododendron colors before I go on. Some *demand* a stop with the camera! A tall row of lavender-blue *R. augustinii* behind the Rothschild rhododendron 'Hawk', a pale yellow, made a lovely study in contrasts. 'David Rockefeller' is a splendid, pure red, and 'Queen of Hearts' an even more striking one, with its dark splotching. A pale,

creamy-yellow rhododendron with waxen petals is being considered (no decision) as 'Diana'. If the name is chosen, the Princess of Wales should be both honored and pleased.

Some of the azaleas are as bright as stained glass, while others are as delicious looking as ice cream. Some have translucent petals, although the "substance" of other flowers is such that light could not actually shine through at all. 'Sunte Nectarine' is so deep an orange on the outside of the petals that the sun-bright inside is almost unbelievable. This was one azalea I repeatedly inspected to make sure it was real. The day we were there was dreary and gray, with the changeable English sky looking ominous, but the garden was in a fiesta mood. Many of the azaleas have buds of one color—a darker one—and flowers of quite another. One such is 'Surprise', with deeply corrugated orange buds and wide, flat-yellow petals. My one real complaint was about the naming of one clone. Can you imagine a really fine, white azalea (with a touch of yellow on the upper petal) being called 'Oxydol'? A laundry powder, for an azalea? 'Edwina Mountbatten' seemed the essence of sunshine, and 'Kathleen' was a watercolorist's flower, shading gently from pale apricot through salmon, deep-pink, orange and even to an almost-red at the tips of buds.

Many of the azaleas are unnamed, but all were chosen to remain. Destruction of inferior plants is absolute. The most interesting set of nameless hybrids is the Solent ball-truss group. (The Solent is the narrow bit of the English Channel between Exbury and the Isle of Wight.) One I photographed is a real fire-ball in deepest orange, all frilled and ruffled. I'm sure if I crushed it I would hear the crackle of starched organdy.

We paused on a small wooden bridge crossing the stream between ponds. On the far side was a magnificent specimen of *Pieris forrestii* 'Wakehurst', its new leaf rosettes blazing above the white blossoms. Farther along, a waterfall dropped from a pond to the one below. The rocky edge was softened by a clump of bamboo. The English use of companion plants is quite different from ours. The largest pond was partially edged with a single file of primulas (*Primula pulverulenta*, 'Bartley Strain'). The only real structure in the garden was a handsome, classic bridge with a stone balustrade and piles of rhododendrons peering over the arching span (the bridge connects two parts of the garden bisected by a little road). This bridge is almost a "trademark" for Exbury.

The atmosphere of the whole garden is

quiet and peaceful. Whenever we spied a bench we stopped. Each new surprise of color or arrangement was a memory-picture to absorb and keep, gay and bright, to light up some gloomy future day.

Douglas Harris or his pleasant young assistant, Terry Drew, were with us all day. Many of the plants were not labeled, so knowledgeable guides were a valuable asset. Mr. Harris was even kind enough to take us to his home for lunch and a rest for weary feet. Edmund de Rothschild was not in England on the day we were at Exbury, although we met some of his family enjoying the comparative privacy of morning. We did meet the gracious owner later, in London.

Since returning to America, I have been asked which of the "great gardens" of England I would choose to own, if I could. I've thought and thought. It's Exbury. It is a great garden, but not a "grand" one. The plantings are breathtakingly perfect but informal. Edmund de Rothschild had written me before we came to England that he could not be sure what I would find in bloom on May 9, but "I do not think you will be disappointed." Indeed not! Exbury was in brightest spring array, and the day was perfect. (Oh, it rained a little, but who cares?)

Author's Note: The American Rhododendron Society recently polled its chapters on which rhododendrons and azaleas perform best in each area. Essentially the hardiness of all Exbury azaleas is about the same, and if you grow American natives, you can grow Exburys. These lovely hybrids do not like the intense summer heat of the Kansas plains, nor the cold of some of our middle states. The chapters reporting some Exbury azaleas on their lists include Connecticut, New York, Princeton, Potomac Valley (northern Virginia, Maryland, southeastern Pennsylvania, Delaware), Middle Atlantic, Piedmont (North Carolina from the Smokies eastward, but not to the coast), Azalea (Atlanta), Grey's Harbor (Olympic Peninsula), Tualatin Valley (west of Portland to the Coast Range), California (San Francisco), San Mateo, and Monterey Bay. Some chapters sent no reports.

The most popular seem to be 'Gibraltar' (orange), 'Strawberry Ice' (coral-pink), 'Cecile' (pink-salmon), 'Klondyke' (gold), and 'Balzac' (red-orange). I photographed none of these, as you may have seen them already. ❀

Martha Prince is an artist, writer and photographer who is a frequent contributor to *American Horticulturist*. She gardens on Long Island.

In 1976 the Bicentennial Rose Garden at Norfolk Botanical Garden, Virginia, became the 123rd official display garden of the American Rose Society. At the opening ceremony Superintendent Bob Mathews described the 3½ acres of roses as "Norfolk's birthday gift to the nation." Long desired and planned for, an exceptionally high degree of citizen involvement, individually and through such groups as the Men's Garden Club and Tidewater Rose Society, made it reality.

The garden is laid out geometrically, with grass paths running between long beds four to six feet across. The country's major growers donated over 4,000 rose bushes, predominately Hybrid Teas and Floribun-

das, plus Grandifloras and climbing roses. All the roses are labeled, making it easy to stroll among the beds and compare the size, habit, flower shape, color, fragrance and, more important, their suitability for the local soil and climate.

An arbor for the climbing roses runs along one boundary, solidly constructed of unpainted, salt-treated lumber. Norfolk is in termite terrain, so the supporting posts are not sunk directly into the ground but are affixed to angle iron set into concrete.

A special feature of the garden is a viewing pavilion 125 feet long and 60 feet wide, constructed on three levels, with a workshop and storage shed underneath. On the upper levels of the pavilion are raised beds containing 53 kinds of miniature roses donated by a local enthusiast. Steps lead up, and there are benches on which to rest and admire the roses massed below. At the Botanical Garden there is also a fragrance garden with braille plaques for the blind. Concern for the handicapped is now further expressed in the ramp going right to the top of the viewing pavilion. From a wheelchair the miniature roses are viewed at eye level.

The City of Norfolk provided a capital improvement grant of \$25,000 for the pavilion, which is constructed of cinder block and concrete, veneered with cobblestone taken from the streets of Norfolk and originally brought by ship from Europe. All the building work was done by the employees and by students of the Garden's horticultural school. Miniature roses are hard to place in a garden. They seem to demand formality and seldom look right mixed with other plants. I have never seen them better displayed than here. Three favorites of my own grown here are the mauve 'Angel Darling', creamy-green 'Green Ice', and the appropriately named single white 'Simplex'.

A name associated with the Botanical Garden from its beginning is that of Fred Heutte, Norfolk's Superintendent of Parks and Forestry for 30 years. When he died in 1980 the Fred Heutte Foundation was formed as a permanent commemorative fund into which go donations for the further development of the gardens to which he devoted so much of his life. Donations are making possible the addition of fountains and sundials within squares left for that purpose when the rose garden was planned.



A Man Who Loves Roses

TEXT AND PHOTOGRAPHY
BY PAMELA HARPER

LEFT: Paul Barek is responsible for the lovely roses in the Bicentennial Rose Garden at Norfolk Botanical Garden, Virginia. RIGHT: One of Barek's favorites, a climber, is 'Royal Sunset'.





Making a garden is one thing, maintaining it another. Those concerned with public gardens know that projects embarked on with an initial burst of enthusiasm and effort often deteriorate, and sometimes become an embarrassment for lack of those willing to carry out the often hum-drum, day-to-day work of maintenance. Enter Paul Berek. Formerly a Warrant Officer in the Navy, Paul joined the Garden as a groundsman in 1970. Already a keen rosarian, and a regular award winner in local shows, he was the obvious person to be put in charge of the rose garden of which he is now so proud.

I first met Paul while photographing the roses. We gravitated towards each other, as those who love flowers inevitably do, and he greeted me with the traditional lament—"You should have seen them two days ago." A hailstorm had left the roses battered, but restorative pruning had already been done. This is an open, wind-swept site; photographers need patience waiting for a flower to be momentarily still. Moving air minimizes fungal problems, but here it is sometimes too turbulent so, with funds donated by the Tidewater Rose Society, shelter belts of trees are being planted.

Work might be defined as "whatever you are doing when you'd rather be doing something else." Horticulture, no less than other occupations, has its square pegs in round holes, but Paul's work is exactly what he would choose to be doing. From him emanates an infectious enthusiasm guaranteed to fan into flame the smallest spark of interest. He is, quite simply, a man who loves roses, and the health of the bushes reflects the care he lavishes upon them. My own approach to gardening tends to be *laissez-faire*—"never trouble trouble, 'til trouble troubles you." It works with most things but not, in a hot and humid climate, with modern roses. Paul took me, step by step, through his recommended procedures for planting and after-care.

The soil here is an acid sand. Dolomitic limestone is applied to raise the pH to about 6.0 (7.0 being neutral). A repeat dressing about once in three years maintains it at this level. The beds are then covered with black plastic, a procedure sometimes criticized as causing the roots to grow toward the surface when they should be delving deep. Here it has worked well, and these roses even survived the drought and ban

Over 4,000 rose bushes grow in the Bicentennial Rose Garden, which is adjacent to the Norfolk airport so that travelers with time on their hands can enjoy a stroll through the garden while waiting for their planes.

on watering during the summer of 1980 because of the plastic mulch.

Berek cuts 18-inch holes in the plastic and then digs the soil to a depth of 18 inches. Before the soil is replaced he mixes it with one-third its bulk of peatmoss plus two cups of bonemeal. He plants the bush with the graft just above ground level and then mulches the whole area with three inches of pine bark or wood chips. In the Norfolk area fall planting is preferred, but the rose bushes are not then available, so planting takes place in February or early March. The bushes are spaced 3½ feet apart in groups of 10 or 20. No fertilizer (other than the bonemeal) is added at planting time.

Feeding with 8-12-4 starts in late March and is repeated every six weeks throughout the growing season using one cup per bush in a six-inch circle towards the outer edge of the planting hole. Another cup of bonemeal is given at the beginning and middle of each growing season. To correct magnesium deficiency (diagnosed by the presence of yellowish leaves with green veins), each bush gets half a cup of Epsom salts twice a year, in spring and fall.

Preventive spraying is carried out against those problems known to occur each year, using Daconil for blackspot, Isotox as a systemic insecticide and Acti-dione P.M. for mildew (the P.M. is important—Acti-dione without these letters is not meant for roses and will defoliate them). Spraying is done weekly from the first of April to November. When possible, spraying is done in the early morning, and it is not done on days when the temperature is expected to rise above 95° F, or if rain is predicted. If rain does fall after spraying, the spraying is repeated.

Paul inspects the bushes every day, ever alert and ready to nip trouble in the bud before a few insects become an infestation. Products used as needed are Sevin for Japanese beetle, corn-ear worm and inch-worm—this spraying is repeated, daily if necessary, until damage ceases to occur; Orthene for thrips, repeated as needed, but one thorough application is usually enough; Spectricide or Diazinon for midge; and Plictram for spider mite.

I asked Paul what had been his experience with slow release fertilizers. He hadn't tried them. As long as the present methods result in beautiful roses, there will be no "monkeying with success," but new problems do arise from time to time and must be coped with, as was done when he switched to Plictram because spider mites became resistant to the Kelthane he previously used.

In November all the bushes are cut back to a height of four feet. This prevents winter winds from rocking them and loosening the roots. In February they are pruned again to somewhere between 18 and 30 inches. In general, a tall growing bush will be pruned back to 30 inches, a smaller one to 18 inches, but Berek takes into account individual idiosyncracies learned from experience. For example, the *Grandiflora* 'Queen Elizabeth' is a very tall rose, but it seems to do best if not pruned back too hard. During the February pruning any dead, diseased or inward growing branches are removed, and some of the oldest branches are cut out at ground level.

Asking a gardener to name a favorite flower is a bit like asking parents which child they prefer. Paul's first affection is for Hybrid Teas, and there is special fervor in his voice when he speaks of 'Peace'—"still the greatest." Others he thinks highly of are the red blend 'Double Delight', light-pink 'Royal Highness', dark-red 'Mary Kittle' and white 'Pristine'. Among *Floribundas* he gives high marks to 'Rose Parade', 'Apricot Nectar', 'Gene Boerner' and 'Cherish'. 'Queen Elizabeth' heads the *Grandifloras*, with 'Sundowner' a runner-up, and Paul is enthusiastic about the new shrub rose 'Carefree Beauty'. 'Royal Sunset' is one of the most impressive climbers in the garden and here it was tied into place with what looked like strips of panty hose—soft, stretchy and an inconspicuous color. And so it proved to be—reject material from a local factory.

The roses get daily inspection and conscientious care, but weaklings are not pampered, for Paul has learned that if a rose does poorly the first year it seldom improves and one might as well throw it out.

Norfolk Botanical Garden is immediately adjacent to the airport, from which there is a walkway into the gardens for the convenience of travellers with an hour or two to wait between planes. There are bushes in flower from May to hard frost, with peak bloom in May and September. Among other highlights are the camellias, azaleas and daffodils of spring, hydrangeas, annuals and waterlilies in summer, the crape myrtles of late summer and early fall, and such winter-berrying shrubs as *Nandina*, *Aucuba*, *Photinia* and hollies of many kinds. The Gardens are open every day of the year. ☉

Pamela Harper is a frequent contributor to *American Horticulturist*. She is a garden writer and the owner of Harper's Horticultural Slide Library in Seaford, Virginia.

nomenclature was evolving. Its popularity has resulted in its now being available in various horticultural forms that differ mostly in stature or leaf type. It is evergreen with inconspicuous flowers and blue-black berries. Its attributes include adaptability to being sheared to produce a dense hedge; growing well in seaside gardens; and serving well as a greenhouse pot plant.

The common guava, *Psidium guajava*, is one of the commercially important members of the myrtle family. It is commonly cultivated as a fruit tree in the tropics for jam, jelly and juice. The strawberry guava, *P. littorale* var. *longipes* (formerly *P. cattleianum*) bears smaller fruit of less value in commercial production, but it is grown in South Florida for jelly and preserves. It is hardier than common guava and is included in ornamental as well as fruit plantings. The various guava species are all tropical American shrubs and trees.

The aromatic *Pimenta* species are also tropical American trees, their value being economic rather than ornamental. *Pimenta dioica* (formerly *P. officinalis*) is our

culinary allspice. The green or unripe berries make the best spice. This species is grown to some extent in Florida as an ornamental, but production of allspice is not profitable there. *P. racemosa* is the bay rum or bay tree. Bay oil distilled from its leaves and twigs is the prime ingredient in the production of bay rum. Trees for this use are grown in south Florida, the Bahamas, the Virgin Islands and other Caribbean islands.

The tiny dried flower buds of *Syzygium aromaticum* are the cloves of commerce. The clove tree is native to the Molucca Islands, and it is not cultivated in the United States.

The eugenias are a large group of evergreen aromatic shrubs and trees of great economic and garden interest, both for their edible fruit and for their ornamental qualities. Classified as *Syzygium* or as *Eugenia*, there are several particularly interesting species. Rose apple, *S. jambos*, a native of India and Malaya, is widely cultivated in tropical America and has large, yellow pom-pom flowers and edible, rose-colored

fruit throughout the year. Malay apple (*S. malaccense*), a 50-foot tree, has tiny cerise blossoms that look like wee shaving brushes and pop out all over the trunk and limbs. It is widely planted throughout the tropics for its pink and white fruit, which can be eaten raw or preserved. Brush cherry eugenia (*S. paniculatum*) from Australia is especially popular in California for its white, showy flowers. Classified as *Eugenia uniflora*, the Surinam cherry from Brazil makes an attractive hedge with white flowers and edible, scarlet fruit; this combination also makes it an effective pot plant.

One of the handsomest and also one of the most familiar of the ornamental Myrtaceae is *Callistemon*, the bottlebrush. Truly resembling a bottle brush, the inflorescence consists of a dense, cylindrical spike of minute flowers, conspicuous because of the beautiful, thread-like red stamens. *C. citrinus* (formerly *C. lanceolatus*), crimson bottlebrush, is from Australia. For choicest ornamental display selected cultivars are superior to seedlings. Besides the benefit of beautiful flowers, the dried seed cap-



Beautiful Solariums

- Perfect for Room Additions, Hot Tubs, Solar Collectors, Horticulture
- Complete Selection of Styles and Sizes, Lean-To and Free Standing
- Special Insulating Materials and Accessories Available

For a **FREE** color catalog, write to:
"Eaglet" Greenhouses



NATIONAL
GREENHOUSE COMPANY

Dept. AH National Greenhouse Company, Box 100
Pana, IL 62557

AHS Binders



Keep your issues of *American Horticulturist* all in one place for quick, handy reference. *American Horticulturist* is not only filled with beautiful pictures, but also with helpful gardening information which you will want to refer back to time and time again.

These attractive binders will hold 18 issues. That's three year's worth of gardening know-how.

Our magazine title is attractively embossed in gold on a rich, leather-like green spine. Easily applied gold numbers are included to help you add dates and volume numbers.

Three or more binders for \$5.75 each or \$6.25 for one binder postpaid. Send your check to Binders, The American Horticultural Society, Box 0105, Mount Vernon, Virginia 22121 and we will fill your order promptly.

sules can be used in flower arrangements.

New Zealand is the home of another prominent member of the myrtle family, *Metrosideros excelsus*, known as New Zealand Christmas tree. The lustrous, dark, leathery foliage of this tree is resistant to salt water spray, which makes it useful in seaside gardens. It bears terminal flower clusters with showy red stamens characteristic of the myrtle family.

Another native Australian is *Melaleuca leucadendron*, the cajaput tree, also known as paper bush, bottlebrush and tea tree. This species is resistant to grass fires as well as to salt spray. It is a timber tree, but it is also planted as an ornamental shrub or for erosion control to fix muddy shores. Its bottle-brush flowers yield a copious nectar that can be made into a mild honey of distinctive flavor. The oil distilled from its leaves is similar to eucalyptus oil.

Popular in California is the South Sea myrtle or tea tree, *Leptospermum. L. laevigatum* has been much planted in Australia and in California for control of shifting sands. Less often planted in California, but probably the best-known species, is *L. scoparium* and its several fine varieties.

Writing of a eugenia from the Gold Coast of West Africa, David Fairchild, noted plant explorer, commented: "I am conscious that this shrub of mine will probably have all the romance brushed off of it when it appears in the nursery catalogs of the future. It has always seemed to me a pity that in the process of developing our gardens we have so often unconsciously removed from our plants almost all of their historical romance or human interest." (*National Horticultural Magazine*, Vol. 13, p. 351, 1934.)

This installment of Strange Relatives is only a brief sketch of the wonders of a fabulous group of plants. In the eucalypts alone is history; in others, beauty and romance. Readers who are residents of Zones 8, 9 and 10, or of Hawaii, probably know and grow various members of the myrtle family. For many other American gardeners, the myrtles are exotics to be exclaimed at in conservatories or marvelled at on visits to warm climates. For the individual gardener, acquiring a knowledge of the origins and historical associations of his plants adds dimension to his horticultural world. ☉

—Jane Steffey

Jane Steffey is the horticultural advisor to the American Horticultural Society.

For the serious gardener . . .

A PROFESSIONAL LARGE CAPACITY HEDGE TRIMMER



AEG 20" & 26" Heavy Duty Elec. Hedge Trimmer

Double reciprocating blades cut on both sides for faster trimming. Cuts hedge and shrub branches up to 5/8" thick cleanly with self sharpening blades. Double operating switches prevent accidental starting. Permanently lubricated ball bearings and safety clutch. From Germany's leading maker of industrial power tools. 115V AC, 3 amps. Weight: 7 lbs.

___ 20" AEG Hedge Trimmer
\$150.00 postpaid

___ 26" AEG Hedge Trimmer
\$175.00 postpaid

MasterCard ___ Visa ___ Check ___
Card No. _____
Expires _____
Name _____
Address _____
City/Town _____
State/Zip _____

*Mass residents add
5% sales tax.

Please detach and mail
with payment to:

THE
CLAPPER
COMPANY

1121 Washington Street
W. Newton, MA 02165
(617) 244-7900



Enjoy WATER-LILIES In your own garden.

Lilypons catalogue
features everything
needed for your
garden pool,
including the pool.

Lilypons Water Gardens

WATER-LILIES

Fiberglass garden pools,
Lotus, aquatic plants,
Filters, pumps, lights
PVC pool liners, sweeps
Statuary, books, koi
Goldfish, scavengers
Send \$2.50 for catalog.

LILYPONS WATER GARDENS

1506 Amhort Road 1506 Lilypons Road
Lilypons, Maryland 21717 Brookshire, Texas 77423
(301) 874-5133 (713) 934-8525

YES, Please send me the new colorful
Lilypons catalog. I enclose \$2.50

Name _____
(Please print)

Address _____

City _____

State _____

Zip _____

Benjamin Franklin Comes Alive

"One of the most important limited-edition of dolls, ever produced, and in my opinion, definitely the most exciting one."

Rolf Ericson,
Executive Director
Doll Artisan Guild.

This original, carefully-crafted Living Image® Figure is truly Benjamin Franklin as he actually looked. He comes alive, paunch and all.

The figure was sculpted by Raymond Lamb after the masterpiece by Houdon at the Metropolitan Museum of Art.

His coat and trousers are virgin wool. His vest is velvetine. His shirt, neckerchief and underwear are cotton. His shoes are hand fashioned of genuine leather with pewter buckles. His eyeglasses are sterling silver, as is the head of his Liberty cap walking stick. The 55 buttons are hand-painted, baked pewter. This, indeed, is Benjamin Franklin, including the mole on his left cheek.

Mr. Franklin stands on a mahogany platform with a brass plate identifying this as an official issue of the United States Historical Society. First of a continuing series of The Great Americans in a registered edition of 2,500. Handmade by dedicated and skilled American craftspeople. The original issue price is \$525. An investment in fine art. Write or call for a color photograph and full particulars. Toll-Free 800-446-7968. In Virginia call collect 804-648-4736.

Actual size:
11 inches
Scale: 2 inches
equals 1 foot

United States Historical Society

Dept. I, First & Main Sts., Richmond, VA 23219

All of the grapes sold in the super markets are produced on vines that were cluster thinned just before the plant went into full bloom. In my vineyard we leave one bunch on a growing cane that normally has two or three clusters of flowers. We save the first cluster on each cane, which is the best one. Cluster-thinned vines produce larger fruit with better and fuller flavor. Another benefit of thinning is that all

Grapes need to be pruned annually, and this is done in the late winter. As a general rule all but 50 or 60 buds should be trimmed away during the process.

of the grapes mature, the wood ripens and you are in better shape for next year's production. Over-loaded vines do not produce sweet, high quality fruit and also can be subject to winter kill once the season is over.

Here are nine of my favorite new cultivars. Some are blue grapes, some are white, but all have delicious flavor.

'Canadice' — You may remember the old favorite 'Delaware', which bore a small red berry yet always brought a high price. Now we have a better new cultivar to follow in its footsteps: 'Canadice', recently named by the New York State Experiment Station after one of the Finger Lakes. It is in great demand and will continue to be, so if you want to try this new plant, order early. 'Canadice' has the sweet 'Delaware' taste, the bunches are about double the size of 'Delaware', the berries are *seedless*, and the vine is more productive. Here in North East, Pennsylvania for the last eight years it has proved to be as winter hardy as 'Concord'. Its only fault is that the birds like the berries too and are likely to get all of them if they are not protected. I have tried all the repellants, and for me Meserol spray has worked best. For a small planting, however, covers of plastic netting work best.

'Festivee' — This cultivar is a breakthrough from the Horticultural Research Institute of Ontario, Canada. It reminds me of the large vinifera cultivars grown in California. The fruit is very attractive, hard and chewy, sweet and refreshing. Some people eat the skins and all. The vine is very vigorous, almost as winter hardy as 'Con-

cord', and so productive it must be cluster thinned. Some growers have reported harvesting nine tons to the acre, where 'Concord' produces five. 'Festivee's' leaves are large and attractive, and it is a handsome plant when grown in an arbor.

'Himrod' — This cultivar is the best of the earlier-maturing seedless grapes. It always places first in any taste panel. 'Himrod' bears an oval shaped white grape in loose bunches. Its fruit is sweet and very good. So far 'Himrod' has been the first of our named cultivars to ripen. I have not noticed any winter damage here in my vineyard.

'Price' — This cultivar from the Virginia Polytechnic Institute Station in Virginia is the first of our blue grapes to ripen. It has the flavor of 'Concord' and is almost always salable by Labor Day. 'Price' produces medium-sized berries and clusters.

'Monticello' — Another cultivar from the Virginia Polytechnic Institute, 'Monticello' has a sweet, somewhat spicy flavor similar to that of 'Steuben'. It ripens about two weeks after 'Price'. This blue grape is a favorite of mine.

'New York Muscat' — This is a cultivar from the New York Experiment Station. It is a vigorous, productive vine with large, reddish-black to black-colored fruit. 'New York Muscat's' berries can also be used in wine making. It ripens at about the same time as 'Delaware', in early mid season.

'Niagara' — This cultivar is our most popular white grape. If stored properly, the fruit can be held until Christmas.

'Remaily Seedless' — This grape is a very new cultivar from the New York State Agricultural Experiment Station and one of the most outstanding new grapes introduced in recent years. 'Remaily Seedless' is a strong grower that bears large, firm, white grapes of excellent taste. It ripens at about the same time 'Concord' does and so far appears to be very hardy. Don't miss this one!

'Steuben' — This cultivar from the New York State Experiment Station is thought by many to be the best blue grape ever named—the best to eat, the best for juice and the best for wine. Its sweet, spicy tang is very popular with my customers, and it is also one of my favorites. The blue-black fruit will keep with full flavor until Christmas, and its vines are very vigorous and hardy. ☼

D. C. Paschke operates a roadside farm market and 12-acre chrysanthemum garden in North East, Pennsylvania.

PRONUNCIATION GUIDE

Guide to Botanical Names in This Issue

The accent, or emphasis, falls on the syllable that appears in capital letters. The vowels that you see standing alone are pronounced as follows:

i—short sound; sounds like i in “hit”
o—long sound; sounds like o in “snow”
a—long sound; sounds like a in “hay”.

Adenium obesum

ah-DEN-ee-um o-BASE-um

Ailanthus altissima

a-LAN-thuss al-TISS-i-ma

Arisaema triphyllum

air-iss-SEE-ma try-FILL-um

Aucuba

aw-KOO-ba

Callistemon citrinus

kal-i-STEM-on si-TRY-nus

C. lanceolatus

c. lance-o-LAY-tus

Chimaphila umbellata var. *cisatlantica*

kim-ah-FILL-ah um-bell-A-ta sis-at-LAN-ti-ka

Codiaeum variegatum

co-DI-ee-um var-i-GAY-tum

Cornus canadensis

KOR-nus can-ah-DEN-sis

C. florida

c. FLOR-i-da

Cypripedium acaule

sip-ri-PEE-dee-um aw-CALL-ee

Dryopteris austriaca var. *intermedia*

dry-OP-ter-is aw-STRY-ah-ka in-ter-MEAD-ee-ah

D. spinulosa var. *intermedia*

d. spin-you-LOW-sa in-ter-MEAD-ee-ah

Eucalyptus albens

you-ka-LIP-tuss ALL-benz

E. dumosa

e. dew-MOW-sa

E. ficifolia

e. fi-si-FO-lee-ah

E. globulus

e. GLOB-you-lus

E. microtheca

e. my-kro-THEK-ah

E. obliqua

e. o-BLEE-qua

E. pulverulenta

e. pul-ver-you-LEN-ta

E. pyriformis

e. py-ri-FORM-iss

E. regnans

e. REG-nanz

E. tetraptera

e. te-TRAP-ter-ah

E. viminalis

e. vim-in-A-liss

Eugenia uniflora

you GENE-ee-ah you-ni-FLOR-ah

Ficus religiosa

FY-kus ree-lidge-ee-O-sa

Gaultheria procumbens

gaul-THEER-ee-ah pro-KUM-benz

Hedyotis caerulea

head-ee-O-tiss see-REW-lee-ah

Impatiens

im-PAY-shunz

Iris brevicaulis

EYE-ris brev-i-CAW-liss

I. fulva

i. FUL-va

I. giganticaerulea

i. gy-gan-ti-see-RULE-ee-ah

I. kaempferi

i. KEMP-fare-eye

I. sibirica

i. sy-BEER-i-ka

Kalmia latifolia

CALM-ee-ah lat-i-FOL-ee-ah

Leptospermum laevigatum

lep-toe-SPER-mum lee-vi-GAY-tum

L. scoparium

l. sco-PAIR-ee-um

Lilium philadelphicum

LIL-ee-um fill-ah-DELL-fi-cum

Linnaea borealis

LYNN-ee-ah bor-ee-AL-iss

Maianthemum canadense

my-AN-the-mum can-ah-DEN-see

Melaleuca leucadendron

mell-ah-LOO-ka loo-ka-DEN-dron

Metrosideros excelsus

met-ro-si-DER-os ex-SELL-sus

Mitchella repens

MITCH-ell-ah REE-penz

Myrtus communis

MIR-tus co-MUNE-iss

Nandina

nan-DEE-na

Nelumbo nucifera

nel-UM-bo new-SIFF-er-ah

Nicotiana glauca

ni-ko-ti-AY-na al-A-ta

Onoclea sensibilis

on-o-KLEE-ah sens-i-BEEL-iss

Osmunda cinnamomea

oz-MUN-da sin-ah-MOME-ee-ah

Pachysandra

pak-i-SAN-dra

Photinia

fo-TIN-ee-ah

Pieris forrestii

PY-er-iss FOR-est-ee-eye

Pimenta dioica

pi-MEN-ta dy-O-i-ka

P. officinalis

p. o-fiss-i-NAL-iss

P. racemosa

p. ray-si-MOS-ah

Plumeria obtusa

plu-MARE-ee-ah ob-TOO-sa

P. rubra

p. REW-bra

Polypodium virginianum

pol-i-POE-dee-um vir-gin-ee-A-num

P. vulgare

p. vul-GARE-ee

Polystichum acrostichoides

pol-i-STY-kum ah-cros-ti-co-EYE-deez

Primula pulverulenta

PRIM-yew-la pul-vare-you-LEN-ta

Psidium cattleianum

SID-ee-um cat-lee-A-num

Psidium guajava

gua-HA-va

P. littorale var. *longipes*

P. lit-or-AL-ee var. LON-gip-ees

Rhododendron augustinii

ro-do-DEN-dron aw-gus-TIN-ee-eye

R. calendulaceum

r. kal-len-dew-LAY-see-um

R. calophytum

r. kal-o-FY-tum

R. flammeum

r. FLAY-mee-um

R. kaempferi

r. KEMP-fare-eye

R. luteum

r. LOO-tee-um

R. molle

r. MOLL-ee

R. nudiflorum

r. new-di-FLOR-um

R. periclymenoides

r. pair-i-cly-men-o-EYE-deez

R. speciosum

r. spee-see-O-sum

R. vaseyi

r. VAZ-ee-eye

R. viscosum

r. vis-KO-sum

Sequoiadendron giganteum

see-QUOY-ah-DEN-dron ji-GAN-tee-um

Syzygium aromaticum

si-ZY-gee-um air-o-MAT-i-kum

S. jambos

s. JAM-bose

S. malaccense

s. mal-ah-SEN-see

S. paniculatum

s. pa-nick-you-LAY-tum

Trillium grandiflorum

TRILL-ee-um grand-i-FLOOR-um

AMERICAN HORTICULTURAL SOCIETY

OFFICERS

Dr. Gilbert S. Daniels
PRESIDENT

Edward N. Dane
FIRST VICE PRESIDENT

Mrs. John M. Maury
SECOND VICE PRESIDENT

Mrs. Edward C. Sweeney
SECRETARY

J. Judson Brooks
TREASURER

Thomas W. Richards
EXECUTIVE VICE PRESIDENT

Dr. Henry M. Cathey
IMMEDIATE PAST PRESIDENT

BOARD OF DIRECTORS

TERMS EXPIRING IN 1982:

Richard J. Both
Edward N. Dane
Jackson R. Eddy
Mrs. A. Lester Marks
Mrs. John M. Maury
Mrs. Edward C. Sweeney
Mrs. William C. Weaver, Jr.
Dr. John A. Wott

TERMS EXPIRING IN 1983:

Dr. Gerald Barad
J. Lyle Bayless, Jr.
Mrs. Benjamin P. Bole, Jr.
Everett Conklin
R. J. Hutton
Mrs. William Wallace Mein
Julia W. Rappaport
Mrs. Harry J. Van de Kamp

TERMS EXPIRING IN 1984:

J. Judson Brooks
Mrs. Erastus Corning
Mrs. Malcolm Matheson, Jr.
Mrs. Joseph G. Poetker
Mr. Mark Sullivan, III

NEW 45° SOLAR-SLANT GREENHOUSE HELPS HEAT YOUR HOME!



Just...\$1195. 6½' Wide
8' Long

40% Tax Credit & State Credits

America's first producer of solar structures introduces the best value ever! Handsome bronze aluminum, double-wall insulated, it RUNS ON THE SUN® . . . and not much else. Offers you all the options, to heat or grow, and save you money in every way. All sizes, shatterproof, the only greenhouse in the industry with a 5 year warranty.

SEND \$1 FOR COLOR BROCHURE & A COPY OF RECENT IRS RULING ON TAX CREDITS.



VEGETABLE FACTORY, INC.
P.O. Box 2235, Dept. AH-82
New York, NY 10163

GREER GARDENS



Justly Famous For

Rhododendrons

Azaleas
Japanese Maples
Dwarf Conifers
Bonsai Materials
Flowering Trees & Shrubs
Rock Garden Plants

Good selection of
unusual Horticulture Books —

Color catalog describes, prices over
1600 plants. Widely recognized as a
valuable reference book.
1982 edition, \$2.00

WORLD WIDE SHIPPING

Dept AH 1280 Goodpasture Is. Rd.
Eugene, Oregon, 97401
(503) 686-8266

SOURCE LIST

EXBURY AZALEAS

Individuals with a special interest in rhododendrons and azaleas should consider joining one of the three national organizations devoted to these lovely plants.

The American Rhododendron Society, 14635 S.W. Bull Mountain Road, Tigard, OR 97223 publishes a quarterly magazine entitled *Quarterly Bulletin*, *American Rhododendron Society*, and their annual dues are \$12.00. Other benefits of membership include participation in the Society's seed exchange and an invitation to their annual conference.

The Azalea Society of America, PO Box 6244, Silver Spring, MD 20906, is a relatively new organization that publishes a quarterly newsletter, *The Azalean*. The annual dues for the Azalea Society are \$10.00.

Finally, the Rhododendron Species Foundation, PO Box 3798, Federal Way, WA 98003, maintains a garden devoted entirely to species rhododendrons and publishes the *RSF Quarterly Newsletter*. Their annual dues are \$25.00, and members have access to their plant distribution service (via their catalogue) as well as year round access to the garden two days per week.

Sources for Exbury Azaleas. Exbury, sometimes referred to as Knap Hill, azaleas are available from:

Greer Gardens, Department AH, 1280

Goodpasture Island Road, Eugene,
OR 97401, catalogue \$2.00

The Wayside Gardens Company, 53

Garden Lane, Hodges, SC 29695,
catalogue \$1.00, deductible

White Flower Farm, Litchfield, CT

06759, catalogue subscription \$5.00,
deductible

FERNS

Sources for Fern Spores—If you can't collect your own fern spores, or if you want to try growing some of the tropical species of ferns as house plants, spores for both hardy and tropical species can be purchased from: Geo. W. Park Seed Company, Inc., PO Box 31, Greenwood, SC 29647, and Thompson and Morgan, PO Box 100, Farmingdale, NJ 07727.

National plant societies. There are three

societies devoted to ferns. In addition to providing information on the subject, they are excellent sources for fern spores.

The American Fern Society, Inc., Department of Botany, University of Tennessee, Knoxville, TN 37916 publishes both *Fiddlehead Forum*, a quarterly newsletter, and *American Fern Journal*, a quarterly magazine. Regular members, who receive the newsletter only, pay \$5.00 in annual dues while members who wish to receive both publications pay a fee of \$8.00.

The Los Angeles International Fern Society, 14895 Gardenhill Drive, La Mirada, CA 90638 publishes the *LAIFS Journal* 10 times per year, and their annual dues are \$10.00. Other benefits of membership include fern cultivation lessons by mail and the opportunity to participate in a "round robin" on a specific topic.

The International Tropical Fern Society, 8720 S.W. 34th Street, Miami, FL 33165 publishes a monthly magazine entitled *Rhizome Reporter*. The annual dues for membership in this organization are \$6.00; in addition to their publication, the benefits of membership include access to their spore store and invitations to meetings, workshops and field trips.

IRIS

The American Iris Society is an excellent source for more information about these lovely plants. In addition to numerous regional and local chapters, the Society is divided into nine "sections" devoted to the different types of iris grown in North America. They are Media Iris Society, Society for Siberian Irises, Spuria Iris Society, Society for Japanese Irises, Reblooming Iris Society, Dwarf Iris Society, Society for Pacific Coast Native Irises, Species Iris Group of North America and Louisiana Iris Society of America. Write to the American Iris Society, 6518 Beachy Avenue, Wichita, KS 67206 for membership information. The annual dues are \$9.50, and the benefits of membership include a subscription to the Society's quarterly publication, *Bulletin of the American Iris Society*, automatic membership in one of the 24 regional chapters, which also issue publications, and the option of joining one of the special "sections."

Individuals interested in Louisiana irises

should also write the **Society for Louisiana Irises**, P. O. Box 40175 USL, Lafayette, LA 70504. The annual dues for this organization, which is not affiliated with the American Iris Society, are \$5.00, and the benefits of membership include a subscription to their quarterly publication, *Newsletter of the Society for Louisiana Irises*.

Sources for Iris Plants. These sources offer some or all of the following types of iris: tall, intermediate and miniature bearded, Siberian iris, Japanese iris and Louisiana iris. Several nurseries list some of the very early blooming species such as *I. cristata*.
Bay View Gardens, 1201 Bay Street, Santa Cruz, CA 95060

Borbeleta Gardens, 10078 154th Avenue, Elk River, MN 55330, Siberian iris only

Carroll Gardens, PO Box 310, 444 East Main Street, Westminster, MD 21157

Cooley's Gardens, 301 South James, PO Box 126, Silverton, OR 97381, tall bearded iris only, catalogue \$2.00, deductible

Cordon Bleu Farms, 418 Buena Creek Road, San Marcos, CA 92069, catalogue \$1.00

Louisiana Nursery, Route 7, Box 43, Opelousas, LA 70570, catalogue \$1.00

John Scheepers, Inc., Flower Bulb specialist, 63 Wall Street, New York, NY 10005

Thompson and Morgan, PO Box 100, Farmingdale, NJ 07727, iris seed
Tranquil Lake Nursery, 45 River Street, Rehoboth, MA 02769, catalogue \$.25

Andre Viette Farm and Nursery, Route 1, Box 16, Fishersville, VA 22939, catalogue \$1.00

The Wayside Gardens Company, 53 Garden Lane, Hodges, SC 29695, catalogue \$1.00, deductible

Gilbert H. Wild and Son, Inc., Dept. AH, Sarcoxie, MO 64862, catalogue \$2.00, deductible

White Flower Farm, Litchfield, CT 06759, catalogue subscription \$5.00, deductible

TABLE GRAPES

Sources—Dessert table grapes (grafted, virus-indexed plants) are available from J.E. Miller Nurseries, Inc., Canandaigua, NY 14424, and The New York State Fruit Testing Cooperative Association, Geneva, NY 14456.

For more information on grapes and grape growing call your local extension service and ask for their list of available publications on the subject, or request the List of Available Publications on Viticulture from the Department of Pomology and Viticulture, New York State Agricultural Experiment Station, Geneva, NY 14456.

A trip to your local library should lead you to gardening books with sections devoted to grapes and grape growing, or entire books on the subject. One excellent book on the subject is *General Viticulture*. A.J. Winkler, James A. Cook, W.M. Kliewer, and Lloyd A. Lider. University of California Press. Berkeley, CA. 1974. ☐

Now anybody can have a greener thumb.

Growing fuller, greener plants isn't all that difficult, especially when you know about Trace Gold.

Trace Gold is a clay-based, water soluble trace element compound that will green up and fill out lawns, bushes, vegetables, trees and plants to make them look fuller, healthier and ribbon-winning green.

Don't let trace element deficiencies keep your plants from doing their best. Send for Trace Gold today. And have a terrific growing season.

Our 13 oz. package will last most people at least a year. But if you'd like to order larger quantities, just check the box on the coupon below.

Send to: Bay Springs Mineral Company
Dept. AH, P. O. Box 371
Bay Springs, MS. 39422

Enclosed please find \$5.95 for my year's supply of Trace Gold. (Add \$1.00 shipping and handling. Mississippi residents add 5% sales tax.)

Please send information about larger quantities.

Name _____

Address _____

City _____

State _____ Zip _____

Send check or money order. Allow 4-6 weeks for delivery.

A NEW HAMPSHIRE WOODS IN THE CITY

It is Sunday evening in Charlestown, Massachusetts and a sudden shower has cleansed the city. The streets are still except for rushing rainwater, and a tantalizing mix of linden tree flowers and salt air permeates the senses. In the heart of this historic Boston neighborhood, hidden behind an 1845 Greek Revival town house, grows a tiny recreation of a New Hampshire woods. The creator of this delightful miniature landscape is Erik Anderson, professional photographer and lecturer on city gardens. Over the past nine years Mr. Anderson has hewn a sanctuary for delicate woodland plants from a most inhospitable environment. Many city gardeners are initially confronted with badly compacted, sour soil, poor drainage and varying degrees of shade. Anderson's garden site was no exception. To make matters worse, not only was his garden located on the north side of a four story building, but his diminutive 16-by-20-foot back yard was also surrounded by a rotting wooden fence and was covered with a thick, concrete laundry yard. With vistas confined to brick walls and a not-so-scenic view down an alley, this utilitarian yard was not intended for so much as a sprig of parsley, let alone anything as fanciful as a garden.

When he moved to his new home, Anderson observed the site, noting the varying degrees of shade, and explored various design solutions. The garden area was strictly defined by its limited size, the access from the kitchen and the neighboring yards and buildings. The scale for the potential garden would, of necessity, be small, but Anderson wanted to provide it with enough variety in species and placement of plants to maintain visual interest year round.

Anderson was intent on avoiding the ubiquitous English ivy that strangled so many shady city gardens in green verbiage. Nor did he want the inevitable *Pachysandra* and *Impatiens*. Also, due to the size and inward focus of this closet-sized garden, any display of brightly colored perennials or shrubs would seem out of scale. Instead, each plant would have to have a delicacy that would harmonize without competition from an equally flamboyant neighbor.

The solution to Anderson's design and aesthetic requirements proved a most poetic juxtaposition to the impenetrability of the site. "I wanted my garden to look and smell like the woods, with a whole section left unplanted and kept as pine needles; soft and spongy like the ground in the country so I could shuffle through the leaves

"When I see the pine needles falling on my trips to New Hampshire, I gather them, then scatter them in my garden. The plants in the woods must be getting protection at that time, so I make it autumn in my garden."

after a day in the city where everything is paved. Because I don't get away from the city as often as I like, I wanted a garden where I could walk out the back door and see what was blooming in New Hampshire."

Compared to cultivated flowers, wildflowers do have drawbacks. Anderson explains, "In most cases the flowers are small, the colors more subtle. However, you just have to learn to look for beautiful little things hidden beneath oak leaves."

Although the New England woods has a succession of bloom, the effect is a whisper rather than a kaleidoscopic display. Foliage with its varying shades of green and subtle texture changes provides much of the year-round interest Anderson intended when he planned his garden.

In summer, when the city becomes sweltering hot, Anderson's woodland garden provides the illusion of coolness. In winter, it is a bit of evergreen fantasy for curious dinner guests. Beneath the soft glow of a gaslight, snowflakes swirl in a tiny reminiscence of the New Hampshire woods. If guests are unwilling to brave a blast of cold air, they can sit by the fire and savor a tea of wintergreen leaves—a taste of the wild while surrounded by city comforts.

But all these pleasant scenes of snow and tea are putting the cart a bit before the horse. Although the vision of lady's slip-

pers dancing in balmy breezes is all very fine, that soiless slab outside Anderson's kitchen door should be explained away, and the soil rescued from beneath.

After rejecting the idea of renting a jackhammer, Anderson devised a solution for dismantling the laundry yard. He dug away the earth beneath a corner of the concrete and then slammed a piece of granite down on top. This rather primitive technique easily cracked the concrete. Between photographic assignments he spent part of his spare time hurling the granite onto the slowly dwindling laundry yard, and when he wasn't busy wheeling broken concrete out of the garden, he was hauling in granite paving stones from a recently burned bridge near his home. With thousands of cobblestones from the bridge to choose from Anderson was able to select near perfect specimens. Worn smooth by over 100 years of horse and automobile traffic, the stones had acquired that wonderful patina only time and use could impart.

The back yard proved something of a puzzle. Beneath the concrete was badly compacted soil, a crumbling brick cistern, an assortment of brass buttons, broken bottles and pottery, but not a single earthworm. During the various stages of evacuation, the "garden" resembled an archaeological dig with its piles of broken concrete and loose bricks. Maneuvering around the gaping holes was difficult as the piles of cobblestones were shifted to and fro when the concrete was broken away, new areas were uncovered, and the heavy clay soil was replaced with wood humus.

Anderson dug planting beds in one- and two-foot widths along three sides of the garden. The old soil was replaced to a depth of two feet with fresh soil rich in leaf mold, which Anderson further enriched with pine needles, rotten wood and sand for drainage. Eventually, he dug out the entire yard and placed a seven-by-seven-foot area of cobblestones on a two-foot bed of sand to serve as a small patio, just large enough for a table and a few chairs for entertaining clients and breakfast guests.

A woodland garden provided the central theme of the garden, but Anderson did experiment with a few cultivated plants. For evening fragrance, *Nicotiana glauca* 'Grandiflora' was planted in a bed of ferns.



Eric Anderson



Margaret A. Hensel



Eric Anderson

Against the rear wall of his house an enthusiastic 'Heavenly Blue' morning glory display provided as many as 500 blooms on summer mornings. These morning glories were certainly an eye-opener, but their display so overshadowed the rest of the garden that the walls received more attention than the delicate display at ground level. As the garden evolved and its woody character became more mature, cultivated species seemed out of place and Anderson removed them.

"I believe a garden should provide winter and summer pleasure," explains Anderson. In keeping with this approach he

chose sensitive ferns, *Onoclea sensibilis*, primarily for their fertile fronds that add winter interest. Left unchecked, they can become a troublesome weed. "But after the frost," explains Anderson, "we're left with those beautiful, brown, beaded fronds through the winter; really beautiful against the snow."

One of the tallest ferns included in the garden is *Osmunda cinnamomea*, the cinnamon fern. It will reach a height of up to six feet in light shade. The equally common Christmas fern, *Polystichum acrostichoides*, was also planted in the shade. Over the years Anderson has propagated

LEFT: *Cypripedium acaule*, the pink lady's slipper, is happily at home in this townhouse garden. ABOVE RIGHT: Garden owner Erik Anderson has carefully reconstructed a woodland habitat in his city backyard. Favorite additions to the garden are wildflowers and ferns. ABOVE: Partridgeberry, *Mitchella repens*, forms an attractive, evergreen groundcover and flowers from April to June.

it by taking divisions in the spring. Evergreen woodfern, *Dryopteris austriaca* var. *intermedia* (formerly *D. spinulosa* var. *intermedia*), with its lacy, finely cut fronds, also provides winter interest. Because its roots and crown tend to become a little unsightly as they mature, Anderson planted this species behind the Christmas ferns.

All of the ferns chosen had similar shade requirements and pH preferences. They also were common and easy to grow in rich, humusy soil, and their differing characteristics, such as frond size, shape, color and texture, provided a varied and dependable backbone for the garden.

Two small clumps of rock-cap ferns, *Polypodium virginianum*, were rescued from a New Hampshire road project where they had formed a dense mat on a granite ledge. *P. vulgare* is a similar species native to Europe that is seen in cultivation, and the native North American rock-cap fern, *P. virginianum*, is often mistakenly called by that name. Packed in a cardboard box full of damp oak leaves, the rock-cap ferns received an occasional spray of water on the two-hour drive back to Boston. Their new home was a 1½-inch slit between the granite back step to the kitchen and the cobbled terrace. "But first the crack was stuffed with a mixture of woods soil, rotted wood, pine needles and a little sand for drainage," explains Anderson. That tiny crack proved the perfect spot, because in a few years the plants had multiplied enough to supply new plants for other parts of the garden. "Rock-cap ferns are a nice fern and not many people use them," adds Anderson. "They're excellent for rock gardens and remain relatively small."

Among the other plants rescued from construction sites were two specimens of the wood lily, *Lilium philadelphicum*. These plants seem to prefer a highly acid soil, so Anderson planted them in a particularly acid area and provided them with a mulch of oak leaves and pine needles for winter protection when autumn arrived. "I knew those lilies grew along a certain road, and when they began widening the road I was there with my shovel. For me they are always the sign of the height of summer. In Boston, they bloom around the first of July and are a bright spot in the garden."

Along with a pair of pink lady's slippers, *Cypripedium acaule*, the wood lilies break up what would be an otherwise primarily green garden. Also orphans from roadside construction, the lady's slippers were carefully transplanted with a good deal of the



Eric Anderson



Eric Anderson

Anderson's woodland garden at first resembled an archaeological dig. The concrete slab was painstakingly removed by hand, and recycled cobblestones took its place. Hostas and morning glory vines were later removed for the sake of woodland continuity.

soil that surrounded them.

Anderson is very careful on these rescue missions. "Before I dig anything, I always look at the forest mulch surrounding them. As with the lady's slippers, I'd pick plants from an environment with conditions very similar to those in my garden in the city."

Though these orchids have bloomed for several years, it remains to be seen if they will establish successfully. Many experienced wildflower gardeners consider these to be tricky plants because they will frequently die out after a few years. That is one reason why wild garden enthusiasts are seeking propagated wild plants, except in cases where plants would otherwise be destroyed. Not only are propagated specimens considered more adaptable to cultivated conditions, but this approach also relieves the strain on the environment caused by nurseries that collect in the wild.

For a strong focal point in a corner be-

tween two buildings, Anderson planted a mountain laurel, *Kalmia latifolia*. Unlike much of Anderson's plant material that was either rescued from highway projects or propagated from seeds, this shrub was purchased from a nursery outside of Boston. Planted in the shadiest part of the garden, it receives about an hour of sun each day. Though it has never blossomed, it grew into a sturdy, glossy green shrub until a large mound of snow and ice plummeted from an asphalt roof nearby. The laurel was so badly damaged that only a quarter of it remains.

According to Anderson, this snow accumulation and sliding is a common problem for city gardeners, particularly those with homes surrounded by slate roofed buildings. Victorian-style architecture is frequently equipped with a series of decorative cast iron fences along the roof edges to avoid this problem. Without resorting

to this kind of addition (if one is lacking), Anderson advises covering vulnerable plants with sturdy wooden structures or planting ferns and herbaceous material near building walls.

One plant for the woods garden Anderson feels is "terribly overlooked" is the partridgeberry, *Mitchella repens*. This evergreen plant spreads into what he describes as "a beautiful and delicate groundcover with a very sweet fragrance, much like the May flower." Anderson enthusiastically points out a tiny pair of four-petaled flowers tinted with a blush of pink. Interested visitors are almost compelled to get down on their hands and knees to take a closer look. Only down at ground level are the particular charms of partridgeberry fully appreciated.

A neighbor to the partridgeberry is another creeping plant, twinflower, *Linnaea borealis*. Although its pairs of drooping pink flowers are very fragrant in July and August, again, visitors must get down on their knees to appreciate these plants and inhale their woody perfume.

To replace the bluets, *Hedyotis caerulea*, that died out after only a three-year stay, Anderson planted wintergreen, *Gaultheria procumbens*. Plucking a shiny, oval leaf and crushing it between his fingers, he explains its fragrant possibilities for tea or just plain chewing. A creeping plant, wintergreen grows two to five inches high and bears small, waxy-white flowers in July and August. Like the partridgeberry, it is evergreen.

An ardent observer of nature and the changes in his own wild garden, Anderson has adopted one of nature's tricks for inducing the spread of these miniature groundcovers. "Rarely do they grow in soil. The roots spread through the humus. That's very important, but people tend to plant them right in the earth like geraniums." To maintain this rich layer of humus, Anderson performs a ritualistic interaction with nature and the seasons. "When I see the pine needles falling on my trips to New Hampshire, I gather them, then scatter them in my garden. The plants in the woods must be getting protection at that time, so I make it autumn in my garden."

Each fall he also adds a layer of oak leaves, small sticks and assorted woods debris to create a facsimile of yearly ground litter found in the woods. Because the only trees that strew their autumn offering across the garden are *Ailanthus altissima*,

this extra mulch serves as added nutrients and helps maintain the soil acidity.

Extra mulching also helps reduce the garden's need for water. On the whole it is pretty self-sufficient except in the summer when the area sometimes gets very hot from the heat-retaining brick buildings. Then, in the evening of particularly sultry days, Anderson attaches a professional greenhouse spray nozzle to the hose. "I don't use a strong stream, I simply mist everything. Usually the mulch keeps everything pretty moist, and watering is only necessary during the dog days of summer."

Other maintenance in the garden is also minimal. "The ground is never raked and the soil is really rich, friable and full of worms; it is so perfect, anything I put in thrives. Now they have to be weeded back to keep from taking over the garden." Anderson's major maintenance chore in the garden is something most city gardeners can identify with. "A great deal of my time is spent plucking *Ailanthus* seedlings out of the ground from a tree two houses away. I must take thousands of seedlings out each year. I don't know why the whole world isn't covered with *Ailanthus*." One of the earliest plants in this city garden is white trillium, *Trillium grandiflorum*. "I think white trillium is a grand plant for a garden. The flowers are really large, and I'm always amazed at how long they last," says Anderson. Another early spring riser in the garden is the Jack-in-the-pulpit, *Arisaema triphyllum*, grown from seeds he collected in the fall and planted by rustling the top layer of groundcover and scattering them just as they'd fall from the plant.

In May, wild lily-of-the-valley, *Maianthemum canadense*, along with the pink lady's slippers and bunchberry, *Cornus canadensis*, bloom. The bunchberry arrived in a piece of sod and spread so well Anderson cut it up and moved new plants to various parts of the garden and gave others as gifts to friends.

July and August are Pipsissewa months. *Chimaphila umbellata* var. *cisatlantica*, has terminal clusters of waxy, white and pinkish flowers. In autumn, there is not much change except for ferns turning rust, brown, cinnamon and a soft gold. "It's nothing spectacular," admits Anderson, but you can sense the passing of the seasons, and that's what this garden is all about." ☪

—Margaret Hensel

Margaret Hensel is a landscape designer and garden writer living in Massachusetts.

NEW
INTRODUCING



the SLUG-ERATOR™

"THE GARDEN SENTRY"

WORKS 24 HOURS A DAY TO
CONTROL GARDEN PESTS!

SAVES BAIT! A BOX OF BAIT LASTS UP
TO 90% LONGER YET EFFECTIVELY
RIDS GARDEN OF **SNAILS · SLUGS ·
SOW BAGS · EARWIGS · CUTWORMS**

MFR. BY **W.A. RAPP & SON, INC.**
2031 S. EASTWOOD ST.
SANTA ANA, CA 92705
(714) 540-5805

Yes! I'm interested! Send me more information.

Name

Address

City

State

Zip Code

©1981 W.A. RAPP & SON, INC. PAT. NO. 4035947

PEONIES, IRIS, DAYLILIES

from World-Famous
Wild's Gardens



96-page
full-color
catalog
with over
1300
varieties

plus... timely planting tips.

for your garden... Choose from this
gorgeous collection. Send today for your
catalog of superb values. \$2 (deductible
on first catalog order).

Please send your value-packed catalog. I
enclose \$2, deductible on my first catalog
order.

Name

St/RFD

City State..... Zip.....

send to:

GILBERT H. WILD & SON, INC.
AH-682 Joplin St.
Sarcoxis, MO. 64862



Enjoy solar benefits with a Janco Greenhouse.

All Janco models now available with your choice of regular or factory-sealed insulated glass.

Add solar warmth to your home and increase your living area with a Janco lean-to, or make a Janco free-standing greenhouse the pleasure center of your lawn. Your Janco agent can help you choose the best model for your site, and advise you on the advantages of heat-retentive insulated glass. Every Janco is all-aluminum for minimum maintenance.

Think Janco when you think "greenhouse." Send \$2.00 for 48-pg. full-color catalog today!

Allow 4 weeks for literature to arrive.



Janco Greenhouses

Dept. AH6
9390 Davis Avenue
Laurel, MD 20707
(301) 498-5700

Rid your garden and premises of nuisance animals and birds.



Get this free Havahart Cage Trap Catalog.

Animals and birds are humanely captured and can be released and re-located unharmed. Gives valuable tips on selecting and setting Havahart traps. Write to: Woodstream, Dept. 002, Lititz, PA 17543.

Woodstream
CORPORATION

GARDENER'S MARKETPLACE

CLASSIFIED AD RATES:

50¢ per word; \$10.00 minimum per insertion. 10% discount for three consecutive insertions using same copy. Copy must be received two months prior to publication date. Send orders to the attention of Cindy Weakland, American Horticultural Society, Mount Vernon, Virginia 22121. Or call (703) 768-5700.

AUSTRALIAN WILDFLOWER SEEDS

Rare selective collection of over 200 species, specializing in brilliant WESTERN AUSTRALIAN WILDFLOWERS. Banksias, Bottlebrushes, Eucalypts, Kangapaws, Grasstrees, Everlastings, Hakeas, Wattles, Honeymyrtles, Boronias, Starflowers, Cone Flowers, Desert Pea, Feather Flowers, Xmasbush, Waxflowers, Flannel Flowers, Smokebush, Dryandras and many more. For FREE descriptive lists, send International Postal Reply Coupons of \$1.00. BUSHLAND FLORA AUSTRALIAN SEED SPECIALISTS, P.O., Box 118, SCARBOROUGH—6019. WESTERN AUSTRALIA.

THE AVANT GARDENER

"DIFFERENT, EXCITING, GREAT FUN TO READ—for the gardener who wants to get more out of gardening!" Subscribe to THE AVANT GARDENER, the most useful, most quoted of all gardening publications. Every month this unique news service brings you the newest and most practical on-going gardening information—new plants, products, techniques, with sources for every item, plus feature articles, special issues. Now in its 14th year. Awarded the Garden Club of America Medal for outstanding achievement in horticulture. Special to new subscribers, \$10 for a full year. Sample copy \$1. THE AVANT GARDENER, Box 489M, New York, NY 10028.

AZALEAS AND RHODODENDRONS

AZALEAS FOR LANDSCAPING—America's largest mail-order selection of hard-to-find, super hardy, landscape-size azaleas and rhododendrons. Catalog \$2.00 (deductible) CARLSON'S GARDENS, Box 305AH, South Salem, NY 10590.

BEGONIAS

All types. Illustrated, descriptive catalog featuring over 700 varieties, many rare and unusual. \$1.50. THE THOMPSONS, PO DRAWER PP, SOUTHAMPTON, NY 11968. (516) 283-3237.

BONSAI

Biannual Bonsai magazine-catalogue, \$3.50. Bonsai care information, unusual starter trees, tools, pots, fertilizers. Visit or write to: Shoen Bonsai and Japanese Garden, 601 E. Gude Drive, Rockville, MD 20850. (301) 762-0878.

BOOK SEARCH SERVICE

Send your list of wanted gardening books or general titles to me. (Out of print, antiquarian, second hand.) I'll try to locate them. No obligation. Edward F. Smiley, Bookseller, RFD 5, 43 Liberty Hill Rd., Bedford, NH 03102.

BOOKS

DRY YOUR FLOWERS for Winter Bouquets! Two Step-by-Step Books. "PRESERVED FLOWERS" \$2.95 and "DRIED BOUQUETS" \$8.95. SHOW-and-TELL DIRECTIONS with hundreds of photos, so anyone can do it. \$1.00 postage one or both books. FREE NEWSLETTER, send stamp. Roberta Moffitt Designs, Box 3597, Wilmington, DE 19807.

New EXOTICA 4, enlarged to 16,300 photos, by Dr. A. B. Graf; 2,590 pages in 2 volumes, \$175. TROPICA—7,000 Color photos of exotic Plants and Trees, \$115. EXOTIC PLANT MANUAL—4,200 photos, \$37.50. EXOTIC HOUSE PLANTS—1,200 photos, \$8.95. Circulars gladly sent. ROEHRHS, Box 125, E. Rutherford, NJ 07073.

BROMELIADS

THE BROMELIAD TREASURY Dept. A offers a selection of decorative species and hybrid Bromeliads at very reasonable prices. Unique 22 page DESCRIPTIVE LIST, \$1.50. Also "Bromeliads for Modern Living," 80 page booklet with 135 beautiful Bromeliad color photos, \$4.00 postpaid. 639 Bend Drive, Sunnyvale, CA 94087.

BULB BROKERS

BULB TALK FOR PROS: "Dar. Hyb. (Dutch) Apeldoorn, Tops, 12 cm/up @ \$18/100, \$162/1000." If you're a serious gardener or floriculturist, write now for our free price quote on any fall planting bulb, corm, tuber or other rootstock. Let us bid on the quantities, species, varieties and colors that you want. Or we'll recommend best market buys according to your specifications. Challenge us! We're pros, too. ZIMMERMAN-McCLURE, Quality Bulb Brokers, 1422 W. Thorndale, Chicago, IL 60660.

BULBS

"THE WIDE WORLD OF BULBS AND PLANTS." America's unique source book. Lists thousands of bulbs, bromeliads, orchids, perennials, herbs, fruits, house plants, wildflowers, nursery stock, vegetables, supplies. Includes Wholesale Supplement. Price: \$3.00 (deductible). INTERNATIONAL GROWERS EXCHANGE, Box 397-E, Farmington, MI 48024.

CACTI AND SUCCULENTS

From the wonderful world of cactus, rare, unusual specimens, books, fertilizers, pots, labels. 1982 List 50¢; deductible first order. BARNETT CACTUS GARDEN, 1104 Meadowview, Bossier City, LA 71111.

FREE . . . 1982 plant & price listing catalog . . . NEW . . . Full color Cacti/Succulent book . . . \$2.00 (bulk mail) via "First Class" . . . \$3.00. K & L CACTUS NURSERY, 12712 Stockton Blvd., Galt, CA 95632.

Cactus, Epiphyllums, Lithops, Echeverias and other succulent plants. 112 page illustrated catalog \$1.00. CACTUS GEM NURSERY, Dept. H, 10092 Mann Drive, Cupertino, CA 95014. Visitors welcome.

CACTUS OF THE MONTH CLUB. First Cacti/Succulent, \$2.95. FREE catalog, illustrated. CALIFORNIA CACTUS PAD, 88 McKee, Dept. AHS, Ventura, CA 93001.

FULL COLOR CATALOG of Orchid Cactus, Rhipsalis, Hoyas, Rattails and Nightblooming Cacti, separate Bookshop Catalogue offering 103 new Cacti books. 37 pages total for \$1.00 (deductible): RAINBOW GARDENS, Box 721-AH62, La Habra, CA 90631. SPECIAL ORCHID CACTUS starter collection offer: small plants, variable colors, 6/\$12.00, 10/\$20.00. Catalogs free, airmailed. Expires 8/1/82. Credit Cards Accepted.

CARNIVOROUS PLANTS

Carnivorous, woodland terrarium plants and supplies. Book, *The World of Carnivorous Plants*, \$6.50 postpaid. Illustrated catalog 25¢, Peter Pauls Nurseries, Canandaigua, NY 14424.

COMPOST BAGS

'POST HASTE' composting bags let you have useable compost in two weeks. Made from DuPont's "Tyvek," 'Post Haste' bags hold in heat but let air circulate and excess moisture escape. Send \$1.00 for postage with order: 1 bag, \$1.95; 5 bags, \$8.95; 10 bags, \$16.95 to FORENCO, PO Box 9088, Wilmington, DE 19809.

DAFFODIL BULBS

Naturalizing Mixtures (8+ varieties): Mixed Colors or All-Yellow, Bushel \$68.00; Peck \$21.00. King Alfred Bushel \$50.00; Peck \$15.00. 10% Discount before June 15. Postpaid East of Mississippi, 10% extra West. Free folder features varieties, collections. RIVER'S EDGE FARM, Rt. 3, Box 228A, Gloucester, VA 23061.

DAYLILIES

Seven named varieties. Wide color and season range, \$10. Descriptive catalog 25¢. TRANQUIL LAKE NURSERY, 45 River Street, Rehoboth, MA 02769.

DOG REPELLENT

A waterproof non-toxic pellet placed around shrubs, flowers, garbage can, lawn or gardens. Protects for weeks. One container (approximately 135 pellets) \$3.00 postage paid or 2 for \$5.00. LOUMAC CHEMICAL COMPANY, Box 8382AS, Chattanooga, TN 37411.

DWARF CONIFERS

Over 140 types of *Bonsai & Dwarf Conifers* described by *size, shape, color and texture*. Descriptive catalog \$1.00 (refundable). Plant and price list free. WASHINGTON EVERGREEN NURSERY, Box 125 AH, South Salem, NY 10590.

FLOWER ARRANGING

FREE CATALOG—Flower Arranging Supplies. Books, foams, wire, vases, dried materials. Low prices. Designer's Bench, Box 839-AH, Auburn, NY 13021.

Reach the single most devoted group of gardeners in the country by advertising in our classified section.

FRAGRANCE

Seeds for fragrant, rare & Grandmother's plants, trees, shrubs, vines etc. THE FRAGRANT PATH, Box 328A, Ft. Calhoun, NE 68023. Catalogue \$1.00 deductible.

GARDEN FURNITURE

Solid Teakwood Garden Seats—featured in the arboretums & gardens of England. The perfect heirloom gift for church, park or private garden. Send \$2.00 (deductible) for the 10-page British color catalogue and current price list. Precipitation, Inc., 17317 Germantown Rd., Germantown, MD 20874. (301) 428-3434.

Haul-n-Hide...it's a wheelbarrow, big deal!

**Storage,
It folds to
only 8" wide!**



haul-n-hide®

- Hauls up to 200 lbs.
- 3.5 Cu. Ft. Capacity
- Wider & Longer handles for better stability
- Made of 16 ga Cold Rolled Steel

ONLY **\$49.95**
plus \$5.25 shipping
includes Wall Bracket

ACCESSORIES

- Wall Bracket for convenient storage
- Screened bottom for sifting dirt & washing vegetables
- Side wall extensions for hauling leaves & grass clippings (available late summer)

\$58.95 plus \$6.00 shipping
includes Wall Bracket & Screened Bottom

\$9.95 plus \$4.00 shipping
for Screened Bottom, if ordered separately.
Illinois residents add 5 1/4 % sales tax.

To order send check or money order to:

CITY METAL PRODUCTS
Dept. 1808
440 Wegner Rd.
McHenry, IL 60050

Allow 4 weeks for delivery;
if paying with personal check
allow 6 weeks for delivery.

- send Haul-n-Hide(s) at \$49.95 ea. plus \$5.25 ea. shipping.
send Haul-n-Hide(s) at \$58.95 ea. plus \$6.00 ea. shipping.
send Screened Bottom(s) at \$9.95 ea. plus \$4.00 ea. shipping.
 Check Money order enclosed. Amount \$ _____

Name _____
Shipping Address _____
City _____ State _____ Zip _____

NEW SUNROOM



and PASSIVE SOLAR GREENHOUSE

- New System 3 - "Brookhaven" model
- Factory insulated triple glazing
- G.E. Lexan® Shatterproof Panels
- 40% Tax Credit & State Credits
- Lean-To, Free Stdg. & Window units
- Curved Eave, Bronze Tone Finish

COLOR CATALOG and TAX CREDIT GUIDE: Enclose \$1. for our catalog and price list, plus our guide to the latest federal and state passive solar tax credits and qualifications. All kits shipped Freight Prepaid.

SAMPLE WINDOW KIT: Enclose \$5 for catalog and tax guide above, plus actual samples of greenhouse alum. frames, G.E. Lexan® glazing, assembly manual and heating guide.

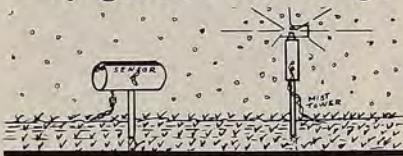


FOUR SEASONS GREENHOUSES

910 Route 110, Dept. AH-206
Farmingdale, N.Y. 11735
Phone: (516) 694-4400

Div. Four Seasons Solar Products, Corp.
(Custom Built & Standard Sizes)

Propagation Breakthrough



Nothing comes even close to the propagation yields, convenience and versatility of Aquamonitor Mist Controls.

1. AQUAMONITOR's sensor is placed in the cutting seed bed. Its automatic multi-level mist is unique and unequalled.
2. All system adjustments are at the sensor, handy for "hardening off". You save time, steps and avoid moving plants.
3. Mist blasts can be set for 1/10 second up to 100 and more.
4. AQUAMONITOR is exceedingly stable and reliable in or outdoors. The sensor is self cleaned automatically.
5. It costs nothing to install or move. It is pre-wired, pre-plumbed, plug in, pull out, hand fitted and portable.
6. It is amazingly easy to operate and adjust. Once set, it can be left pretty much alone until "hardening off".
7. One kit can operate a single nozzle or as many as 150. Power is less than two watts. Multi-kit installations cost less and provide better control.
8. It is rugged, durable, trouble free, safe, dependable, solid state and has little wear or upkeep. The first kits sold 11 years ago are operating today.

WRITE FOR OUR FREE LITERATURE
AQUAMONITOR

Box 327-Z Huntington, N.Y. 11743

GARDENER'S MARKETPLACE CONT'D

GARDENING

"THE BACKSAVER SHOVEL"—Our new, narrow cut tapered shovel moves less earth. Digs smaller, neater holes EASIER ON YOUR BACK! Overall length is five feet—no stooping. Narrow cut blade averages 5" in width instead of traditional 8½". Standard 11½" long blade allows you to dig deeply without disturbing large amounts of soil. WRITE FOR FREE ILLUSTRATED BROCHURE. For a BACKSAVER SHOVEL send \$15.00 (Price includes UPS). Md., D.C., Va. residents add local sales tax. P.I. Tool Supply, 17317 Germantown Rd., Germantown, MD 20874.

GARDENING BOOKS

New, used, rare, out-of-print. Hundreds of titles in stock at all times. Send five 20¢ stamps for catalogs. WARREN BRODERICK, 695 4th Avenue (PO Box 124), Lansingburgh, NY 12182.

GREENHOUSE GROWING

PROPAGATION BREAKTHROUGH—Don't gamble—Use only the best mist controls. Guaranteed, versatile, portable, indoor, outdoor, automatic, economical. Write AQUAMONITOR, Box 327-B, Huntington, NY 11743.

HARPER HORTICULTURAL SLIDE LIBRARY (PAMELA HARPER).

We supply many of the pictures in this and other garden magazines. You may rent these and 40,000 others, or buy duplicates. Lecture programs on many topics. Catalog \$1. 219 Robanna Shores, Seaford, VA 23696.

HAWAIIAN PLANTS FOR INDOOR GARDENING

HAWAIIAN PLANTS AND SEEDS. New 1982 catalog listing many rare and unusual HAWAIIAN plants, seeds and gifts. Send 50¢ postage/handling. HANA GARDENLAND, PO Box 248AH456, Hana, HI 96713.

HERB PLANTS

10 Herb plants—\$8.00. State inspected. UPS paid. Send 25¢ for list. ABC HERB NURSERY, Rte. 1, Box 313, Lecoma, MO 65540.

HERBS

HERB PLANTS—culinary, fragrant, dye, medicinal, everlasting, scented geraniums. Botanicals, oils, kits, wreaths, more. Informative, educational catalog \$2. STILLCOPPER HERB FARM, Box 186-M6, Brookneal, VA 24528.

Coming This Summer
The Society's New Directory
North American Horticulture,
A Reference Guide

Over 450 Pages of Listings.

A descriptive brochure and
order blank will be mailed
to you soon.

HEAVENLY HERBS—ENJOY THEM! (Third Printing). Simple gourmet recipes, herb basics, humor. \$3.50. 6474 Norway Rd., Dallas, TX 75230.

HOUSE PLANTS

ORCHIDS, GESNERIADS, BEGONIAS, CACTI & SUCCULENTS. Visitors welcome. 1982-83 Catalog \$1.25. LAURAY OF SALISBURY, Rt. 41 (Undermountain Rd.), Salisbury, CT 06068 (203) 435-2263.

50 exotic foliage plants, 320 variegates, 110 succulents, 140 Hoyas, 130 sansevierias, 60 cycads, 360 shrubs, 400 trees, 80 grasses and bamboos, 50 palms. Catalog and newsletters \$4.00. ENDANGERED SPECIES, 12571(A) Redhill, Tustin, CA 02680.

ORCHIDS, EPIPHYLLUMS, HOYAS. List 50¢. MAGGIC PLANTS, 8562 Fireside Avenue, San Diego, CA 92123.

RARE-REASONABLE-GUARANTEED:

Aroids, Bromeliads, Unusual foliage, Platyceriums, Epiphytic Ferns, Palms, Cycads. List/stamp. JERRY HORNE, 10195 S.W. 70 Street, Miami, FL 33173.

HOYA SPECIAL

WHAT'S A HOYA? Send for free descriptive list. Limited hoyo introductory offer. 6 different 2" hoyas \$19.95 PPD. SAN LUIS GARDENS, Rt.3, Box 269A, Dept. AH, San Luis Obispo, CA 93401.

IRIS

Siberian iris. Seven named varieties. Broad color range, \$10. Descriptive catalog 25¢. TRANQUIL LAKE NURSERY, 45 River Street, Rehoboth, MA 02769.

LILIES

LET'S GROW LILIES—a 48 page beautifully illustrated Handbook on lily culture with complete easy-to-understand instructions on raising lilies in the garden or on the patio in containers. \$3.00. NORTH AMERICAN LILY SOCIETY, INC., PO Box 476, Waukegan, IA 50263.

MAPLES

Rare and Unusual Japanese Maple and Japanese Black Pine. 50¢ Shipping List. MATSUMOMIJI NURSERY, PO 11414, Philadelphia, PA 19111. (215) 722-6286.

MISCELLANEOUS

Like STRAWBERRIES? You'll love our fragrant, strawberry soap. Over a pound of soap balls \$3.95 including postage. SOMETHIN*SPECIAL, #146, PO Box 77, Cedar Knolls, NJ 07927.

NEW METHOD OF IRRIGATION

NEW METHOD OF IRRIGATION. Saves up to 80% of water and energy used on gardens, lawns, orchards and residential & commercial landscaping. One control will irrigate up to 300 square feet of garden or as many as four trees. No maintenance, vandalism or electricity. Simple to install. Tested and proven successful by U.S. Department of Agriculture. Price \$30.00 each. California add 6% sales tax. No C.O.D. Guaranteed. WATERGUARDE, PO Box 1222, La Mesa, CA 92041, Dept. A.

ORCHIDS

ORCHIDS! ORCHIDS! ORCHIDS! Bromeliads, Staghorn Ferns, Books, Peters Fertilizer Potting Mixes, Supplies for indoor and greenhouse culture. Catalog, 40¢ coin or stamps. FOX ORCHIDS, INC., 6615 West Markham, Little Rock, AR 72205.

PALM SOCIETY

PALM SOCIETY members receive our international quarterly journal "Principes." Our Seed Bank distributes seeds of rare palms collected worldwide. Five chapters in the U.S. meet frequently, enjoy viewing beautiful collections, conduct rare palm sales, and exchange cultural information. Regular membership \$15 to THE PALM SOCIETY, INC., Box 368-AH, Lawrence, KS 66044.

PHALAENOPSIS (MOTH) ORCHIDS

Blooms for months in greenhouse or window-sill; white, pink, yellow, peppermint, novelty species. Flask to blooming size. Other orchid genera available. Write for list. GREEN VALLEY ORCHIDS, Rte. 1, Box 233 S, Folsom, LA 70437 (504) 796-5785.

PLANTS, RARE but AFFORDABLE

Outstanding Ornamentals * Hardy Western Natives * Conifers * Wild Fruit * Bird and Wildlife Plants * Bee Plants * Containerized starter-plants; affordable prices. Descriptive catalog—\$1.00. FORESTFARM, 990 Tether-aha, Williams, OR 97544.

PROTEA

EXOTIC HAWAIIAN/AUSTRALIAN BANK-SIA PLANTS—SPECIAL SALE—LIMITED QUANTITIES AVAILABLE NOW FOR SHIPMENT ANYWHERE U.S.A. 4 PLANTS—\$25.00 POST-PAID. PROTEA GARDENS OF MAUI, RR#2, BOX 389, KULA, MAUI, HAWAII 96790 (808) 878-6048.

RARE NATIVE PLANTS

Rhododendron chapmannii, R. austrinum, R. speciosum, R. serrulatum, R. prunifolia, Magnolia ashei (Weatherby), Magnolia pyramidata, Stewartia malacrodendron. Grown from native seed or cuttings. Write for prices and shipping dates. SALTER TREE FARM, Rt 2, Box 1332, Madison, FL 32340.

RHAPIS PALMS

Rhapis Palms from Japan. Rhapis humilis and excelsa seedlings. Special pots, new book in English, beautiful color catalog \$2.00. Unilab, Box 84-A, Redlands, CA 92373.

RHODODENDRON ADMIRERS

Open the doors to beauty, knowledge and friendship. Membership in the American Rhododendron Society will furnish the keys. Annual dues to this non-profit educational organization are \$12.00 annually. Write ARS, Dept. AH, 14635 S.W. Bull Mt. Rd., Tigard, OR 97223.

SEEDS

Grow some of the world's most RARE, EXOTIC AND BEAUTIFUL PLANT AND TREE VARIETIES from seed. Free list. KEO ENTITIES, 348 Chelsea Circle, Land O'Lakes, FL 33539.

SHADE CLOTH

Shade cloth for patio or greenhouse. Eight densities available. Custom sewn with reinforced binding and brass grommets. Last for years. Call (404) 778-8654, 24 hours a day. Yonah Manufacturing Company, PO Box 280, Cornelia, GA 30531.

TETRAPLOID DAYLILIES

Over 450 hybrids; exotic new Tetraploid Introductions. Catalog \$1.00, deductible with order for plants. SEAWRIGHT GARDENS, 134 Indian Hill, Carlisle, MA 01741 (617) 369-2172. Visitors welcome!

TREE PROBLEMS—BOTANICAL OR LEGAL

For Directory of members of the American Society of Consulting Arborists—the experts in tree care and appraisals for legal matters, write: ASCA, 315(AH) Franklin Road, North Brunswick, NJ 08902.

TROPICAL SEEDS

"HOW TO Grow Rare And Exotic Tropical Plants From Seeds All Year Around." Just \$1.00. Free Catalog—Irene Rube, 1313-S West Cambridge, Fresno, CA 93705.

UNUSUAL INDOOR PLANTS

Unusual Indoor Plants. 1,800 Varieties—Begonias, Ferns, Geraniums, Herbs, Exotics. NEW 1982-84 catalog with more color \$2.50. LOGEE'S GREENHOUSES, AH, 55 North Street, Danielson, CT 06239.

UNUSUAL PLANTS

UNUSUAL PLANTS, rare succulents, Caudiciforms, Sansevierias, and other exotics. Illustrated catalog and periodic newsletters—\$1.00. SINGERS' GROWING THINGS, 17806 Plummer Street, AH, Northridge, CA 91325.

WILDFLOWERS, HERBS, FERNS

Rootstock, bulbs, plants. Illustrated catalogue \$1, refundable with order. New England Rootstock Association, Dept. B62, Box 76, Cambridge, NY 12816.

"Schultz-Instant" LIQUID PLANT FOOD

EASY TO USE
"Just add 7 drops per qt. in the water
Everytime you water,
Everything you grow."

Ultra Pure, Concentrated, 10-15-10,
Liquid, All Purpose, "Starts & Feeds
Formula". Convenient for all indoor
and outdoor uses. 3 Sizes.

Available at your store or send
\$1.50 for 5 1/2 oz., \$2.75 for 12 oz.,
\$4.00 for 28 oz. (includes mailing)



7 DROPS PER QT.

"Schultz-Instant" Fertilizer

EASY TO USE
"Just add 1/4 tsp. per gal. in the water
Everytime you water, Everything you grow."

Ultra Pure, Concentrated, 20-30-20, Soluble,
All Purpose, "Starts & Feeds Formula".
Sizes for Gardens, Vegetables, Flowers,
Roses, Shrubs, Trees, Lawns, Greenhouses,
Nurseries. 3 Sizes.

Available at your store or send \$2.50 for
1 lb., Small Garden Size, \$9.95 for 5 lb.
Lawn & Garden Size, \$33.00 for 25 lb.
Estate Size (includes mailing)
By the makers of "Plant Shine".



1/4 TEASPOON PER GAL.

SCHULTZ CO.—St. Louis, MO 63043

SEND FOR OUR FUND RAISING OFFER

Prune Your Own Trees

WITH A

SNAP-CUT®

SEYMOUR SMITH & SON, INC.

TELESCOPING FIBER GLASS POLE Tree Pruner



Save a bundle by doing your own tree pruning. Up to 17 foot reach, strong fiber glass poles, fast and easy cutting up to 1 1/2" limbs, 16 inch saw blade for bigger stuff. Teflon-S® coated blades won't stick, gum-up or rust. A great, money saving tool!

SEYMOUR SMITH & SON, INC.
Better Garden Tools Since 1850
Oakville, Conn. 06779

PRUNING SHEARS ■ GRASS SHEARS
HEDGE SHEARS ■ LOPPING SHEARS
PRUNING SAWS

DO NOT USE THESE TOOLS NEAR
ELECTRICAL WIRES.
USE ONLY WHILE STANDING FIRMLY
ON DRY LAND.



It Tells You When to Water

The lower half of the Nutriponics® planter shown above is transparent so you can see the water level. The roots grow down into the liquid and pull up water and nutrients as needed. You need add water only every week or two, depending on the plant. Tomatoes may require more frequent watering when the plant is large.

Our instruction leaflet on growing tomatoes indoors is free for the asking. Also we have written an illustrated 52-page book on NUTRIPONICS which is included in each of the kits listed in the coupon shown below.

The tomatoes in the above photo are Pixie which are sweet and

very red, and they are larger than cherry tomatoes. They are growing in our attractive planter which makes plants grow faster and better. We have had similar success with all types of plants from African Violets to Geraniums to Sunflowers. You can also use Nutriponics to give your plants a head start for planting later outdoors.

You will be thrilled at how easy it is to grow your favorite plants using this new technique. We do not grow plants for sale, but we have hundreds of different kinds of plants growing in our experimental areas. Write us for more information or use the coupon below.

Windowsill Gardens, Grafton, N.H. 03240, Dept. AHJ

- Send Information Name _____
- Send \$9.95 kit Street _____
- Send \$19.80 kit City _____ State _____ Zip _____

Includes planter shown above.

Include \$2.00 for shipping

WINDOWSILL GARDENS
Grafton, New Hampshire 03240

