

Green Thumb Newsletter

DENVER
BOTANIC
GARDENS, INC.

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NO. 77-1

JANUARY 1977

297-2547

GARDENING TIPS FOR JANUARY

January is hardly the month to think about gardening, at least, out of doors but it is a good time to think about the plants in your garden and how they will survive the winter.

We have had an extremely dry fall and the subsoil moistures were depleted during the past two growing seasons. Even though we have had some snowfall this winter it is a good idea during times of "open", snowless periods to deep water your trees and shrubs. Pay particular attention to shallow-rooted plants such as birch, maples and all of the evergreens. A Ross Root Feeder or similar hose-attached device is preferred. It is best not to attempt this during very cold weather, particularly if the ground is frozen.

If you have young trees with thin bark, particularly those that were recently planted, it would be a good idea to wrap them now with commercial tree wraps; starting at the base of the tree and wrapping upward to a point above the first or second limb. The wrap should be overlapping slightly so that it will give good protection and so that water and ice cannot form underneath. Tree wrapping is important in Colorado for thin-barked trees because of a condition known as sun scald. Actually, sun scald is a poor term because it is a condition that is the result of a combination of sun and cold. It normally will not occur on a tree until after about mid-January; being most prevalent during the period of late January through March. Prior to that time the tree is in full dormancy and is not normally affected by sudden temperature changes. About mid-January many trees and shrubs have had their cold period satisfied and are capable of coming out of dormancy on days that are clear and warm but then are prone to sudden freezing as temperatures drop in the evenings.

Sun scald normally occurs on the southwest side of thin-barked trees because the sun at that time of year is at a low angle, warms up the side of the tree, causing cells beneath the bark to become active. Commercial tree wraps are designed to protect against this warm-up, in other words, insulating against sudden changes of temperature.

You can recognize the sun scald condition on the trees by a discoloration of the bark and a shrinking or cracking in long streaks appearing on the southwest side. The cracking is due to the fact that desiccation has occurred. When a cell freezes, water is drawn out of the cell into the spaces between the cells. The cells thus dehydrated are killed. The process does not reverse because the cells are already dead and any water moving back into the cell only promotes the development of organisms which later on usually result in a discoloration of the bark.

If you have not disposed of your Christmas tree, you might consider removing all the branches from the tree and scatter them around the bases of garden perennials, particularly chrysanthemums and some of the shallow-rooted plants used in rock gardens. The boughs will shade the soil and reduce water loss and this in turn will reduce the amount of water that might be needed as a supplement during the winter. If you happen to have a fireplace, the boughs can be disposed of in the spring in this manner. This is the best way I know of to recycle a Christmas tree.

-Dr. J. R. Feucht

NEW YEAR'S GREETINGS FROM THE DIRECTOR

A Summing Up

The year 1976, I think you will all agree, was no ordinary year. Within its span we celebrated the 200th birthday of our great Nation. We observed the 100th anniversary of statehood for Colorado and of the establishment of the University of Colorado. Last, but surely not least for most of us, we reached the 25th anniversary of the founding of the Denver Botanic Gardens.

In 1976, too, the Denver Botanic Gardens reached what is probably its highest peak of accomplishment in its quarter-century history. Membership registered a very healthy increase in reaching its greatest number, yet, the Plant Sale, the Christmas Sale, and the Used Book Sale all broke their previous records of accomplishment; the number of persons visiting the Gardens by the end of 1976 will be the greatest recorded to date, and their voluntary donations at the gate were the most generous in our history. The number of trees and shrubs, flowering bulbs, and annual bedding plants placed in the outdoor gardens also reached new high points. Very substantial progress was made in installation of automatic sprinkling systems in the garden. A new garden for young people was opened, bringing to three the number of areas being made available for youngsters who can learn to grow plants under the supervision of the Denver Botanic Gardens. Participation in these gardening projects reached a new high.

The Education Program offered more courses with greater variety than in any previous year, and response to these offerings was the best in our history. Acquisitions to the Helen Fowler Library were the greatest for any single year since it came into existence. The Gift Shop reported the greatest sales volume it has ever experienced.

The first matching grant fund for the Chatfield Arboretum project was received; a two-foot contour map of the Deer Creek flood-plain area was prepared at the request of the Gardens; the historic old schoolhouse at Chatfield was moved to the new location where it will eventually serve as a Visitor and Reception Center for the project. Plans which will result in the selection, soon, of the firm to prepare the master plan for the Chatfield project were set in motion.

In 1976 nearly all of the property between the Children's Garden north to 11th Avenue was purchased to protect the plans for ultimate expansion of the activities of the Botanic Gardens into that area. Notable improvements including the acquisition of electrical power were continued at the Walter S. Reed Botanical Garden on Upper Bear Creek near Evergreen.

Additional items indicative of the progress of the Gardens were the reprinting of a new edition of the *Conservatory Plant Guide*, the hiring of a new, highly qualified superintendent for the conservatory and greenhouses, and the acquisition of many new plants for the permanent indoor collection. The keeping of accurate and detailed plant records, so important to the scientific contribution of any botanical garden, has been brought up to date in most categories for the first time.

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A record number of volunteer workers, along with the high level of performance of the members of the staff were instrumental in bringing about the progress which has been noted above. The leadership of the Board of Trustees, and the cooperation of City officials at all levels were essential in producing the fine record of performance of Denver Botanic Gardens in 1976. To all these persons the Director would like to express his deep gratitude.

A Look Ahead

Admittedly, the prospects for progress in the year 1977 appear a good deal less optimistic than in 1976. Along with other City agencies, the Botanic Gardens has been asked to plan its activities around a budget which will total around 16.1% less than the City budget for the Gardens in 1976 — a result of the current City financial crisis. As of January 1, 1977, the Botanic Gardens has been forced to drop four permanent employees and one temporary employee from its roster. The loss of these employees and their positions will be keenly felt, as will the cut of fifty percent in the City budget for supplies, materials and services. Some belt-tightening measures which are being considered are the following: Reduction of the use of Botanic Gardens facilities particularly by organizations not strongly oriented toward horticultural and botanical goals; closing of the Education Building facilities one or two nights per week; closing of the Botanic Gardens to all activities one day per week. Continued expansion of projects in the Gardens dependent upon the City budget will be sharply curtailed.

Everything possible is being done, and will be done in 1977 to lessen the impact of this budget reduction on the Botanic Gardens. We will continue to operate in as nearly the normal fashion as our budgets will permit. When cut-backs are required, the cooperation of all persons involved will be greatly appreciated. At this distance, it appears that more volunteers will be called on to do more kinds of jobs than in previous years to help keep the Gardens at its present level of performance. The situation is by no means desperate, but it is very serious. Concerted efforts by all those concerned with the operation and activities of the Gardens certainly will see us through this new crisis with the fewest possible effects on the Gardens.

In spite of these rather gloomy comments, we expect a good year in most respects in 1977. To all the members of the extended Botanic Gardens Family, we wish a great and rewarding New Year.

—William G. Gambill, Jr.

SEED DISTRIBUTION TO OTHER BOTANICAL GARDENS

Since the establishment of the Conservatory and outside gardens some ten years ago, the Denver Botanic Gardens has been the recipient of various listings of seeds from other botanical gardens and institutions; this has enabled us to extend the collections in quite a significant manner.

This year for the first time, we are going to reciprocate and our list, though not large with only 100 numbers, is being distributed this winter. Even if only twenty interested establishments ask for seed we are talking of perhaps 2,000 packets. All of you must realize the time it takes to collect, sort, label and package such quantities of seeds and without the volunteers who have helped in the greenhouses, it would have been an impossible task.

Seed exchange has been going on since 1682 when Leiden in Holland and Chelsea Physic Garden in England started the happy relationship of distributing botanical wealth.

The Garden Club of America and The Garden Club of Denver announce meetings open to the public Wednesday, February 9, 1977 Denver Botanic Gardens

10:00 AM Open meeting of the Horticultural Committee of the Garden Club of America

Speakers:

Mr. Charles Lewis, Horticulturist, Morton Arboretum "People and Plants — The Human View of Horticulture"

Miss Rachel Snyder, Editor-in-chief, *Flower and Garden Magazine*, "American Heritage by the Garden Path through the use of Native American Plants."

12:00 N Luncheon \$6.00/person — please send check for reservation by February 1st (no refunds) to
Mrs. Arthur Rydstrom
5270 Stanford Circle
Englewood, Colorado 80110

1:30 PM Open Meeting of the Conservation Committee of the Garden Club of America.

Speaker:

Mr. Richard W. Underwood, National Aeronautics and Space Council. "Contributions of NASA to World Conservation"

CLASSES

Help Wanted

Position: Volunteer Conservatory Tour Guide

Experience Needed: None

Qualifications: Interest in plants and people

Prerequisite to Employment: Enrollment in *Tropical Plants of the Conservatory*, January 5 - March 9; 1-3 p.m.; Cost \$25.00 (to be refunded if the student guides for a total of 40 hours).

Length of Employment: Whatever you can spare (it is hoped that the student will donate two hours a week).

Wages: The satisfaction of knowing you have helped in a most worthy effort of the Volunteers of the Denver Botanic Gardens.



Remember *Landscape Horticulture*, Thursday evenings from 7:15 to 9:45 p.m. in Classroom C. This class will start on January 6 and continue to February 24. The cost is \$15.00.

Sign up now for Dr. Denham's class, *Conifer and Flowering Plant Taxonomy*. It will begin on January 10 and end February 28, 1-3 p.m. in Classroom B. Fee \$20.00.

Indoor Light Gardening will be taught by two staff members, Gary Davis and Tom Riley. This class is offered from January 12 - February 9 from 7 to 8 p.m., Classroom A and the cost is \$7.50.

African Violet Workshop on Saturday morning, January 15, will also help with questions about growing plants under lights. The Hi-Hopes Study Club tries to provide as much individual instruction as possible by planning various demonstrations throughout the morning. Come at 9 a.m. or later as you wish. Fee 50¢ payable at the door of Horticulture Hall.

Some of the most fascinating plants in the world will be discussed on January 20 at 9:30 a.m. in Classroom C when *Carnivorous Plants* will be the subject.

Another free class *The World of Palms* will be taught by Andrew Pierce, Superintendent of the Conservatory, on January 26 and February 2 from 1 - 3 p.m. (Even if you are not enrolled in the Guide's Class but are interested in palms, do plan to attend.)

Also remember *Basic Arrangements Using Dried Plant Materials*. This will be taught by Avalonne Kosanke on the four Mondays in February from 9:30 to Noon in Classroom B. The cost of \$15.00 includes much of the material to be used although some special materials may be purchased if you especially desire them. Limit 15.

Finally, those early birds who signed up for Eileen Price's class on *Baking Bread* should know that oven temperature is very important for successful results. If you call Public Service Company, 623-1234, they will check and adjust ovens. There is a waiting list for this service, so if you are not sure you can trust your oven, better have it checked before February 5th.

First Announcement

Denver Botanic Garden members who are interested in subscribing for the recently announced Alaska Tour, or who would like to learn more about the tour, are invited to gather at 4 p.m., Sunday, January 9 at 909 York. Mr. James Holme, of Tourizons International, will show slides he took this fall in the various areas to be visited on the tour. Questions about any aspects of the tour arrangements will be answered. Refreshments will be served. All members are invited to spend a pleasant hour in learning about this very exciting trip for 1977.

COLORADO STATE UNIVERSITY EXTENSION SERVICE SEEKING GARDENING VOLUNTEERS

The Colorado State University Extension Service is offering a program designed to fill the need for providing information to the gardening public. The endeavor is a volunteer effort called the Master Gardener Program which uses the talents of experienced, knowledgeable gardeners who have the desire to share that knowledge with others in the community by answering questions at garden clinics or over the telephone. Recruitment for volunteers is underway for persons who have experience and have the time to devote a minimum of forty daytime hours for public service. The clinics would run from April through September. Volunteers will be trained by horticulturists from Colorado State University in nine daytime sessions offered every Tuesday and Thursday starting the second week of February at the Denver Botanic Gardens. Interested persons should contact their County Extension Office for an application or for more information. Application deadline is January 15, 1977.

DID YOU KNOW?

The Lobby Court is completely or partially changed on the average of once a month. The display involves months of prior planning and, of course, careful greenhouse "nurturing" of the plants. The displays are designed with the intention of showing the plants to their best advantage and occasionally to create a feeling or emotion.

The display area usually requires approximately 200 plants to appear full. On certain occasions the area has contained as many as 400 (mums), or a few as 80 (begonia) plants, depending upon the design. In most of the displays the majority of plants are in flower. Flowers last from two days to four weeks, depending on the particular plant (i.e., bulbous paperwhites average two-four days, chrysanthemums two-four weeks). This necessitates daily pruning and replacing of the plants involved. In addition to pruning and replacing plants, watering, checking for insect pests and generally careful plant observation is necessary on a daily basis.

Changing the displays is a larger job than it may appear to the casual observer. Initially, all the plants must be removed and returned to the green house. To the plant, being placed in the dark and dry atmosphere of the lobby is a traumatic experience. Returning to the greenhouse again presents a shock — hence pruning, spraying or other cultural adjustments are necessary for returning plants. After the display area is emptied all debris must be cleaned from the bark; spraying for lingering fungal spores or insect pests is also necessary as a precautionary measure. Of course, the pool must be drained, cleaned and the numerous coins collected. Then all the new plants must be carried in and arranged to meet the criteria of the new display. All of this takes time — usually one or two days depending upon the number of interruptions. Normally three people do the entire job. The work is very tiring and generally leaves everyone involved with sore muscles and strained backs!

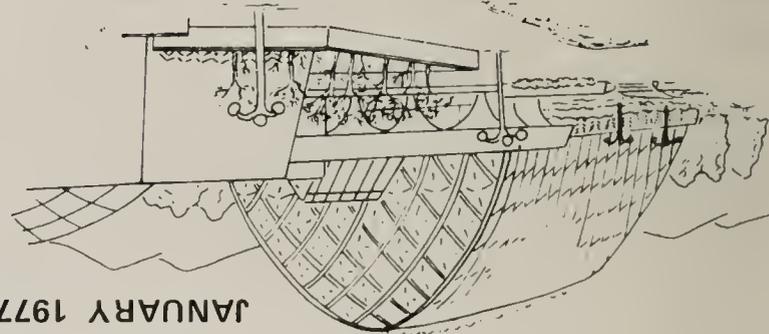
—Nancy Collins



FREE MOVIE

According to *Flower and Garden* magazine, the new fad replacing pet rocks is the invisible plant. It goes with all interior decorating schemes and requires no care! If you are more traditional and prefer plants you can see, plan to attend the film on January 8th at 1:30 p.m., Classroom C. This film from Callaway Gardens on *Indoor Plants* focuses on the environmental factors of light and temperature as well as cultural requirements such as watering, plant hygiene, pest control and repotting. Artificial lights, aquatic plants, cacti and succulents are also covered.

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BOTANY CLUB MEETING
JANUARY 21, 7:30 P.M.
ALL WELCOME



A general membership meeting of the Colorado Native Plant Society will be held in Ft. Collins on January 29. This meeting at Colorado State University will meet in the Plant Sciences Building, a room C-146 at 6:30 p.m. The program theme will be "Threatened and Endangered Plants of Colorado." Preceding the business meeting from 1 to 4 p.m., the CSU Herbarium will hold open house. Demonstration of the RAPIC (Rapid Access Plant Information Center) will be presented at 1:30, 2:30, and 3:30. You are invited to visit these facilities and to learn their functions in relation to the activities and goals of the Society.

For further information please contact:

Dr. Dieter H. Wilken
Department of Botany and Plant Pathology
Colorado State University
Fort Collins, Colorado 80523

NOTICE TO ALL VOLUNTEERS

Be sure to keep a regular record of all your volunteer hours; include all activities in which you participate at the Gardens — Christmas Sale, Plant Sale, Workshops, Guiding, etc. Sheets for this purpose are available in the Gift Shop.

Reminder: All Volunteers should be members of The Associates. Thank you.

Thanks are due all who heeded the request for dried material for Christmas Sale. Many interesting seeds, pods and cones were donated and all were put to good use. Especially valued were the money plant and the Chinese lantern pods which always sell well. All your help was much appreciated.

Also bouquets should be given to the Hostess/Information Desk volunteers and members of the Development and Public Relations Committee who manned the membership booth at the Christmas Sale. Thanks to their efforts, 38 new members were added to the Denver Botanic Gardens. Welcome!

New Book

Those people fortunate enough to be traveling to the S.W. for vacation should take along *Shrubs and Trees of the Southwest Uplands*. This book, just received by the Gift Shop, is written by Francis H. Elmore who worked for the National Park Service for over 30 years. (Some of our members may know Mr. Elmore for he has frequented the Denver Botanic Gardens Library doing research for this work.) The book is handsomely illustrated with black and white line drawings and color photographs; the sections are color coded by zones for easy identification.

The Denver Botanic Gardens recently received a bequest from the Estate of Mrs. Conrad M. Riley. Also, donations for a Rose Garden have been received in memory of Ethel Gillette. Gifts have also been received in memory of Emil Bruderlin, Geneva Eldridge and Bertha Mossman. Thank you so much.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication.

Editor — Margaret Sikes — 297-2547



Green Thumb Newsletter

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NO. 77-6

JUNE 1977

297-2547

GARDENING TIPS FOR JUNE

Beautiful Spring!

This was one of the most colorful springs I can remember. The dry winter and the threat of continued drought, although leaving many gardeners uneasy, does have its rewards. Flowering seems to be more intense in years when there is less soil moisture available. Perhaps this is one of nature's ways of preserving plants; by causing them to produce flower and fruit in abundance in years of drought just in case the parent plant dies because of drought. I don't remember a spring when everything seemed to bloom all at once, as it did this year but I do remember the heavy seed production in Siberian elm and other plants following the disastrous freeze of 1969 and the dry fall of 1970 which stimulated the flowering of lilacs in September in some areas.

Flowering trees were probably the showiest of any this year, particularly the crabapples and the redbuds. For those that have had trouble with fireblight in crabapples, I'm afraid this year will be a repeat because fireblight is usually more intense during years of heavy flowering. Redbuds make a good substitute if you are looking for a small tree with pink flowers in spring. Redbuds are best located on an east exposure and they will need protection from sunscald the first two or three years after planting.

Along with the heavy flowering, we'll probably also see heavy fruiting, particularly in crabapples. This office has received quite a few requests for information on ways to reduce the fruit set on crabapples to avoid the clutter of apples under the trees later on. While it may be a little late this year to try, applications of the insecticide, Sevin, will often cause fruit drop. Normally the material must be applied within 20 days after petal fall. The insecticide serves a double purpose in that it will help to control some of the insect problems.

As predicted earlier, insect populations seem to be at an all-time high. Most of them got an early start with leaf rollers and tent caterpillars beginning activity in early May and in some cases, even in late April. It would pay to check your yard weekly and apply corrective measures if necessary. Before you spray, however, be sure to identify the problem correctly and then before you apply a chemical, determine whether or not there are sufficient numbers of insects to warrant spraying.

One insect that is often overlooked but can be very destructive on spruce and pine is the pine needle scale. This insect is white and has a flat scale resembling speckles of white paint spread on the needles. Be sure this is not confused with the normal resin found on bristlecone and foxtail pine. The pine needle scale should be in the crawler stage in the early part of June and if you have them, they can be controlled with weekly applications of malathion or diazinon. Apply about three applications.

(Continued back page)



DENVER ROSE SHOW

On Sunday June 26, the Denver Rose Society will host their annual show in Horticulture Hall of the Denver Botanic Gardens. The show, open to the public, free of charge from 1:00 to 4:45 is the 30th Annual Show. This year judging will be done by Accredited Judges from outside the metropolitan area. There will be 20 judges representing many states including Dr. Eldon Lyle of Tyler, Texas, past president of the American Rose Society.

The show will consist of approximately 150 classes in the Horticulture Division, and 12 classes in the Artistic Division, "Colorado Summer". A special class for Novices will be included. More than 25 prizes and awards will be given.

Dr. William Campbell is chairman of the Show assisted by Joan Franson as Co-Chairman.

The High Country Bromeliad Society will meet June 20 at 7:30 p.m., in Classroom C at the Botanic Gardens. There will be a slide show of a Brazilian Bromeliad expedition from the National Society. Also look at the *Journal of the Bromeliad Society* in the Helen Fowler Library. The issue of Mar-April has a good article on the Denver Botanic Gardens and our collection.

Bouquets to you!

Members will be pleased to learn that one of our members was recently honored at the National Convention of the African Violet Society in St. Louis . . . Emma Lahr was presented the Continuing Service Award in recognition of meritorious service for having served the AVSA in many capacities on a national and local level since 1967.

A RAINBOW OF BLOOM – 1977 IRIS SHOW

Horticulture Hall – Denver Botanic Gardens
1005 York Street

Saturday June 4 – 1:00 p.m. to 4:45 p.m.
Sunday June 5 – 10:00 a.m. to 4:45 p.m.

The public is invited without admission charge to view the show iris and/or enter horticultural stalks and/or arrangements.

Those viewing the show during the above hours will see displayed the region's finest iris. The show is timed for peak bloom of the outstanding Tall Bearded variety. The latest new iris introductions will be separately featured by commercial growers.

Other sections will show Aril iris, Beardless iris, seedlings propagated by the region's hybridizers, and youth horticultural stalks and/or arrangements.

Those wishing to enter stalks and/or arrangements can obtain schedules by calling either of the show co-chairpersons:

Marguerite Vigil 935-2695

Ray Lyons 985-7030

BONSAI SHOW

The Denver Bonsai Club will sponsor its annual Bonsai Exhibition at the Denver Botanic Gardens on June 18 and 19 from 9:30 a.m. to 4:30 p.m. each day. Admission is \$1.00 for adults and children under 16 will be admitted free.

Featured will be the exhibiting of 150 miniature trees from the newly created to some that are over 100 years old. This is the finest exhibit of its kind in the Rocky Mountain area. There will be expert demonstrations at 10:30, 12:00, 1:30, and 3:00 both days on the creating and culture of Bonsai. Everyone is encouraged to bring cameras, ask questions, and enjoy our show with us.

For additional information concerning the exhibition, please contact Keith Jeppson, Show Chairman (business phone 629-2263).

The free film ties in beautifully with the Bonsai Show by setting the mood with gorgeous photography of Japan. The movie features the development of one particular bonsai from start to finish. Classroom C, 1:30 p.m., June 11. Free.

TRIBUTES

Park Hill Garden Club

In memory of Ruth D. Armstrong

Rachel Agrelus

In memory of Arch Brenker

Mr. and Mrs. John Falkenberg

In memory of Polly Steele

Connie Achelpohl

Mr. and Mrs. Francis O. Brown

Mrs. C. E. Chisman

Rose Christensen

Mrs. Katharine B. Crisp

Myra K. Freeman

Mrs. E. Sydney Glick

Mr. and Mrs. George W. Kelly

Mr. and Mrs. Ray T. Krehbiel

Mr. and Mrs. J. V. Petersen

Mr. and Mrs. Robert Rishel

Margaret Sikes

Amy L. Smith

Walter H. Wilson



Great Success!

The 1977 Plant Sale was another record breaker – not only in the variety of plants offered, and the numbers of people who came, but also in the number of volunteers who helped. The time and effort you donated to this outstanding annual event is always an impressive example of your dedication. Thanks go to all of you and especially to Joan Franson, General Chairman, and Beverly Hanselman, Co-Chairman, for their leadership.

Thanks also are due to the tour guides who have so faithfully volunteered hours and hours – first learning, then guiding – for the benefit of our many visitors to the gardens. Glin Duxbury scheduled guides all year long and Carrie McLaughlin has accepted that big responsibility for the coming months ahead. The summer tours will be booked at 10 a.m. Tuesday, Wednesday and Thursday in July and August.

ENGLEMANN RETURNS TO MISSOURI

Among the many plants named for George Englemann, noted botanist of the 1800's is *Picea englemannii* (Parry), the Englemann Spruce.

The Missouri Botanical Garden had long wanted to add this Colorado native to their collection because of Dr. Englemann's association with them. A month ago when Dr. Gambill, the Director of the Denver Botanic Gardens, was going to St. Louis for a meeting, he decided to take them a tree.

Although it is extremely hard to get in the trade, our Assistant Director, Glenn Park, after many trials and tribulations, found a 4 foot high plant. This was carefully wrapped, both shoot and root, in plastic and paper.

The airlines had been alerted that Dr. Gambill would carry it with him; unfortunately, the agent at the gate had not been notified and was adamant that it was to be shipped in the baggage compartment. That was done but thankfully the tree was removed prior to the descent along the carousel with suitcases and skis.

Missouri Botanical Gardens was delighted to receive it, so they potted, planted and photographed it for the record; (a special picture was taken with the type specimen from their herbarium which was collected by Dr. Parry at Empire in 1862). Then after all the publicity was finished, it was dug up and removed to a cooler environment for recovery from its trauma!

INTERNATIONAL BOTANIC GARDENS SEED DISTRIBUTION AND EXCHANGE

With Denver Botanic Gardens participating as a seed distributor for the first time during the winter of 1976-77, I would like to remind *Green Thumb* readers of the importance of this method of extending our plant range.

In the past, well prior to the establishment of plant nurseries and seed farms, botanical garden collections were maintained and enriched by the international exchange of seeds and less frequently by plants. One of the earliest recorded distributions was between Leiden in Holland and Chelsea Physic Garden in London during 1682; these two gardens still carry on exchange today.

No doubt earlier exchanges were made between Pisa and Padua in Italy, the first two botanic gardens to be established in the mid 1500's. Perhaps well before that the Greek philosopher, Theophrastus (370-286 B.C.) distributed seeds from his botanical collections.

More recently there has been an upsurge in the collection of native and other seeds for distribution and ever since its inception Denver Botanic Gardens has been the recipient of such lists from all parts of the world. We have received large lists, of up to 4,000, not only from America but many European countries as well as Russia, China and Japan. South of the equator one sees supplies from Australia, New Zealand and South Africa and now that our gardens are beginning to mature we are in a position to reciprocate.

This year our first list, of only 100 taxa, went out to some 60 other botanic gardens and establishments. This list was sent out during December (Summer in the southern hemisphere) and 3 months or so are allowed for return. To date approximately 50% have sent in requests and should you ever visit Moscow, Rotterdam, Turin, or Taiwan you may see Colorado natives blooming in somewhat different surroundings.

Last year approximately 1/3 (about 1,000) of Denver Botanic Garden's new accessions were in the form of seeds from such lists and in future years to come some of these will find their way into the outside gardens and conservatory.

We would like to extend our list to include more natives of Colorado and if any of you should be able to collect and let us have fresh *seed* crops of named plants later this summer and fall, it would be most appreciated. If so, call me at 297-2547 for information on correct procedure.

At the same time I think we should all thank other botanic gardens for helping to make the Denver Botanic Gardens what it is today.

Andrew Pierce

JUNE CLASSES

"Something old, something new . . ." may categorize the educational offerings this month.

Beginning Beekeeping will be explained on June 4 at 9 a.m. in Classroom A. Since these familiar insects have been connected with man for centuries, many fables are told concerning their behavior. For example, if a bee circles your head, you'll get a letter soon; or if you're not sure about your true love's feelings, lead him past a hive. If the bees swarm out and sting him, he is unfaithful.

Mr. Washecka, the author of *Stingless Beekeeping*, will mention tales like those but will spend more time discussing hives, brood nests, and methods of working with bees. Free, but limited to 25. Please call and sign up after May 20.

Other classes include *House Plants as Ground Cover*, June 8 at 9 a.m., Classroom C. Free. *Beginning Bread Baking*

on June 15 from 9 - 12, Classroom B. Please bring measuring cup and spoon, wooden spoon, a bowl and a large cookie sheet. Limit 15, cost \$2.50. Also, *Pottery and Plants*, a children's class on June 16 and 23. Grades 4-6 will meet from 9 to noon and Grades 1-3 from 1-3 p.m. The children will make pottery using a variety of techniques and decorations. All materials for propagation will be provided along with clay, oxides and paints. The fee is \$3.00 and the classes are limited to 10 students each session.

Two new classes that were not listed in the Summer List of Classes will be of special interest to members. Demand was so heavy after Eileen Price's last class that she has consented to offer one on "*Spice Up Your Life*," June 20-21, from 10-12 noon both days. It will meet in Classroom A, cost \$6.00 and cover herbs and spices from A to Z. Students will taste them, learn the families to which they belong and how to use them.

Also there will be a *Field Trip to See Trees in Boulder* on June 11 with Campbell Robertson. Meet at 9 a.m. on the Chautauqua Grounds in front of the Dining Hall (on Grant and Baseline, South Hill). The walk will encompass the grounds plus some of the nearby streets. Limit 20, cost \$1.50.

Those people who plan to enroll in the August class and make *rose beads* will want to start gathering petals now. You will need a large shopping bag full for the class, so "gather ye rosebuds while ye may."

Field Trips will fill the remainder of the month.

Join Dr. Brunquist on June 15 at 9 a.m. at 909 York. Free.

Other trips which are scheduled require a prepaid reservation. (Unfortunately people will list their names and not show!) Please remember to send in \$1.50 for any of the following:

Grass Field Trip with Dr. Zeiner, June 11 at 9 a.m. at 909 York or 10 a.m. at Shelter House at Daniels Park (drive south on University Blvd. to County Line Rd., east about one mile to first right turn, south to shelter house). Limit 15.

Field Trip to Colorado Springs with Lucian Long, June 18 at 8 a.m. at 909 York or 9:15 a.m. Monument Valley Park (Take I-25 to Colorado Springs, at the Uintah Exit turn left under I-25 and the railroad to Glen Ave., turn right two blocks to Mesa Rd. Monument Valley Park is at the intersection of Glen and Mesa and the Native Garden of the Horticultural Arts Society is inside the Park). Limit 30.

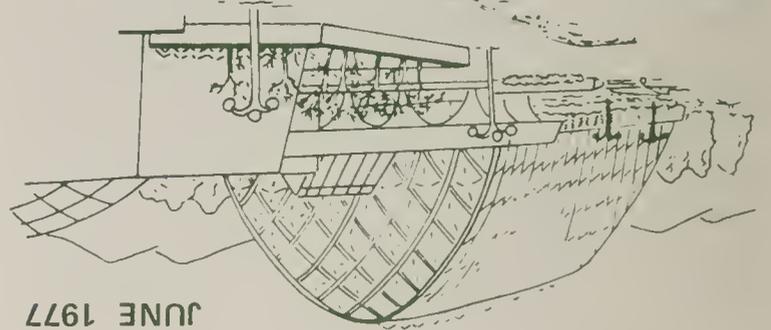
Field Trip to Mt. Goliath with Marjorie Shepherd, June 24, 8 a.m. at 909 York or 9 a.m. at Echo Lake Lodge (Take I-70 west to Idaho Springs, take Mt. Evans Exit - Hwy 103 to Echo Lake Lodge). Limit 20.

Field Trip to Rosborough Park with Dr. Janet Wingate, June 25, 8 a.m. at 909 York, or 9 a.m. at Roxborough Entrance Station (Drive south on Santa Fe - Hwy 85 to Titan Rd., turn west to N. Rampart Range Rd., turn north to Entrance Station). Limit 20.

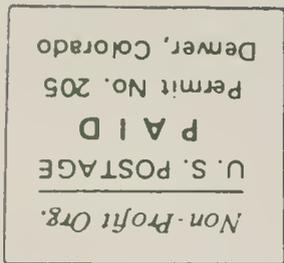
Remember on all field trips please bring your lunch and share gas expenses with the driver. Also please remember all field trips (except those led by Dr. Brunquist) are limited and there is a pre-paid charge of \$1.50 for each.

Finally we have had many requests especially from people who took the Basic Mushroom classes, for mycological field trips. The Colorado Mycological Society leads such forays throughout the season. Why not join that organization and participate with them? The dues are \$5.00 a year and the Treasurer is Marge Curran, 1654 Quince, Denver, Colo. 80220.

DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO, 80206



JUNE 1977



(Continued from page 1)

Oyster shell scale, commonly found on dogwood, lilacs and aspen, can be controlled in the crawler stage with the same spray used for pine needle scale. Early control is essential because the young crawlers will soon form their own scale which protects them from the chemicals applied. Use caution when applying chemicals to aspen. They are quite sensitive. If possible, apply only a wettable powder formulation rather than the liquid form. This is because the liquids carry solvents that frequently do more damage than the pesticide itself.

Another method for controlling scale insects is the use of a systemic such as Dimethoate EC (Cygon).

June is rose month. While many of the roses had a tough time through the dry winter, it looks like most of them are going to be stronger by virtue of the fact that when the canes are closer to the ground they are usually stronger. The frequent afternoon thunder storms have increased the incidence of mildew and it would be advisable to control this before it cripples the foliage and shoots. One of the most effective control measures is Benlate which has some systemic properties and does not wash off readily during the rains. Among other mildew control chemicals Mildex and Karathane. The latter one has to be applied more frequently than Benlate. You can do much to control mildew in your garden by avoiding overhead irrigation or frequent, light waterings. Let the soil surface dry out between waterings and this will reduce the likelihood of a humid microclimate around the plants which tends to encourage disease development.

When cutting roses for bouquets always make the cut just above a five-leaflet leaf so that the shoot will flower again. If you cut above a three-leaflet leaf the shoot will be unable to produce another flower.

It is also best to try to make all cuts to an outside-faced bud to encourage the plant to fill out more and it will also improve the general shape of the plant. For longer-lasting qualities try to cut them during the coolest part of the day and a few hours after they have been deep watered.

In this column last month I discussed various topics including the tussock moth. Because of the danger and severe damage this insect can inflict on our state tree, I am repeating a few words of caution. The insects also attack other needled evergreens beside the spruce. They will also feed on Engelmann spruce, Douglas-fir and white fir. They will not feed on pines or junipers.

Because the insects migrate to the tops of the trees, they are difficult to detect. They are also very tiny at first. A white sheet or plastic cloth at least 12 inches square staked to the ground near the trunk of the tree will soon show signs if the tussock moth is chewing your tree. You will find yellow, sand-like droppings and bits of chewed needles on the cloth. Control can be obtained by using Orthene or Diazinon or a mixture of Methoxychlor and Malathion.

For more information request a brochure prepared by the Colorado State University Extension Service and Trees for Today and Tomorrow (TTT) from the parks and recreation department of Lakewood, Wheat Ridge or Denver. These brochures have been distributed by the local city forestry offices and by over 90 neighborhood organizations to homes located in known infested areas. Supplies of the brochures are also available from this author or from the Extension offices in Jefferson, Arapahoe and Denver counties.

We can and must save our majestic Colorado State Tree!

Dr. J. R. Feucht



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication.
Editor — Margaret Sikes — 297-2547



Green Thumb Newsletter

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BOTANIC
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NO. 77-7

JULY 1977

297-2547

GARDENING TIPS FOR JULY

MITE PROBLEMS

Spider mite populations are beginning to build up in the garden areas and like many other pests, they are early this year by as much as two to three weeks. The recent warm weather has encouraged rapid hatch of the eggs which have over-wintered.

These tiny eight-legged creatures don't seem to be too particular about the plants they feed on but are particularly troublesome in junipers, spruce, roses and a wide variety of shrubs. It takes a trained eye to actually see the mites since they are smaller than the size of a pin head and they generally feed on the lower surface of the leaves. Signs that they are present are usually indicated by a stippled look to the foliage and there may also be present a coating of fine cobwebs over the surface of the leaves.

Because many trees and shrubs are already under stress from drought conditions as a result of last winter, it is anticipated that spider mite populations may cause an even more severe effect than normal. It will be even more important this year to gain control over them as soon as possible. There are several miticides on the market that can be used for control. The most common is Kelthane but in recent years it has been found that mites are beginning to develop resistance to this chemical so it is a good idea to use an alternate such as Chlorobenzilate.

If you are controlling mites on non-edible plants you can also use a systemic or mixtures containing systemics such as Isotox. A new product on the market this year, Orthene, is also labeled for control of mites and it also has systemic qualities.

Should you wish to control mites without use of pesticides, they can be washed off by frequent syringing with a strong stream of water. It is even more effective if you use a little detergent in a hose-attached jar-type sprayer. About 1 teaspoon liquid detergent for fifteen gallons of water is sufficient. The syringing method might hold populations down but it is not as effective in eliminating mites as the chemical sprays.

Another type of mite that is showing up in certain plants is the Eriophyid. These are four-legged creatures and they are about five times smaller than a regular spider mite, thus, they will often go undetected and are usually only recognized by the symptoms alone.

This year there seems to be more than the usual number of Eriophyid mites causing nipple-like galls on aspen. While not serious other than aesthetically affecting the appearance of the trees, some control can be obtained using a miticide. Since aspen are very sensitive to certain types of chemical sprays it is best to use only those forms available in wettable powders rather than liquids. These are usually somewhat more difficult to purchase in garden centers.

There are also gall-forming Eriophyid mites on cottonwoods. The gall forms along the twigs at a point where a bud had originated. The only control known at this time of

Continued inside

Terrace and Garden Tour

Plan to join other interested gardeners on July 28 from 10 a.m. — 6 p.m. when the Denver Botanic Gardens Guild offers its annual Terrace and Garden Tour.

Eight gardens are featured this year which have a variety of interest including large vegetable gardens, fish ponds, grape arbors, hanging baskets and striking statuary. Of special interest to people who have taken the *Home Landscaping* course at the Gardens will be the Rollingers' home with its outstanding representation of native and exotic trees, shrubs, and other plants.

Tickets, costing \$5.00, are available at the Gift Shop or at two individual gardens on the day of the tour.



*Palm at Oceanside
by Edith Warrick*

All are invited free of charge to the Colorado Watercolor Society Show in Horticulture Hall, 1005 York, from July 6 to the 24th.

Slide Show of Wild Flowers

Members will be interested to learn of a new slide show which is now available at the Denver Botanic Garden Library on a rental basis. This depicts the cavalcade of bloom in the front range from the plants of early spring to the tundra flowers of the late summer. Besides the full carousel of slides and a listing of botanical names, a narrative is included. The fascinating script was written by Diane Ipsen, a volunteer with extensive editorial experience. She was helped in this project by Helen Clifford, Al Daraghy and Jim Jackson, among others, who chose slides and did research. We are fortunate indeed to have volunteers of this caliber and wish to express thanks for a job well done!

The show is available on a check-out basis at the Helen Fowler Library on deposit of \$15.00, \$5.00 to be refunded on return of program.

year is through the use of systemics which are injected into the tree. This is rather expensive and must be applied by a licensed applicator. As with the galls on aspen leaves, these are usually not too serious but in large quantities, could result in dieback of the twigs. These are better controlled with sprays applied just as the leaves unfold in spring.

A way to check for mites in your yard is to hold a sheet of white paper under a branch and shake the branch vigorously. The mites falling on the paper will then be visible as tiny specks moving across the paper. Mites can do serious damage to your plants so it is wise to control them.

As with all chemicals however, when applying these, use extreme caution, use only as directed on the label, and avoid applying on a hot and windy day. For further information on the control of spider mites in your yard, you may request a copy of Service in Action leaflet #5.507 by dropping a card to this author at 909 York Street, Denver, CO 80206.

TOMATO HORNWORM

July is a good time to look for the tomato hornworm. It's amazing how they can creep up on you and become too large, seemingly over night. They are very well disguised but you can watch for signs of chewing on the foliage and small tomatoes.

An effective control is Sevin and this chemical can be applied without concern about residual effects, allowing only twenty-four hours after application before harvesting the tomatoes. It is always a good idea to wash the tomatoes before eating them.

If you object to using any chemicals in your garden, the only other way is picking the worms off by hand. This can be a very time-consuming task, particularly when the worms are small and it does take pretty good eyesight.

If you have had trouble with the fruitworm on your tomatoes it is probably because the tomatoes have been allowed to come into contact with the soil. The plants can be tied up or you can tuck a little bit of dry grass clippings under the fruit. The grass clippings will serve a dual purpose — protecting the fruit from contact with the soil, and mulching the area to prevent weeds and water loss.

PROPER WATERING

Watering of course, is a big and important subject this year and I fear for years to come. Even though the Denver Water Board has developed rather strict water restrictions and the restrictions have helped to reduce water consumption, the "three hours per day every 3rd day" ruling is not helping promote drought resistance in your plants. In many cases it has probably encouraged less drought resistance because, in order to water an entire area in just three hours, shallow watering is almost a necessity and is most certainly a necessity if you have a large yard to cover. These shallow waterings encourage shallow rooting and even the most drought-resistant plants like Russian-olive, pine and sage can succumb to long dry spells.

If conditions become more critical, I would recommend utilizing your water time to deep-root watering the trees and shrubs and garden perennials, even if it means neglecting the lawn areas. Lawns can be replaced at lower costs than your trees and shrubs. In any case, don't attempt to keep everything green through shallow watering. The consequences can be costly later on. Evaluate your yard and determine what areas should receive the highest priority for water. Keep in mind that north sides of structures will need less water than either south or west exposure. Established trees and shrubs should be able to get by with just one deep watering a month. This is best done with a deep-root

watering device rather than with the sprinkler system. The additional aeration can help promote deep roots along with your deep watering.

— Dr. J. R. Feucht

ANNUAL PLANTINGS

Summer is here, and at this time of year our thoughts turn to outdoor activities, especially gardening. Even though water shortages have cramped the style of many Colorado flower gardeners, one can still enjoy the beauty and elegance of flowers by visiting the outdoor displays at the Denver Botanic Gardens.

The theme of the gardens this year is Indian designs. Throughout the numerous planted areas, motifs taken from Indian blankets and beaded belts may be found.

According to Mr. Glenn Park, Assistant Director and mastermind behind the outdoor garden designs, a variety of low maintenance plants are being used such as petunias, marigolds, ageratum, alyssum, and begonias. These are plants which do not require trimming to provide continuous bloom.

The color scheme of the gardens is simple: reds, blues, whites, and yellows. Variety is added, however, by the use of numerous different types of plants. For example, in the red shades one may find such plants as Petunia 'El Toro', Snapdragon 'Floral Carpet Rose', Geranium 'Scarlet Flash', and Begonia 'Glamour Red'.

One of the most outstanding displays of the outdoor garden is the Thunderbird motif just west of Anna's Overlook. Bordered by 'Yellow Galore' Marigolds, the Thunderbird spreads its majestic 'Panther' Marigold wings across a background of 'Blue Angel' Ageratum. The eye of the Thunderbird and surrounding triangular designs are of 'Floral Carpet Rose' Snapdragons.

These displays are a must for all residents, and an excellent place to bring one's visiting friends and relatives.

—Joyce Deming

(Editor's note: Joyce Deming is a college intern who is working at the gardens this summer.)



FREE FILM

On July 9 at 1:30 p.m. in Classroom C, "Minigardens" will be shown. This prize winner from the International Film and TV Festival shows how these wonderful minigardens can spring up in cellars, schoolrooms, drab halls, back steps, fire escapes, windows and porches to bring beauty and life to mundane surroundings. All welcome.

HELP PLEASE!!

We desperately need tarragon (*Artemisia dracunculus*) for our famous herb vinegar. If you have some to spare please call Gloria Falkenberg 322-4862 for information.

JULY CLASSES

Many, many people have signed up for our classes and field trips this summer. Some spaces remain however, so plan to join us and increase your enjoyment of this beautiful season in this beautiful state.

Mrs. Walter Pesman, age 83, wrote this poem last July. How appropriate!

JEEP TRIP TO YANKEE BOY BASIN

Wide open skies and airy breeze,
Cliffside and valley, graceful trees,
And jagged mountains, if you please,
As we go jeeping along.

We hear some pleasant wild bird calls,
We glimpse the narrow canyon walls,
We see the wild white water falls,
As we go jeeping along.

Then come the mines, fabled of yore,
Thistledown, Camp Bird – gold still in store –
Torpedo Eclipse, Golden Rose, and many more,
As we go jeeping along.

Revenue, Atlas – their fame is just,
Gilpin, Governor, Ruby Trust –
To see these ruins is a must,
As we go jeeping along.

Here's Sneffles – last house now aflop.
We journey on. At final stop,
Virginus, Humboldt, Mountain Top,
As we go jeeping along.

What glorious flowers greet our way,
The yellow monkey-flower so gay,
Blue chiming bells with dainty spray,
As we go jeeping along.

The white bear's breeches, showy, broad;
By tall green gentian one is awed;
Red elephants we all applaud,
As we go jeeping along.

And, best of all, that plant divine,
In meadows above timberline,
Our state flower, lovely columbine,
As we go jeeping along.

High up, in masses we behold
In marshy spots those pals of old –
Gold globeflower and white marigold,
As we go jeeping along.

The fleecy clouds, by winds far-flung,
The babble of each friendly tongue –
These yearly jeep trips keep me young!

The Field Trip to Mt. Goliath has 5 spaces left. Join us on July 11 at 8 a.m. at 909 York or 9 a.m. at Echo Lake Lodge. (Take I-70 west turn off at the Mt. Evans Exit to Echo Lake.) Fee \$1.50 plus gasoline.

Dr. Brunquist will continue his ever-popular *Plant Life Field Trips* on July 20. Meet at 909 York at 9 a.m. No limit and no fee but bring lunch and share gasoline expenses with the driver.

Remember those who have signed up for the field trip and anyone else who is interested, should plan on attending July 30 at 9 a.m. in Classroom C to see slides of plants of Deckers! Free.

Please remember these field trips are not primarily planned to view scenery or to take pictures, laudable as those aims are, but they are devised to study plants in a scientific fashion. For this aim it would be helpful to bring a hand lens and to carry Weber's *Rocky Mountain Flora*. (Also we are sorry but we can not make refunds under \$5.00. It costs the Gardens that amount to process refunds.)

A free class, open to all in *Summer Lawn Care*, will explain some lawn problems and recommend cures. The discussion will include insect and disease problems, weed control and renovation procedures. Meet in Classroom C at 9 a.m. on July 9.

Reminder: those people who have signed up or are planning to sign up for *Rose Beads* in August should be continuing to collect a large shopping bag full of petals. (Sometimes it is helpful to separate the red from other colors.)



All-America Selections

The two 1978 All-America Rose Selections winners are on display at the gardens this summer. They are located in a raised planter at the southeast side of the garden near the pylons.

'Charisma' is a floribunda of vivid coloration. The scarlet red and golden yellow blooms are small and plentiful. The growth habit of the plant is neat and compact. 'Color Magic' a hybrid tea, is a progressing color blend of pale apricot pink to deep pink and to rose red – thus the name.

More All-America Selections!

Three thousand of the best All-America corms have been planted in the south gladiolus beds at the Gardens. Look especially for a display planting of 'Sunray' a new 1977 introduction. Also when walking around the Gardens, note the test gardens for future All-America selections west of the Conservatory.

All of these have been donated by "Selected Glads, Inc."

Inspirational Reading for Gardeners and Flower Lovers . . . for anyone

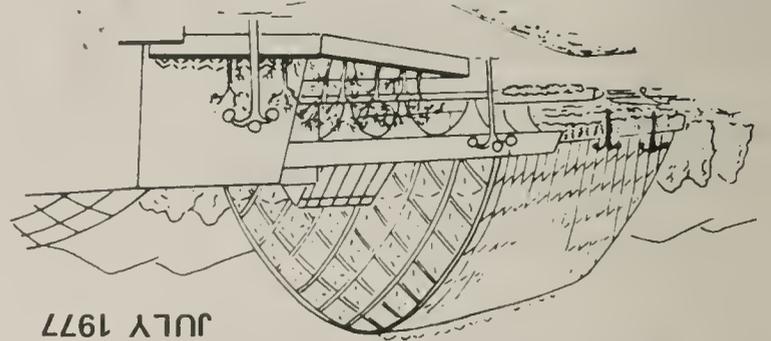
Garden Meditations by Josephine Robertson is now available. Each refreshing message begins with a quote from a poem, prose selection, or from a famous public figure and ends with a sentence prayer. Mrs. Robertson, a graduate of the Columbia School of Journalism, is well known to many members of the Denver Botanic Gardens for she and her husband are very active in our projects.

GOOD NEWS

The 1977 Used Book Sale was very successful and increased the book budget of the library by \$3500.00. The donations from members and friends are responsible for this achievement. Please continue your support of the Helen Fowler Library by contributing more books and more magazines for the 1978 sale. Please call 297-2547, extension 24, if more information is desired.

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JULY 1977

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Mrs. Polly Steele
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Dr. and Mrs. Fred Zeiner
Cherry Creek Women's Club
Mrs. Robert A. Maynard
An Arbor Day project – conservatory plant
Morning Belles Garden Club



LOBBY COURT

The beautiful blooms and foliage of begonias are featured this month in the Lobby Court. First will be wax, rex, and reigers followed by the spectacular colors of the tuberous. Come and admire them all!



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Editor – Margaret Sikes – 297-2547



Green Thumb Newsletter

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DENVER
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NO. 77-8

AUGUST 1977

575-2547

GARDENING TIPS FOR AUGUST

Insect Pests Having "Field Day"

The continued high prices of food in the marketplace has led a tremendous increase in the number of vegetable gardens and the number of problems in these gardens has also increased.

Insects, it seems, have had a "field day" due in part, to a mild winter and present weather conditions. You are probably seeing signs of the tomato hornworm, first evidenced by chewed foliage and black droppings. For a small number of plants, they can easily be picked off by hand, but for large numbers of plants, Sevin does a good job of controlling the hornworm.

Tomatoes and potatoes are often afflicted by another insect known as psyllid. This pest is often detected only after the damage has already been done. The adult and the nymph stages of the psyllid feed by sucking the plant juices, leading to a yellowed condition known as "psyllid yellows." Often the leaves are curled as well as yellow, causing a stunting or distortion which will result in little or no fruit on tomatoes and small, marble-like potatoes. A spray of Malathion or Diazinon will help to reduce this problem.

Use Of Pesticides

Perhaps a word or two about pesticides and their uses, or mis-uses, would be timely for the gardeners in August. Frequently, this column as well as most garden literature, will indicate that there is a waiting period after spraying and before harvesting your edible crops. We are often asked the purpose of this waiting period and why it differs from one chemical to the next and one crop to the next. For example, Sevin has a one-day waiting period on such things as asparagus, beans, carrots, peppers and tomatoes, but will have a three-day waiting period on broccoli, cabbage, cauliflower and head lettuce; a seven-day waiting period on raspberries; fourteen days on chard, leaf lettuce and spinach. Similar variations occur with other garden pesticides such as Malathion and Diazinon.

The reason the waiting period varies is a combination of the nature of the chemical itself, the type of carrier used in the chemical, and the texture of the foliage of the crop. The question then arises, how does one remember all these things? The answer is, you *don't*. The information is present on the label of every product you purchase. This is why it is so important to read the label and then follow instructions explicitly. If the label does not list the vegetables you are spraying, then you are using the wrong chemical. Call your county extension office for assistance in these matters.

Browning in Junipers

At this time of year much browning occurs on the inside of upright and spreading junipers. Sometimes this browning is the result of natural shading in cases where junipers have been heavily sheared, but more often than not, the browning is the result of heavy infestations of the spider

mite. If allowed to go unchecked, the mite population will build up rapidly during this hot weather and can severely injure or even kill some valuable evergreens. Applications of Kelthane or combinations of sprays containing miticides will bring them under control. Also look for the presence of mites on other trees and shrubs, also garden flowers.

For those not wishing to use pesticides, reasonably adequate control can be obtained by forceful washing down of the plants with a garden hose. This should be done every few days and will work well with existing water restrictions. Use only a sufficient amount of water under pressure to dislodge the mites; do not overwater the plants in the process. Overwatering will only lead to other problems, such as mildew in roses, zinnias and other mildew-prone plants.

Prepare for Fall

Since August is usually a very hot, dry month during which our first thoughts turn to finding ways to cool off, it's a good month to cool off psychologically by thinking ahead to the Autumn weather to come. Now is a good time to do more than just think about fall, but to do something about it. By this I mean, we should begin to prepare our trees and shrubs for winter so that they will not suffer the injuries which have occurred all too often in past years from untimely freezes. Early, untimely, freezes do occur in Colorado and perhaps more often than we like to remember.

What can be done? Perhaps the most important at this time is to begin tapering off on watering so that late growth is encouraged to harden off as early as possible. This doesn't mean that you completely ignore your woody plants in the yard. Simply reduce gradually, the frequency of deep waterings and avoid, if at all possible any shallow waterings. This serves a dual purpose: protects our trees and shrubs and conserves our much-needed water at the same time. Trees and shrubs need only one deep watering a month.

Reducing the need for frequent watering in flower beds can be achieved by using a mulch. Grass clippings work well to conserve soil moisture if they are applied after drying and not too heavily all at once. Mulches not only reduce water loss, but if properly selected, will reduce many weed problems as well.

For more information on the use of mulches, you can obtain a copy of Service in Action leaflet #7.214, "Mulches for the Home Grounds", by contacting this author in care of the Denver Botanic Gardens, or through your local county extension agent.

—Dr. J. R. Feucht

LOBBY COURT DISPLAY

The plantings in the Lobby Court this month are designed to capture a mood of peace and quiet by the skillful use of blue hues. This concept is patterned after Miss Jekyll's ideas. She said, "What is meant by colour schemes is not merely the putting together of flowers that look well side by side, but the disposition of the plants in . . . such a manner that the whole effect is pictorial. It is done by means of progressive harmonies — harmonies throughout being the guiding principle, contrasts the occasional exception".

ADULT GARDENING

This year marks the beginning of the Adult Garden Program at the Denver Botanic Gardens. The garden program is designed to instruct fundamental gardening and to provide the area and opportunity for people in the community to grow their own vegetables. The instructors for the program are Lee Schwade and John Brett. Both are present at the garden during morning and evening hours to instruct and assist the adult gardeners.

The program has had a good response for the first year. At the present time there are twenty-five families and individuals participating in the program. The tuition for each 150 sq. ft. plot is \$15.00. The tuition covers the cost of a variety of seeds and most bedding plants, along with fertilizer, water, and instruction.

The adult garden also contains an experimental section. Mrs. Lainie Jackson, who is in charge of the test area obtains new varieties of vegetables from around the world and determines how well they grow in the Denver region. The adult gardeners share in the maintenance of the test plot and in the harvest.

The gardeners not only socialize during regular hours but each month they gather for a potluck barbecue. Some of the dishes include vegetables harvested from their garden.

The program provides an inexpensive way to learn gardening and a way of becoming acquainted with other people in the community.

—Ronald McLellan

(Editor's Note: Ron McLellan is a college intern who is working at the gardens this summer.)



TRIBUTES

In Memory of Mrs. Rae Rogers Smart
Combs — Gates Denver, Inc.

The Fontius Family
Bill and Karin Hillhouse
Betty I. Naugle
Ann D. Schmidt

In Memory of Vera Stevenson Lafferty
Mr. and Mrs. Harper Swensen

In Memory of Dr. Maude E. Midgley
Orra M. Robertson

NOTICE: The city telephone prefix number has been changed to 575. Therefore, Denver Botanic Gardens number is now 575-2547.

Distinguished Guests — —

Three years ago the U.S. and the U.S.S.R. signed an agreement relating to protection of the environment with one section pertaining to conservation of native flora. In accordance with the document, three Russian botanists will be touring the Rocky Mountains and then three Americans will return the visit.

The Denver Botanic Gardens is pleased to be included in the itinerary. Dr. Gambill will host the following scientists this month:

Dr. Valery I. Nekrasov — Chief, Department of Exchange and Seed Investigation, Main Botanical Garden, Moscow.

Dr. Lilian S. Platnikova — Senior Scientist, Main Botanical Garden, Moscow.

Dr. Igor V. Belolipov — Senior Scientist, Tashkent Botanical Garden, Uzbek Academy of Science.

* * * * *

The *Fall List of Classes* will soon be delivered. One of the special classes to be offered is *Fundamental Ecology*. Dr. Denham, who will be teaching it, suggests the following ideas for consideration:

Have you ever wondered why certain plants grow where they do and why they are absent from nearby localities? Some plants seem to grow almost anywhere and others are highly restricted as to the places they can be found.

The topography of Colorado is striking with plains and rivers to the east and mountains and valleys to the west. Our really common plants appear to grow in all kinds of soils with temperature and moisture being the obvious restricting factors. On the plains it is hot and dry in summer and cold, dry and windblown in winter. Here there are primarily grasses, either pasture grasses or cultivated wheat and corn, with most of the trees, willows and cottonwoods, growing along the streamsides. As the ground rises along the foothills there are junipers (red cedar) and pines. As we go upward into the mountains, the increasing elevation gives us a climate that is cooler and has more moisture. At about 11,600 feet the climate becomes too rigorous for trees and above timberline we have the dwarf plants of the alpine tundra, capable of growing very, very slowly in a world where it can sleet or snow any day of the year.

In addition to these broad general patterns, the geologic history of Colorado with several episodes of mountain-building and others of sedimentation, especially along the shores and below the surface of extensive inland seas, has left conspicuously different soils within our state. There are plants which are restricted to certain types of soil.

As you drive around the state this summer, whether it is to the mountains on a hot day or to the plains when it is cooler, break the boredom of driving by stopping to look at the roadside plants.

ANNOUNCEMENT

A six weeks *Landscape Plant* class will be taught starting August 17th from 9 a.m. to Noon. This class which costs \$12.00 will be offered by Dr. James R. Feucht and Gary Niederkorn and is limited to 25 students. Please call Dr. Feucht at 355-8306 or Mr. Niederkorn at 659-4150 for further information.

LAGNIAPPE

A special treat, a double-decker bus ride around some colorful parks of the city, has been planned for hard working volunteers. Miss Dorothy Nemeč, Landscape Architect for Parks and Recreation, will be riding with us and will describe and discuss her handiwork. Those attending will also partake of light refreshments at one of the parks.

All this is a way to try to say thank you to a grand group!

GLADIOLUS SOCIETY SHOW

The Colorado Gladiolus Society will hold their annual Gladiolus Show at the Denver Botanic Gardens in Horticulture Hall on August 13th & 14th. The show will be open to the public on Saturday from 1 - 4:45 p.m. and on Sunday from 9 a.m. to 4 p.m. Admission to the show is free. Photographers are welcome to photograph the beautiful specimens of gladiolus. Columbia Savings is sponsoring the show this year. The theme of the Gladiolus show will be "Ports of Call." Those interested in exhibiting in the artistic arrangements may obtain more information by calling the Chairman, D. H. Kerrigan, 935-9104. Those interested in exhibiting their gladiolus spikes for the horticulture section may obtain more information by calling Mr. Robert Folsom, 756-2126. Those who wish to exhibit should bring their spikes on Saturday morning to Horticulture Hall before 10 a.m. as judging begins at 11 a.m.

12th ANNUAL DAHLIA SHOW

The Denver Dahlia Society will present its colorful dahlia show to the public on Saturday, August 27, from 1 p.m. to 4:45 p.m. and Sunday, August 28, from 10 a.m. to 4:45 p.m. at the Denver Botanic Gardens.

We welcome all dahlia growers to participate. You do not have to be a member of the Denver Dahlia Society to be an exhibitor. Your single specimen bloom must be a named variety with one pair of attached leaves. For further information call Edward J. Pankoski (Show Chairman) 424-4816 or Ed Mehner (Club President) 355-9045.

COME TO THE FAIR — The Denver Botanic Gardens will be the scene of the Colorado Mycological Society's second annual Mushroom Fair on Sunday, August 21st. You can view the wonders of Colorado fungi from 1 to 4:45 p.m. for only \$1.00 per person, children under 12 free when accompanied by an adult.

According to Dr. Emanuel Salzman, chairman of the Fair this year, the event will consist of a variety of demonstrations and exhibits in the field of mycology, which is defined as the study of mushrooms and fungi. Probably the most interesting feature of the Fair is to be a display of fresh, wild mushrooms gathered the previous day by the society's members. Most of the 200 men and women in the organization will divide into groups to search various locations for the sometimes elusive fungi. The finds will then be carefully identified and displayed by common and scientific name.

Other features of the Fair will include a continuous slide show depicting a number of spectacular mushrooms common to this area and a display of mushroom identification books and other mycological literature.

A demonstration of some aspects of the treatment of mushroom poisoning will be presented by the Denver Poison Control Center.

MUSHROOM FAIR, AUGUST 21

During the Mushroom Fair, the Helen Fowler Library will feature a special display of books on mushrooms, books from the general collection and the special collection housed in the Waring Room.

The Waring Room of the Helen Fowler Library contains rare books, our treasures. Among these are *Icones Farlowianae: Illustrations of the Larger Fungi of Eastern North America* by William Gibson Farlow; *Mushrooms, Russia and History* by Valentina Pavlona Wasson and R.

Gordon Wasson and *Mushroom Book* by Lois Long, John Cage and Alexander H. Smith. (Dr. Smith presented this folio volume of lithographs to the library in 1976.) People will be admitted in small groups as the room is not large and none of the volumes displayed will be allowed to leave the premises.

Among recent additions to the circulating collection are the following titles:

Introduction to the History of Mycology by Geoffrey Clough Ainsworth;

Mycologist's Handbook: an Introduction to the Principles of Taxonomy and Nomenclature in the Fungi and Lichens by D. L. Hawksworth;

How to Identify Mushrooms (to Genus) using only Macroscopic Features by David Largent;

One Thousand American Fungi by Charles McIlvaine and Robert K. Macadam, reprinted by Dover in 1973. The first edition is in the Waring Room.

Mushrooms of North America by Orson K. Miller, Jr.

The Complete Book of Mushrooms: over 1,000 Species and Varieties of American, European, and Asiatic Mushrooms by Augusto Rinaldi and Vassili Tyndalo.

The Romance of the Fungus World; an Account of Fungus Life in its Numerous Guises, Both Real and Legendary by T. R. Rolfe and F. W. Rolfe, a reissue of an older work.

A Field Guide to Western Mushrooms by Alexander H. Smith.

Wild Mushrooms of the Central Midwest by Ansel Hartley Stubbs.

A Colour Guide to Familiar Mushrooms by Mirko Svrcek

CLASSES

Summer is reaching its zenith and many plants are in full bloom now. Often it seems as if they are ADC (another darn composite); still they are well worth studying with the help of an expert.

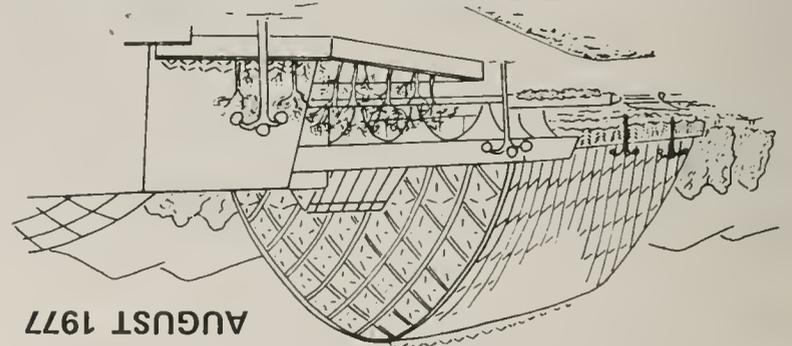
To people who are susceptible to hayfever from ragweed and other wind pollinated plants, August can be a difficult time. Generally speaking no plant that has conspicuous flowers is a culprit for it is likely to be insect pollinated. Rather it is plants with inconspicuous flowers and no fragrance that may cause the problem. Learn more about this subject with Dr. Zeiner and Mrs. Shepherd on *Field Trip to Study Allergy Plants* on August 10th. Meet at 8 a.m. at 909 York St. or 9 a.m. at the intersection of Highway 75 and the Deer Creek Canyon Road at Chatfield. Fee \$1.50 plus gasoline.

Dr. Brunquist will lead his popular *Field Trip* on August 17. Meet at 909 York at 9 a.m. Free, bring lunch and share gasoline expenses with the driver.



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AUGUST 1977

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Members will be delighted to know that Dr. Brunquist recently received the Minoru Yasui Community Volunteer Award. This award, sponsored by the Denver Commission on Community Relations, the Rocky Mountain News and the United Bank of Denver recognizes an unusual gentleman whose enthusiasm for living and for sharing his philosophy of life makes him a pleasure to be with. Congratulations on a well deserved recognition!

And more about Dr. Brunquist

In "Popular Gardening Indoors", there is an article "I Took a Course." There Dr. Brunquist and Peg Hayward are featured along with other volunteers from other Gardens.

A class which works with flowers is *Techniques of Collecting and Drying Flowers in Silica Gel*. Students must bring two plastic shoe boxes with tight fitting lids, scissors, wire cutters and a wide mouthed gallon plastic container with lid. On the first day, August 15, flowers will be collected and placed in the medium; on August 19 they should be properly dried. The cost is \$17.50 and ten spaces are left.

Finally *Winter Pruning Tips* on August 30 at 9:30 a.m., Classroom B will help you prepare your evergreens, flowering trees and shrubs for winter. If you plan ahead now you'll be ready to act when the plants drop their leaves – one of the best times to prune. Free, all welcome.

FREE FILM

Field trips fill up so fast that if you can't join the group in the hills, you may enjoy seeing a film on *The Rocky Mountains*. This show views the snow capped peaks, alpine lakes, evergreen trees and wildlife which bring people from all over to view the beauty of our area. August 13 at 1:30 p.m. Classroom C.

Congratulations!

Members will be pleased to know of another well deserved recognition which Mrs. Ross Lahr has received: she was elected President of the American Gloxinia and Gesneriad Society at their recent convention in Minneapolis.

BROMELIAD MEETING

The High Country Bromeliad Society will meet August 15th at 7:30 p.m. in Classroom C of the Botanic Gardens. There will be a tour of the new Walter Smith Memorial Bromeliad Collection.



Courtesy Burpee Seeds



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor – Margaret Sikes, 575-2547



Green Thumb Newsletter

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BOTANIC
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NO. 77-9

SEPTEMBER 1977

575-2547

GARDENING TIPS FOR SEPTEMBER

Fall Is Coming

Already it is September! It is impossible to predict when we will have our first killing frost. For this reason it is a good idea to prepare your plants for possible early freezes. One of the best ways to do this is to withdraw water by spacing the watering periods further apart each time. This does not mean you should let your trees and shrubs get bone dry. You need not worry too much about certain kinds of plants since they seem to get ready regardless of temperatures and are probably more regulated by the shortening day lengths. Some examples are oaks, lindens, hackberry and birch. Those that do tend to grow late should be given special attention; these are goldenrain, willows, some kinds of cottonwood, redbud and some of the maples. These plants are often the ones most severely injured in untimely freezes.

Early Fall Chores

This is a good time to re-arrange some of the perennials by digging and dividing to improve the health of the plants and to keep them from getting overcrowded. Perennials that bloom in the spring and early summer, such as peonies, poppies, delphinium and shasta daisies, can be divided now. Late summer and fall flowering perennials should not be divided until spring.

Using a spade, shovel or spading fork (I prefer the latter), dig around and under the entire plant and lift it out of the soil. By hand, remove the large clods of soil from the roots and wash off the rest with a stream from the garden hose. Check the condition of the roots, remove and discard all diseased and dead portions. Save the healthiest parts and separate them at the crown or "eye." Healthy portions should be kept moist and replanted as soon as possible. If they need to be held over, heel them in the garden in an out-of-the-way place and water them in. If it is just for a few days, wrap in moist paper and store in the refrigerator.

Perennials that have been divided and replanted in the fall should be given a liberal mulch applied on the surface of the ground around them. This will help to conserve moisture and prevent early freezing of the soil long enough for development of roots before winter sets in. One of the most suitable mulches on the market is wood chips. For ideas on other types of mulches, request a free copy of Service in Action leaflet 7.214 from your county extension office or from the author, in care of the Denver Botanic Garden.

Spring flowering bulbs can be planted now. The earlier you buy them, the better quality bulbs you are apt to get. Bulbs that are kept on the garden shop shelves too long are not apt to produce satisfactory flowering. Most garden centers also keep only limited supplies of the good-quality bulbs since few of them have adequate facilities for long-range storage.

Bulb planting depth will vary with the type of bulb as well as the kind of soil. In heavier soils, bulbs should be planted 1" - 2" more shallowly than in lighter, sandy soils. Large bulbs like narcissus and the late tulips are generally planted 7" - 8" deep. Hyacinths and early to mid-season bulbs, 5" - 6" deep, and the small early bulbs such as crocus, squill and snowdrop 3" - 4". For more detailed information, request a bulb planting chart from the author.

Tree Replacements

Fall is a good time to replace some of the lost trees in our city provided they are planted early enough to become established before the ground freezes hard. Use care in selecting a tree. Attention should be given to the site and soil conditions and the space available. Don't choose a tree on the basis that your neighbor has one or on price alone. If you are replacing a tree along public rights-of-way, check with the city forester to get approval before planting. Some types of trees are not allowed along streets for reasons of safety or hazards to sewer lines. For more information on selecting trees and proper procedures for planting and care, request pamphlets 43 and 127 from the author. Each of these are available for 25¢ each.

Giving Your Lawn a Boost

The dry winter weather, water restrictions, hot temperatures and a myriad of insect and disease problems have taken their toll on lawns. Fall is a good time to give the lawn a good boost because during cooler periods, bluegrass will tend to develop a lot of side shoots (tillers) that will help to fill in the bare spots. If you've hesitated putting on a lawn fertilizer because it might promote more need for water, now is the time to consider it because the added benefits of fertilizer actually can increase the healthy lawn, improve the root depth and make the plant more efficient as far as water use.

If you've had difficulty getting the lawn to accept water it is probably because the soil is tight and it may also be due to an accumulation of shallow grass roots forming a mat. This will occur where frequent, light watering has been practiced.

Fall is a good time to use a mechanical aerator to help promote air and water penetration and to encourage better root growth.

As the cooler weather develops some gardeners are tempted to reduce the mowing height. This practice should be discouraged, however, since the more blade that is removed, the more food-producing portion of the plant is removed. This will reduce the ability of the plant to tiller and to develop deep roots.

If conditions continue to be dry this fall and winter it is a good idea to keep in mind that some winter watering will be needed on trees and shrubs and the more exposed areas of the lawn. Trees and shrubs should have no more than 1 deep watering a month to help them through dry spells.

Dr. J. R. Feucht

THE PLANT OF THE MONTH

The plant featured in the photograph is Sugar Maple, *Acer saccharum*. This particular specimen is located at 23rd Avenue and Colorado Boulevard.

Sugar Maple is a native of the Eastern and Northeastern United States and reaches up to Canada where the leaf forms the national symbol.

While it prefers a more acid soil, it seems to adapt to some of the older soils in Denver and if proper drainage conditions exist, will thrive, producing a dark green foliage with dense shade but perhaps more striking is the orange-to-red fall color.



Special Meetings and Events

The Colorado Junior Horticulture Association Contest will be held at 9:30 a.m., September 17 at Botanic Gardens. It is being handled through Cooperative Extension Service, 500 Right of Way Road, P.O. Box 950, Sterling, CO 80751, Phone 1-522-3200.

Hobby Greenhouse of Colorado, Chapter 1 members of Hobby Greenhouse Association of Wallingford, Conn., meeting at 7:30 p.m. Wednesday, September 7, in Classroom A at Botanic Gardens. Interested persons invited.

The Colorado Federation of Garden Clubs is sponsoring two courses during September at their headquarters at 1556 Emerson St., Denver. The *Landscape Design School* Course 2, is on September 26, 27 and 28. It is accredited by the National Council of State Garden Clubs. Cost: \$20 for members, \$23 for non-members. For information call Mrs. Ann Moss, 422-0038.

Flower Show School, Course 3, on September 7, 8 and 9, features Mr. Herbert Gundell and Mrs. C. W. Thomas from Tipton, Mo. For information call Mrs. Glenn Clayton, 781-3468.

Gardening under lights: Organizational meeting of Light Gardening Society, Classroom A, September 13 at 7:30 p.m.

Saturday's Show: September 10, 1:30 p.m. "Tuberous Begonias." Free movie at Classroom C of Denver Botanic Gardens.

REMINDER: York Street Children's Garden Graduation Program – September 10, 1:30 p.m.

Ecology – the Plants Around You

Dr. Miriam Denham

To the south of Denver the pines are pinyon, and Gambel's (scrub) oak is conspicuous. To the north of Denver the pines are ponderosa, and Gambel's oak is absent. Shrubs such as mountain mahogany and skunkbrush are found throughout the foothills, north to south. Colorado blue spruce is found along the moist valleys. Douglas fir forms dense forests on steep north-facing slopes until it is replaced by Engelmann spruce and subalpine firs. Ponderosa pines are on the warmer, drier south-facing slopes at lower elevations and are replaced by lodgepole pines at higher elevations. You might be interested in looking for some of these this summer.

In the vicinity of Bonnie Reservoir along the eastern border of Colorado, some of the gravel roads cut through sand dunes. (One area easily found is along the approach to Bonnie Dam from the east and to the south side of the dam.) In addition to the grasses, a plant community which is characteristic of these areas includes the thread-leaved silvery wormwood (*Artemisia filifolia*), spiderwort, wild "begonia," prairie evening primrose and golden aster. In the spring, the annual low lupine and the orange-flowered Carolina puccoon can be found here.

As you drive along Interstate 76 toward Denver between Roggens and Hudson, pasture sagebrush (*Artemisia frigida*, sold commercially as Silver Mound) starts to mingle with the silvery wormwood as the soils become less sandy. As you reach Denver, the silvery wormwood disappears and is completely replaced by pasture sagebrush. This sagebrush is found from the plains to timberline. Mountain sagebrush (*Artemisia tridentata* ssp. *vaseyana*) is found in Middle Park and the related big sagebrush (*A. tridentata* ssp. *tridentata*) dominates large areas on the western slope.

Small species of *Artemisia* are found above timberline. One, alpine sage (*A. pattersonii*) seems to be rare, but the reasons are not obvious.

One of the soils deposited by the Cretaceous seas contains the toxic element selenium. In our area and on the western slope, these soils can sometimes be identified by the presence of the showy, yellow-flowered prince's plume (*Stanleya pinnata*), a selenium indicator.

One more example is the giant evening-star (*Mentzelia decapetala*) which opens its huge white blooms at dusk. This plant is restricted to Cretaceous shales. It is not really common, but when it occurs, on disturbed soils, there may be many plants present. [There is a large group of these plants along the roadside southwest of Pawnee Buttes. Another population can be found on Niobrara shales on the east side of Interstate 25 at the exit about 1 mile north of the northbound rest stop south of Pueblo.]

If you are interested in the species of plants found in the major Colorado vegetation zones, there is a short article by David Costello on pages iii to x in H. D. Harrington's *Manual of the Plants of Colorado*.

Mrs. Walter R. Smith amassed a collection of books, many of which were donated to the Helen Fowler Library. Among the titles which are new to the bromeliad book collection are:

The Bromeliacea of Colombia by Lyman B. Smith. 1957.

Bromeliads – A Cultural Handbook by Mulford B. Foster. 1953.

The Bromeliacea of Brazil by Lyman B. Smith. 1955.

The Bromeliaceae of Ecuador by Amy Jean Gilmartin. 1972.

Das Pflanzenreich: Bromeliaceae by C. Mez. 1965.

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COLORADO POTTERS GUILD 1977 SHOW CERAMIC POTS FOR FLOWERS, PLANTS, IKEBANA, BONSAI

Pictured is a terra cotta plant contained by Jim Lorio, Colorado potter. Lorio will jury the special sales exhibition of ceramic flower and plant containers made by members of the Colorado Potters Guild and shown in Horticulture Hall September 30, October 1 and 2.

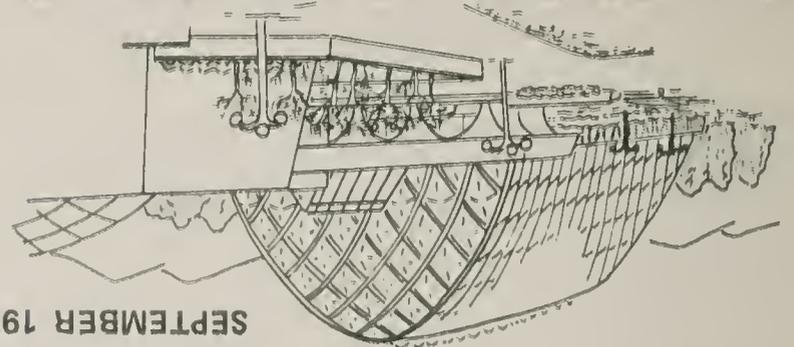
Early in the summer, Peg Hayward, Ikebana teacher, met with the potters to explain and illustrate the special design needs of flower and plant containers. The potters then had the summer to design and produce their one-of-a-kind pots.

Before the pots are arranged for display they are juried by Lorio whose studio is in Boulder. A former Colorado University ceramics instructor, and director of ceramics at the Evanston Art Center in Illinois, he now maintains his own studio and exhibits widely throughout the country. His work also will be included in the Botanic Show. All will be for sale and half the proceeds is donated to the Denver Botanic Gardens by the potters.

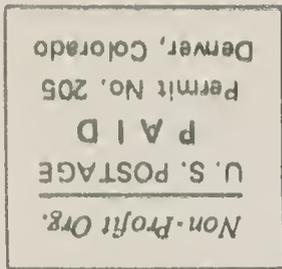
Admission to the show is free and hours are 9 to 5 on Friday and Saturday, 9 to 1 on Sunday.

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SEPTEMBER 1977



BACK TO SCHOOL TIME

Classes begin now!

There's that one about *Tropical Plants of the Conservatory* taught by Peg Hayward. It costs \$25 and it's worth it. The fee will be refunded if you put in a total of 40 hours as tour guide after you complete the course. Wednesdays, 1:00 to 3:00 p.m., from September 7 to November 9, in Classroom C and the Conservatory. Limit 15.

Then, take a walk: the *Tree Walk in Boulder*, led by Mr. Campbell Robertson at 9:00 a.m. Saturday, September 10. You start on the grounds of the Colorado Chautauqua, which opened in 1898 and is the only remaining historic Chautauqua west of the Mississippi. Many fine old trees. Meet at Chautauqua Dining Hall. Fee: \$1.50. Limit: 15.

It's time to see how commercial mushrooms are grown, harvested and processed. The *Field Trip to Mushroom Farm* (the place is muddy and wet, dress accordingly) is on Wednesday, September 14. Meet at 909 York St. at 8:30 a.m. Fee: \$1.50. Limit: 15. Mr. Sam Wardle is the instructor.

Look over the food before you eat; *Go Vegetarian, Italian Style*. First, we go to Green Mountain Grainery to see various kinds of foodstuffs. Then, after a discussion of the plant kingdom and its variety, we will dine on examples that have been carefully chosen from it. The instructor is Mrs. Eileen Price. Meet on Thursday, September 15 at 5:30 p.m. at 909 York St. Dinner at 6:30 p.m. at 1469 So. Pearl St. Fee: \$5.50. Limit: 20.

Look Ma! No dirt! Learn about the bubbling mineral water method of growing plants from a practicing hydroponicist. The instructor will meet the class in his garden, so all can see his method first hand. The title: *Mineral Water Gardening*. The time is 9:00 a.m., Saturday, September 17. The fee is \$1.00. For directions on how to get there, call 575-2547.

Knowledge we need: *Fundamental Ecology*. Dr. Miriam Denham's beginning study of the inter-relationships of plants and animals with their environment. In Classroom B at 12:30 to 2:30 p.m. on Mondays, September 19 to October 24. Fee: \$20.00. See Dr. Denham's article on Ecology elsewhere in this Newsletter.

Don't miss this one: *Plant Life Field Trip* provides an opportunity to study native and exotic plants in the field. On Wednesday, September 21, meet at 909 York St., at 9:00 a.m. A trip like this with Dr. E. H. Brunquist as instructor is a rare and rewarding experience. Any adult is welcome. Free; bring sack lunch, share gasoline expenses with the driver.

GARDEN ART IN MINIATURE

The delightful and perfect gardens of your dreams, lovingly and minutely modeled by Mrs. Helen Stanley, will be shown at Denver Botanic Gardens on September 10 and 11 (tentative dates), between 9 a.m. and 4:45 p.m. These works of art, which have delighted children and adults for over 35 years, are marvels in miniature, turning soil and pebbles, twigs and nail polish, tiny plants, biscuit pans and cookie sheets, and tiny figurines into Mexican villas, thatched roofs, winding roads and creeks and colorful mountains. Enjoy them.

LOBBY COURT DISPLAY

The High Country Bromeliad Society's second public bromeliad exhibit will be on display in the lobby court, along with plants from the Denver Botanic Gardens, throughout the month of September. The show will stress the various ways bromeliads can be used as greenhouse and house plant subjects, i.e.: under lights, in macrame hangers, epiphytically on trees, etc.

The Denver Botanic Gardens recently received a donation of a 1,000 plant bromeliad assortment. This collection, known as the Walter R. Smith Memorial Collection, contains many rare, unusual, and eye-catching bromeliads. Selected material from the Smith Collection will be incorporated into the display.

For more information on bromeliads, see "The Green Thumb," Vol. 34, #1, Spring 1977.

Succulent Plant Exhibit

An exhibit of succulent plants, sponsored by the Rocky Mountain Succulent Society, will be held in Horticulture Hall from 9:00 a.m. to 3:00 p.m. on September 24 and 25. Most of the major types of succulents, from private collections of the members and from the Botanic Garden's collection, will be on display.



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Green Thumb Newsletter

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OCTOBER 1977

575-2547

GARDENING TIPS FOR OCTOBER

Improve The Soil

To me, one of the best times of the year is October because it provides an opportunity to make changes in your garden but more important, to improve the soil for the next year. It won't be long before the lawn mower can be put away and that is one thing I never miss, and the cooler season of the year should also mean there will be less time spent trying to keep the garden watered. Let's hope for more water next year!

Fall is the best time to spade in your compost or any other sources of organic matter but it is preferable to leave the soil in rather large lumps and by letting the freezing and thawing action during the winter break them down. This will result in a mellow soil by spring. Leaving it open and loose also allows moisture to penetrate more deeply, providing a reservoir for spring growth.

There are hundreds of ways to make a compost. If space is limited one of the best methods is to compost right in the garden; chopping up the plant refuse from this year's garden and spading it directly in. This should be done as early as possible, however, so there will be some warm soil to hasten the breakdown of the material before a hard freeze hits. I have found that one of the best methods to chop up the tops of perennials and annuals is to pile them along the edge of the garden and run over them with a rotary mower. If this is done, be sure there are no large rocks or sticks in with the debris and also make sure the debris is blown into an area where neither people nor structures can be injured in the process. After using the mower in this fashion the blade will need to be rebalanced and resharpened but this is a small task compared to chopping it up by hand. There are machines on the market that are designed to do this kind of thing if you prefer.

It is preferable to chop up the garden debris before it has dried and get it spaded in immediately because the moisture in the plant tissues will help promote decomposition at a faster rate.

The primary purpose for adding compost into a garden is not to add fertilizer but to improve soil structure. For those who think that compost adds a lot of fertility to the soil, I should again cite some research mentioned several years ago in this column. The research was conducted by the Connecticut Experiment Station and presented in Bulletin 727, titled, "Biochemistry and Methodology of Composting," by Raymond P. Poincelot. According to this report the average nitrogen level in finished compost is only about 2%. Most of this is not immediately available to a plant and requires breaking down by organisms in the soil. Phosphorous will average less than 1% and potassium about 1%. The latter is rarely needed in our soils anyhow.

With drought continuing to be a subject of concern, composts not only improve soil structure but helps in water retention. The real secret behind organic gardening is that the organic matter improves the environment for the growth of the roots. Plants with "happy roots" are usually "happy plants."

There are some things that should be avoided in composting:

1. To keep down flies and to keep the neighbors happy, avoid using animal byproducts.

2. Despite the fact that heat may build up in a compost, it often isn't sufficient to kill the weed seeds. It is best to avoid planting debris that has gone to seed.

3. Woody twigs and clippings from evergreens break down slowly, normally requiring the addition of commercial fertilizer containing nitrogen. Coarse material, while useful in amending a soil, should not dominate the compost; perhaps no more than one-third of the volume should come from woody and coarse materials.

4. When using grass clippings, they should be stirred thoroughly and mixed with the coarser materials. If placed in a compost in layers, grass clippings usually produce a "goeey" mass which will act as a barrier to the exchange of air and the penetration of water. A foul odor will also result.

Fertilizing the Lawn

October is a good time to apply a fertilizer to your lawn, particularly, if you have been reluctant to use much in the way of fertilizers because of limited water supplies. The cool season of fall helps promote the side growth in bluegrass and fertilizer will help to improve the density of the turf. Apply fertilizer with an analysis of 20-10-5 or similar ratio now and help provide a good greenup in the spring and should also eliminate the need for an early application next year.

Mulches

Mulches are becoming more and more important in the garden not only for the control of weeds but for water conservation. Mulches can be used in several ways during the fall and winter months. If you are planning to plant spring-flowering bulbs, you can help delay or prevent early emergence of the bulbs by applying a mulch after the ground has been thoroughly frozen. The mulch will serve as an insulation by keeping the ground frozen later in the spring. If you are planning on planting trees, shrubs or perennials this fall, use a mulch to prevent the ground from freezing too soon. This will extend the time period needed for development of new roots.

The type of mulch that you select is important. Too often, peat moss is used as a mulch but this is really a soil amendment. Peat moss will tend to compact after watering and will prevent good water and air penetration. Mulches should be made of materials that will not compact such as wood chips, chunk bark or even gravel. If you plan to use black plastic, covering this with a decorative material, use strips no more than 18" wide and overlap them. This will allow better air and water penetration. It is best to use plastic films that are no thicker than 4 mils. Anything thicker than that could suffocate plant roots.

Bulbs

Get your bulbs now for spring enjoyment. Spring-flowering bulbs can be planted at any time; the earlier the better and the better quality bulbs you will be able to buy.

—Dr. F. R. Feucht

RHODODENDRONS AT 8400-FT. ELEVATION?

This could be called the saga of some well-traveled rhododendrons. It starts in the spring of 1974 when these plants were purchased from Pride's Nursery in Pennsylvania. They were planted in a raised bed of Canadian peat moss at our former home 40 miles northwest of Chicago. In August, Dr. Gambill persuaded me to come west to be the Assistant Director of the Botanic Gardens.

These small rhododendrons were dug up in September and heeled-in, near our house, in preparation for the move to Denver in October. Well, the home market was bad in Illinois, so it wasn't until January that we finally moved all our belongings to Littleton. The plants were placed close to the house on a concrete porch which faced north. In March, I prepared another raised bed on the north side of the house and planted them there. They grew well all summer and, since *Rhododendron* 'Juliet' was older than the others, it bloomed that spring.

Another move!! This time to Conifer, Colorado, at an elevation of 8400 ft. We moved on Easter weekend in April 1976, and, after about a month of getting settled, the rhododendrons were placed in a raised bed of Canadian peat moss (no additives) on the north side of the house. Again, *Rhododendron* 'Juliet' bloomed that spring. They all grew well during the summer and *R.* 'Juliet' set one flower bud.

The first winter at that elevation was nice for people, but terrible for broadleaf evergreens: no snow cover until January, warm daytime temperatures and freezing night temperatures. The soil remained frozen from mid-November to late-April because of the shaded location and cold nights. The spring drought did not help matters any, even though all the broadleaf evergreens were watered thoroughly once a week. *Rhododendron* 'Juliet' suffered some burned foliage, but the one flower bud bloomed in late May. New growth has covered the most severely damaged branches.

When we had 15-20° below zero temperatures, the rhododendrons were under a cover of snow, although I had to shovel extra snow onto them to achieve a complete cover. We did get one 27" snow accumulation in March which was nice (for plants), but I wished that it would come in November.

Rhododendron yakusimanum 'Mist Maiden' and *R. yakusimanum* 'Leach Hybrid' have been beautiful all winter and spring and look even more so this summer. These plants are now about 5-6 years old and hopefully will set some bloom buds this year. *Rhododendron* 'Helen Curtis' (a white-flowered evergreen azalea) suffered heavy leaf burn and some branch dieback, but new growth has replaced this and some bloom buds are forming this summer.

At this point, I cannot make any recommendations for growing rhododendrons at this altitude, as more time is needed to test the hardiness of these plants.

If you are an experimenter with growing plants under less than ideal conditions try some of the "iron clad" varieties or *Rhododendron* 'P.J.M.'. Place them in a raised bed or in some other well-drained location, add enough Canadian peat moss to provide over 60-70% of the soil contents, and keep them well watered until the ground freezes. A wind screen and shade in the winter is very beneficial. Warm spells in the winter may require additional watering unless there is sufficient snow to provide the moisture and protection.

Good Luck!! More later on other broadleaf evergreens at 8400-ft. elevation.

—Glenn Park

(Editor's Note: Glenn Park has recently been elected as President of the Colorado Garden and Home Show.)

The Denver Orchid Society and the High Country Bromeliad Society will present "Denver's Tropical Beauties" a showing of orchids and bromeliads. The show will be staged in Horticulture Hall, Denver Botanic Gardens from 9:30 to 4:30 both Saturday and Sunday, October 8 & 9. Sale plants and practical information will be readily available. Everyone is invited to come and enjoy these beautiful and exotic plants.



To borrow a phrase from last year's Bicentennial, "in celebration of US . . ." That is what our Annual Meeting on October 19th is all about! We get to hear all the latest statistics about all of our projects and accomplishments; we get to share a light repast together; we get to hear a fun speaker (Al Rollinger!) and perhaps even learn a little more about the world of plants.

As President of the Associates I am in a good position to tell you that we do have plenty of cause for celebration. During the past two years of my tenure we have been an active, innovative, productive group whose membership has remained loyal and whose efforts have brought both financial benefit and the aid of direct-labor to the Gardens. As an *ex-officio* member of the Board of Trustees I have been able to appreciate more fully than most the tremendous broadening of activities which is paving the way for the future expansion of both our physical plant and the community we serve: the ultimate completion of the York Street outdoor garden; the planned development of additional glass houses for displaying our increasingly fine specialized plant collections; the expanding list of classes and field trips offered by the Gardens; the renewed participation in "dirt-gardening" by the public to give them the practical experience every farmer seemed to be born with in years past; the new arboretum near Chatfield Dam where woody plants, both trees and shrubs, will be planted for the general public, school classes, professional landscapers and scientists to study. Additionally, the Gardens has been fortunate to be the recipient of two pieces of property, one in the montane zone on Upper Bear Creek and one in the foothills zone near Golden, which will both ultimately be used for display and teaching purposes yet to be developed.

I hope all members of our volunteer organization as well as all the other members of the Gardens can share my sense of excitement and fulfillment that our efforts are bearing fruit, even at this early stage, and that the prospects are even greater for future harvests!

—Syd Glick

Annual Meeting of the Associates

Once a year the Volunteers get together at the Annual Meeting of the Associates. This year it is scheduled for October 19 in Horticulture Hall. The business meeting at 10:30 a.m. will be followed by lunch at 12:15 p.m. Mr. Al Rollinger, the guest speaker, will discuss "Plants That Don't Read the Textbooks."

October Classes

In the Orient, men of culture and wealth frequently admired the gnarled and weathered trees that they saw in the mountains. Not only were they beautiful objects but they also symbolized courage in overcoming obstacles. When men attempted to emulate what they saw, the art of bonsai was developed. Mrs. Neil is planning to teach one class in *Beginning Bonsai* which will start on October 10 and continue through October 31. The hours are from 7 to 9 p.m., Classroom B. The cost of \$50.00 will provide materials - soil, wire, pots and trees. Tools and books are additional. Limit 12 students.

A children's class that was very successful in summer is being repeated on the Saturdays in October. Students may enroll in either two or four sessions of *Pottery and Plants for Children*. Grades 4-6 will meet from 9 to noon and grades 1-3 from 1:30 to 3:30 p.m. Limit 10 each class. The fee is \$4.00 for two sessions or \$8.00 for all four sessions.

Our Lobby Court display is one of the most striking of the year with the myriad blooms of the chrysanthemum as the feature. Come on October 12 at 9 a.m. when Nancy Collins who is responsible for the displays will explain the *Culture of Chrysanthemums*. Free but limited to 12 people. (No sign ups accepted before September 29, please.)



All Rollinger who is to be the speaker at the Associates' Annual Meeting, and Larry Watson of Western Evergreens Inc. will offer a class on *Waterwise Gardening*. Landscape design and use of appropriate native and introduced plants will be discussed. (Did you see Al's garden on the Terrace and Garden Tour?) The class starts on October 20 and continues to November 10, from 7:30-9:30 p.m. in Classroom C. The cost is \$10.00 (but if another member of the family wishes to attend the cost will be \$15.00 for both). Limit 50.

A free film on *Hybrid Vigor* will continue our series. Unusual film techniques illustrate the role of genetics in modern agriculture. The camera work includes time lapse photography and close ups of seed germination and development of plants. October 8 at 1:30 p.m., Classroom C.

Congratulations to George Kelly and thanks from all gardeners of this area! *Green Survival*, produced by the American Association of Nurseryman, finally has published a map with arid-alkaline zones shown for our area rather than zone 4 or 5. This is something Mr. Kelly has been working on for 35 years. Gardening in the Rocky Mountains is different.

Care to Share

It's time again to collect unusual seeds, pods, small cattails and (especially needed this year) burr oak acorns for Around the Seasons Club. A diversity of dried material is sought by the wise shoppers at the Christmas Sale. Help us fill their needs! Please bring materials to 1005 York on October 27 in the morning or call 575-2547 for further information.

STRIKE ONE! STRIKE TWO! STRIKE THREE!

It wasn't a ball game. It was the recurring head of mercurial Canadian and American labor unions adding spice and adventure to the first Denver Botanic Gardens Alaska Tour, July 21 - August 7, 1977.

However, all 26 returned travelers report a fabulous trip blessed with repeated good fortune and superlative trip escorts. Both north and south peaks of cloud-swathed Mt. McKinley accommodatingly emerged to the delight of the photographers; the cyclic salmon courageously leaped and struggled in the powerful cascades of torrential rivers; and the wonders of Glacier Bay National Monument and the White Pass-Yukon Railway, a narrow-gauge between Whitehorse, Yukon Territory and Skagway, Alaska, were experienced under azure skies. Nature cooperated, but it was nip-and-tuck with the unions.

Juneau welcomed us with rain and the cumulative efforts of a 14-day strike of the government operated coastal ferries which had zoomed the price of meals in the hotel dining room.

In Anchorage we noticed the picketing against Wein Air Alaska for using too many non-resident pilots in its operation; fortunately the strike was still a threat when the Denver Botanic Gardens group flew Wein Air Alaska from Fairbanks to Whitehorse, Y.T.

Heroic trip survival stories will recount the events of Sunday, August 7th, the date of our scheduled arrival in Denver. Our luxury cruise ship m/s "Renaissance" docked, on time, in Vancouver, B.C. only to discharge its passengers into the chaos of a general cessation of air travel in Canada. The air-controllers had called a strike.

Luckily the DBG group was in the capable escort hands of James S. Holme, Executive Vice President of Tourizons International, Inc., trip organizers. His travel expertise and attention to details were an important aspect of the trip's success.

Rain or shine, Alaska is a naturalist's paradise and a photographer's dream. The focus of the DBG tour was the flora and ecology of Alaska. During our three days on the Kenai Peninsula and at Mount McKinley National Park our guest guide and lecturer was Dr. James Mitchell, professor of Botany at the University of Alaska. Dr. and Mrs. Curtis Dearborn were our guides and hosts for the full day in the Matanuska Valley and tundra botanizing on Hatcher Pass. Having Dr. William Gambill, Director of Denver Botanic Gardens, as a member of our party was a particular pleasure. His enthusiasm and taxonomic excellence stimulated even the non-botanists to explore the world with a 10X hand-lens.

The Alaska tourist who has never experienced the cushioned springiness of the tundra, nor walked the six miles to Bartlett's Inlet through a dripping rain forest at Glacier Bay Lodge, or botanized the Alaskan roadsides has missed the basics of their trip to Nature's Paradise.

The Lucky Twenty-six on DBG 1977 Alaska Tour:

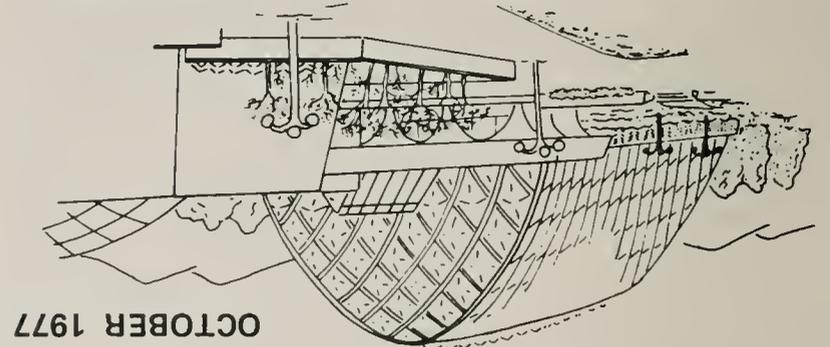
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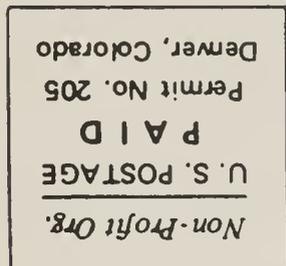
-Esther Witte

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OCTOBER 1977



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Green Thumb Newsletter

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NO. 77-11

NOVEMBER 1977

575-2547

GARDENING TIPS FOR NOVEMBER

Time to Relax!

Somehow, November and the other winter months should be the time for gardeners to relax and perhaps spend some time indoor-gardening in containers. Other than the final cleanup of the yard, one more turn of the compost and a little pruning here and there, I find it difficult to suggest too many gardening ideas at this time.

Forcing Bulbs

A good indoor activity would be to try to force a few bulbs in shallow trays or decorative containers. The easiest are the paper white narcissus now available in garden centers. These bulbs need no preconditioning and can be made to flower within six weeks or less. All you would need to do to start them is to fill shallow containers with gravel (pea size) or decorative gravel available in aquarium shops. The bulbs should be planted so that the top or "neck" is protruding from the gravel and enough water added to cover only the base of the bulbs. It is usually best to keep them in a dark location, or at least away from direct sunlight; gradually moving them to brighter light as the tops begin to grow.

If you try to force outdoor varieties, you will need to precondition them. (Hyacinths can be purchased already preconditioned.) To do this will require some room in the refrigerator. Hyacinths are among the easiest; tulips among the most difficult. In either case, place the bulbs in the containers you intend to grow them, add water and place them in the refrigerator until the top growth is 1 to 1½ inches long. By this time, most bulbs will have had enough cold treatment to resume the rest of their growth. Remove them from the refrigerator and place them in an area away from direct sunlight and strong heat and gradually move them to brighter light and warmer temperatures. With proper timing, it is possible to have bulbs in flower through the winter months, or by Christmas. They make good conversation pieces on the livingroom coffee table.

House Plant Care

With the wide variety of house plants available these days, it would be hard to try to describe all the things that could be done. Past records show, however, that Extension offices, florist shops and nurseries are deluged this time of year with calls on problems with house plants. The major problem encountered is with watering practices. Too many house plants are treated in the winter months the same way as in the summer months. This leads to such things as dropping of lower leaves, browning of the tips of the leaves, and a sudden yellowing or a development of off-color. Most of these responses are the result of changes in humidity, particularly in homes with forced air furnaces. When the furnace goes on, drastic changes take place in the atmosphere of the home. Such sudden changes will usually cause houseplants to drop their lower leaves. This is a common problem with some of the more sensitive plants including philodendron, schefflera and rubber plant.

(Continued next page)

April in the Mediterranean

Plans are now being completed for another in the highly successful floral tours sponsored by the Denver Botanic Gardens. Dates for 1978 have tentatively been set for April 23 - May 9, featuring the gardens and famous historic shrines of Southern Europe, and the wildflowers of Greece. The group will fly from Denver via New York to Lisbon, spending several days in that area, doubling back to the garden island of Madeira; then from Madeira via Lisbon to Rome, from which visits will be made to Florence and to some of the nearby points of interest; finally the tour will go to Athens, spending two days there, and a 3-day trip through the lovely Pelopponese. Those wishing to extend their stay in Greece, either to take one of the many Greek Islands cruises available from there, or to visit the Island of Corfu, may do so at their option. Jim Holme of Tourizons International is, as we go to press, making a reconnaissance trip over most of the same itinerary, checking hotels and other facilities to be used for the trip. Be sure to save the dates. A detailed brochure will be distributed to all Botanic Gardens members as soon as possible — it is hoped by early November.

Fund Campaign

John C. Mitchell, president of the Board of Trustees, announced recently that the Trustees of the Denver Botanic Gardens Foundation have launched a capital campaign. This seeks a minimum of \$1,500,000 for such projects as completion of the Rock-Alpine and Japanese Gardens; the building of an orchid and bromeliad display greenhouse; expansion of the children's, family, and handicapped people's gardens; planning, designing, and planting of an arboretum to be located near Denver at Chatfield Recreational Complex; establishment of a maintenance endowment fund; building of a mini-park at York Street with outside picnic facilities; and the drilling of a deep water well at York Street to ensure a continuous water supply for the Gardens.

All of us are aware that the interest of the membership has been the most important factor in the continued growth of the Gardens; we hope to be worthy of your support in this new campaign.

New Organization

The Denver Chapter of the National Indoor Light Gardening Society of America has formed and begun meeting the second Thursday of each month in Classroom A of the Denver Botanic Gardens at 7:30 p.m. We offer a special invitation to persons in the metropolitan area to join us in learning about the many new types of plants which can be grown under fluorescent light: begonia, geraniums, orchids, bromeliads, gesneriads, ferns, herbs, garden annuals, and vegetables and more. Anticipated program topics include: flowering plants for light gardens, propagation under lights, ABC's of fluorescent fixtures, pesticides in the home, soils and potting, terrariums, how to construct a light garden, and separate programs on plant families. Another feature of monthly meetings will be a sales table — a source of new and unusual plant material grown by our propagation committee. For further information, contact Doug Crispin at 399-3022.

House plants should be conditioned for winter even though they are indoors. First, is a gradual reduction of frequency of watering. This does not mean the plant should be allowed to dry up, but you should attempt to slow down its growth rate. This can be done to some extent by keeping the plant on the dry side. This is necessary for most house plants because they are accustomed to long days, which they will not be getting in the winter months. They also require higher humidity than is available when the furnace comes on in the winter. Keeping the plant on the dry side tends to slow down its metabolism, thus reducing its need for some of these requirements.

Another problem frequently encountered is the accumulation of soluble salts as a result of frequent, light watering. Soluble salts are even visible as a white crust on the surface of the soil and on the edges of the pots. These salts, when accumulated in sufficient amount, actually cause a reverse flow of water from the soil to the roots, a process known as plasmolysis. This results in the death of roots and, ultimately, the top of the plant. The first symptoms are a marginal browning or a tip burn of the leaves. Soluble salts can be reduced by adding copious amounts of water to the top of the pot and allowing it to flow out into a catch basin. To prevent the salts from returning, the catch basin should be emptied or the pots elevated so the bottom is not in contact with the surplus water. All house plants should be watered by using plenty of water so as to prevent any future accumulation of salts.

As a general rule, it is a poor policy to water from the bottom of the pot because of the salt problem. If you do water from the bottom or use wicks, occasionally flood from the top to remove the salts. The question always arises, "Where do the salts come from?" They are naturally in the soil and are the chemicals that make up the nutritional elements that plants need. It is an excess of these salts that cause the problem.

Past Growing Season

Perhaps this is a good time to reflect on the past growing season. With one of the driest springs on record, followed by a hot, dry summer, it is no wonder that gardeners were plagued by a variety of problems they had not encountered for many years. Conditions were generally favorable for all types of insects. Insect populations seemed to be at an all-time high, undoubtedly as a result of the previous rather mild winter. A surprising thing was the increasing incidence of diseases. One would normally think that in a hot, dry year, fungus diseases would be of little consequence. Yet, canker diseases in willows, cottonwoods and honeylocusts were plentiful. A relatively new disease in the area, thyronectria canker, was fatal to a number of established honeylocusts in the metropolitan area.

Fireblight, a bacterial disease common in apples and crabapples, was also at an all-time high. It seems rather unfortunate that in years in which we have the best flowering, we also have the worst fireblight problems. This is because the honeybee, unknowingly, spreads the bacteria from blossom to blossom. Other insects such as aphids can do the same but aphids will spread it through the foliage and twigs later in the season.

This fall, mildew on roses, sweet peas, zinnias and other mildew-prone plants was just as widespread as ever.

Not surprising was a very high activity of spider mites. They seemed to be on almost everything in the yard. Spider mites propagate quickly in hot weather. Other insects that were prolific included the tussock moth, pine needle

scale (most abundant on spruce), tent caterpillar and elm leaf beetle. We will talk about the control of these at the appropriate time next year.

Perhaps the most frequently encountered problem resulted from our dry spring and summer. It seems that many people over-compensated for the dryness by watering their yards more frequently but did not really get the water down deep. This practice tends to seal off the air supply to the root system, causing oxygen starvation in plants that are sensitive. In a dry year it will also result in an accumulation of soluble salts in the root zone of many plants in the same manner as in house plants, as described above.

If you have a spruce tree whose needles are turning purple or a pine whose needles dropped off more than normally, you may have a salt problem.

What kind of year was it? For me it was extremely busy and, frankly, I'm glad that the cold season is here once again.

HAPPY THANKSGIVING!

Dr. J. R. Feucht



SPECIAL EVENT

A beautiful slide show featuring the alpine tundra will be presented on November 2 at 7:30 p.m. in Horticulture Hall. Mr. and Mrs. Vernon Tomppert, who gave the initial show when the Education Building opened in 1971, have worked for months on this show. Mr. Tomppert has presented programs in many of the cities in the western U.S. and in Washington, D.C.; Mrs. Tomppert prepares and presents the narrative. All facets of the tundra will be shown, including flora, fauna, and geology, as well as gorgeous scenery. A musical background and dissolve photography techniques complete the program. Free and all welcome.

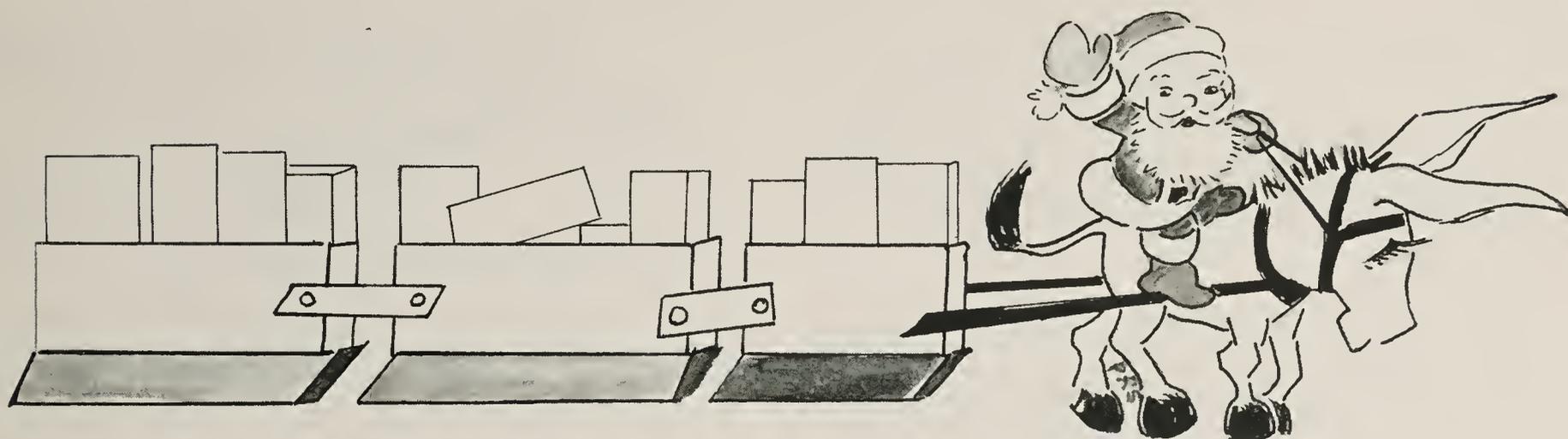
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Members will be interested to know that the Colorado Watercolor Society will have a show and sale in the lobby of the First National Bank of Denver, 17th and Welton. This show will start on October 31 and end November 11; the hours at the Bank are 7:30 a.m. to 6 p.m. weekdays and 8 a.m. to noon on Saturdays. A percentage of the proceeds from the sale will be given to the Gardens.

XMAS SALE

November 18 and 19

10 a.m. to 4:30 p.m.



CHRISTMAS SALE

Ferrying his one-horse sleigh our energy-saving Santa heralds Denver Botanic Gardens Gift Shop's 14th annual pre-holiday sale Nov. 18 and 19. Naturally, volunteers have planned for one-stop shopping at Boettcher Memorial Center, 1005 York Street. Sales hours are 10 a.m. to 4:30 p.m. both Friday and Saturday.

Sparkling new gift ideas mingle with traditional favorites — potpourris, zesty vinegars, treasure handcrafts, autumn harvests. All of these, plus carefully selected gifts from the Shop.

Garden Party is the newest fragrance in potpourri. Dainty sachets and tranquillity pillows have been fashioned with such heavenly scents as lilac, lavender, rose, carnation, lemon, mint, lily-of-the-valley and sandalwood. Mulling balls (orange baskets with spiced brown sugar) is a new treat for cider sippers. Although vanilla beans and cinnamon sticks will be available herb salt will be missing from Fragrance Corner this season.

Carefully brewed from a generations-old recipe more than 2500 pints of herb and tarragon vinegars have been bottled by members of the Guild.

Everlastings in flowers, cones, pods and other dried natural materials have been assembled by members of Around the Seasons Club. For those seeking to create their own yuletide gifts there will be blue salvia, colorful cockscombs, dusty millers and other floral gatherings; sweet gum balls, ear pods, acorns; green pinion cones, graceful cones of eastern white pine as well as native cones.

HOLIDAY TREASURES from the Arts and Crafts workshop will include distinctive wall hangings, table pieces, wreaths and candle rings. Floral arrangements in glass and brass boxes will also be offered. The twelve days of Christmas in origami, the handmade ornaments which graced last year's lobby court display will be for sale.

THE BOOK CORNER boasts more than 400 titles including the latest Time-Life series on *Herbs*, *Wildflowers* and *The Field Guide to North American Birds, Western Edition* by the Audubon Society. Recent releases are Wyman's *Encyclopedia of Gardening*, Revised and Nelson's *Handbook of Rocky Mountain Plants*, Revised, both popular standards.

JEWELRY IN CAPTURED SUNLIGHT. A limited collection of amber, jade and semi-precious jewelry will be for sale — bracelets, rings, pins, necklaces and earrings. Austrian petit point in a variety of floral designs; enamelled copper pendants, hair clips and belt buckles; ghost beads of juniper berries made by Navajos near Bluff, Utah are favorites. BOXES delight the imaginative: music boxes in rich tapestries or embellished leathers; colorful inlaid soapstone containers from Poland; Kashmirs lacquered in vivid floral and animal motifs; English metalware resembling fine porcelain to complement gifts of homemade treats — cookie jars, tea caddies, boxes and trays.

GIFTS FOR CHILDREN. This 75th anniversary of Beatrix Potter prompted the complete series of her cherished figurines, books and puzzles. Pull-string music boxes or rollicking clowns can brighten a nursery. Dover coloring books detail wildflowers, weeds, herbs, house plants, garden plants and the *Audubon Bird Coloring Book*. Cosgrove's *My Recipe for Birds* offers insight into attracting winged visitors and *Peter Rabbit's Natural Foods Cook Book* has edible recipes to channel a youngster's culinary efforts.

GIFTS FOR GARDEN OR LANAI feature mobiles of agate or sliced Brazilian geodes; wind chimes in variety, some are brass-toned; ornamental faucet handles and elegant hose guides. Pots from California, Mexico and Colorado will flatter a corner or spotlight a divider. Moist-o-meters and wick-its are useful items.

ACCENTS AND ACCESSORIES. Laser carved walnut bookends and utility boxes, antique brass bookends, one-of-a-kind handblown glass paper weights, candle snuffers, decorator eggs are a few of the carefully selected gifts.

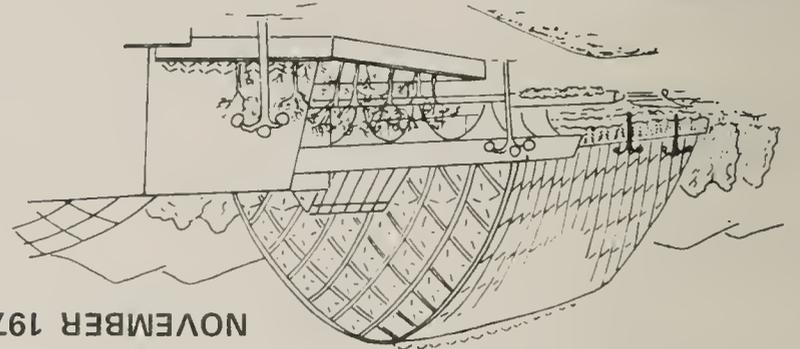
PLEASURE FOR FLOWER ARRANGERS can be found in crystal bud vases, oriental porcelains, modern ceramic containers, rosewood bases, even Flower-Dri for ardent hobbyists.

TRINKETS AND REMEMBRANCES. Musical necklaces, linen towels in floral, vegetable and herb designs, thimbles, memo boards, bright roosters and birds in quilled wood, note papers and pressed flower book marks are other suggestions.

As always, a gift from the Gardens is a gift to the Gardens for all proceeds benefit Denver Botanic Gardens.

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909 YORK STREET • DENVER, COLORADO 80206



NOVEMBER 1977

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TRIBUTES

- In memory of Mrs. Clayton Dorn
Mr. and Mrs. John C. Mitchell
- In memory of Mrs. Margaret E. Honnen
The Garden Club of Denver
Margaret Masoner
- In memory of Tom Palmer
The John Falkenberg Family
- In memory of Dr. Robert L. Stearns
Mr. and Mrs. John C. Mitchell
- In memory of Miss Eleanore M. Weckbaugh
Mr. and Mrs. John C. Mitchell
- In memory of Barbara Whealen
Katherine S. Benton
Margaret B. Gregg
Bernadetta B. Pfeifferberger

Readers will remember the announcement concerning a wild flower program that is available on a checkout basis from the library. Solange Gignac reports that it has been booked by various groups and so far has been well received. Now a tape cassette has been prepared by Ellsworth Mitick that can be used in place of the written narrative. Mr. Mitick, a library volunteer, is a retired speech teacher from South High School so he is well qualified to provide this service. Program chairmen who have the proper equipment may find this even more useful than reading the narrative themselves.

Remember, the whole unit may be checked out from the Helen Fowler Library for \$15.00. Five dollars will be refunded on return of the program.

Free Film

"The Garden of God" is a beautiful film which shows the flowers and trees of the Bible. This was filmed on location in the Holy Land and was the recipient of a creative excellence award at the U.S. Industrial Film Festival and the Silver Award at the International Film and T.V. Festival. Come on November 12 at 1:30 p.m., Classroom C, and later sign up to see many of the same plants on our Conservatory tour of plants of the Bible in December.

Lobby Court – Chrysanthemums

"Hope's golden flower, the last of all..." is again featured in the Lobby Court this month. Did you know that chryso is from the Greek meaning "gold" and anthemion means "a flower." The display is more appropriately named now for last month showed the red, pinks, and purple flowers; now it is yellow and bronze shades.

Report on Field Trip

Dr. Brunquist's final field trip of the season was held on a bright, beautiful day in the middle of September. Twenty-one trippers journeyed to Golden Gate State Park. Besides enjoying the fall color, they found twelve plant families in bloom (of course *Compositae* led the list with 14 genera).

Dr. Brunquist led monthly field trips from March throughout September with an average attendance of 30 people. He is already planning excursions for next season!



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication.
Editor – Margaret Sikes, 575-2547



Green Thumb Newsletter

DENVER
BOTANIC
GARDENS, INC.

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NO. 77-12

DECEMBER 1977

575-2547

GARDENING TIPS FOR DECEMBER

Choose A Tree Wisely

It's time again to make that once-a-year trip to the Christmas tree lot to make that decision on your ideal tree to grace your living room or den.

You need not wait until the last minute to go out and find a tree in the belief that it will be fresher than one selected earlier in the month, because you can keep the tree just as fresh, if not fresher, than it is kept at the lot and you will have the advantage of better selection if you shop early.

Most Christmas tree lots offer a wide variety of ever-green types from the shorter needled Douglas fir, concolor or white fir (also called Colorado fir) to the longer needled Scots (Scotch pine) and the native ponderosa pine. Another short-needled tree occasionally found is the balsam fir but is perhaps more common in the northeastern states.

Of the short needled types, the most common in this area is the Douglas-fir. While it is not a true fir it makes an excellent Christmas tree because, like the true fir, it will hold its needles a long time even after the tree has become dry.

Occasionally one will find spruce, particularly black spruce, in a Christmas tree lot. While they are generally very nicely shaped and of good color, they should be avoided as a cut tree because the needles tend to shed readily, even in relatively fresh trees. You can tell spruce from Douglas-fir and true fir by close examination of the needles. Spruce needles will be sharply pointed and angled in cross section. A good test is to roll a needle between the thumb and index finger; if it rolls readily, it is a spruce. Fir and Douglas-fir on the other hand, have flat needles, they are less rigid and not sharply pointed. The needles will not roll readily between the fingers.

To find an ideal tree, look for a uniform, triangular taper. Check carefully to see that this tree is free of weak, broken or unduly long branches, that it is well filled out and does not have large crooks in the stem.

When Christmas trees are cut, they are generally bundled together, with the branches tied upward, close to the main stem. To get a better idea of the shape of the tree, you should bounce the base of the tree lightly on the ground several times so that the branches will return to their normal positions. This will also tell you whether the tree is fresh and more likely to retain its needles. If many needles drop, you should not select this tree. If only a few needles drop the tree is undoubtedly fresh.

The desired effect you wish to have in the decorated tree will determine the amount of density and the closeness of the branches. If you prefer to have long tinsel hanging straight down, you should look for a tree with fewer but evenly spaced branches. If you like a tree heavily laden with ornaments then a very densely-branched tree is in order.

Once home with your tree, saw off the butt end about an inch or two above the original cut so that it can absorb water. The cut end of the tree should then be placed in a bucket of water in a cool, shady place, preferably outside, until the day you bring it in for decorating.

To reduce fire hazard, use a stand that has a water basin and place the tree in your home away from radiators, fireplaces, TV sets or other heat sources. Be sure to keep the basin of the tree stand full of water. Another word of caution – never leave a lighted Christmas tree unattended.

MERRY CHRISTMAS & HAPPY NEW YEAR

Dr. J. R. Feucht



The 3rd Annual Denver Audubon Society Art Show and Sale

WHAT AND WHEN:

Wildlife Art Exhibition

Saturday through Saturday

December 3-10, 1977

noon to eight p.m. weekdays

nine to five p.m. weekends

WHERE:

Denver Botanic Gardens

Horticulture Hall

1005 York

With two successful art shows setting the precedent this year's sale promises to offer even more excitement for the connoisseur of flora and fauna art. Twenty-five wildlife artists of local and national renown are eager to share their interpretations of nature in the mediums of watercolor, oil, pen & ink, acrylics, pencil, collograph, scratchboard, bronze sculpture, and inlay wood carvings. Edition prints from Parnell, Peterson, and Schoenherr studios will be available as will a few James Audubon antique prints. This stimulating 3rd Annual Art Sale gives opportunity not only for purchase of unusual and treasured items for personal collections and enjoyment but for very special Christmas giving. All items shown will be for sale and proceeds will aid the Denver Audubon Society.

Spring Trip

Plans are moving forward for the spring trip to the Mediterranean. Many expressions of interest have already been received, and all indications are that this will match or even surpass previous trips.

For further information, call Tourizons International, Inc., at 770-7895.

REPORT ON TEST ANNUALS

Forty-five new varieties of annuals were tested this summer at the gardens. Basic groups included were ageratum, alyssum, aster, begonia, calendula, cosmos, dianthus, geranium, marigold, petunia, portulaca, salvia, snapdragon, verbena, vinca and zinnia.

Two of the new ageratum varieties are worthy of mention 'Biscay' and 'Blue Danube' (also listed as 'Blue Puffs'). 'Biscay' is a taller variety 8-10" with mounds spreading up to 14" and 'Blue Danube' is a shorter 4" variety with 9" mounds. Both are heavy bloomers. Aster 'Pinocchio' has mixed colors of white, red, light pink, purple, rose and yellow. It is a late summer bloomer. The compact mounded plants are 10" high and are covered with tiny 1" dahlia type blooms. For mass effect plant 10" apart or this variety could be used well as an accent plant. Several geraniums were included, mostly different colors of the two series, Sooner and Sprinter. Generally plants are 11-14" high and spread up to 14". 'Sooner Deep Salmon' and 'Sprinter Salmon' are the same medium salmon color and 'Sooner Red' and 'Sprinter Scarlet' are the same red orange color. If you wish a definite red color use 'Sprinter Deep Red'. The variety that was the most distinctive among the geraniums was 'Showgirl'. Color is vibrant pink. It is a 1977 All-America Selection winner and certainly appears worthy of the distinction.

Several marigold introductions were planted but only two varieties seem to be worthwhile. 'Deep Orange Lady' is 15" high with 2½-3" carnation type blooms of vivid deep orange. 'Red Wheels', a mahogany red single with gold center, is 14" high with 2" blooms. Bloom color changes to a bronze tone and is very effective. Vinca 'Little Mix' and vinca 'Rosea Mix' are two varieties that could add a little something different to your garden. Both are mixes of lavender pink and white. 'Little Mix', 8-10" high with 1½" blooms, is best used as a border plant. 'Rosea Mix' is 18" tall with 1½" blooms. The open branching habit gives plants a light, airy appearance.

Several All-America Selection flower varieties were displayed in the garden this summer. There were four 1978 winners on display. Plants and seeds of these varieties were made available to the public on October 1st.

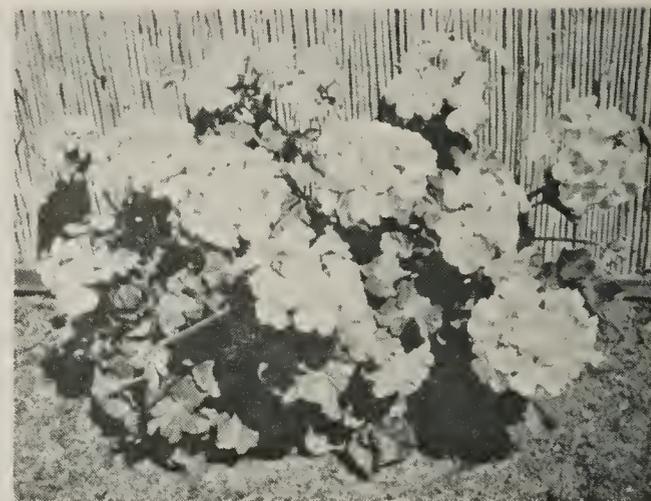
Zinnia 'Red Sun' — bronze medal — has mid sized plants 18-20" high with large 4" blooms of dark red. Blooms should be kept cut as fading flowers do distract. Fading is often typical in red varieties. Dianthus 'Snowfire' — silver medal — is a low growing variety 6-8" high. Blooms are white with rose red centers. This variety should be used as a border or edging plant and is also recommended as a container plant. Zinnia 'Cherry Ruffles' and zinnia 'Yellow Ruffles' are also silver medal winners for 1978. Plants are about 20" high with 2½" blooms for cutting.

Some of the 1977 winners were included in the display and are worthy of mention. Petunia 'Blushing Maid' — bronze medal — has double blooms of medium clear pink on low growing 10" plants. This variety produces many blossoms and fading is slight. Geranium 'Showgirl' is vibrant pink in color. Full plants are 15" high and bloom production is excellent. Two other bronze medal winners for 1977 were marigold 'Primrose Lady' and marigold 'Yellow Galore'. Both are 16-18" high with 2½-3" blooms. 'Primrose Lady' is a pale yellow color while 'Yellow Galore' is deep yellow.

Bev Nilsen



Petunia 'Blushing Maid' Hybrid



Geranium, Hybrid 'Showgirl'



Dianthus 'Snowfire' Hybrid

All All-American Selections

CHRISTMAS PRESENTS FOR A SPECIAL PERSON

There are many beautiful presents in the Gift Shop just waiting for purchasers. Some special books for special people might include *Space and Illusion in the Japanese Garden*. Another lovely book for the fancier of oriental art forms is *The Garden Art of Japan*. Members of the Orchid Society or anyone else who loves beautiful pictures of orchids would cherish *The Native Orchids of the United States and Canada Excluding Florida* by Carlyle A. Luer. This shows colored pictures of the orchids plus maps with the locale where the plants may be found. And finally for a bibliophile, three copies of a commemorative album from the Muriel R. Leeds collection on the *Yoshimura School of Bonsai* are available. This is a limited edition and all the copies for sale are signed by Yuji Yoshimura.

Good Reading

Look at *American Horticulture Magazine* for fall, 1977. In it, Dr. Gambill, the Director of the Denver Botanic Gardens, has written an article on aspen. It is beautifully illustrated by Loraine Yeatts.

There are many plants connected with the Holy Season. Some will be pointed out on the tour of *Plants of the Bible* on December 2. Other favorites such as holly, ivy, and mistletoe are familiar to all.

Other plants of the holidays will be displayed in the Lobby Court. The traditional white and red poinsettias will greet the eye, but visitors will also see 'Merry Christmas' Rex begonias, holly ferns, white cyclamen, and red and orange kalanchoe. All this, plus the outstanding display that Avalonne Kosanke, Fran Morrison, and their committee prepare every year.



Photography Display

Another reason to visit the Denver Botanic Gardens is to see *Tropical Blossoms*, a traveling exhibition from the Smithsonian Institution.

Forty-seven beautiful, full-color close-ups of unusual flowers from the tropical areas in Africa and the Americas are included in the exhibition. One example of the rare and exotic blossoms shown is the *Bixa orellana* or "Lipstick Plant," a small, delicate tree that produces showy flowers in summer, followed by clusters of bright red pods in winter. It is the only member of its family. Another interesting species pictured is the "Night-Blooming Cereus," a clambering vine found on rock walls, or draped on trees throughout the tropics whose richly perfumed, foot-long blossoms last but a single night. The prayer plant, passion flower, African tulip tree, bird-of-paradise flower, cannonball tree, and members of the African violet and Four O'Clock families are among the flowers documented.

Organized and produced by the Department of Botany at the Smithsonian's National Museum of Natural History, *Tropical Blossoms* has recently returned from successful showings in England. The color photography is the work of Dr. Edward S. Ayensu, Curator in the Botany Department, and his colleague, Dr. Kjell B. Sandved.

These fascinating photographs will be on display at the herbarium balcony from December 10 - January 8 from 10 a.m. to 3 p.m. daily.

(We do need help to man this display. If you can spare some time to volunteer, please call Mary Lou Falion at 688-9274.)

TO FULFILL A PROMISE!

The kickoff dinner meeting for the Denver Botanic Gardens "TO FULFILL A PROMISE" Campaign was held on Monday, November 21, at the University Club. J. F. Baxter, General Chairman of the campaign, served as Master of Ceremonies for the event.

The campaign seeks a minimum objective of \$1.5 million which includes: \$250,000 for the expansion of the participatory Gardens for the handicapped, senior citizens, children and families; \$200,000 for a master plan, design, water development and initial plantings of an arboretum at the Chatfield Recreation Complex; \$500,000 for an endowment fund to ensure the margin of excellence for the Gardens in the years ahead; \$110,000 for the completion of a Rock Alpine Garden; \$250,000 for the completion of the Japanese Garden; \$150,000 toward the Orchid and Bromeliad Display Greenhouse and \$40,000 to drill a deep water well for a continuous supply of untreated water.

Mr. Baxter announced at the meeting that the campaign has already raised \$967,000 toward the \$1,500,000 goal. This includes a \$300,000 gift from the Boettcher Foundation, \$125,000 from the Coor's Foundation and \$200,000 from a private individual. A \$10,000 gift was also received from the Helen K. and Arthur E. Johnson Foundation.

Serving as Co-Chairmen of the campaign is Richard A. Kirk, President of the United Bank of Denver and John C. Mitchell, II, Vice President of the Boettcher Foundation.

Members of the Steering Committee are: Grant T. Alley, W. T. Blackburn, Robert G. Bonham, Theodore D. Brown, Mrs. Donald C. Campbell, George R. Cannon, George P. Caulkins, Jr., Edward P. Connors, John R. Durrance, M.D., Donald C. Elliott, Walter C. Emery, Mrs. Frank B. Freyer, II, Richard Hanselman, John D. Hershner, Edward Hirschfeld, Donald D. Hoffman, William H. Kistler, William C. Kurtz, Jr., Lawrence A. Long, John A. Love, William J. Lunsford, Francis H. May, Jr., Frederick R. Mayer, Paul Messinger, Maurice Mitchell, George M. Mullin, James G. Nussbaum, Gerald H. Phipps, Eugene F. Pilz, Bruce M. Rockwell, Donald R. Seawell, Moras L. Shubert, Ph.D., William R. Thurston, Robert K. Timothy, Joseph A. Uhl, Francis S. Van Derbur, Richard F. Walker, Mrs. James J. Waring and James E. Wilson.

The slide presentation, shown at the meeting, is available for showing to clubs and organizations throughout the Denver area.

Tributes

In memory of Isabel Burns Barton

Mr. and Mrs. William W. Hubbell

In memory of Mrs. Edward V. Dunklee

Mr. and Mrs. William W. Hubbell

In memory of Margaret Glynn

Leah V. Brown

In memory of Margaret Honnen

Leah V. Brown

Mr. and Mrs. Edward C. Eppich

Dennis O'Rourke

In memory of Mr. D. P. Krebill for Herb Garden

The Morning Belles Garden Club

In memory of Stanley P. Petrick for Herb Garden

The Morning Belles Garden Club

In memory of Mrs. Barbara Whealen

Marjorie Ewers

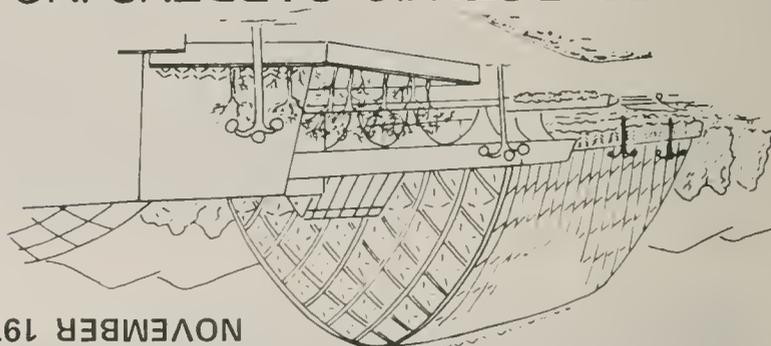
Marilyn J. Kitch

In memory of Doris Wilmore

Virginia K. Adams

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NOVEMBER 1977

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Free Film

There are many beautiful gardens in Louisiana. If you can't journey to visit them now, come to Classroom "C" at 1:30 p.m. on December 10, 1977. Some of the areas to be featured include Jefferson Island with its garden within a garden containing azaleas, camellias, and magnolias. Antebellum mansions like Shadows-on-the-Teche, or St. Francisville are pictured as is Rosedown Plantation with its gardens following original designs and using authentic plant material of the period. All welcome.



Herb Gundell Retires

Herb Gundell, Denver County Extension Agent for the last 28 years, recently announced his retirement. He has held a demanding job and spent hours beyond the required service. Denver residents will be pleased to know that he will continue his radio programs and his gardening columns.

Our good wishes go with him.

New Micro-film Viewer/Printer for Library

Early in September, the Helen Fowler Library received a gift of a new micro-film reader from Mr. and Mrs. Fred S. Jensen. In a recent telephone interview, (from the Botanic Gardens House to the Library), the librarian Solange Gignac told me that the viewer would be available to anyone to use. The viewer also has the ability to make hard copies of the micro-film. Ms. Gignac said that all that is needed now would be more micro-film and a micro-fiche reader. The micro-fiche reader would be able to read micro-film cards rather than the rolls that the micro-film reader does. However, the micro-fiche will have to come later because it will cost approximately \$300.00. The Helen Fowler Library is very pleased with the new addition and now there will be a new horizon of learning available at the Denver Botanic Gardens.

Kevin Jenkyns

(Editor's Note: Kevin is a high school intern at the Gardens for this semester.)

CHANGES IN THE VEGETABLE GARDENING PROGRAM

Due to the problems with the soil in the York Street Children's Garden this area will be closed for at least a year. A cover crop has been sown and soil improvement practices will continue as long as needed.

The Barret Garden, 2900 Jackson Street, will be open next summer with gardening plots designated for family use. Further information regarding enrollment will appear in a later issue of the newsletter.

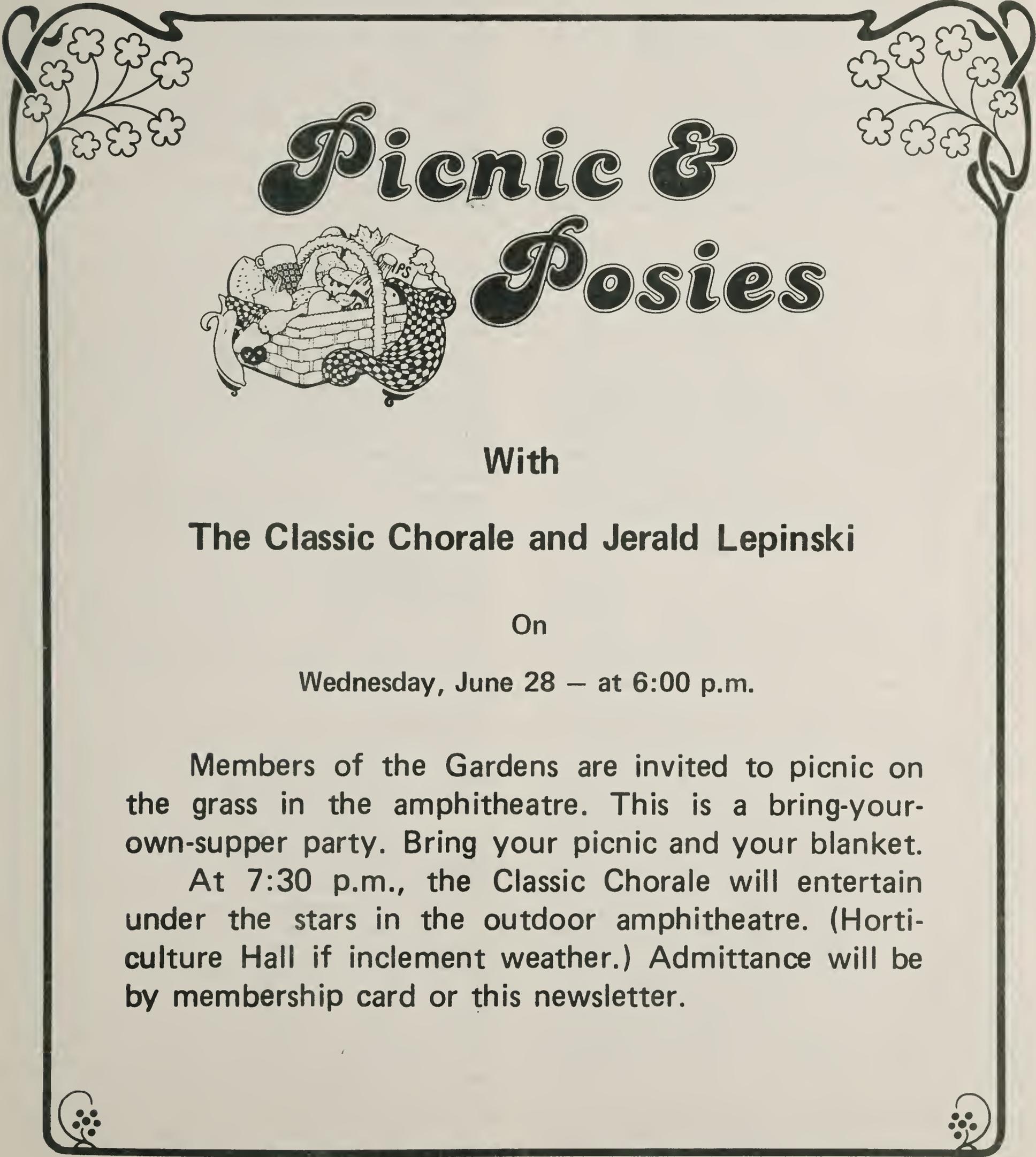
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In the past, inventories of the library book collection have been done over a long period of time. This year, in an attempt to be more efficient, the library will be closed on 12 and 13 December, the inventory begun and completed in two days. Books checked out on 21 and 22 November will be due on 14 December.



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Picnic & Posies



With

The Classic Chorale and Jerald Lepinski

On

Wednesday, June 28 — at 6:00 p.m.

Members of the Gardens are invited to picnic on the grass in the amphitheatre. This is a bring-your-own-supper party. Bring your picnic and your blanket.

At 7:30 p.m., the Classic Chorale will entertain under the stars in the outdoor amphitheatre. (Horticulture Hall if inclement weather.) Admittance will be by membership card or this newsletter.

GARDENING TIPS FOR JUNE

Anyone who has lived in Colorado very long soon learns that we rush from winter to summer, back to winter again several times before the season seems to settle down. This is exactly what happened this year. In case you forgot, it also happened in 1972. There were some distinct advantages in the crazy weather, because if you were confused, many of the insects were likewise completely frustrated, in some cases to our advantage. For example, leaf rollers this year hardly had a chance and we can expect to find few this year. This is primarily because the warm-up in March and early April started the crabapples and other leaf roller hosts to begin leafing out and before the poor insect realized it the foliage was already too mature to sink his teeth into.

On the other hand, a very dry and windy winter preceding the warm-up was pretty tough on plants and we can expect to see this month wilting and die-back occurring in the more shallowly rooted plants such as spruce, maple, and birch, especially if they were not given water during the January-March period. Some damage is already showing, particularly on south exposures.

The ups and downs of temperature in early May also resulted in some freeze injury to tender foliage. Typical examples are in honeysuckles and spirea. In most cases, however, the new growth has fairly well covered up the damage. Should you notice leaves towards the inside of a shrub or tree with marginal browning, don't hasten to the conclusion that it is a disease; it is more likely old freeze injury. The wet period in May will probably increase the incidence of fireblight in apples. Last year was bad enough!

I hope you resisted planting some of the tender plants like tomatoes until the third or fourth week in May. Planting before that time could have led to disaster and even if the plants survived they would have been held back even more so than a planting delayed until the first week in June. If you have not planted them, now is the time – but watch the watering.

Both tomatoes and peppers prefer a rather warm and relatively dry soil. Frequent watering tends to cool soils, reducing root growth and too much water later in the season will also affect fruit set and fruit development. It would be difficult to give a rule of thumb on watering because each situation is different depending on soil and exposure. In a well-drained, good garden soil, even on a south exposure, watering of tomatoes should not be necessary more than once every two weeks. I prefer to even let them go to the beginning of a wilting point at least until fruit set occurs.

Lawn diseases seem to come and go according to weather conditions. Because of the cool, moist conditions in late April and early May, leaf spot or *Helminthosporium* appears to be quite heavy in most lawns. The leaf spot stage is not too serious, but when the summer heat arrives a "melting-out" stage develops rapidly and often destroys large areas of the lawn. Leaf spot in the lawn can be recognized by examining the grass blades. Leaf spot starts as a series of reddish spots on the foliage. These eventually coalesce and result in total withering and browning of the blade.

Prevention is the best method for control of leaf spot. Avoid fertilizers with too much nitrogen too early in the spring and avoid frequent light waterings. Let the lawn get a little on the dry side before watering again. Then water deeply.

Several lawn fungicides, also preventive in nature, are available. These, while not curing the existing infections, will prevent further spread of the melting-out stage. Among the best in a long line of lawn fungicides is Tersan 1991, a Dupont product consisting of 50% Benomyl and Daconil

2787, a Diamond-Shamrock product. Benomyl has several distinct advantages over most other products on the market in that it is systemic in nature, virtually non-toxic to the user and to wild life, and has a sufficient residual effect to make frequent applications unnecessary. For lawns, it takes only about 2-4 ounces per thousand square feet to do the job.

Benomyl has also been shown to be the most effective chemical for control of a relatively new disease in Colorado: stripe smut. This disease occurs primarily during spring and early summer months when the nights are still relatively cool and there are frequent thunderstorms keeping the grass damp. Since it is a systemic disease which follows the rhizomes, control must be obtained through a systemic chemical such as Benomyl. You can determine whether you have stripe smut by searching the grass blades for grayish, powdery stripes. These are actually masses of spores which may be spread by wind, water, the lawn mower, or even just walking across an infected area.

So far, this disease has not reached a very serious stage in lawns in Colorado, but under certain climatic conditions could severely weaken a lawn.

A common lawn disease problem is a fairy ring. Unfortunately, there are no really satisfactory controls. This disease does not directly attack living grass, it feeds on dead grass "thatch" or any decomposing vegetation. It often gets its start from dead tree roots or buried scraps of lumber. The typical green ring is a result of nitrogen being produced by the breakdown process of the fungus. The dead areas in the center of the ring are the result of suffocation and lack of water. The fungus develops such a thick mat in the soil that it could be likened to a buried piece of canvas. The most satisfactory control known is still aeration of the entire area to a point about one foot beyond the ring, followed by treatment with water and detergent. About 1 teaspoon of household detergent per gallon of water is sufficient. A hose-attached root feeder works well for this process but can be very time consuming.

Some things to watch out for in June: tussock moth caterpillars in the tops of spruce trees; tent caterpillars in cottonwoods, willows, chokecherries, and many other plants; scale in lilacs, dogwoods, and euonymus; and the ever-present aphids and mites on just about everything.

Dr. J. R. Feucht

TRIBUTES

In memory of Lucy M. Crissey

Rachael Hauck
Mrs. Harold S. Herman
Miss Florence M. King
Anna L. Kyle
Mrs. Oliver L. Lilley
Edythe and Sherman McNally
Miss Phyllis Osteen
Miss Berta G. Plant

In memory of Miss Flora Macker Justice and Mrs. Byron White

In memory of Ida Miller
Mr. & Mrs. Felix M. Bourgeois
Mr. & Mrs. Alan Means
Alda and Betty Milligan
Mrs. A. J. Queen

In memory of Jack Riley

Esther H. Barnett
Mrs. Mildred Barrow
Mr. & Mrs. Samuel Rank
Margaret Sikes

In memory of Barbara Petrikin Welch Mary P. Kugeler

ROCKY MOUNTAIN AFRICAN VIOLET COUNCIL
17th Annual Show and Sale

The Rocky Mountain African Violet Council will present its 17th annual show and plant sale on Saturday, June 3, from 1:00 p.m. to 4:30 p.m., and on Sunday, June 4, from 10:00 a.m. to 4:30 p.m. The location for the show will be Horticulture Hall of the Denver Botanic Gardens, 1005 York Street, with the sale being held in the lower level rooms. The theme of the show is "Violet Planets" and admission to the show and sale is free. Photographers are invited to take pictures from 8:00 to 10:00 a.m. on Sunday, June 4.

The show is divided into two main categories: horticulture and design. The horticulture division will be judged on the merit basis by accredited African Violet Society judges and the design division will be judged competitively by National Council judges. Entry in the show will be limited to Council members only.

The Council, composed of 17 clubs, strives to stimulate interest in and appreciation of African violets and other gesneriads. Educational exhibits pertaining to African violets will be on display and Council members will be there to answer any questions about these increasingly popular houseplants.

For further information contact:

Council President	Mrs. Carl Fussell	781-4214
Show Chairman	Mrs. Donald Roesch	986-6365
Publicity Chairman	Mrs. Michael Boster	979-1721

News from Friends

Irene Mitchell writes from Los Alamos that she is keeping busy. Besides her usual column in *The Denver Post*, she also writes regularly for *Sunset Magazine* and has recently been published in the April issue of *Horticulture* where she wrote about *Artemisias*. She also enclosed information about George Kelly. His many friends will be pleased to learn that the Garden Writers Association of America named him a Fellow in 1977. He is the first Rocky Mountain Fellow and our congratulations are extended to him!

Also, word has been received from Glenn Park. He writes he is nicely settled in Riverside, California, at Park's Wishing Well Nursery. Any of our members who are in the vicinity of 7590 Indiana Avenue are cordially invited to stop by and say hello.

Many members commented about the handsome brochure "To Fulfill a Promise" and asked for more information about the artist. Vicki L. Piebenga lives in Roanoke, Indiana; as well as being a full-time commercial artist, she also free-lances. Among assignments she has accepted are portraits, book and greeting card illustrations, animal and nature pictures, and advertising brochure layout and design.

One of her hopes for the future is to come to Colorado and study western landscape and wildlife painting. Then she would hope to visit the Gardens and see some of the scenes she depicted so beautifully for us.

Slide Show

The Gardens will host a camera day again this summer (more information in a later newsletter). Richard Hodges has been invited to help with this project because of his extensive and varied experience as a photographer. As a preview of the event, he will show a 20-minute presentation on the Denver Botanic Gardens which he prepared for the New Mexico Native Plant Society. This is scheduled on June 10 at 1:30 p.m., Classroom "C". All welcome. Free!



DENVER BONSAI SHOW

The Denver Bonsai Club will sponsor its annual Bonsai Exhibition at the Denver Botanic Gardens on June 17 and June 18. The hours will be from 9:30 a.m. to 4:30 p.m. each day and admission is \$1.00 for adults and children under 16 will be admitted free.

Featured will be the exhibiting of 150 miniature trees from the newly created to some that are over 100 years old. This is the finest exhibit of its kind in the Rocky Mountain area. There will be expert demonstrations at 10:30, 12:00, 1:30, and 3:00 both days on the creating and culture of Bonsai.

Everyone is encouraged to bring cameras, ask questions, and enjoy our show with us.

For additional information concerning the exhibition, please contact Keith Jeppson, Show Chairman (business phone - 629-2263).

Garden Club of America Zone XI Meeting

On July 10th, 11th, and 12th, 1978 the Garden Club of Denver will host the Garden Club of America Zone XI annual meeting. Zone XI of the Garden Club of America includes Chicago, Minneapolis, St. Louis, Kansas City, and other cities west to Denver and Colorado Springs. Chairmen of various Zone Committees and two representatives from each of the nineteen garden clubs which make up Zone XI will be in attendance. Also attending will be Mrs. Benjamin M. Belcher, President of the Garden Club of America, and several members of her national board and/or executive committee.

The meeting is held annually in alternating cities in Zone XI for the purpose of sharing horticulture and conservation information. The theme of this meeting will be alpine wildflowers. A special alpine wildflower display will be in the Lobby Court area of the Botanic Gardens, immediately inside the south doors of the conservatory, to prepare guests for a guided tour on Mt. Goliath.

On Monday, July 10th a representative from each of the nineteen garden clubs will enter a challenge class flower show. Plant material and containers will be provided. The arrangements will be judged and will be on display in the Lobby Court to the public on Tuesday, July 11th.

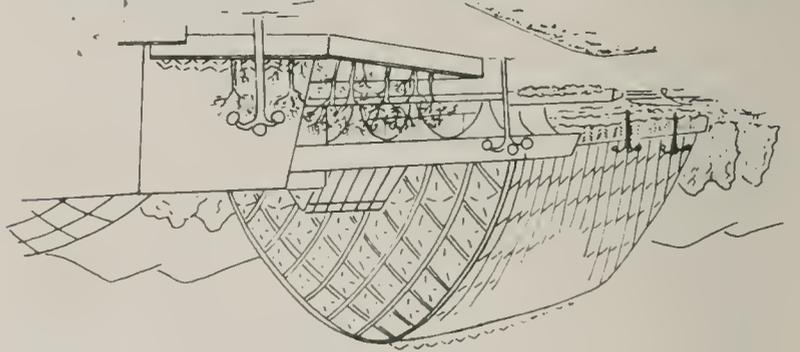
The Zone XI annual dinner, hosted jointly by the Garden Club of Denver and the Broadmoor Garden Club of Colorado Springs, will be held in Horticulture Hall on Monday evening. Daylight Savings Time will provide ample time for guests to wander through and to enjoy the gardens and the conservatory.

Notice from the Native Plant Society

A survey of Colorado proposed threatened and endangered plants is currently underway but people are needed to help report sightings of these plants. An illustrated field guide is available which lists all such plants in Colorado and their habitat and counties where found. For copies of this guide, please call Dr. Janet Holm at 234-4600. For more information on the field work itself, contact Dr. William Harmon, Dept. of Biological Sciences, University of Northern Colorado, Greeley, CO 80639.

DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206

JUNE
1978



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CLASSES

We have planned many field trips for this summer and hope they will be an opportunity to find out how rare a day in June in Colorado can be.

June 3rd's *Field Trip to Barr Lake* is full but directions are as follows: meet at 8:00 a.m. at 909 York or 9:00 a.m. at the east entrance to Barr Lake State Park. (Take Colorado Boulevard north to I-76. Follow that past Barr Lake, turn at Bromley Lane for approximately 2 miles, then turn south on Picadilly for about 1-1/2 miles to the entrance.)

Look in the April issue of *American Forest* magazine for the listing of the champion trees of the U.S. Four are found in Colorado: *Fraxinus anomala* (single leaf ash) in West Creek, Mesa County; *Populus deltoides* var. *occidentalis* (plains cottonwood) near Hygiene; *Quercus undulata* (wavy leaf oak), Carrizo Canon, Baca County; *Picea pungens* (blue spruce), Gunnison National Forest. None of these will be shown on June 10 on the *Tree Walk in Boulder*, but many other trees of interest will be. Meet at 8:30 a.m. at 909 York or at 9:30 at the corner of Sixth Street and Forest Avenue, Boulder. Cost \$1.50, 5 spaces remain.

The trip to Roxborough Park is full. Directions are as follows: meet at 8:00 a.m. at 909 York or at 9:00 at the gate of the Park (drive south on Santa Fe, Highway 85, to Titan Road, turn west to North Rampart Range Road and north to entrance).

Dr. Brunquist will lead a free trip on June 21. Meet at 909 York at 9:00 a.m.

The first trip of the season to Mt. Goliath is scheduled for June 29 and it too is full. Meet at 8:00 a.m. at 909 York or 9:00 a.m. at Echo Lake Lodge (take I-70 west to Mt. Evans Exit in Idaho Springs).

Remember, on all trips bring lunch, be prepared to walk, and please share gasoline expenses with the driver.

Other classes in June include *Basic Orchid Culture* on June 14 at 1:00 p.m. in Classroom "B", free. *Pottery and Plants for Children* will be offered on June 17, 24, and July

1 and 8. Grades 4-6 will be taught from 9:00 a.m. to noon, and grades 1-3 from 1:00 to 3:00 p.m. Cost \$5.00 for 2 sessions and \$10.00 for 4 sessions. *Preparing Leaves for Flower Arrangements* will meet on June 26 and 30 from 9:30 - 11:30 a.m., Classroom "B". Please read the *Summer List of Classes* for information on material and also bring a large flat box with a lid (a dress box would do nicely). This is so students may store and transport the leaves they have prepared. Cost \$6.00, 8 spaces remain. Reminder: *Advanced Bread Baking* is scheduled 9:00 to 2:00 p.m., bring lunch!

You Did It Again!

Our sincere thanks to the host of volunteers who helped make the Plant Sale the great success it was. As always, your dedication on behalf of the Gardens is most gratifying. All of us know how many months are involved in getting ready for the big days — and how tiring they can be when they arrive. Our special thanks to Bev Hanselman, chairman, and Bernice Millard, co-chairman.

Grateful thanks to all who so generously supported our Used Book Sale. Book and magazine contributors were more numerous than ever before, and attendance at the sale made it an exciting success. Be looking in the Library this coming year for the new book acquisitions your support will make possible.

—Kathy Fletcher

Thanks, too, to Carrie McLaughlin who booked the tours of the Conservatory this past year. It is a *big* job (do you realize that in April alone 1,240 people visited the Conservatory on guided tours?). And, there is no respite for the summer tours (July and August, Tuesday, Wednesday and Thursday at 10:00 a.m.) are already being scheduled.

Help Please!

We desperately need tarragon (*Artemisia dracunculus*) for our famous herb vinegar. If you have some to spare, please call Gloria Falkenberg, 322-4862, for information.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 575-2547



Green Thumb Newsletter

DENVER
BOTANIC
GARDENS, INC.

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NO. 78-7

JULY, 1978

575-2547

17th Annual Terrace and Garden Tour

Thursday, July 27, 1978 10 A.M. to 6 P.M.

A marvelous outpouring of ingenuity in design and personal touch can be seen in our tour of the eight gardens selected for this year. Interest mounts as one travels from a compact, well organized and very appealing townhouse garden to elegant city gardens, ablaze with annual and perennial color, hardy adaptable evergreens and shrubs, stately deciduous trees and interesting retreats from the outside environmental influences, to finally the totally peaceful, almost pastoral settings of two large country gardens. The owners themselves, and some in conjunction with several of the area's well known landscape architects, have created very different but complete concepts of garden design for their own particular needs, likes and life styles.

It would be a shame to miss these exciting and versatile gardens so plan to join your gardening friends for a day of pleasurable garden browsing.

Tickets will be available at the Botanic Gardens Gift Shop and from all members of the Herb Guild. See you the 27th of July!

Report from Mediterranean Trip

(Written Aboard Flight TWA 881)

As the 21 members of the Denver Botanic Gardens returned from their tour of the Mediterranean area, their thoughts returned to the tropical splendor of Lisbon's Estuda Fria (Cold Greenhouse) and to the Fronteria Palace and Gardens which date from 1712. They also remembered with pleasure the "garden island" of Madeira with its cobblestone highways and its terraced vineyards. Since the gulf stream provides a tropical atmosphere, nasturtium, yellow poppies, and calla lilies grow wild on the hillsides. In town, jacaranda in full bloom lined the streets and the homes were adorned with wisteria, bougainvillea, and climbing roses. At higher altitudes, wicker was grown and processed by the peasants. Also, we learned since the hillsides were so steep, cows were not allowed to graze; their food was brought to them on the backs of small burros!

With special permission, the tour visited the Papal Gardens in Rome and also the Pope's summer villa. Here we enjoyed seeing a most impressive collection of introduced shrubs and trees in a formal setting. Further south, the scent of orange blossoms was overwhelming in Naples, Pompeii, and Sorrento. Flowers cascaded from the balconies of homes.

Next we traveled to see the famous ruins of Grecian antiquity and fields of red poppies, giant purple thistle, Scotch broom, and numerous other wild flowers added to the general interest. Ancient olive groves furnished the people with a principal industry, second only to tourism.

Photographs and souvenirs will prolong our memories of this most enjoyable trip.

Clara I. Perin
Helen M. Clifford

VOLUNTEERS, TAKE A BOW

This letter was recently received:

"While visiting the Botanical Gardens last week, I stopped in to the Gift Shop, and I saw something rare — Happy Employees! What pleasure the ladies who work there brought me. They were cheerful, and more than willing to help. I have worked in many stores, and managed a few, but never have I seen such a staff! You have a wonderful group there, keep on smiling!"

Do you realize all the places volunteers help at DBG?

Some are:

Help in the Gift Shop as salespersons.

Tour Guides in the Conservatory, after a training course.

Assist on telephones, about scheduling guides program.

Help in the Library, and assistance in sorting and arranging books which are donated for the annual book sale.

Serving on Hostess and Information Table in the Lobby.

Assistance in Administrative Offices when needed.

Assistance in "Plant Give Away" to members once a year.

Workers before and during Christmas Sale in November.

Workers before and during Plant Sale in May.

Help in entertaining special visitors to the Gardens.

Help in preparing and serving refreshments for some of the various affairs held in the Gardens.

Assistance in covering hours for special exhibits open to the public.

Eventually Guides will probably be needed for the Outdoor Gardens.

Assistance in the mundane but necessary task of weeding flower beds. N.B. Join us for "Weedless Wednesdays" throughout the summer. Bring gloves and digger. Come between 8-9 a.m. Meet at gatehouse, 1005 York.

Our grateful thanks to you all.



GARDENING TIPS FOR JULY

July is normally a hot time of year and a time when you should be looking out for a buildup of spider mites on just about every plant in your garden. It pays to give the plants a close inspection, paying particular attention to the under sides of leaves where the mites will harbor. Other signs of infestation will be a stippled or salt-and-pepper appearance. An easy way to find the mites is to hold a sheet of white paper under a branch and tap the branch sharply several times. If mites are present they can easily be seen on the paper.

Good control can be obtained by applying a miticide such as Kelthane or a combination of an insecticide containing a miticide. Even though the commonly used Malathion will kill active mites, it has such a short residual it will not control the eggs that hatch following the spraying. This is why miticides are preferred chemicals for controlling mites. Diazinon has a longer residual, is labeled for mite control, but it has been my experience that repeated use of Diazinon can actually cause a buildup of mites. This is likely due to the same problem recognized in the days of continued use of DDT. DDT actually controlled the predators more than it did the mites, thus causing a buildup. The same problem occurs when using insecticides such as Methoxychlor. It is generally best to include a miticide in your regular spraying program when using insect control chemicals.

Frequent but unwarranted use of insecticides can also create more insect problems in your garden so it's a good idea to use these chemicals only when absolutely necessary rather than to grab the sprayer at the first sign of an insect. Always identify the insect first to determine whether it is really a pest, assess the severity of the problem and then decide whether chemical control is warranted. Sometimes the insects can be reduced in populations by using other non-pesticidal methods such as washing them off with a strong stream of water, or even hand picking them off. This is probably the most effective way to control the tomato hornworm, that is, if you have good eyesight as they are difficult to see on your tomato plants. A weekly inspection and removal of the worms will probably keep them to tolerable levels. If you do not want to bother hand picking them, or if you plan to be gone on vacation for a couple of weeks, excellent control can be obtained using Sevin which may be applied either as a dust or as a liquid spray.

Using Weed Control Chemicals

Caution is urged in the use of weed control chemicals. Because of water restrictions and the conversion of many lawn areas to gravel, woodchip mulches and other non-turf ground covers, there is a trend towards increased use of chemical weed controls. Even in cases where black plastic is used beneath ground covers, weeds will pop through in places where the plastic has been broken. Unfortunately, all too often, the chemical selected is a soil sterilant such as Triox, Ureabor or Hyvar X. None of these chemicals should be used in the home garden.

The difficulty is that even if the directions are followed exactly, there is a likelihood that the home gardener will run into trouble. Soil sterilants render the soil unsuitable for the growth of any vegetation and have the tendency to migrate from the area of application considerable distances and into the root zone of desirable plants. Depending upon the type of soil, degree of slope and the amount of rainfall or added irrigation, these chemicals are capable of moving with water and sometimes with wind, hundreds of feet.

Another problem with most of the heavier soils in Colorado is that they lack good drainage and a sufficient amount of organic material to cause the breakdown of the soil sterilant. Even though the label on products such as Triox indicates that it will last only one year, conditions in the metropolitan area generally prolong the life of the chemicals two or three times longer than they are supposed to last. Thus, Triox may have sterilizing effects for as long as three years and Ureabor — as long as five to eight years. During that period of time, the roots of plants will grow into the soil sterilant. Thus, it is possible to have damage several years after application, even when the chemical is not moved by wind or water.

Don't be tempted to use these chemicals if you have large areas of gravel, including gravel driveways. If you have problems with weeds in your ground cover areas, either control them by hand pulling, hoeing or spot treating with less potent, non-sterilizing weed control chemicals. Even these, however, should be used with extreme caution.

For broadleaved weeds such as dandelions, thistle and bindweed, spot treat by applying 2,4-D, 2,4,5-TP (Silvex) and Dicamba directly on the foliage. This combination, which is available as such, will give fairly good control. Normally in the case of bindweed and thistle, a second or third application is necessary.

When used in turf areas these chemicals are selective in that they will control broadleaved weeds without damage to the grass, provided the label rates are followed. Be sure that all label precautions are followed, particularly when using weed killers containing Dicamba. This chemical, if used at high enough rates near the root zones of trees and shrubs, can injure or kill them. Dicamba has been known to be accumulative, so frequent use can also result in problems two or three years later.

It is best to avoid any of the 2,4-D types of weed control chemicals if you have either tomatoes or grapes nearby. These plants are extremely sensitive, even to the fumes, and can be damaged at a considerable distance downwind from the point of application. Always apply weed control chemicals during calm weather periods, using a sprayer that delivers a coarse droplet under low pressure.

It is also important to keep a separate sprayer for weed control use, particularly when using 2,4-D or any similar broadleaf weed killer. This chemical will tend to bond to the lining of the sprayer tank, the delivery hose and nozzle, and cannot be completely washed out. The same tank, if used for other purposes such as applying pesticides to your vegetable plants, will be a source of contamination which could be damaging.

It is also best to avoid, where possible, the use of hose-attached, jar-type sprayers for weed control chemicals because they are too difficult to control, they apply large volumes and create a greater hazard for drift. A pump-type sprayer is better because it enables you to not only adjust the nozzle, but also the pressure of the delivered spray.

Dr. J. R. Feucht

SLIDE SHOW

On July 8 at 1:30 p.m. in Classroom "C", Dr. Carl Tempel will show slides of wild flowers now in bloom in the mountains. Those of you who have seen his slides before will remember he shows a scenic view, focuses on a plant itself, and then, finally, a closeup of the flower. These are lovely slides which will be enjoyable to all. Free.

CLASSES

A member who joined us on a field trip last year expressed her impressions in this poetic manner.

We are fifteen,
heads bobbing
over flower clusters
floating in the mossy green —
old man of the mountain,
king's crown,
alpine lilies —
so blown by alpine winds
they dance along
between the rocks
and over rippling grass.
Below us other mountains
crest toward the plains,
the mist rolls down
between the distances,
a water pipit flies crying by,
dipping over the swells,
while driftwood-smooth bristlecone
stands centuries-mute
against the storm.

Nancy R. Rankin

If you wish to experience similar emotions, join us on July 8th for a weekend in Steamboat Springs, Your leader, Dr. Schwendinger, has extensive background as a staff ecologist for Standard Oil of Indiana and as bio-engineering supervisor for Alyeska Pipeline Service Co. in Alaska. Currently, he is an independent consultant in the fields of Environmental Science, Agronomy, and Chemistry. He plans to bring these disciplines to bear on this trip where he hopes to point out *Trilliums* and *Rhododendrons*. Meet at 8:30 a.m. at the Post Office in Steamboat Springs. Free, but please call and let us know of your interest in attending.

Dr. Brunquist's field trip this month will meet at 9:00 a.m. at 909 York on July 19. Bring lunch.

Directions to the Florissant Fossil Beds National Monument are as follows: meet at 8:00 a.m. at 909 York or 10:30 a.m. at the Headquarters Building. Take I-25 to Colorado Springs, then Highway 24 west to Florissant, then south to the Monument itself.

Other classes of interest include *Plants of Shakespeare*. Sir Thomas More said "As for Rosemarie, I let it run all over my garden walls, not only because my bees love it, but because it is a herb sacred to remembrance, and therefore, to friendship..." Ophelia also echoes this by saying, "There's rosemary; that's for remembrance; pray you, love, remember." The herb was used at funerals for the same reason. In *Romeo and Juliet* Friar Lawrence says "Dry up your tears, and stick your rosemary on this fair corpse." Ideas like these supplemented by readings should prove a pleasant way to spend time on July 11th. Meet Dr. Osborne at 9:30 in the Lew Hammer Garden (near the Herb Garden). Free, all welcome.

Canning and Freezing Garden Produce at either 9:00 a.m. or 7:00 p.m. on July 26 will give you ideas to save the bounty from your garden. Jackie Anderson, who works at the Denver County Extension Office, has many suggestions to share. Free.

* * * * *

COLORADO WATERCOLOR EXHIBITION

JULY 13 — 31

HORTICULTURE HALL

TRIBUTES:

Nature's Novice Garden Club in appreciation of speakers:

In memory of Charles P. Barone:

Mr. & Mrs. Lawrence A. Long

In memory of Lucy Crissey:

William G. Gambill, Jr.

Solange Gignac

In memory of Tita Dominguez:

The John F. Falkenberg Family

In memory of John Evans:

The John F. Falkenberg Family

In memory of Phyllis Girompiny:

Winston Downs Garden Club

In memory of Fritz Nagel:

The John F. Falkenberg Family

In honor of Melissa Lynn Nutt:

Edith W. Trospen

In memory of J. P. (Jack) Riley:

Mrs. Betty Anderson

Board of Trustees Denver Botanic Gardens

for Hemerocallis Plants:

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Harry B. Kuesel

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C. Bethel Martin

Vi Prangley

Elsie and Charles Ryland

Mat and Anne Spicer

Harold and Dorothy Spotts

Phil and Treva Talmage

In memory of Robert M. Stanley for Japanese Garden:

Yoko Fukuta

In memory of Alma Thomas:

The John F. Falkenberg Family



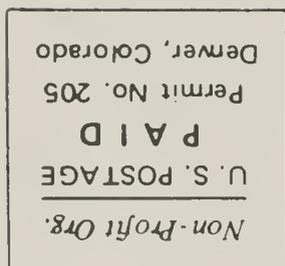
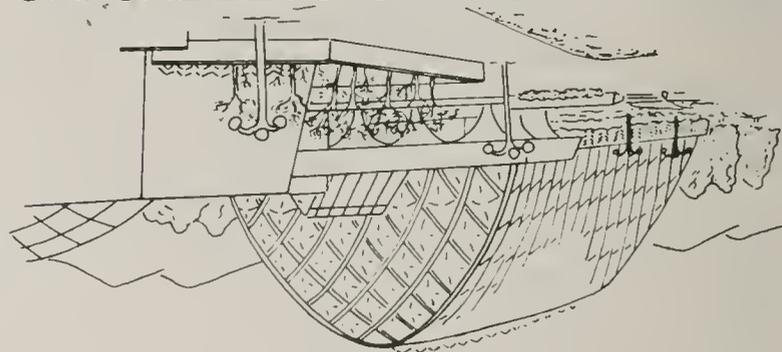
HEMEROCALLIS GARDEN

The prime bloom time of the day lilies is this month. Twelve of the most popular as listed in the 1977 Popularity Poll of the American Hemerocallis Society are planted in our garden. Look for 'Winning Ways' (greenish yellow), 'Clarence Simm' (pink, melon), 'Hope Diamond' and 'Moment of Truth' (both near white), 'Amazing Grace' (cream with green throat), and 'Ed Murray' (black-red with green throat).



DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206

JULY 1978



NEW FACES

Those of you who are frequent visitors to the Botanic Gardens, or perhaps work as volunteers, may have noticed some new faces working alongside you. These people are involved in two programs: the college intern program, and the Denver Earn And Learn (DEAL) program.

The two interns spend ten weeks at the Gardens working in several different areas for about a week at a time. Gary Kuroki has been an intern since April 24. He will be a senior at Fort Lewis College next year. Gary is majoring in Biology and hopes to study Ecology in graduate school. Mark McCauley began his internship May 30. He will be a junior at Metropolitan State College this fall. Mark is also a Biology major with his primary interest in Botany.

DEAL is a program aimed at employing Denver area youths. The program is coordinated by the Denver Manpower Administration. Employment and the students educational curriculum are coordinated to help supplement the students area of study.

We have employed four persons so far. Their names and where they work are: Matthew Paris and Alfred Velasquez, outside; Mike Martinez, greenhouse; John Flood, library.

If you see any of these workers, please feel free to stop and introduce yourself; I am sure they would like to meet you.

Gary Kuroki

HOW TO PICK GOOSEBERRIES WITHOUT A SCRATCH (A Gardening Tip from Dr. Shubert)

You can pick thorny gooseberries with ease and comfort! Use a leather glove to hold a branch and cut off the base of that branch with sharp pruning shears. Collect the branches in a basket or garden cart and haul them to your favorite garden chair. Sit and pick gooseberries while you sip your favorite refreshing drink!

TRAIL OF TREES

Available now is a newly-published guide to Denver trees written by Dr. James R. Feucht and Mr. E. Alan Rollinger. The sixty-four page, hand size book, complete with map, line drawings and descriptive narrative, features the historic trees located in Fairmount Cemetery; perhaps Denver's only mature arboretum.

This booklet takes you on a self-guided tour through the grounds at historic Fairmount Cemetery where you will see such trees as sycamore, American linden and six species of oak, including perhaps the largest English oak west of the Mississippi River.

The booklet, "*Trail of Trees, Guide to Historic Trees at Fairmount,*" sells for \$2.95 and is available in the Gift Shop at the Denver Botanic Gardens and many other bookstores.

On July 19th at 3:00 PM there will be an autograph party in Horticulture Hall of Denver Botanic Gardens. This will provide an opportunity for everyone to meet the authors.



LOBBY COURT

The public's favorite display — tuberous begonias is featured in the Lobby Court this month. Interspersed among their lovely blooms, visitors will see Rex and Wax begonias as well as some examples of gesneriads. Look for *Streptocarpus grandis*. Can you see why Dr. Brunquist called it, "A fig leaf for a giant?"



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 575-2547



Green Thumb Newsletter

DENVER
BOTANIC
GARDENS, INC.

NO. 78-8

AUGUST, 1978

575-2547

25th Annual Gladiolus Show

August 12th & 13th

The Colorado Gladiolus Society will host the Rocky Mountain International Gladiolus Show at the Denver Botanic Gardens on August 12th and 13th. Time for public viewing of the exhibition will be from 1:00 to 4:00 P.M. on Saturday; and from 10:00 A.M. to 4:00 P.M. on Sunday.

This year marks a special celebration for the Glad people for it is our 25th Anniversary Show. To commemorate this special occasion there will be several new awards in the Horticulture Divisions. Our exhibition is open to anyone who cares to enter. We are especially encouraging the first time exhibitor who has a top-notch gladiolus growing in his garden. It doesn't even need to be classified . . . for we call this the *No Name Variety Division*. For old timers and novice alike, feel free to bring your gladiolus specimens to the rear entrance of the Botanic Gardens on Saturday morning, August 12th before 10:00 A.M. for placement in the show. Or, if you prefer, you may contact the Show Chairman, Robert Folsom, 756-2126 for further information.

The show will provide an opportunity to actually see and compare the newest and the "old time" varieties of gladiolus. On display will be many pixiola varieties, recent introductions, seedlings for the hybridizer, and most of the All America selections. There will be expert glad growers on hand to answer any questions you have about the culture of gladiolus, disease control, planting and storing of corms, etc. We welcome the opportunity to assist in any way we can.

But just come to the show and enjoy the wonderful array of colors of gladiolus and the beautiful artistic arrangements is a pleasant way to spend a few hours.

Glenn & Dolly Kerrigan
Colorado Gladiolus Society
President and Secretary



CBHL ANNUAL MEETING

The Council on Botanical and Horticultural Libraries held its annual meeting at Denver Botanic Gardens on 7-10 June 1978. Thirty-eight participants from 17 states, the District of Columbia and Canada represented their institutions at the conference.

Delegates were greeted by Dr. William G. Gambill, Jr., Mary Alice Felt and Solange G. Gignac at a reception at the Brown Palace on Wednesday evening, 7 June.

Thursday morning, the group was involved in business meetings and committee reports. After lunch, the afternoon session consisted of presentations by Ms. Kay Collins, Conservation Specialist, Denver Public Library, who spoke on the Conservation Library, its history, current services and its direction. Mr. Dorris Clark, Assistant Director, National Seed Storage Laboratory, Fort Collins, described the facility, its purposes and public services. Mr. Paul Earle described the effort required to collect all the literature on one subject: bromeliads. All speakers provided good information in interesting presentations and all were asked many questions. After a short break, Dr. Gambill told the national conferees all about Denver Botanic Gardens. His talk was followed by tours of DBG led by Mrs. James J. Tracy (grounds), Mr. Larry Latta (greenhouses), Ms. Harriet MacMillan (conservatory) and Ms. Solange Gignac (library).

The evening program included dinner at the Brown Palace.

On Friday, the CBHL members boarded a bus at 8:30 a.m. to go to Rocky Mountain National Park. Accompanying the group were Dr. Helen Zeiner and Mrs. Marjorie Sheperd who shared their plant identification expertise. Five stops were made along the way, each different from the other and each thoroughly explained in terms of ecological, geological and botanical relationships. It was a perfect day during which the visitors were impressed by the local flora and fauna.

On Saturday morning, Mr. Richard Isaacson presented his talk on the picture file collection at the library of the Garden Center of Greater Cleveland. The conference adjourned at noon.

Many letters have been received from the participants saying how much they learned and enjoyed during the conference. May I be allowed to say that the success was due to the cooperation from the Council, the DBG staff, the library volunteers and the Associates.



A Different Request

We need rocks — dark-colored ones are in demand for the Japanese Garden, any color will be okay for the Alpine Garden. If any members who have mountain property would like to contribute rocks, please call 575-2547 and leave your name, address, and telephone number. Someone will call back to set up a convenient time to see your geological specimens.

GARDENING TIPS FOR AUGUST

In this hot weather, it may seem impossible to cut back on watering, but the month of August is a good time to begin tapering off on water for trees and shrubs. Not of course to the extent that plants suffer, but just enough to begin to help them harden off for winter. This is good insurance against the unpredictable fall weather that we might have. The past few falls have been long and extensive without any sudden temperature changes but those who have lived here very long, at least since 1969, will remember that year and also 1971 when summer went to winter rather quickly and the plants were not ready for it. Gradually reducing water on trees and shrubs helps to slow the plants down and get them ready for winter.

Some plants will prepare for winter no matter what. Oaks and lindens will start getting ready for winter in July. This is because they are regulated by day length rather than by weather conditions. Trees such as walnut, soft maple, green ash and golden raintree and several others that tend to put out a strong second flush of growth need a gradual withdrawal of water to help "tell them to get ready for winter." It would probably also be a good idea to withhold high-nitrogen fertilizers on such trees and shrubs.

The question is usually asked, "How do I know when a plant has hardened off?" The easiest way is to look for sign of woodiness in the most recent growth. You will notice a change in color from a green to olive or brown. You can also look at the buds. Plants that are getting ready for winter will have set buds at the base of each leaf and at the tips of the branchlets.

Most evergreens prefer a well-drained subsoil that supplies plenty of oxygen to the roots. In the Denver area, clay soils are most common. This type of soil is not suited to evergreens such as pine and Concolor Fir. The addition of water in these heavy soils simply reduces the oxygen supply to the roots causing "oxygen starvation."

When a plant is oxygen-starved it is not capable of taking up water and nutrients, thus, the plant will wilt or, in the case of narrow-leaved evergreens, the inside needles will drop off. In this way the plant compensates for the lack of water in the plant even though there is plenty of water in the soil.

The evergreens most commonly showing the over-watering symptoms are Pinyon and Bristlecone (Foxtail) pine. Both species are accustomed to gravelly, loose and well-drained soils. Ponderosa pine will also react to over-watering.

Avoiding this problem requires wise distribution of water. It is much better to deeply water the evergreens only occasionally rather than weekly, as we do our lawns.

If you have an underground sprinkler system, make sure the sprinkler heads do not cause the spray of water to shoot directly into the evergreens. Water your evergreens by hand.



"One of the nicest things about gardening is that if you put it off long enough, it eventually is too late."

Barry Fowler



Caution on Pesticides

Already this year we have had some of the typical calls regarding the use of pesticides, or I should better say "misuse," leading to some rather unfortunate and avoidable mistakes. A very common occurrence is the application of a pesticide to edible crops such as vegetables and fruits, only to read the label afterwards and find that they cannot be used for that purpose. One of the biggest offenders on the market is Isotox. The formula of this pesticide has been changed and it now contains a systemic, making it unsuitable for use on edible crops. A warning given in the past bears repeating. **ALWAYS READ AND FOLLOW THE DIRECTIONS GIVEN ON THE LABEL EACH TIME A PESTICIDE IS USED.**

Another common problem encountered is the misunderstanding on the so-called "waiting period" on edible crops after pesticides have been used. Because the waiting period of Sevin is only one day on tomatoes does not mean it is just the same on other vegetables. Sevin used on cauliflower or head lettuce will require a three-day waiting period. The law requires that the label carry clearly-printed instructions on each container of pesticide. **ALWAYS READ THAT LABEL!**

(Cont. pg. 6)

Everything's Coming up Roses . . .

The Denver Rose Society will sponsor the 1978 Annual Rose Show in Horticulture Hall on August 20 between the hours of 1:00 and 4:30 p.m.

The Society expects to have 500 to 600 exhibits consisting of old and new hybrid tea, grandiflora, florabunda, miniature, and old garden roses. One class in the show will consist of the All-America Rose Selection Winners for 1978. Bring your notebooks so that you may tabulate the names of varieties that appeal to you particularly.

There is no charge for viewing this show.

While visiting the show, be sure to walk outside and see the Rose Garden where seven new varieties have been added. Two All-America Rose Selection winners are among them — 'Double Delight' (1977), a red and white hybrid tea and 'Yankee Doodle' (1976), a peach orange hybrid tea. 'Double Delight' was tested at the gardens and performed extremely well. Other hybrid teas are 'Typhoo Tea' — coral/white, 'Marmalade' — orange, 'Kentucky Derby' — red, and 'American Pride' — a deep red variety which has been named 1979 Rose of the Year by Jackson and Perkins Co. One of the most interesting additions is the medium pink floribunda 'Carefree.' This is a landscaping rose for use in hedges, foundation plantings, and borders, or as a specimen plant. It was also tested at Denver Botanic Gardens and proved to be an excellent variety that has something different to offer.

Recently, Alpha Xi Delta Sorority presented 15 'Chipper' miniature rose bushes to the Gardens in honor of its flower, the pink 'Kilarney' Rose. These plants have been placed in the northwest section of the raised bed of the Rose Garden and though small at present should flower beautifully in their next season.

After all the above you might find this request amusing, but we need rose petals. Can you help? If so, please put them in brown grocery bags and bring to the Gift Shop. Thanks so much.

CLASSES

Many local people know the wild flowers of the West, but to many of our visitors they are as unfamiliar as those of Botany Bay were to Captain Cook's expedition. The August 16th *Field Trip* with Dr. Brunquist will help rectify this situation. Meet at 909 York at 9:00 a.m. Free, but share gasoline expenses. Bring lunch.

The Andersons, leaders of the next field trip will show slides featuring Colorado wild flowers. On August 12 at 1:30 p.m., Classroom "C." Members may know the Andersons by reputation as editors of *The Green Thumb*. Come and meet them in person and enjoy these lovely slides.

N.B. Please note time change for the trip on August 19th. The group will meet at 7:30 a.m. at 909 York. Be sure to meet only at the House and not in the mountains for plans may have to be changed concerning the *Burning Bear Trail* itself! (As of this writing, the flowers are disappointing in that area.)

Also, plan on meeting at Denver Botanic Gardens at 8:00 a.m., Classroom "C", on August 26th when Bill Eisenlohr will show slides of the plants at *Golden Gate State Park*; then the group will go to the area itself. Directions are as follows: take Eighth Avenue west to Sixth Avenue, then follow that to Colorado 58 and turn right. Exit quickly right to Washington Avenue and turn left over the bridge. Following Washington north approximately 2 miles to a small white sign on the right "Golden Gate Canyon Road." Turn left, drive approximately 14 miles to State Park Headquarters Building. Fee: \$2.50 plus gasoline. Bring lunch.

The popular class on *Techniques of Collecting and Drying Flowers in Silica Gel* will be offered on August 21 and 25. Meet promptly at 9:00 a.m. in Classroom "B" both days. Please read the *Summer List of Classes* for information and bring the necessary material. The fee of \$18.50 provides all else. There are 10 spaces remaining.

If you can't sign up for this class but are interested in the subject, please look at *Arnoldia*, November/December, 1977. Two articles, *Preserving Woody Plant Material for Winter Arrangements* and *A Guide by Plant Family to Foliage Preservation*, are most informative. This magazine and other books on the subject are available in the Helen Fowler Library.

The Conservatory Tour on Sacred Plants, August 25 at 9:30 a.m., Classroom "A", may serve as a good lead-in for anyone who might be interested in the Guides Class which starts in September. Of course, all are welcome to this free class whether budding guides or not.

Basic Mushroom Identification is planned for beginners and for those who need a refresher class. Learn the distinguishing characteristics of mushrooms; how to classify species by spore color and how to make a spore print. Over 880 color slides are used in this class. The course starts on August 30 and continues until October 4; 7:30 p.m. Horticulture Hall. The cost is \$10.00 and the course is taught by George Grimes.

Mr. Grimes and other experts will be on hand at the Colorado Mycological Society Fair on August 27th from 10:30 a.m. to 4:45 p.m. Come and learn and have fun while learning! Donation \$1.00.



REPORT TO MEMBERS

The "To Fulfill A Promise" campaign to raise \$1,500,000 for a number of needed projects and improvements at the York Street Gardens and Chatfield Arboretum and to augment the endowment fund has been moving along very well. Actually, we are able to report that \$1,683,858.23 have been raised, which is in excess of our goal, but ironically the projects originally identified in the campaign have not yet been fully funded. This is because some gifts to the campaign have been designated for projects not originally included in the program or the scope of a particular project has been greatly enlarged, and the amount originally allocated to that project, although perhaps raised, is no longer sufficient to fund the project. Consequently, your campaign committee continues to work and has set a goal of \$1,750,000 as necessary to accomplish the original program plus the newly designated projects. We are hopeful that this amount can be raised with largely non-restricted additional contributions in order that the original program can be accomplished along with the other very desirable projects. If not, the endowment fund probably will suffer, as usually is the case, which would be unfortunate as developing conditions suggest that the endowment fund will be more and more vital to the continuing program at Denver Botanic Gardens. With your help it can be accomplished.

John C. Mitchell

I LOVED IT SO

by Lisa Kenny

Carrots orange and lettuce green
Round cabbage and stately beans

Weeded, hoed and watched it grow
Delicious too, I loved it so

Seeds and dirt and rain and sun
Made my summer so much fun

Tributes

In memory of Mrs. Emily L. Barbe for Orchid and Bromeliad House

Mr. Hubert L. Barbe

Donation by Cherry Point Garden Club for Children's Garden

In memory of Lucy Crissey

Mrs. William Y. Holland

In memory of Mr. Charles A. Davlin for Lobby Court Fund

Mr. and Mrs. John C. Mitchell

In memory of George A. Ducker

Geneva Ducker

In memory of Alan Fisher for Lobby Court Fund

Mr. and Mrs. John C. Mitchell

In memory of Olive B. Hubbard for Japanese Garden

Mr. Hubert L. Barbe

In memory of Fred G. McLean

Peggy Altvater

In memory of Mr. and Mrs. J. E. Rice for Children's Garden

Mr. Hubert L. Barbe

In memory of Jack Riley

John S. Ingles

Rocky Mountain Railroad Club

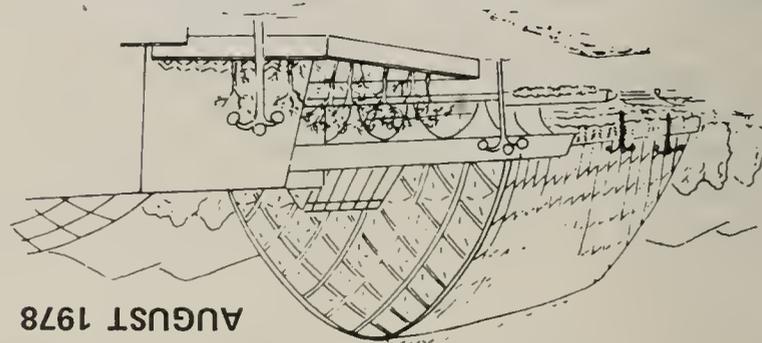
In memory of Doris Wilmore

Frances K. Manz



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Hildebrand Ranch Placed on List of Historic Sites

Frank and Elizabeth Hildebrand were some of the first pioneer homesteaders in the Denver area. At the time, a few cattle ranches had been established, but these German immigrants made one of the first attempts at farming in the vicinity. In 1866, they built a log cabin on Deer Creek at the base of the foothills in Jefferson County after Frank had been driven off his farm north of Denver by the big flood of 1864. The Hildebrand family continued to live on the site until 1975, during which time they constructed a two story addition to the cabin and other structures, including horse and cow barns, a chicken coop, 6 sheds, a garage, two out-houses, plus bath and bunk houses. A flood also caused the Hildebrands to lose the ranch when it was acquired by the Army Corps of Engineers for the Chatfield Reservoir Project in 1965.

In 1973, the ranch was acquired by Denver Botanic Gardens with the lease of 750 acres of property for development of the Chatfield Arboretum. The decision was made to restore the ranch buildings as an example of the pioneer lifestyle.

The Hildebrand ranch was recently placed on the National Register of Historic Buildings, which will provide some funding for the restoration and maintenance of the ranch by Denver Botanic Gardens for future visitors to the Chatfield Arboretum. The ranch reflects the ingenuity and resourcefulness of the American pioneer and is certain to be a great asset to both the arboretum and the community.

Mark McCauley

Spidermites

Hot weather always brings out an increase in spidermite activity. Unfortunately, the damage is often done before the mites themselves, which are rather small in size, can be detected. Make it a practice to check your plants by holding a sheet of white paper beneath a branch and shaking it vigorously. The presence of mites will be indicated by little "dots" appearing on the paper. Kelthane and similar insecticides will bring them under control. If you have been using a lot of Sevin, Mythoxychlor, or Chlordane without combining them with a miticide, you will probably be experiencing a buildup of spidermites. This is because these products have little effect on spidermites and they kill off natural predators. Therefore, if you wish to control the mites, it is generally a good idea to combine a miticide with the proper insecticide. Sometimes these combinations are available already mixed for you.

If you wish to control mites without using chemicals, some satisfaction can be gained by the use of a forceful spray of water at frequent intervals. Just be sure you avoid overwatering the trees when you use this method. This could lead to other problems.

Dr. J. R. Feucht

Lobby Court

Begonias will take pride of place this month. Come admire their beauty not only of blossom but also of leaf texture and color. Many of the plants will be displayed in hanging baskets.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor - Margaret Sikes, 575-2547



New D.B.G. Assistant Director

The Denver Botanic Gardens is pleased to welcome Mr. Merle M. Moore of Ann Arbor, Michigan as its new Assistant Director. Mr. Moore took up his new duties on August 14, 1978.

In Ann Arbor, our new Assistant Director had been serving as the Senior Horticulturalist of the Matthaei Botanical Gardens at the University of Michigan since 1974. Previous to his tour of duty in Michigan he held the position of Assistant Horticulturist at the Holden Arboretum in Mentor, Ohio. Of special interest is Mr. Moore's experience as an advisor on civilian programs to the Vietnamese Government on the District and Province level. His position was with the U.S. Agency for International Development operating out of Washington, D.C. Earlier, as a Peace Corps volunteer, the new Assistant Director served as agricultural advisor for Peace Corps volunteers working with various Hill Tribes in remote areas of Thailand. Before his government service, Mr. Moore spent a period as a Managerial Trainee at the Wayside Gardens Company in Mentor, Ohio.

Mr. Moore is married and has three children. He and his family have taken up residence in Littleton. Welcome to the Moore family!



Colorado Potters' Guild Show

Ceramic Pots for Flowers, Plants, Ikebana, Bonsai

In September, Denver Botanic Gardens will host the Colorado Potters' Guild Show/Sale of pottery suitable for plants and flower arrangements. Members of Ikebana International and of the Floral Art Study Club will again provide unique and beautiful arrangements using containers made by the potters.

This year the pottery will be judged by Nan and Jim McKinnell, national known potters, who are presently teaching at Loretto Heights College.

The show will be open to the public free of charge on Friday and Saturday, September 29th and 30th, from 9:00 a.m. until 4:45 p.m., and on Sunday, October 1st from 9:00 a.m. until 1:00 p.m. A percentage of all sales will benefit Denver Botanic Gardens.

Gardening Tips for September

This has been a long, hot summer and if you are like me, you are looking forward to some cool, fall weather. This is also a good time to look forward to the fall colors which we all enjoy. The best fall color occurs during the season when the nights are cool and the days bright and crisp. Actually, sunlight is necessary for good, intense fall color. Most of the color in the leaves is already there but it is masked by the chlorophyll. Chlorophyll is readily bleached out by sunlight and the brighter the light, the more bleaching that occurs. Thus, the colors underneath show more vividly.

Preserving Fall Color

Preserving fall colors in foliage is often difficult because drying of the leaves usually results in the loss of luster. If you are trying aspen foliage for dried arrangements it must be done at a certain time. Generally the best time is just as soon as the yellow or orange color appears. Waiting a week or two is usually too late because the leaves will begin to discolor and in the drying process, will frequently fall off. One method that has been used on small branches is to plunge the base of the branches in a mixture of one-third glycerin and two-thirds water. After about a week or two, take them out of the mixture and allow them to dry naturally. The glycerin helps to keep the leaves from becoming too brittle and if cut at just the right stage, may almost appear like fresh-cut foliage.

Be sure, if you are cutting foliage from mountainous areas, that it is done on private lands with permission from the owner. Leave the plants on public ground alone for others to enjoy.

Dried Arrangements

This is a good time to gather material for dried arrangements. Among the best sources for these materials are the open fields and along roadsides where various types of weeds grow liberally. The tall seedheads of dock, teasel, a type of thistle, and many of the grasses and sedges make excellent subjects for dried arrangements.

If the stalks are still a little bit green, they should be tied in small bundles and hung upside-down in a location that is airy but away from direct sunlight. Be sure the bundles are not large because sometimes they will mildew in the center of the bundle.

Many types of seed pods are also useful and attractive for dry arrangements to decorate the home. Poppy seedheads make excellent and interesting additions, along with milkweed pods and yucca. If you use yucca you will often find that the black seeds inside are wormy. During the drying process you might wish to pick out the seed and those that are not wormy can be planted outdoors for growth next spring.

(Continued next page)

Drying Flowers in Borax

Drying of flowers is also a good activity at this time of year. There are several methods that have been successful and this is a particularly good time for fall flowers like chrysanthemums, blackeyed susans, asters and similar fall-flowering plants. One method is to use borax or silica gel. To use these materials an old shoe box makes a good container. Put an inch or so of the mixture in the bottom of the container and place the flowers face-down and gradually cover them by sifting the borax or gel over the top. Put a lid on the box and place it in a dark, dry location. The flowers will desiccate in three or four weeks. It is best to leave only a short stem on the flowers and then for your individual arrangements, use wire and florist's tape to simulate a new stem.

A little experimentation with various flowers from your garden should ensure some success with several kinds. Among the easiest are daisies, pansies, chrysanthemums, zinnias, and marigolds.

Microwave Drying Method

If you happen to own a microwave oven you can speed up the process but it requires a different procedure. Use any container that is safe in a microwave oven, making sure that it is not metallic. Here again an old shoe box or any kind of paper container will be satisfactory. Flowers should be cut to leave about one-half-inch stems and placed *stems down* in silica gel or kitty litter. Pour enough of either material to securely anchor the stems. Gradually cover the flowers using a plastic knitting needle or ice pick to separate the petals, making sure that the material covers all spaces. The container, however, should not be covered when placed in the microwave oven. Place a cup of water in the corner of the oven and set the oven for one-to-two minutes, depending on the kind of flowers. Flowers which have fairly thin petals will require only one minute while those that are thicker will require two minutes.

After heating, remove from the oven, leaving the material in the box for at least ten or fifteen minutes if you are using silica gel, and twenty-four hours if you are using kitty litter. After this time, the flowers can be carefully removed from the container. Use a fine camel's brush to clean them off. Following this procedure the flowers can be attached to wire and wrapped with florist's tape and attractively arranged to suit your fancy. Dried leaves can be added to the stem but they should be dried separately.

Selecting and Planting Bulbs

This is a good time to make your selection of spring-flowering bulbs and also to get the ground ready for planting. Early selection of bulbs is important. Most garden centers do not have proper storage facilities to keep bulbs for a long period of time. Because of handling, after a while they become bruised and may even develop molds. I prefer to select bulbs from stores which have them in open bins rather than pre-packaged. The only disadvantage in selecting bulbs from open bins is that they may become mixed up from one bin to the next and you may end up with different varieties. Most bulbs, however, differ somewhat in color and shape from one variety to the next. When selecting them, make sure they all appear the same. For satisfactory flowers it is important also to select the largest of its kind. Frequently bulbs are sold in bargain packages but they are

culls and of a lower grade and will usually result in inferior flowers. This is particularly true with tulips, daffodils and hyacinths.

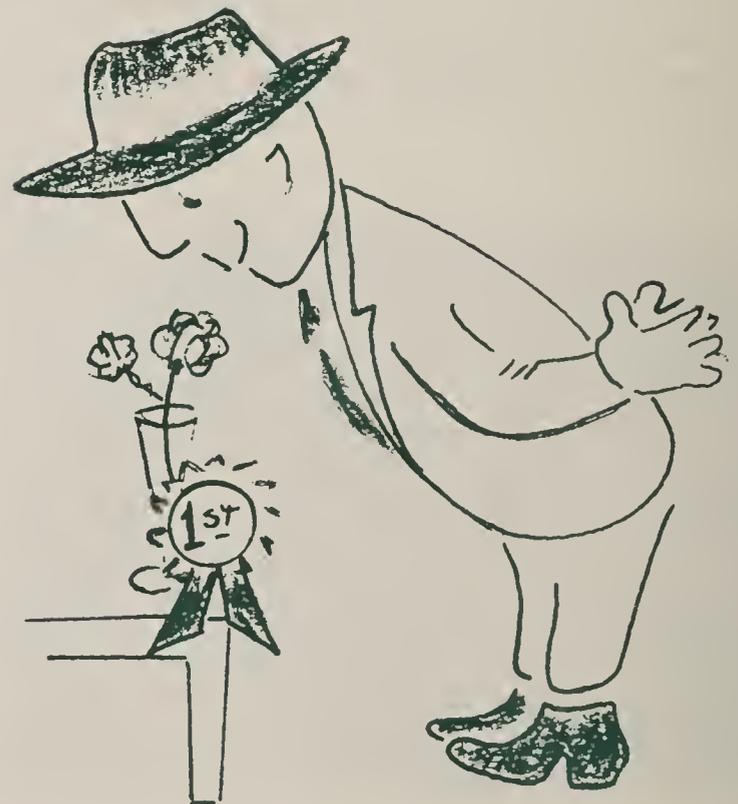
Soil Preparation

When planting bulbs it is important that the soil be well drained. If your soil is of a heavy clay, it will be necessary to improve it by adding organic matter or a quantity of sand to a depth of one foot or more. This should be thoroughly stirred so that the soil is uniform throughout the depth. Planting depths will vary. In general, tulips and narcissus are planted six to eight inches deep and hyacinths about five to six inches deep. The smaller "bulbs" such as crocus and grape hyacinths are planted about three to four inches deep.

In order to keep bulbs from emerging too early in the spring, avoid planting on a south exposure or near structures where heat is radiated, forcing the bulbs too soon. You can also wait until the ground has frozen and apply a layer of woodchips or other suitable mulch to insulate the ground and keep it frozen for a longer period of time.

For more complete information on spring-flowering bulbs, their selection and care, contact your local extension office or this author at 909 York Street, Denver 80206 for Service in Action leaflet #7.411.

Dr. J. R. Feucht



DAHLIA DAYS!

The Denver Dahlia Society will present its annual dahlia show on Saturday and Sunday, September 2nd and 3rd, at the Denver Botanic Gardens. The show is free of charge and open to the public from 1:00 to 4:45 p.m. on Saturday and from 10:00 a.m. to 4:45 p.m. on Sunday.

You need not be a member of the Denver Dahlia Society to enter dahlias for exhibition. Anyone may enter. Blooms must be disbudded — they must have one or more pairs of leaves. For more information call Pat Deffner (794-0158) or the Robert Crawfords (778-0822).

We invite everyone to take this opportunity to come and see the progress being made at the Botanic Gardens, view the flowers outside and then come in and enjoy the many varieties of dahlias on exhibition.

CAMERA DAY

Shutter bugs should be the only bugs evident at Denver Botanic Gardens, Saturday, September 9th when photographers are invited to capture on film favorite flowers, landscapes and other subjects.

For camera buffs who seek additional expertise in the use of telephoto lenses, extension tubes, bellows and/or flash, qualified panelists will be in Horticulture Hall for a how-to talk at 10 a.m. and again at 1 p.m. Other photography experts will be on hand throughout the gardens offering advice and suggestions from 10:30 a.m. until 3 p.m.

Visitors may wish to enter a contest featuring pictures taken at the Gardens. Three categories: black and white, color and color slides will be open to participants. Further details available on Camera Day.

APPEAL FOR PERENNIAL PLANTS

During the past years considerably interest has been created by various types of gardens such as Herb, Rose, Daylily, etc. within the scope of Denver Botanic Gardens and now it is the turn of the PERENNIAL.

The Horticultural Advisory Committee is looking for stock of NAMED perennial herbaceous material as plans are currently underway to flank the northern section of Linden Allee with such material.

Anyone with such plant material to offer is asked to contact either Mrs. Phil (Peg) Hayward at 757-4237 or Andrew Pierce at the Gardens 575-2547.

Remember we are looking principally for named and unusual material.

CLASSES

Tropical Plants of the Conservatory, the guides training class, will start September 6 and continue to November 8 from 1 - 3 p.m. Some people have expressed an interest in guiding but feel hesitant about knowing enough to give a tour. Do not be concerned about lack of experience. This class has been carefully designed with classroom sessions on botany alternating with time in the Conservatory to study the specific plants. It is guaranteed to increase your knowledge about the plant kingdom and especially tropical and subtropical flora. Limit 15. Cost \$25.00 to be refunded if the student guides for 40 hours.

Introduction to Bonsai will be taught by members of the Denver Bonsai Club. Under their tutelage, students will create one bonsai. The cost of \$17.50 will cover all materials. The class is scheduled from September 7 - 28, 7 - 9 p.m., Classroom B.

Last spring the session on *Renovation of Old Lawns* was snowed out. Let's try again. Meet Lee Schwade on September 9 at 9 a.m., Classroom C. Cost \$1.50. Limit 25.

Unfortunately, Dr. Hohn who was scheduled to teach *Taxonomy* has been transferred. Therefore, this class has been cancelled.

Did you see the article in the *Denver Post* about Mr. Novitt and his projects? One of his consuming interests is in *Mineral Water Gardening*. This will be discussed on September 16 at 9:30, Classroom A, cost \$1.50.

Dr. Brunquist will offer his last field trip this season on September 20. Meet at 909 York. Bring lunch, free.

Mr. Hodges who offered so much information on Camera Day will continue sharing his secrets for beautiful pictures in *Flower Photography*. This will meet from September 20 - October 11, 7 - 9 p.m. Classroom C. Cost \$10.00.

And a reminder, many of the classes listed in the Fall Program are filling up rapidly. Get your money in immediately so you won't be left out!

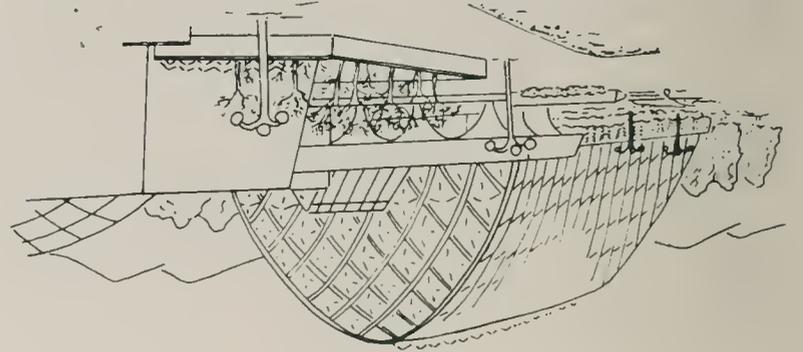
THE ROCKY MOUNTAIN CHAPTER OF THE AMERICAN ROCK GARDEN SOCIETY

There will be a meeting of the American Rock Garden Society at 7:30 p.m. on Wednesday, September 20, in Classroom B. Paul Maslin will be speaking on "dwarf shrubs for the rock garden." Just as *Jamesia*, Kinnikinick, Alpine Laurel and junipers form a conspicuous and elegant frame for wildflowers in the natural rock gardens of our mountains, so can a host of cultivated dwarf shrubs serve as the permanent backbone to a home planting. No one is more qualified to speak on the subject than Paul Maslin who has had many decades' experience growing native and exotic shrubs in Colorado. His unique garden boasts what surely must be the largest collection of hardy plants in the region - perhaps two thousand different species. Paul's superb slides will show how to grow unusual shrub material in an aesthetic fashion: rose, white and crimson flowered mats of hardy heather brightening the January landscape; a variety of dwarf rhododendrons that have proven durable in our climate; many forms of dwarf manzanitas that enliven the garden year around and are especially drought tolerant; tiny spiraeas for autumn color, *Deutzias*, *Genistas*, *Helianthemums*, *Coton-easters*, *Cytisus* - the list may be long, but considering that there is no single source on shrubby plants for our climate, we are fortunate to have Paul to lead us through the tangle to the very best dwarf shrubs for our climate. Visitors are welcome.

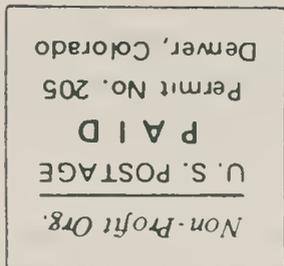


Hollyhock Althea Zebrina

DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206



SEPTEMBER 1978



Notices

The Lost and Found Box may be found in Helen McCloskey's office, 909 York.

A special opportunity is now available in the Gift Shop. Autographed copies of *Run, River, Run* and *Land Above the Trees* by Ann Zwinger, *Wild Flower Name Tales* by Berta Anderson and *Trail of Trees* by J. R. Feucht and Al Rollinger are available there.

Congratulations are due to Ross Lahr and Ray Turnure of the Denver Rose Society. Mr. Lahr won the District Silver Medal, the highest award a District can give to an individual, and Mr. Turnure, the outstanding District Judge's Award, the first ever award of its kind. Two well deserved recognitions to two fine rosarians!

The tuberous begonia display just finished is the favorite of visitors, especially photographers. A free film on that subject is sure to please, so if you wish to learn more about these lovely flowers, their culture and care, join us on September 9 at 1:30, Classroom C.

When you come for this film, please note the beautiful colors — yellow, red, purple, orange and white — of the chrysanthemums in the Lobby Court. A striking display.

Tributes

In memory of Mrs. Cyrus G. Allen

Dorothy Ann and Paul Fullerton

In memory of Mrs. Lawrence Bromfield

Mr. and Mrs. Gilbert J. Mueller

In memory of Mr. J. R. "Ray" McKee

Sarah and Oliver W. Steadman

In memory of Jack Riley

Clarence J. Crochet

In appreciation of Mr. Campbell Robertson

Spade and Trowel Garden Club

In memory of Alma W. Thomas

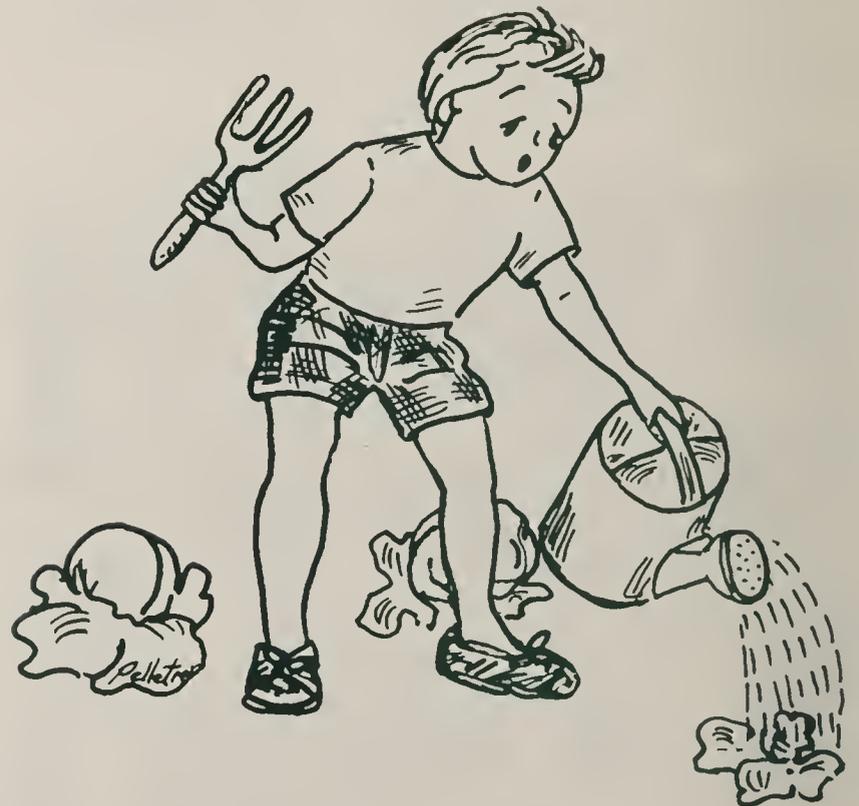
Lavinia Earhart Black

Mildred H. Earhart

Helen L. Olsen

Don't Forget The Junior Members!

Junior memberships are available at \$3.00 per year for children 9-14 years of age. Members will receive 8 issues of *The Jolly Green Gardener* Newsletter. The newsletter is mailed monthly September through May (exception: combined November-December issue). Membership also includes use of the Helen Fowler Library and borrowing privileges. There is an excellent section of books devoted to the younger reader.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 575-2547



Green Thumb Newsletter

DENVER
BOTANIC
GARDENS, INC.

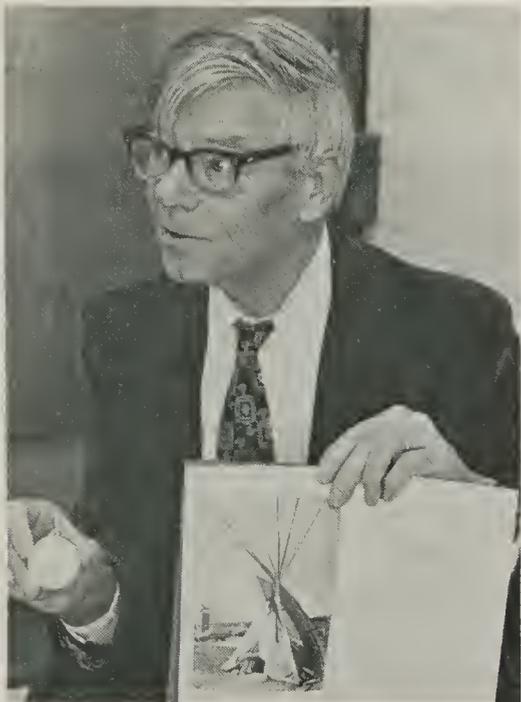
NO. 78-10

OCTOBER, 1978

575-2547

Associates Annual Meeting

Circle the date of October 24 and plan now to join your friends and co-workers of the Denver Botanic Gardens at the Associates Annual Meeting. Business will be transacted in the morning, followed by lunch and our speaker, Dr. Robert W. Delaney, Director of the Center of Southwest Studies, Ft. Lewis College in Durango. Dr. Delaney, who has taught at Ft. Lewis since 1957, has a wide and varied academic background which includes extensive travel, numerous publications and research in Peru and Bolivia. The title of his talk is "Plants, a Sidelight of the Spanish Conquest."



And Speaking of Travel

Two fascinating trips are planned for the enjoyment of our members.

On February 2, a group will fly to Miami en route to Quito, Equador and thence to the Galapagos Islands! Our group will live on board the M/V Iguana but many stops at different islands are scheduled along with a visit to the Charles Darwin Research Station. A trained naturalist will be traveling with the group so all may benefit from his knowledge.

As a preview for this trip, Dr. Moras Shubert, who visited the Galapagos last year, will show slides on October 14 at 1:30 p.m., Classroom C. Free and all welcome.

Another show about a planned trip to India and Nepal is booked on October 3 at 7:30 p.m. in Horticulture Hall. The trip will leave Denver on March 16 and return to New York on April 9th. A visit to the Himalayas offers one of the most unusual experiences in the world — fascinating people and cultures, rare and exotic plants including giant rhododendrons and mountains over five miles high — truly the ultimate in travel.

You will be receiving information about both these trips. Read the letter carefully and then plan to attend the slide shows to learn more about these exciting travel opportunities.

HOW OUR NUMBERS GROW!!

Perhaps somewhat behind the scenes the Denver Botanic Gardens Greenhouses are getting fuller than ever and as the saying goes you never have enough GH space no matter how much you build. Incredible though it may seem the extension that was put on in 1974 is almost full to overflowing.

During the last twelve months, ending December 31, 1977, the number of plants has grown from 3,512 to 4,809. Likewise the different kinds of taxa have gone up from 2,523 to 3,313. Both figures represent an increase of approximately thirty per cent. It is interesting to note how near we are to the 1 to 1 ratio between plants and taxa, which shows you how many taxa we have with only one specimen.

This trend is continuing during 1978, though at a somewhat reduced rate. Some re-propagation is being carried out on larger plants so that additional space can be made available for new accessions.

Most of the increase is due to the large collection of Bromeliads from New Orleans but other sections such as Orchids, Ferns and Gesneriads show considerable increase as well. One major area, that of Cacti and Succulents, has remained static and this is purely due to physical limitations on space.

Notwithstanding the above, the greenhouses also have to maintain the necessary plants to beautify the Lobby Court, Conservatory replacements, provide plants for membership, grow all the plants for the Herb Garden, provide plants for the Community gardens and DBG vegetables and raise all the trial annuals for the outside gardens.

The Greenhouses are always extremely busy and space always at a premium.

Andrew Pierce
Conservatory Superintendent

SPECIAL CHRISTMAS GIFT

How would you like to own one (or several) of the exquisite hand-painted egg ornaments which fascinated visitors viewing last year's lobby Christmas tree?

Members only will be privileged to examine and purchase these lovely keepsakes in Classroom B, Monday, November 6 between 10 a.m. and 3:30 p.m. Price will be \$5.00.

Usually all lobby tree ornaments are available only at the Gift Shop Christmas Sale (Nov. 17-18 this year). These genuine eggs from China, painstakingly twined into tree ornaments, are far too delicate to survive the crush! So come early, present your membership card to get in — then browse at your leisure. Select several for yourself and favorite friends. Each comes in its own special box to preserve it forever. These one-of-a-kind ornaments will be cherished by old and young alike.

Powdered Milk: Fountain of Youth for Seeds?

Until recently, home gardeners could do little to prolong the life of left-over garden seeds except to follow the ancient practice of storing in a cool, dry area. Consequently, the vigor and longevity of left-over seeds often dropped abruptly.

One of the nation's leading specialists in seed storage, Dr. James Harrington of the University of California at Davis, has developed an inexpensive method of storage of the seed by using powdered dried milk as the dryer or desiccant. His recommendations are as follows:

1. Unfold and lay out a stack of four facial tissues.
2. Place two heaping tablespoons of powdered milk on one corner. The milk must be from a freshly opened box to guarantee dryness.
3. Fold and roll the tissue to make a small pouch. Secure with tape or a rubber band.
4. Place the pouch in a wide mouthed jar and immediately drop in packets of left-over seeds.
5. Seal the jar tightly using a rubber ring to exclude moist air.
6. Store the jar in the refrigerator, not in the freezer.
7. Use seeds as soon as possible. Discard and replace the desiccant once or twice a year.

(Information, courtesy National Garden Bureau.)

Congratulations

Members will be pleased to learn that one of the staff, Nancy Collins, was invited to write an article on "Hanging Gardens" for publication of the Brooklyn Botanic Gardens on *Container Gardening*. This issue may be found in the Library and may be purchased in the Gift Shop.

OCTOBER CLASSES

Beginning Indoor Fluorescent Light Gardening will present many ideas and techniques for this fast growing hobby. Come on Tuesday evenings starting October 3 and continuing to November 21 from 7 to 9 p.m., Classroom B and be prepared to work with light bulbs as well as flower bulbs. Doug Crispin, teacher, is owner of the African Violet Showcase. Cost: \$20.00

Another chance to work with house plants and to learn about *Culture* and *Basic Propagation* will be offered from October 5-26, 6 to 8 p.m., Classroom B. The cost is \$10.00.



Brighten the corner where you are with flowers. Sign up now for *Basic Flower Arrangement* and learn to make simple, colorful decorations for your home. The cost of \$20.00 provides all plant material. The class will begin October 17 and continue until November 14, 9:30 a.m. until noon.

Many of our members attended Jim Feucht's and Al Rollinger's autograph party. If you haven't walked the Trail of Trees at Fairmount, now is your chance. Meet at 9:30 a.m. at East Alameda and South Quebec, main entrance main office, second turn south, on October 18. Free and no limit but please bring *Trail of Trees*.

Many times in the past few years professional landscape architects have enrolled in *Landscape Horticulture*, the very popular class offered at the Gardens. We were flattered of course, by their interest but the influx of professionals had threatened to change the nature of the course, originally planned for the homeowner. Al Rollinger and Larry Watson have therefore developed a specific course *Landscape Horticulture for Professionals*, October 24–November 28, 7:30 to 9:30 p.m., Classroom C. Fee: \$60.00. Remember, this is designed for people in the trade.

Herbarium Specimens

A fine collection of herbarium specimens has been received from the estate of Bruno Klinger. Dr. Klinger was a professor at Colorado State University for many years. This collection includes 79 mounted and identified sheets, 84 sheets mounted but not identified and 1200 pressed specimens identified to genus only.

Dr. Zeiner and the Herbarium Committee will be kept busy with this fine acquisition.



INVITATION TO ORCHID OKTOBERFEST

The Denver Orchid Society will hold their Annual Fall Show on October 14-15 in the Horticulture Hall – Denver Botanic Gardens.

Hours: Saturday October 14 9 to 4:45
Sunday October 15 9 to 4:00

We cordially invite you to attend and bring your friends.

The orchid growers in the Denver area take great pride in their flowers and like to take this opportunity to share them with you. Orchids will be displayed in individual exhibits pertaining to the show theme "ORCHID OKTOBERFEST."

Name Change!

In August's newsletter mention was made of 'Carefree' a Jackson and Perkins rose which was especially beautiful in hedges, foundation plantings and borders. If you wish to order it for next year, the name has been changed to 'Simplicity.'

CALENDAR OF EVENTS FOR OCTOBER, 1978 (CONTINUED)

14)	9:00 a.m.	Education Building – Horticulture Hall	Denver Orchid Society Show OPEN TO PUBLIC: 9:00 a.m.–4:45 p.m.
14)	1:30 p.m.	Education Building – Classroom “C”	Film: Dr. Shubert’s Slides of the Galapagos
15)	9:00 a.m.	Education Building – Horticulture Hall	Denver Orchid Society Show OPEN TO PUBLIC: 9:00 a.m.–4:00 p.m.
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16)	7:30 p.m.	Education Building – Classroom “C”	Hi-Country Bromeliad Society Meeting
17)*	9:30 a.m.	Education Building – Classroom “B”	Basic Flower Arrangement – Mrs. Cecil McLaughlin
17)*	7:00 p.m.	Education Building – Classroom “C”	Beginning Indoor Fluorescent Light Gardening – Mr. Douglas Crispin
17)	7:30 p.m.	Education Building – Horticulture Hall	Sierra Club Meeting
17)*	7:30 p.m.	Education Building – Classroom “A”	Denver Audubon Society Meeting
17)*	7:30 p.m.	Education Building – Classroom “B”	Denver Bonsai Club Meeting
18)*	9:00 a.m.	Botanic Gardens House – Main-Dining-Kitchen	D.B.G. Guild (Vinegar preparation)
18)*	1:00 p.m.	Education Building – Classroom “C”	Tropical Plants of the Conservatory – Mrs. P. Hayward
18)*	1:30 p.m.	Botanic Gardens House – Dining Room	Propagation Committee Meeting
18)	7:30 p.m.	Education Building – Classroom “B”	American Rock Garden Society Meeting
19)*	9:00 a.m.	Botanic Gardens House – Main-Dining-Kitchen	D.B.G. Guild (Vinegar preparation)
19)*	9:30 a.m.	Botanic Gardens House – Dining Room	Grounds Committee Meeting
19)*	4:00 p.m.	Botanic Gardens House – Dining Room	Chatfield Committee Meeting
19)*	6:00 p.m.	Education Building – Classroom “B”	House Plant Culture & Basic Propagation – Mr. Andrew Pierce
19)	7:30 p.m.	Education Building – Classroom “C”	Indoor Light Gardening Society Meeting
20)*	9:30 a.m.	Education Building – Classroom “B”	Potpourri Workshop
20)	7:30 p.m.	Education Building – Classroom “C”	Denver Botany Club Meeting
21)	1:00 p.m.	Education Building – Horticulture Hall	Native Plant Society Meeting
22)	2:00 p.m.	Education Building – Classroom “C”	Colorado Cactophiles Meeting
22)*	3:00 p.m.– 5:00 p.m.	Education Building – Horticulture Hall & Classroom “A”	Special Library Association Meeting (Rocky Mountain Chapter)
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23)	9:30 a.m.	Botanic Gardens House – Main Room	Ultra Violet Club Meeting
24)*	9:30 a.m.	Education Building – Classroom “B”	Basic Flower Arrangement – Mrs. Cecil McLaughlin
24)*	10:00 a.m.	Education Building – Horticulture Hall	Associates Annual Meeting
24)*	7:00 p.m.	Education Building – Classroom “B”	Beginning Indoor Fluorescent Light Gardening – Mr. Douglas Crispin
24)*	7:30 p.m.	Education Building – Classroom “C”	Landscape Horticulture for Professionals – Mr. E. Alan Rollinger & Mr. Larry Watson
24)	7:30 p.m.	Education Building – Classroom “A”	Colorado Gladiolus Society Meeting
25)*	Noon	Botanic Gardens House – Dining Room	Industrial Expositions Committee Meeting
25)*	1:00 p.m.	Education Building – Classroom “C”	Tropical Plants of the Conservatory – Mrs. P. Hayward
25)*	1:30 p.m.	Botanic Gardens House – Dining Room	Propagation Committee Meeting
26)*	9:30 a.m.	Botanic Gardens House – Dining Room	Grounds Committee Meeting
26)*	10:00 a.m.	Botanic Gardens House – Main Room	Around the Seasons Meeting
26)*	6:00 p.m.	Education Building – Classroom “B”	House Plant Culture & Basic Propagation – Mr. Andrew Pierce
26)*	7:30 p.m.	Botanic Gardens House – Main-Dining-Kitchen	Men’s Garden Club Meeting
27)*	9:30 a.m.	Education Building – Classroom “B”	Potpourri Workshop
27)	Noon	Education Building – Horticulture Hall	Rocky Mountain African Violet Council
28)	10:00 a.m.	Education Building – Horticulture Hall	Rocky Mountain African Violet Council
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31)*	9:30 a.m.	Education Building – Classroom “B”	Basic Flower Arrangement – Mrs. Cecil McLaughlin
31)*	1:00 p.m.	Botanic Gardens House – Dining Room	Editorial Committee Meeting
31)*	7:00 p.m.	Education Building – Classroom “B”	Beginning Indoor Fluorescent Light Gardening – Mr. Douglas Crispin
31)*	7:30 p.m.	Education Building – Classroom “C”	Landscape Horticulture for Professionals – Mr. E. Alan Rollinger & Mr. Larry Watson

*FOR MEMBERS OR ENROLLEES ONLY

GARDENING TIPS FOR OCTOBER

Fall is a favorite time of year for me. It's a good time to clean up the lawn mower and get it ready for winter. Drain the crankcase if it happens to be a four-cycle engine, hang up most of the garden tools but keep a spade or shovel handy.

PREPARING SOIL FOR SPRING

This is a good time to get your soil preparation started. This will reduce the chores in the spring. If you have had difficulty in growing plants, part of the reason may be that the soil is too heavy and could use some amendments.

If you have a compost or a source of good, well-rotted barnyard manure, now would be a good time to spade it in the garden, making sure it is thoroughly stirred to a depth of nine to twelve inches. Don't worry about breaking up the clods. Large clods can be left, allowing the freezing and thawing action of winter to break them down. It is also a good idea to leave it lumpy because this will allow for better water penetration. Subsoil moistures are pretty well depleted and by leaving the surface rough, small reservoirs are created when moisture falls. This will go a long way in providing adequate subsoil moisture for your garden next year. It will also help the deeply-rooted trees and shrubs that are suffering now from the hottest and driest summer on record, preceded by the driest winter on record.

If you are getting rid of the garden debris in your yard, tops of perennials and frozen annuals, or even annuals that have not been frozen but are ready to be removed, can be used for what I call "composting in place." Rake all the debris, making sure it is free from rocks, woody twigs and clumps of dirt and put it in windrows along the edge of the garden. Set your rotary mower as high as possible and move it across the pile back and forth, making sure that the chute of the mower is pointing towards the garden area and away from children's play areas or the windows of your home. The debris chopped by the mower can be raked over the garden area and spaded in. It will provide "roughage" which helps hold moisture and also opens the soil for better air penetration.

PLANTING BULBS

Last month we talked about purchasing bulbs. If you have done so and they have not been planted, now would be a good time to do this. Make sure that the soil is well drained. It is generally best to plant them about two inches deeper than indicated on the plant guides distributed through garden centers. After planting, it is important that they be well watered if your soil is on the dry side. The first thing that bulbs do before winter sets in is develop a root system and they will require some moisture to do this.

To avoid possible rotting of the bulbs and some of the blights, it might be a good idea to coat the bulbs with a little Captan or Ferbam prior to planting.

OUR CITY TREES

Now that fall is here, one begins to look more critically at the trees in our city, particularly those along the streets. If you have observed at all, you have noticed that some of the trees are in serious condition.

Street trees need more care than the average trees and shrubs in the home landscape. Yet, these are the very ones

that are more often neglected. For one reason or another, street trees have been taken for granted and are somehow expected to survive on their own despite all the odds.

In some cities, but not in Denver, the care of street trees is the responsibility of the city and this care is supported by tax dollars. It is easy to see in these cases where the property owners will take the trees on the parking for granted and consider them not under their care. In Denver, however, trees along public rights-of-ways, except those in parks and parkways, are the responsibility of the abutting property owners.

The increased decline in street trees seen in the past few years is in part due to the necessary water restrictions placed on property owners. The first area that is cut off from water due to restrictions is the parking area because it is owned by the city and merely under the care of the property owners. Thus the trees are showing an early loss of leaves, browning, scorching and falling prey to disease and insect problems such as borers.

The question remains, what can be done? If you have trees along the parking area near your home and have chosen not to water the lawn beneath them, you can still help the trees and use a minimum amount of water doing it. This is done by using a hose-attached soil needle such as the Ross Root Feeder to deep-water the trees.

The root feeder should be inserted into the ground at least one-half its length but left only a minute or so in each location. Move the feeder frequently and only a distance of six to eight inches, paying particular attention to the area just inside the drip point and extending several feet beyond. It does no good to water a large street tree by soaking it near the trunk. The feeder roots extend considerable distances from the trunk and this is the area where they need the most attention. It is better to deep water a tree this way rather than with a sprinkler since most sprinklers apply water too fast and it runs off into the gutter before it is absorbed deep enough to help the tree.

You need not worry about a tree developing soft growth as a result of deep-root watering this time of year. It is now late enough in the year that it would be unlikely that the water would stimulate new growth and it is much more important that the trees go into the fall and winter months with adequate moisture.

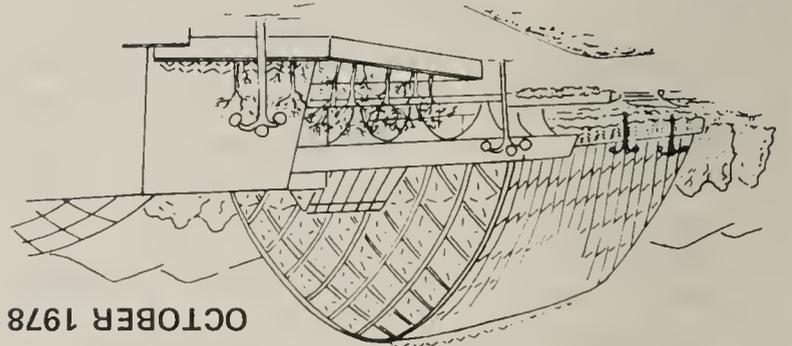
If the fall and winter months are as dry as last year it would be very important to deep-water the trees at least once or even twice each month as long as the ground is still unfrozen. If the ground is frozen and the soil needle cannot be inserted, it is a fairly good sign that there is adequate moisture.

Street trees are a benefit to the entire community and should be a concern of all citizens whether or not your city takes care of the trees with your tax dollars. By maintaining these trees in a healthy condition, you are to some degree improving the environment for the trees and shrubs in your own yard. Healthy trees are less frequently subjected to disease and attack by insects. This can be done even under water restrictions by using the simple method already described. It seems more important to put the time, effort and water into a tree that enhances the beauty of the landscape and provides benefiting shade to all, rather than in a lawn which competes with the tree and does not take years to become the asset that just one tree does.

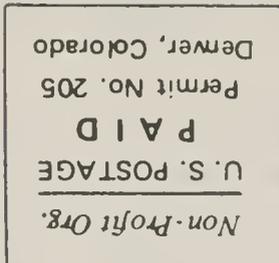
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OCTOBER 1978



(Continued)

It seems to me that it is about time we stopped watering just to have a show lawn at the expense of our trees. Most lawn watering penetrates only deep enough to keep the grass green but doesn't benefit the trees at all. In fact, this practice encourages shallow rooting of trees, making them less capable of surviving a dry winter and frequent, shallow watering can even seal off the air that is necessary for the growth of tree roots.

We should heed the words of the late S. R. DeBoer, well known landscape architect who was responsible for planting 50,000 trees in Denver during his lifetime. In 1972 he wrote the following: "To keep Denver beautiful it is imperative that city planners as well as residents take a renewed interest in the greening of Denver. We must not stop in our planning for beauty. Our trees and parks and gardens must be renewed constantly if we are to leave a decent world for those who follow us. Now is the time to plan that world. The city grows so fast that it will soon be too late if the opportunities for making it beautiful are not grasped now."

—Dr. J. R. Feucht

HELP PLEASE

It is getting to be that time of year again when Around the Seasons Club needs your help. All sorts of dried materials — pods, cones, unusual seeds, cattails, etc., are needed for the Christmas Sale booth. Thanks for your help.

TRIBUTES

In memory of Lucy Crissey, for Library

Bernice Millard

In memory of Mr. Leonard Faus, for Japanese Garden

Mr. and Mrs. Morris Wooldridge

In memory of Jack Riley

M. W. Solt



LOBBY COURT

The fields are stripped, the groves are dumb;
The frost flowers greet the icy moon.
Then blooms the bright chrysanthemum.

(O. W. Holmes)

Another plant of this season also has a poem about it:

"For pottage and puddings and custards and pies,
Our pumpkins and parsnips are common supplies;
We have pumpkin at morning and pumpkin at noon;
If it were not for pumpkin we should be undone."

If you had lived in colonial days, you would have made pumpkin pie in a very different manner than today. It was made by cutting a hole in the top so that the seeds could be removed. After that the cavity was stuffed with apples, spices, sugar and milk and then the whole pumpkin was baked.



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CHRISTMAS SALE



November 17 and 18

10 a.m. to 4:30 p.m.



WEAVERS OFFER DISPLAY OF NATURALLY DYED YARNS

The end of the summer is an excellent time for gathering up the garden flowers, making a trip to the nearby vacant lot for weeds, and then dyeing your yarns for weaving, knitting, needlepoint and embroidery projects. Members of the Rocky Mountain Weavers Guild will be displaying naturally dyed yarns in the main lobby, library and herbarium beginning October 27, 1978. Most of the yarns will be dyed with plants we are all familiar with – annual and perennial flowers from our gardens as well as some exotic dyes such as indigo, madder, Brazil wood and cochineal.

The lobby display will be up until November 12, 1978. The library display, which will also show a hand woven item, will feature yarns mordanted with alum, copper, tin, chrome and iron. The dried plant material and the dyed yarn will be displayed in the herbarium cases. Both of these displays will continue through December 14, 1978.

For further information on dyeing yarns (or Guild activities), contact Mrs. Candy Tobin, Chairperson of the Service Committee – 979-8789.

CLASSES

The *Broadmoor tour* is full. If you choose not to meet at 909 York at 8:30 a.m., but prefer to drive to Colorado Springs on your own, the directions are as follows: Take I-25 south to Exit 59, Mile 140 B; then south on Nevada to Lake Avenue (122) and follow the signs to the Broadmoor. The greenhouses are on the righthand side on the circle drive, near the Flower and Gift Shop.

Gardeners took in stride the recent news from England about a test tube baby, for since the dawn of civilization, they have been propagating plants by various means of vegetative reproduction. Join us on November 4, 9:30 a.m., Classroom C, for a free discussion of *Plant Tissue Culture*. If you are interested in the subject but busy that day, look at the *Scientific American*, January, 1978. In it there is a most interesting article about growing potatoes by this method. Several unusual findings have emerged from this study. In theory, all new plants should be similar to parent type but 25% have a different physical appearance. Further research is continuing.

Members should sign up now for *Feather Rock Planters* on November 9th from 9 to 11 a.m., Classroom B. All material will be provided for the fee of \$7.50. As of this writing, 8 spaces remain.

Please remember for all Fee classes, no refunds can be made after the first class has met.

Gifts galore are always in store for shoppers at the annual pre-Christmas sale at Denver Botanic Gardens. This year marks the 15th season the Associates, an organization of volunteers who manage and staff the Gift Shop, has sponsored this event. Traditional Favorites are handcrafted heritage wreaths and tree ornaments, zesty herb vinegars, fragrant potpourris and autumn harvests of everlastings. Scheduled Friday and Saturday, Nov. 17 and 18, the sale will be held in Boettcher Memorial Center, 1005 York Street from 10 a.m. to 4:30 p.m. each day.

FRAGRANCE GIFTS. Potpourri in 15 heavenly scents has been packaged in dainty sachets and tranquility pillows, decorative glass boxes and fragrance jars. Tutti-frutti, new this year, was blended especially for children and will be tucked into fun sachets adorned with dancing mice or rabbits chasing butterflies. Garden party, orange blossom, lilac, mint and sandalwood are among the favorites. Fixatives, essences and oils plus some materials from the Herb Garden will be available for those preferring to mix their own potpourri.

Frankincense and myrrh, tonka beans, cinnamon sticks and vanilla beans are traditional. Herb seasoned salt accented with a whiff of paprika will also be found at the Fragrance booth.

HOLIDAY TREASURES will include one-of-a-kind wreaths, big to small to spotlight a mantle or flatter a table. Here, too, will be delicate wreaths of baby's-breath and other airy everlastings as well as festive table pieces and door hangings. A dozen kinds of handmade tree ornaments, some with peacock feathers, others are scenes in brass rings, delightful gold spiders, tiny cone trees – the variety is fascinating.

HERB AND TARRAGON VINEGARS have been carefully blended. Members of the Guild have bottled more than 3,000 pints of this popular gift.

EVERLASTINGS in flowers, cones, pods and other dried natural materials have been assembled for those seeking to create their own yuletide gifts. As regularly as squirrels cache their harvests, members of Around the Seasons Club collect blue salvia, money plant, golden yarrow and other blossoms; acorns, buckeyes, sweetgum balls and other seeds or pods; green pinion and graceful cones of eastern white pine plus a variety of other cones – all sought-after supplies. Colorful go-together blossoms dubbed 'gatherings' are favorites, too.

(Continued next page)

AUTOGRAPHED BOOKS by local authors will be offered: *Trail of Trees* by James Feucht and Alan Rollinger; *Trees of Boulder*, Campbell Robertson; *Run, River, Run and Land Above the Trees*, autographed by Ann Zwinger; *Garden Meditations*, Josephine Robertson and *Wild Flower Name Tales* by Berta Anderson. Books by local authors or regional in subject include *Colorado* by David Muench; a dye book *Weeds* by Anne Bliss; *Colorado West*, George Young and *Red Rocks Park* by L. V. & D. A. LeRoy. Wildflower references, *Meet the Natives*, an amateur's guide to wildflowers by M. Walter Pesman and two handbooks by Ruth Ashton Nelson: *Plants of Zion National Park* and *Rocky Mountain Plants*.

The book corner of the gift shop boasts more than 400 titles year around on such topics as geology, conservation, horticulture, flower arranging. They range in spectrum from coloring books for children to college texts.

Pressed flower bookmarks are thoughtful remembrances in living color and are made by volunteers.

CHILDREN'S GIFTS. To delight the very young are pull toys, puppets, small wooden cars, planes and trains plus Beatrix Potter's complete collection of books, buttons, calendars and perky figurines. To capture a youngster's fancy are puzzles by DeGrazia, some jewelry and quaint wall plaques of biblical figures (Noah's Ark, The Nativity, Adam and Eve, Jesus and Children) the product of Benedictine Monks of St. Andrews Priory in the high California desert.

Excellent books to make beginning reading fun are *A Is for Annabelle* and *One Is I* by Tasha Tudor. *Peter Rabbit's Natural Foods Cook Book* has edible recipes to inspire a would-be chef.

JEWELRY. Amber, some jade, natural amethyst necklaces, bracelets, pins and earrings will be offered. Again the Navahos near Bluff, Utah have made ghost bead necklaces of juniper berries with a scattering of seed beads. There are also cloisonne stick pins, pendants and pill boxes.

LOCAL ARTISTRY includes Woodland Etchings, striking black imagery on silver framed in walnut, by Mel Dobson of Colorado Springs; stained glass by Harriett Wills, clay sun plaques by Wendel Studio, copper aspen wall pieces by Larry Paddella.

ACCESSORIES AND ACCENTS. Turtles, a child with bird, penguins, seals and a wall statue of St. Francis are a few of the works of Isabel Bloom sold exclusively in Denver at the Gardens. Animals in brass or pewter, stone carvings from Russia, Mexican hand-carved quarry stone, highly polished stone spheres as well as birds of porcelain, china or crystal are among gifts selected for sale. Exotic wind chimes of sliced agate or brass tubing, lasercraft desk accessories of walnut, even indoor copper fountains of contemporary design are available.

COLLECTOR'S PRIDE. Thimbles, paper weights and bells of china, crystal or brass are nostalgia items.

Gift memberships in the Gardens will be available at a separate booth in the lobby court. Newcomers to the sale will find that most of the handcrafted workshop gifts, potpourri, vinegars, books and seasonal items are in Horticulture Hall. Many gifts will be found in the year-round shop adjacent to the conservatory and the autumn harvests are in the lobby.

Associates of Denver Botanic Gardens, sponsors of the sale, are volunteers who also assist in the library, at the hospitality-information desk and carry out the tour guide program. They are quick to say, "A gift from the Gardens is a gift to the Gardens," for all proceeds from the sale benefit Denver Botanic Gardens.



THE JAPANESE GARDEN

by
Paul McLellan

This fall, the Denver Botanic Gardens started construction of the Japanese Garden. It is contracted out to a private company. The garden was designed by Koichi Kawana, an architect from UCLA.

The design of the garden is in the traditional style of Japanese gardens, and has the support of the Japanese community in the Denver area, which helped raise funds for it.

Five men dug thirty-two Ponderosa pines, at an estimated value of \$7,000, for the garden. Of the thirty-two dug, thirty-one lived, which says a lot for the skill of the men doing the work. Some of the pines had trunks six inches in diameter and were growing out of cracks in rocks. Currently, the trees are planted at the northwest end of the grounds, by the Russian olive trees. When the Japanese Garden is ready, they will be replanted there.

The Denver Botanic Gardens would like to thank H. Aoyagi, Bob Sugana, Kai Kawahara, M. Matsuo, and W. Sagyana, the men who excavated the trees, and also all those who helped raise funds and donated money for this project.

(Editor's Note: Paul is a high school intern working at the Denver Botanic Gardens this semester.)

Start Growing Gifts for the Holidays

Many garden catalogues are full of exciting and different gift ideas for gardeners and their friends. Early ordering (and that means NOW) will assure that your gifts will be ready for the holiday season.

For example, Burpee's shows pre-planted bulbs that are so easy they are practically fool-proof. Try some of the African amaryllis, ready-to-grow crocus or easy paper white narcissus. Anyone would be pleased with this touch of spring in mid-winter.

REMINDER

You all have received information about the two tours scheduled in early and late spring and it is hoped that many attended the slide shows on October 3rd and 14th. If further information is desired on the Galapagos trip, please call: Travel Associates, Inc. at 761-1666, and for that on India and Nepal: Imperial Travel, Inc. at 892-1334.

Another exciting tour is being prepared for November, 1979, with details and prices ready for distribution by November of this year. The Tour will be from Denver to the West Coast, then to the Island of Raratonga. The majority of our time will be spent in New Zealand. There will be an optional extension to Australia if at least 10 people elect to do so. Departure probably November 4, proposed duration of basic tour 18 days.



GARDENING TIPS FOR NOVEMBER



This is a month that I find difficult to suggest very many gardening tips because it is the beginning of the Holiday season and thoughts tend to turn towards other things beside gardening.

There are, however, a few things that need to be done before you relax. After a hard frost has killed back the tops of your perennials and annuals, it would be a good time to clean out the debris by cutting back the tops of chrysanthemums and delphiniums and pulling out the now-frozen remains of your annuals.

Recycling Garden Debris

All of this debris can be recycled in your compost, or an even better way is to chop up the stems and leaves into small pieces and spade them directly into your garden. While there are grinding machines available for making composts, these are rather expensive and an alternative method is to use a rotary mower. Certain safety rules should be followed, however.

Pile the debris into windrows no more than 6 to 8 inches high and slightly narrower than the width of the mower. Make sure there are no stones nor large, woody twigs in it because these will become missiles and cause damage or injury. Run the mower back and forth over the pile, aiming the chute towards the garden area but away from windows or any structures that could be damaged. Also be sure there are no children or pets in the area at the time. It will usually be necessary to rake the pile several times, gradually reducing the pile down into small pieces. Following this procedure, the debris can be spaded directly into the garden. It is a good idea to spade the debris in during the fall rather than waiting until spring. The organic material will help to open up the soil and the subsequent freezing and thawing action will break the clods down, leaving a mellow, easy-to-work soil next spring.

Wrapping Young Trees

If you have young trees that are thinned-barked like honeylocust, or green ash that have recently been planted, now would be a good time to wrap the trunks to prevent sunscald. Sunscald occurs in the winter months, generally in the January through March periods and it is the result of the sun's rays warming up the southwest side of the tree, causing some of the cells to become active. A sudden drop in temperature will result in the freezing of these cells and the death of the bark. The tree wrap insulates against the sudden temperature change. Commercial crepe wraps are inexpensive and are designed for this purpose. Avoid using burlap or other substitutes as they tend to absorb moisture which will conduct both heat and cold; defeating the purpose of the wrap. Start at the bottom of the tree with the wrap overlapping as you wind the material upward. This will prevent water from getting underneath the wrapping and causing other problems. The entire trunk up to the second or third branches should be wrapped. Fasten the final wind of the wrap with a staple. Avoid using tape or a wire that encircles the trunk. Mark your calendar now to remove the wrap in April of next year. A wrap left on during the growing season can create an ideal environment for the growth of canker organisms and a good hiding place for insects that can damage the bark.

Collecting for Dry Arrangements

While cleaning up around the yard or perhaps while driving out into the country, keep your eye out for dried perennials and weeds which would make good subjects for dried arrangements. Some seed pods that are in abundance this time of year are the cone flower and its relative, the sun flower, yucca, milkweed and the prickly tops of various types of thistles. To add interest to an arrangement, try the older seed heads of some of the field grasses such as brome, foxtail and Timothy. After collecting them, hang them in bundles upside down in a dry location until they are completely dry. If you are collecting milkweed, make sure that the pods have completely opened. Otherwise, the silky seedheads can make a mess in your home.

Forcing Bulbs

One of the fun things that can be done now is to force bulbs into bloom for indoor enjoyment. The real challenge is to get them to bloom on a predetermined date such as by Christmas, St. Valentine's Day or Easter Sunday. Some bulbs are available in the garden centers that can be forced in a short period of time such as Paper White Narcissus. These present little challenge but are fun anyway. Hardy bulbs are more difficult but it is nothing more than trying to duplicate nature's cold periods ahead of time. The best method is to place the bulbs in the pots or decorative containers you wish to have them flower in. Make sure the containers have good drainage in their bases, and use a sandy, well-drained soil as a supporting medium. Place the bulbs in the soil so that the pointed end of the bulb is slightly exposed. Mark the date on a label, water them and place them in a location that can be maintained at 48 to 50°F. An unheated garage will often maintain temperatures close to that this time of year.

Another method, though slightly more difficult is to plunge the pots in an outside trench about 15" deep. The trench is then filled with lightweight cinders or similar material and topped with straw. After about 8 weeks for hyacinths and 15 weeks for tulips, the cold-treated bulbs can be brought indoors but should be placed in a cool, dark location until the spouts develop and grow to be about 1" long. After that, the bulbs can be brought into normal room temperatures in a location where there is light but no direct sun. Hyacinths can be forced into bloom after the cold period within 14 to 18 days, daffodils in 20 to 25 days and tulips in 25 to 40 days, depending on the type.

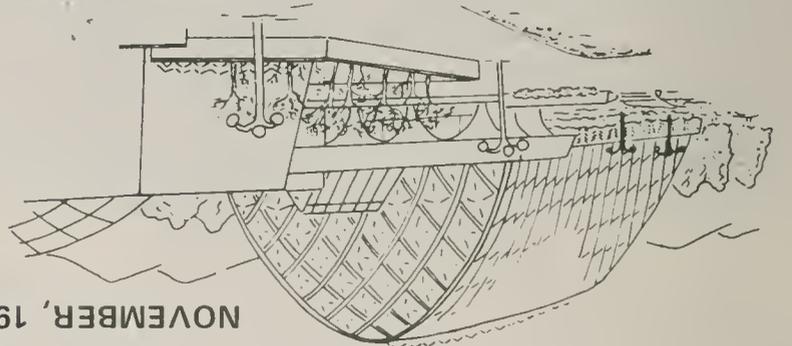
Winterizing Garden Tools

Another chore that can be done before your thoughts turn to the holidays is to get your garden tools and lawn mower cleaned up and put away for the winter. Garden tools can be coated with a thin film of oil to keep them in good shape after they are cleaned. Power mowers should have the gasoline drained. Gasoline stored for long periods of time may accumulate moisture and will also form a type of lacquer that can interfere with ignition, fouling the spark plugs when it is started next spring. Four-cycle engines will need to have the oil drained and the crankcase refilled with the proper oil. The crankcase can also be left empty but be sure to put a note on it lest the mower be started next spring with an empty crankcase.

HAPPY THANKSGIVING

—Dr. J. R. Feucht

DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206



NOVEMBER, 1978

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FREE FILM

"Fruit of Paradise," *Musa paradisiaca*, is the featured plant for our film on November 11 at 1:30, Classroom C. Can you guess its common name? This is a very fast growing herbaceous plant, often misnamed a tree, that bears edible fruit in finger-like bunches. It may be found in the Conservatory.



TRIBUTES

In memory of William S. Gleason

Mrs. F. V. Altvater

In memory of Mr. Alva C. Gregg

Mr. and Mrs. Granville Hamilton

In memory of Mrs. Ruth Tracy for the Herb Garden

Morning Belles Garden Club

In memory of Mrs. Karen Fose Zimmerer for the Japanese Garden

Denver Ikebana International Chapter

That's Telling Her!

(The following billet-doux was received from one of our faithful members who wished to share it for the amusement of all.)

Dear Mountain Ash¹:

This may come as a Truffle² to you considering my Valerian³ and White Mullern⁴ but I give you fair Hand Flower Tree⁵. I am sick of your Apple Thorn⁶ and disgusted with your Water Melon⁷. Your constant complaints of Chequered Fritillary⁸ amuse me, even if I now find your Lupin⁹ so exhausting. Besides, your Tall Sunflower¹⁰ gets on my nerves and so does your nagging about Throatwort¹¹. I feel I have kept my own Chinese Chrysanthemum¹². You are a perfect case of Crowsfoot¹³, Cranberry¹⁴ and Crab Blossom¹⁵. Even your Clematis¹⁶ has gone. Only your Lettuce¹⁷ is left, Wild Liquorice¹⁸; I'm off back to my Bachelor's Buttons¹⁹.

I await your Canterbury Bell,²⁰

Sweet William²¹

1-prudence ... 2-surprise ... 3-accommodating disposition ...
4-good nature ... 5-warning ... 6-deceitful charms ... 7-bulkiness...
8-persecution ... 9-voraciousness ... 10-haughtiness ...
11-neglected beauty ... 12-cheerfulness under adversity ...
13-ingratitude ... 14-hardness ... 15-ill nature ... 16-mental
beauty ... 17-cold-heartedness ... 18-declare war against you ...
19-single blessedness ... 20-acknowledgment ... 21-gallantry

Michael Joseph

Daisies Never Tell, But You Should!

Moving can be hectic, we know, but remembering to send us your new address in advance will save us postage and assure undelayed delivery of monthly mailings to you. So, don't be "mum" about moves: let us know. Thanks a bunch.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor - Margaret Sikes, 575-2547



Green Thumb Newsletter

DENVER
BOTANIC
GARDENS, INC.

NO. 78-12

DECEMBER, 1978

575-2547

Darwin's Crossroads of Evolution

Time is running out to sign up for the trip to the Galapagos! Naturalists especially will enjoy this excursion for here is one of the few places on earth where an entire ecological system may be viewed in a nearly pristine state. Do look at the current *Audubon* magazine to see some of the exotic sights we will view. Another highlight of this trip will be a visit to Fairchild Tropical Gardens in Florida. Fairchild, the main tropical botanic garden in the continental U.S., extends over 83 acres and displays some 5000 different kinds of plants. Don't delay—sign up now. Call Travel Associates, Inc., at 761-1666 for further information.

CLASSES

Conifers and Crafts for Christmas will provide an opportunity for children in grades 1 - 4 to make ornaments for their homes. Please report promptly to Classroom B at 9 a.m. on December 2. All material will be provided for the \$4.50 fee.

Please note: We wish to offer more classes for children. Do read the Winter Schedule carefully and then mention the *Propagation* and *Garbage Gardening* opportunities to children that you know.



Although it was a cold, misty day, 58 people joined Dr. Feucht and Mr. Rollinger on the *Trail of Trees* in October. Many asked that we reschedule the walk after the leaves had fallen, so come along on December 8. Meet at the Fairmount main office parking lot at 9:30 a.m. Free but please bring "*Trail of Trees*" (available in the Gift Shop for \$3.14).

Finally, bring your measuring cup and spoon, wooden spoon, bowl and large cookie sheet and learn how to make *Holiday Breads*. This will be on December 9 from 9 a.m. to 3 p.m. so bring your lunch too. All materials except the sour dough starter will be provided for the fee of \$8.00. Eight spaces remain as of this writing.



GARDENING TIPS FOR DECEMBER



December is a festive month and few think in terms of outdoor gardening at this time of year. Yet, there are some things that can be done, depending on the weather. As this column has always urged in the past, if conditions are dry, a deep watering of trees and shrubs on a clear, warm day is a good idea. Apply the water early in the day so that it has a chance to soak in before freezing night time temperatures occur. The use of a Ross Root Feeder is even a better idea but it can only be used if the ground is not frozen solidly.

If you have not gotten around to pruning your evergreens, why not get a dual purpose out of the prunings? Rather than throwing them away, use them for decoration, then after Christmas, they can be placed on the shallow-rooted perennials to help retain moisture for the rest of the winter.

With shopping and all the other chores necessary to get ready for Christmas, often houseplants are neglected and even shifted around to make way for the Christmas decor. Drastic shifts of your houseplants from one exposure to another will usually cause them to react. A common ailment of houseplants following a change of exposure is the dropping of the lower leaves. Try, if at all possible, to avoid moving your plants to extreme changes in exposure. If they have become accustomed to a west window, try to move them to another room with the same exposure.

Potted plants received as gifts such as poinsettia and cyclamen and many foliage plants are often beautiful when they arrive but they deteriorate quickly. This is generally because of the extreme change from greenhouse conditions to the low humidity in your home. Some of these problems cannot always be avoided but it is generally advisable to keep a new plant out of direct sunlight, away from heat sources such as radios and television sets, and if possible, provide additional humidity with a humidifier or trays of moist pebbles beneath the plants.

Keep in mind that the low angle of the sun during this month can create very hot, dry conditions, particularly if you have south-facing windows. Indirect, bounced light such as that from an east exposure is usually better. Walls that are white or light in color will diffuse light more evenly than dark walls and houseplants will do better under these conditions.

If you have an azalea, hydrangia or similar acid-loving plant, it is generally growing in a nearly 100% peat moss. This usually creates a problem with water. When the peat becomes too dry it is difficult to get it wet again. If it is too wet it is difficult to dry it out before the plant begins to suffer. A daily check of the moisture level in the peat moss will help to overcome this problem. If you begin to see shrinkage of the peat from the edge of the pot water should be applied immediately. Avoid just wetting the surface. Apply sufficient water so that it drains into the catch basin beneath.

(Continued inside)

If you are accustomed to periodically giving your house plants a little fertilizer, December and January are probably best skipped in this procedure because the plants will not utilize it when the days are shorter and it is best not to stimulate them too much until better growing conditions return in the spring. There is also the problem of a soluble salt buildup. This will appear as a white crust along the top of the soil near the edge of the pot. This condition exists due to watering too frequently too lightly. The only way to overcome salts is to flush them out with quantities of water. The trick is to do this without drowning the plant.

Unless you have gone to the use of artificial Christmas trees, selecting a live tree for your home will still be a chore to be done. To ensure safety in your home and to avoid disappointment due to messy needledrop just at the time you want most to enjoy the tree, take special care when you select your tree. Avoid those that have been sprayed green with paint to make them look fresh. You can detect this by observing the branches and trunk because they will appear green rather than the usual brown. Such trees are cut early in the season and are already quite dry. You can also test for freshness by bending a few needles. If they seem brittle and dry that tree should be avoided. The longest lasting trees include the fir, Douglas-fir and some of the pines. The least durable are the spruce. Before selecting any tree, grasp the cut tree by the trunk and tap the base of it on the ground sharply. If great quantities of needles drop you would be wiser if another tree were selected.

MERRY CHRISTMAS.

Dr. J. R. Feucht



FOR THE HOUSEPLANT ENTHUSIAST

The Colorado State University Extension Service in Adams County is offering a home correspondence course on the *Culture and Care of Houseplants*. Designed to inform and educate the houseplant enthusiast in the sciences of indoor gardening, the course contains eleven lessons dealing with topics ranging from physiology and anatomy, to propagation and container usage. People enrolled in the course will be sent a lesson each week or ten days. Each lesson is three to five pages in length with a thought sheet that will help highlight the main parts.

To enroll in the course a \$3.00 check, which covers the cost of printing and materials should be sent to:

Adams County Extension Service

9755 Henderson Road

Brighton, Colorado 80601

Please make checks payable to the Adams County Extension Fund. For more information call 659-4150 and ask for Steven Yarish.

MEMBERSHIP DUES INCREASE

A new class of membership in the Denver Botanic Gardens will be available on January 1st — the Family Membership. Special programs and classes are being planned for families. The cost of the Family Membership will be \$25.

An Individual Membership will cost \$15 with Student and Senior Citizen Memberships at \$10. Of course, the Contributing Membership at \$50, the Supporting Membership at \$100, the Corporate Membership at \$200, the Patron Membership at \$500 and the Benefactor at \$1000 all will receive the privileges of the Family Membership.

Because of the success of the concert by the Classic Chorale in the amphitheater last summer and the tour of the greenhouses, more events for members are being planned. In addition to the Annual Dinner on January 31st, a special program is scheduled in conjunction with the Smithsonian Institution for our members next spring.

Members also receive the interesting and informative publications "The Green Thumb Magazine" and "Newsletter" besides early notification of classes and tours. "The Jolly Green Gardener", a new sheet for the young gardener, will be sent bimonthly with "Library Lines."

The Denver Botanic Gardens is dependent upon memberships to continue its excellent services. With the many advantages offered to members, both you and the Denver Botanic Gardens benefit from your membership and your membership gifts to friends.

CHRISTMAS DISPLAYS

The Lobby Court is sporting its festive holiday look with massed poinsettias and the beautiful tree decorated by the volunteers. Another feature to note is the half column over the waterfall. At first glance you may think holly is used as decoration. Look again, those are holly ferns, *Cyrtomium falcatum*.

Also notice the handsome jade trees on either side of the entrance. Although many people grow this common house plant, many have not seen its bloom. The little stars will appear if certain conditions are met; it likes 70° day and 55° night temperatures starting in October and demands *full sun*. (If red edges show on the leaves, the plant is getting optimum light.)

Another interesting plant, not used in our display but frequently used in the East in wreaths, ropes or swags, is club-moss or ground pine. About 100 species of club-moss are known through the world. Their history is fascinating for they are living descendants of the ancient plants of the late Paleozoic times. Members of *Lycopodiaceae* are not common in Colorado. Weber lists only two which may be seen on the Front Range: Stiff Club-moss, *Lycopodium annotinum* found in the sub-alpine zone and the very rare Fir Club-moss, *Huperzia selago*.

We Need Your Christmas Tree!

Several recent plantings at the Botanic Gardens would benefit greatly by a mulch of evergreen boughs during the winter. If you have a Christmas tree which you intend to discard, please bring it to the Gardens during the week of January 2 - 6 and we will recycle it for use in protecting the newly planted perennial borders as well as other plantings requiring a winter mulch. During weekday working hours, bring your tree to the service area north of the Conservatory, entering on Gaylord Street. On Saturday, January 6th, bring your tree to the York Street gate of the Waring Garden and place the tree inside the vegetable garden area. Every tree we can get will be useful and much appreciated.

Requiescat in Pace

A memorial service was held for Dudley "Lee" Schwade on October 27th at Ft. Logan National Cemetery. Lee, as he was known to his many friends, had been employed at the gardens for three years as a Botanist-Horticulturist. During that time he was responsible for the turf plots, the children's garden and the community garden programs. We all cherish fond memories of him as a colleague, teacher, scholar and friend.

Donations in his memory have been received from the following people:

Mrs. John F. Falkenberg
Dr. William G. Gambill, Jr.
Elizabeth Heacock
Mr. and Mrs. William Cable Jackson, Jr.
Mr. and Mrs. Edward McCloskey
Mr. and Mrs. Roy A. Nilsen
Margaret Sikes
Mr. and Mrs. Henry W. Waidmann

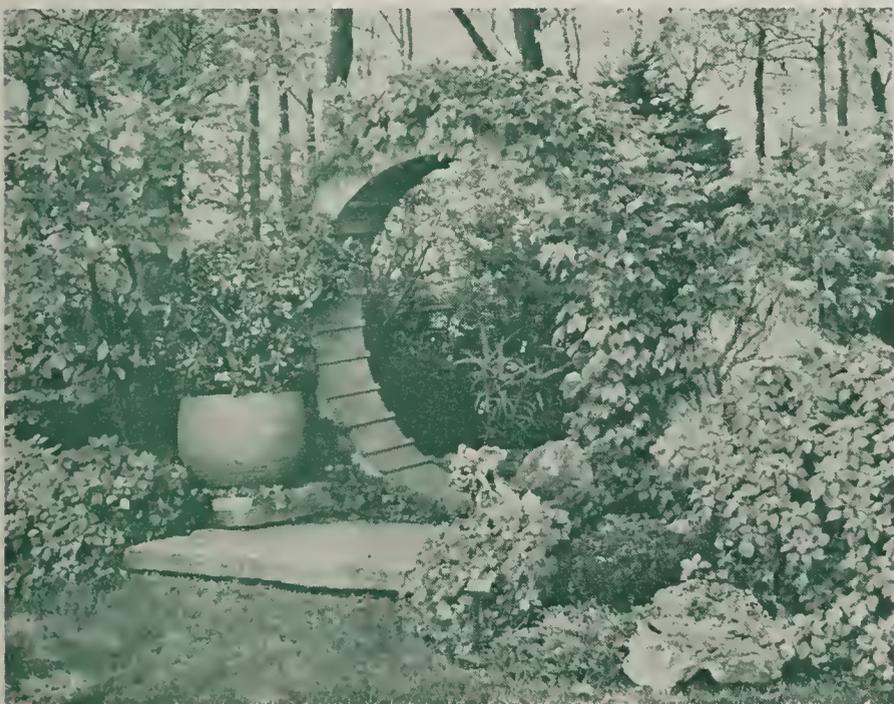
CAMPAIGN REPORT

The "To Fulfill a Promise" Campaign will be drawing to a close. The results thus far have been most gratifying to the Board of Trustees and it is apparent that most of the development planned for the Gardens can be accomplished.

The Board of Trustees and members of the Botanic Gardens attach importance to the participatory gardens for the handicapped, the aged and the young. With your help, horticultural therapy as a therapeutic tool for handicapped children and adults can become a part of the regular gardening program which has been so popular over the years for those who are not handicapped.

As we near the end of the capital campaign, there may be tax or year-end considerations which you could make that would financially assist the Botanic Gardens and help underwrite the remaining project work.

A few more dollars can mean the inclusion of these special projects and the Board of Trustees and all members of the Botanic Gardens express the hope that you could make a contribution between now and the end of the year to fulfill this promise.



FREE FILM

December 9 at 1:30 p.m., Classroom C, join us and see "Legacy for Living." This award winning film was produced by the American Society of Landscape Architects. Their profession in all its ramifications is the topic of this 17 minute film.

Other tributes received include:

In memory of Mrs. Lawrence Bromfield for the Japanese Garden

Mrs. Theodore A. Boerstler

In memory of Edna Dettmann for climbing roses

Dee Nelson

In memory of Felicia Kopff

Gus and Dulcy Amter

In memory of Jack Riley

Grandview Congregational Church

Region Nine, American Hemerocallis Society

The following article was found among Dr. R. L. Stearns' papers:

BOTANY

THERE SHOULD BE no monotony in studying your botany. It helps to train and spur the brain — unless you haven't got any — —

It teaches you — does botany — to know the plants and spotany, and learn just why they live and die, in case you plant or potany.

You learn from reading botany of woolly plants and cottony that grow on earth, and what they're worth, and why some spots have notany.

You sketch the plants in botany; you learn to chart and plotany, like corn or oats. You jot down notes — if you know how to jotany.

Your time, if you'll allotany, will teach you how and whatany old plants or trees can do or be. And that's the use of botany!

Berton Braley in B-L-S Friendly Chat

THANK YOU

A grateful thanks to our marvelous volunteers! Christmas Sale is now a memory but it was a huge success with throngs of eager shoppers who came early, stayed late and bought, bought, bought. Months of work go into this event but it's worth it. Thanks again.

One reminder. It is not too late to please a friend for Christmas with a gift membership to the Denver Botanic Gardens. (See enclosed.)

COLORADO NATURAL AREAS PROGRAM — ENSURING AN ENDURING RESOURCE

What is a "natural" area? Under Colorado law, a natural area is an area which typifies native vegetation and associated biologic and geologic features; provides habitat for rare or endangered plant or animal species; or includes geologic or other natural features of scientific or educational value.

Under the law, an area does not have to be "untouched by man" to be considered a natural area but it does have to be *unspoiled* by man.

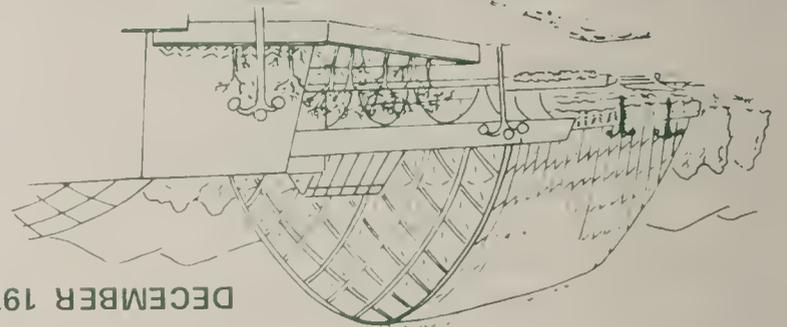
Established by the state legislature last year, the Colorado Natural Areas program is designed to identify, select, and protect prime examples of these natural areas as an enduring resource. The Natural Areas Program is administered by the Colorado Department of Natural Resources.

How can you help? Perhaps you know of a spot that would qualify as a natural area . . . Perhaps you can help in the field surveys that will be necessary to establish a list of the state's natural areas . . . Perhaps you know of someone who would like to set aside some of his land and donate it as a natural area . . . Or perhaps you can lend financial support to the Natural Areas Program. . .

If so, please contact the Colorado Natural Areas Program, Department of Natural Resources, 1313 Sherman Street, Denver, Colorado 80203, Phone: 839-3311.

Address correction requested
Return postage guaranteed

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DECEMBER 1978

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THREE SHOWY NEW FLOWERS FROM BURPEE FOR 1979

Burpee continues its 103-year tradition of developing showier flowers for gardeners everywhere to enjoy. The trio of debutantes for 1979 are versatile, colorful and attractive for many different garden uses. Why not be the first in your neighborhood to grow these three newcomers? They are:

HAPPY DAYS Double French Marigold
FANCY PLUMES Celosia
SPARKLING BUBBLES Iceland Poppy

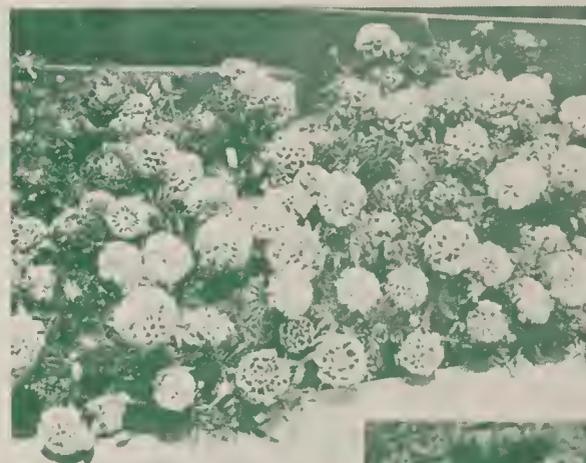
HAPPY DAYS Double French Marigold, Mixed Colors

It's hard to beat French Marigolds for carefree beauty in the garden all summer. HAPPY DAYS is especially rich and bright . . . a colorama of yellow, gold and mahogany-red shades. The flowers are well-doubled, 2 inches across and cover the plants from early summer to fall. The heat-resistant plants grow about 10 inches tall, with blossoms on long enough stems to pick for small bouquets.

FANCY PLUMES is a superb mixture of Tall Plumed Celosia . . . an eye-stopper both in the garden and in flower arrangements, fresh or dried. Each plant produces a wealth of unusually large, graceful and feathery plumes. The side branches are nearly as showy as the main spikes, creating a stunning floral effect from midsummer to frost. The colors cover a wide spectrum . . . soft primrose, gold, rose, bronze, scarlet and crimson shades. You'll find FANCY PLUMES Celosia, which grows about 32 in. tall, a splendid improvement of this old-fashioned flower.

SPARKLING BUBBLES Iceland Poppy, Mixed Colors

SPARKLING BUBBLES Iceland Poppy is a rich blend of brilliant colors . . . yellow, rose, orange and scarlet with a sprinkling of pastel shades. This lovely perennial often blooms the first season from early sown seeds. The healthy plants flower abundantly with very large, shiny blossoms on long, strong stems about 16 inches tall. SPARKLING BUBBLES puts on a spectacular display in the garden, especially in cool weather areas. The graceful flowers are also fine to cut for bouquets.



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