

THE SEGO LILY

NEWSLETTER OF THE UTAH NATIVE PLANT SOCIETY

Volume 13; Number 8

January 1987

WHAT'S HAPPENING

Wednesdays

Feb 4 - Apr 22

6:00 - 8:00 pm

or

Fridays

Feb 6 - Apr 14

9:55 - 11:50 am

Herbs-Tempting the Senses: For students interested in the techniques of propagation, cultivation and culinary uses of herbs. Garden design and "window box" gardening will also be explored. Offered through the Division of Continuing Education, University of Utah. \$55.00 noncredit. To register, contact DEC, 581-6483.

Saturday

Feb 14

1:00 - 3:00 pm

Snowshoe at Red Butte Garden: Includes equipment and hot chocolate. \$5.00 Please pre-register by calling the Arboretum office at 581-5322.

Saturday

Feb 21

9:00 - 11:00 am

Seed Propagation Workshop: Learn selection and buying of seed, stratification and starting at this State Arboretum of Utah workshop. Call the Arboretum at 581-5322 for more information. (Register by Jan 31, small fee required.)

Saturday

Feb 21

9:00 am - noon

Playing with Herbs: Learn how to use herbs in cooking. Make Fennel Bread and Tabouli Salad while sipping herb teas. Co-sponsored by Pioneer Trail State Park and the Arboretum. Call the Arboretum at 581-5322 for more information. Register by Jan 31. Participants must supply some cooking utensils. \$8.00

Thursday

Feb 27

7:30 pm

UUPS Salt Lake Chapter Meeting: Dr. Elizabeth Neese will review Utah's rare and endangered plants and the factors which contribute to their scarcity. Room 323, Student Union Building, University of Utah. Free and open to the public.

Grasses are our most important plants. Though not the largest group of plants, they are more abundant and ubiquitous than any other plant family. Have you ever heard of daisylands, orchidlands, or beanlands? Now for the big question: Have you ever heard of grasslands? Of course you have. Grasslands are so many and so important that we have special terms for them: steppes, prairie, veldt, pampas, etc. In the temperate parts of the world such as Utah, we rely on grasses as a food source for ourselves and the animals from which we obtain meat, milk, eggs, leather, etc. In the humid tropics, woody grasses-bamboos are used in multitudinous ways including construction, furniture making, and paper making.

Grasses are the most studied group of plants because of their importance as food. They deserve better. They deserve to be loved and admired for their own sake. Sure, they lack such obvious sources of attraction as colored flowers and varied leaf shapes, but their inflorescences exhibit a wonderful variety of shapes and forms. There is the thick upright spike of wheat, the open panicle of oats, and the beautifully soft dense panicle of rabbitsfoot. This beauty is beginning to get the respect it deserves. Take a careful look at dried flower arrangements and you will often find different grasses. On the other hand, most wildflower picture books completely ignore grasses, thereby helping create the impression that they are too difficult for ordinary people. What nonsense! They are just different.

Until recently, not much thought was given to the selection forces that would lead to the evolution of differently shaped inflorescences and spikelets (the units of an inflorescence that include the flowers). Grasses are wind pollinated and wind pollination was thought to be just a matter of chance. Karl Niklas of Cornell University maintains that this is not completely true. The shape of the inflorescence, the flexibility of its axis and branches, and the shape of the structures in the spikelet modify the air currents immediately around the stigmas. He has found that they do so in such a way as to increase the number of pollen grains landing on the stigmas. It is not yet clear whether there are sufficient differences in the buoyancy of pollen from different species or genera of grasses to allow for some degree of discrimination at this stage as there are in pines. What is clear is that wind pollination is not quite as chancy as was once thought. A tantalizing observation in this connection: In both the tribes of grasses with which I work most, proposed realignments of the generic boundaries would increase the importance of the shape of the glumes (which are sterile structures in the spikelet) to identification. Is this a reflection of their role in directing air currents?

Next time you are out on a hike, look at the grasses. Notice the shape of the inflorescence. Notice the way the grass grow, whether in a clump or spreading out. Look at the spikelets. These are the units of the inflorescence. Pull them apart. At this stage, just notice how different the spikelets of different grasses can be.

What if you want to go further? You want to start learning to recognize different grasses? Join a Native Plant hike and ask the field trip leader not only for names but what to look for in distinguishing one grass from another. Probably the best book to get started with is "How to know the Grasses" by Dr. Richard Pohl. It has an introductory section explaining the parts of a grass, and identification keys with illustrations at various places in the keys as well as illustrations of representative species. Utah's Grasses, published by Utah State University Extension Service (EC 384), provides line drawing and descriptions of several Utah species but lacks keys. The Intermountain Flora (vol. 6) is, of course, an excellent reference, but one to buy after you have realized that grasses are wonderful.

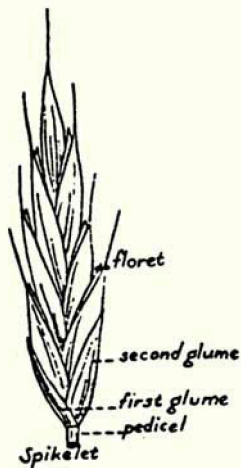
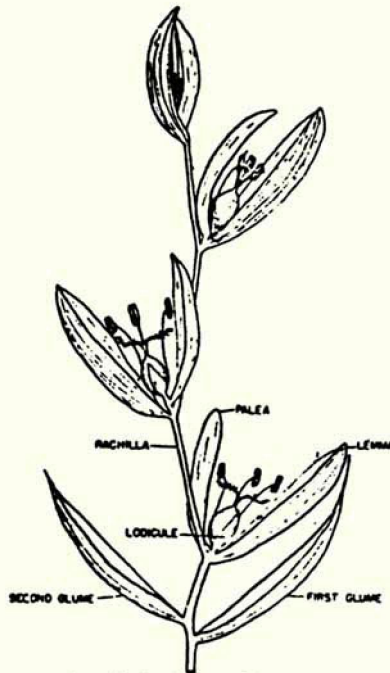


FIG. 84.—Spikelet of *Bromus marginatus* showing the glumes and several florets typical of the Gramineae. (One-half natural size)



—Representative spikelet of grass. The rachilla here is elongated show the parts more clearly.

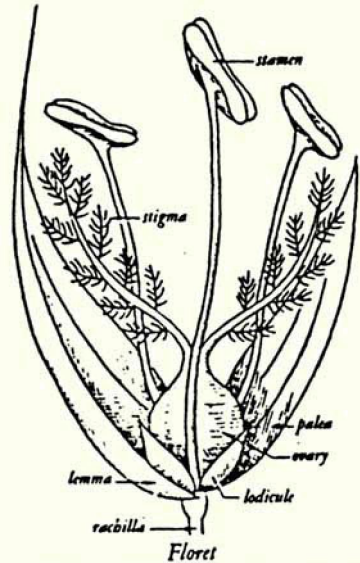


FIG. 86.—Representative floret of grass, much enlarged.

ANNOUNCEMENT: SHRUB RESEARCH CONSORTIUM

The Shrub Research Consortium is sponsoring the Fifth Wildland Shrub Symposium June 30 - July 2, 1987 at Utah State University, Logan, Utah. The symposium, "Shrub Ecophysiology and Biotechnology", will feature invited and contributed papers. Contributed presentations will be 20 minutes. The proceedings will be published by the USDA Forest Service Intermountain Research Station. If you would like to present a paper, send a title and abstract by March 31, 1987 to:

Dr. Arthur Wallace
Laboratory of Biomedical and Environmental Sciences
UCLA
900 Veteran Avenue
Los Angeles, CA 90024

To receive preregistration materials and information, please contact:

Michael B. Price
Eccles Conference Center
Room 103 F
Logan, Utah 84322-5005
(801) 750-1696

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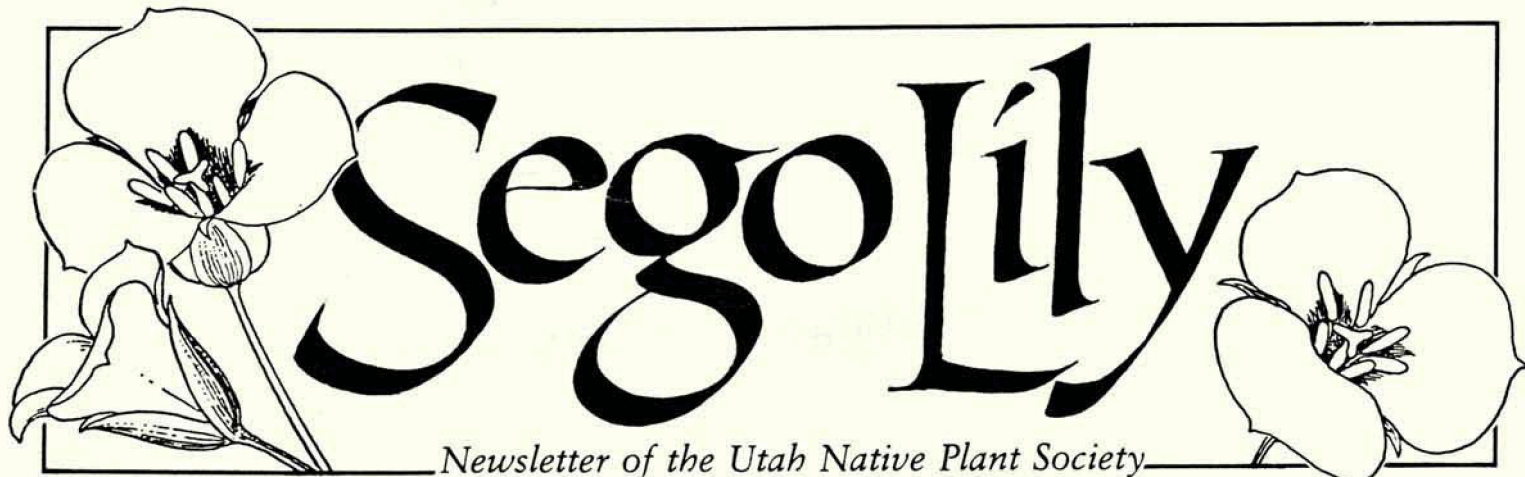
() Please send a complimentary copy of the Sego Lily Newsletter to the above.

Check membership category desired:

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() Family.	\$12.00	() Life.	\$250.00
() Supporting.	\$25.00	() Corporate.	\$25.00
			or greater

Please enclose check made payable to Utah Native Plant Society and send to:

Pam Poulsen, Treasurer, 3631 South Carolyn Street, Salt Lake City, Utah 84106



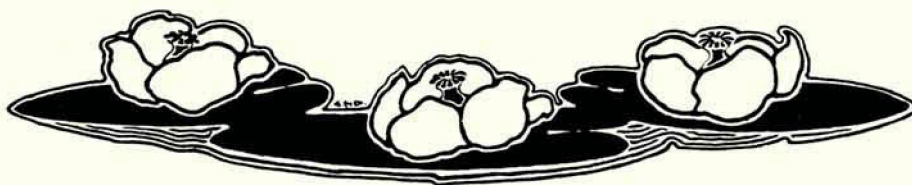
Sego Lily

Newsletter of the Utah Native Plant Society

Vol. 10, No. 2

When, Where, What

- March 3
Not Avail. Utah Department of Transportation Meeting for those wishing to air concerns about the potential widening of Logan Canyon Highway. For more information, call Wayne Padgett (752-1311, days). Logan Mountain Fuel Building
- March 12
Thursday
7:30 p.m. Cache Valley Chapter Meeting (with Bridgerland Audobon) David Livermore, Director, Great Basin Field Office of The Nature Conservancy will discuss TNC plans in Utah and Nevada. Logan City Building
- Spring Qtr.
Tues/Thurs Utah State University Biology Department - Plants of Utah For those with no botanical background or to 'brush-up' on Utah flora. Call USU Biology Department (750-2485) or Dr. Mary Barkworth (750-1584).
- March 14
Saturday
9:00 a.m. State Arboretum of Utah Native Plant Basketry Workshop, taught by Becky Menlove, Textile Laboratory Supervisor, Utah Museum of Natural History. Advance registration required. The Den, Student Union, University of Utah
- March 26
Thursday
7:30 p.m. Salt Lake Chapter Meeting David Livermore, Director, Great Basin Field Office of The Nature Conservancy discusses TNC plans in Utah and Nevada. Room 323, Student Union, University of Utah. Free/open to the public.
- April 4
Saturday
10:00 a.m. State Arboretum of Utah Dying Eggs with Native Plant Pigments Workshop - Alene Avery. Use ancient techniques of Navajo wool dying to color eggs. Fee includes plant materials. Register before March 20. Call 581-5322 for more information. Pioneer Trail State Park Social Hall
- April 23,
24, 25 Annual Utah Threatened/Endangered Plant Meeting, Dixie State College, St. George, Utah. Meetings on April 23, field trips on April 24 and 25. (We will hopefully have an agenda in the next Sego Lily.) For more information, call Duane Atwood (625-5599), Andrew Boyac (278-8596), Pam Poulson (581-5322) or Dave Wallace (466-2719).
- April 30
Thursday
7:30 p.m. Salt Lake Chapter Meeting Wayne Padgett - Riparian Plant Communities. Room 323, Student Union, University of Utah. Free/open to public.
- May 16
Saturday
9:00 a.m. to 3:00 p.m. State Arboretum of Utah "Tree Cheers" - Eighth Annual Arboretum Plant Sale and Green Spree. Buy plants of every description: herbs, trees and shrubs, vegetables, houseplants, native plants, cacti, perennials and annuals. University of Utah campus.
- May -- UNPS Field Trip Primula maguieri trip with Cache Valley Chapter. (Details in next Sego Lily)
- May 23
Saturday State Arboretum of Utah Spring Wildflowers of the Wasatch Foothills - Dr. Ty Harrison, Plant Ecologist. Field trip starts from the Arboretum Office on the University of Utah campus. Register before May 8. For more information, call 581-5322.
- May 28
Thursday
7:30 p.m. Salt Lake Chapter Meeting Indian Use of Native Plants - Dr Stephen Clark. Room 323, Student Union, University of Utah. Free/open to public.



UNPS Update

David Wallace

It is appropriate that this issue of the Sego Lily has a different look. This is just one of many things that are changing at the Utah Native Plant Society.

We expect changes at the first of each year as the term for the editor begins and the officers and committee chairmen are getting started, but this year even more is happening. The role of the UNPS as an organization is evolving.

Nine years ago, the UNPS was created to promote the "appreciation, preservation and conservation" of native plants, and we are now in a position to make our most significant contribution toward these goals.

In addition to our usual conservation and education activities, the UNPS is committing its resources to aid Utah's "most endangered" plant, the dwarf bearclaw poppy, Arctomecon humilis. The core of this effort is a UNPS sponsored research program. Last month, a two year contract was awarded to Brigham Young University to provide for a graduate student study into this unique southern Utah plant. Also, the Annual Threatened and Endangered Plant Meeting will emphasize the bearclaw poppy and the Education Committee is preparing a program for the schools.

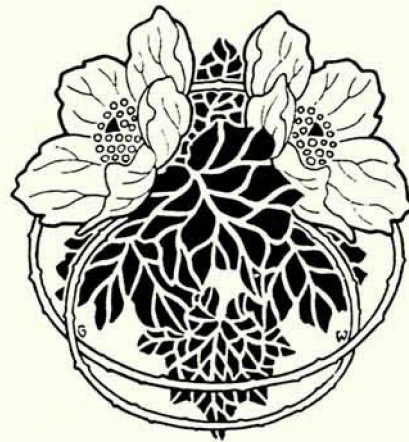
This effort is just part of our changing role; the other big change will be our emphasis on finances. These activities cost money, and the UNPS must improve our income if we are to continue performing at this level. Current plans include a slight increase in our dues (for the first time!), soliciting contributions and initiating several fund raising projects.

Look for more of these updates in coming issues. In the meantime, we need your help!

Support fund raising activities. Give a trial membership to a friend, become a supporting member, make a donation.

Get involved. Volunteer for a committee, write a newsletter article, let us know what you want from the UNPS.

Note: The Threatened and Endangered Plant Meeting will be held in St. George, on Thursday, April 23 through Saturday, April 25. The event will feature a field-trip to Beaver Dam Wash (Lytle Ranch) on Friday and Saturday's activity will be a field trip to see the bearclaw poppy. Call Duane Atwood (625-5599), Andrew Boyac (278-8596), Pam Poulson (581-5322) or Dave Wallace (466-2719) for more information.



Membership Fees and Term

Eight years ago we started with our current membership fee schedule. Although we now bulk mail whenever possible, printing, mailing and other activity costs have been going up. Surprised? It's time for a small increase in all fees. We hope the extra cost won't scare anyone away. Please keep up your support.

UNPS membership fees (effective immediately)

Student/Senior	\$ 5.00
Individual	\$ 10.00
Family	\$ 15.00
Supporting	\$ 30.00
Corporate	\$ 30.00 and up
Life	\$250.00

New Membership Year

To simplify our membership records (and make life simpler for members) UNPS will be going to a standardized membership year. Instead of a "water year", we will be following the "Utah Natives Flowering Year". All memberships will run from April 1 to March 31.

For new members: Members joining between January 1 and April 1, 1987, will be paid through March 31, 1988.

Members joining between April 1 and June 30, 1987 will be paid through March 31, 1988.

Members joining between July 1 and December 31, 1987 will pay 50% of the annual membership fee.

For members who renew immediately: All memberships paid between now and March 31 will be paid through March 31, 1988.

If you have just joined in the past couple of months and want to extend your membership through March 31, 1988, or prorate your membership because of early expiration, contact Kathryn Mutz, Membership Chair, at 544-0688.

Delinquent Members

Many of us are late in renewing this year. (I was a "worst" offender.) With the new "UNF year" renewal schedule, we will be sending reminder notes and envelopes which should keep memberships better organized.

If you are late, please renew ASAP (and how about including your "back dues" too?) Remember, this is a non-profit organization, tax deductible and in need of your support

Kathryn Mutz, Membership Chair



UNPS - New Members

Sue Allard, Salt Lake City
Melissa Blackwell, Salt Lake City
Patricia Legant, Salt Lake City
Kirsten Marquart, Logan
Arvin R. Maxfield, Sandy
Sharon Meross, Salt Lake City
Thomas Parks, Salt Lake City
Rebecca Reheis, Sandy

Publicity Committee Notes

Publicity for state activities and events was a cooperative effort for several people in 1986. Pam Poulson was particularly active in sending notices along with State Arboretum of Utah mailings to over 40 organizations, radio stations, newsletters, etc. on a regular basis. Major newspaper articles on the plant sale and mushroom hunt meeting/field trip advertised these events. Dave Okelberry arranged for a poster displaying UNPS contacts and scheduled chapter meetings/field trips. The posters were distributed by many members and were sent with an introductory letter and copy of Sego Lily to each nursery on the Wasatch Front. A booth at the Home and Garden Show in the Salt Palace gave us the opportunity to distribute event schedules, copies of the newsletter and other literature.

We will be involved in many of the same activities in 1987 and we would appreciate the help of any interested members. If you would be interested in distributing posters or extra copies of "blue cards" announcing meetings and activities, please contact Kathryn Mutz, at 544-0688 or 538-5340.



Membership Drive

We would like the help of our membership in promoting appreciation, conservation and preservation of our native flora. One way each one of us can help is to introduce just one friend, neighbor or perfect stranger to the UNPS. Here are a few options:

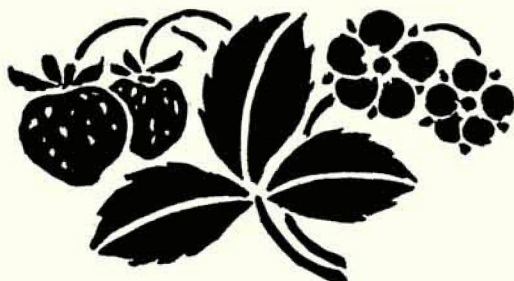
Brighten up the last days of winter for friend; give a 6 month introductory membership as a tax deductible \$5 gift. Fill out and return the bottom of this sheet and we will start the gift membership with the next newsletter and a special gift card in your name.

Pass on your newsletter to a neighbor, co-worker or fellow bus commuter. Tell them a little about UNPS or offer to bring them to the next chapter meeting or field trip.

Fill out the sheet with one or more names and we will introduce them to UNPS with a letter and complimentary copy of Sego Lily.

A few minutes and a stamp could spread the Utah Native Plant Society message across the state or to friends outside Utah. Please help.

Fill out and detach the order form and send to: Kathryn Mutz, Membership Chair, Utah Native Plant Society, 737 S. Angel Street, Kaysville, UT 84037.



Send six month gift membership to:

Name _____

Street _____

City/State/Zip _____

From _____

(Include \$5.00 check or money order for each gift; payable to UNPS.)

Send the above a complimentary Sego Lily and society information.

Send six month gift membership to:

Name _____

Street _____

City/State/Zip _____

From _____

(Include \$5.00 check or money order for each gift; payable to UNPS.)

Send the above a complimentary Sego Lily and society information.

Send six month gift membership to:

Name _____

Street _____

City/State/Zip _____

(Include \$5.00 check or money order for each gift; payable to UNPS.)

Send the above a complimentary Sego Lily and society information.

Membership Application

() New member () Renewal () Gift

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City/State _____

Zip _____ Phone _____

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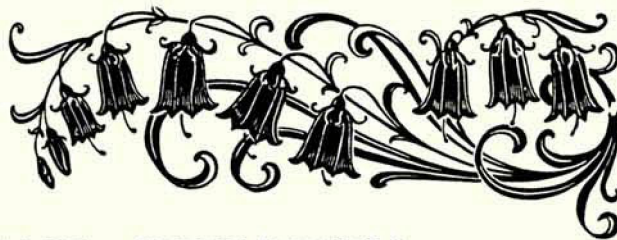
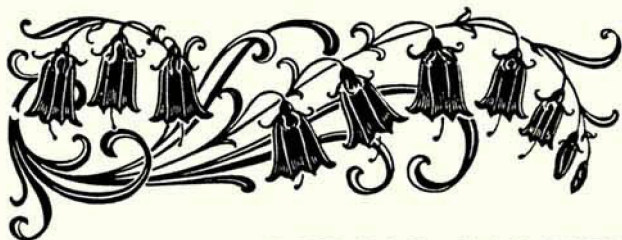
Check membership category desired:

- () Student/Senior...\$ 5.00
- () Individual.....\$ 10.00
- () Family.....\$ 15.00
- () Supporting.....\$ 30.00
- () Corporate.....\$ 30.00 and up
- () Life.....\$250.00

() Please send a complimentary copy of the Sego Lily to the above individual.

Please enclose a check, payable to Utah Native Plant Society, and send to:

Pam Poulson, Treasurer, 3631 South Carolyn Street, Salt Lake City, Utah 84106.



UTAH NATIVE PLANT SOCIETY
SEED ORDER FORM

QUANTITY	BOTANICAL NAME	COMMON NAME	COMMENTS
-----	Agoseris sp.	Mountain Dandelion	
-----	Alisma sp.	Water Plantain	
-----	Allium geberi	Wild Onion	
-----	Aquilegia caerulea	Blue Columbine	
-----	Arnica sp.	Arnica	
-----	Artemisia papposa	Fuzzy Sagebrush	
-----	Astragalus hamiltonii	Milkvetch	May be poisonous
-----	Astragalus racemosus	Milkvetch	May be poisonous
-----	Astragalus saurinus	Milkvetch	May be poisonous
-----	Atriplex corrugata	Saltbush	
-----	Bailey multiradiata	Desert Marigold	
-----	Balsamorhiza sagittata	Arrowleaf Balsamroot	
-----	Calochortus nuttallii	Sego Lily	
-----	Cercocarpus ledifolius	Curlleaf Mountain Mahogany	
-----	Chaenactis douglasii	Douglas Dusty Maiden	
-----	Cleome serrulata	Pink Bee Flower	
-----	Echinacea purpurea	Purple Coneflower	Easy to grow
-----	Epibilobium angustifolium	Fireweed	
-----	Eriogonum heracleoides	Wild Buckwheat	
-----	Eschscholzia californica	California Poppy	
-----	Fallugia paradoxa	Apache-plume	
-----	Gaillardia pinnatifida	Blanket Flower	
-----	Gaillardia aristata	Blanket Flower	
-----	Geranium viscosissimum	Wild Geranium	
-----	Gilia leptantha	Blue Gilia	
-----	Hedysarum boreale	Northern Sweet Vetch	
-----	Helianthella microcephala	Lesser Royal Conehead	
-----	Layia platyglossa	Tidytips	
-----	Linum Lewisii	Blue Flax	
-----	Lomatium dissectum	Biscuit Root	
-----	Lupinus caudatus	Tailcup Lupine	
-----	Lupinus sericeus	Silky Lupine	
-----	Oenothera pallida	White Evening Primrose	
-----	Papaver rhoeas	Flanders Poppy	Introduced
-----	Penstemon cyanthus	Wasatch Penstemon	
-----	Penstemon moffatii	Penstemon	
-----	Penstemon palmeri	Palmer Penstemon	
-----	Penstemon platyphyllus	Penstemon	
-----	Phacelia campanularia	Annual Blue Bells	
-----	Polygonum bistoroides	American Bistort	
-----	Purshia tridentata	Bitterbrush	
-----	Rudbeckia hirta	Black-eyed Susan	
-----	Sphaeralcea coccinea	Scarlet Globemallow	
-----	Viguiera multiflora	Showy Goldeneye	
-----	*****	Great Basin Wildflower Mix	Warmer and drier locations
-----	*****	Rocky Mountain Wildflower Mix	Cooler and moister locations

Seeds are supplied in 3" by 5" packets of at least 50 seeds unless noted. Send one dollar for each seed packed (check or money order) and self addressed stamped envelope to:

Dick Page
440 E 8180 S
Sandy Utah 84070

Allow 4 weeks for delivery. Quantities are limited so we cannot guarantee orders. (2/87)

Pussytoes, Prairie Smoke and other Successful Groundcovers

Jeanette Milne, Curator of Collections
The Arboretum at Flagstaff

Native groundcovers were the most popular plants at The Arboretum at Flagstaff's open house and plant sale this past July. When one considers the variety of plants and uses that fit the category of 'groundcover' it is not surprising. The true function of a groundcover is carpeting the ground to prevent erosion, inhibit weed growth, protect tree and shrub roots from temperature extremes and provide visual spice.

In areas receiving heavy foot traffic where durability, uniformity and neatness are important, a grass lawn is unbeatable as a groundcover. There are a number of situations, however, that preclude the use of a lawn, for example on steep banks or in deep shade. In these instances, an appropriate groundcover is very desirable.

In 1984, The Arboretum at Flagstaff established groundcover demonstration plots to test the suitability of eight native plants for groundcover use. Planted in full sun and receiving minimal irrigation are pussytoes, sulfur-flower buckwheat, pine-leaf penstemon, creeping beardtongue, wild strawberry, prairie smoke or oldman whiskers, hummingbird trumpet and prairie zinnia. The intended duration of the trial is five years, thus in 1989 a complete report will be available. Some obvious winners have already emerged and two of our favorites are pussytoes and prairie smoke.

Pussy toes (Antennaria rosea, A. parvifolia or A. rosulata) forms a dense, wooly gray-green mat of foliage about one inch high. A member of the sunflower family, the plant gets its name from the silver or rose colored flower that looks somewhat like the paw of a kitten. The flower heads are fluffy and unsightly when mature and are best removed with a weed eater prior to full bloom. This once-a-year activity is all the maintenance a 'lawn' of pussytoes requires. Best results are obtained by starting with plants or divisions that are weed free, set on 12" to 15" centers.

Prairie smoke or oldman whiskers (Geum triflorum), a member of the rose family, is a common meadow plant on the Colorado Plateau. It is often recognized only in seed when it sends up a plume of pinkish 'smoke'. It has an attractive fern-like foliage, bright green in color, turning red in the fall and a pink, nodding flower. Prairie smoke spreads quickly and can be started by seed or plugs. Seed germinates best when pre-treated by cold stratification for 30 days or planted in the fall.

Design considerations are important in selecting an appropriate ground cover. For example, should the groundcover closely resemble a lawn and withstand some foot traffic or is it simply being used as a barrier, edging or accent plant? Should it be evergreen or deciduous? Is a carpet of flowers desirable or are various shades of green preferred? There are attractive plants for all situations.

Whatever the criteria for selecting a groundcover, it is important to match the plant to the site. Factors such as sun, shade, moisture, soil condition, slope and drainage will have a tremendous impact on the choice of plant material.

Once site conditions have been determined and plant material selected, a number of cultural techniques can be employed to enhance plant growth and save time and money.

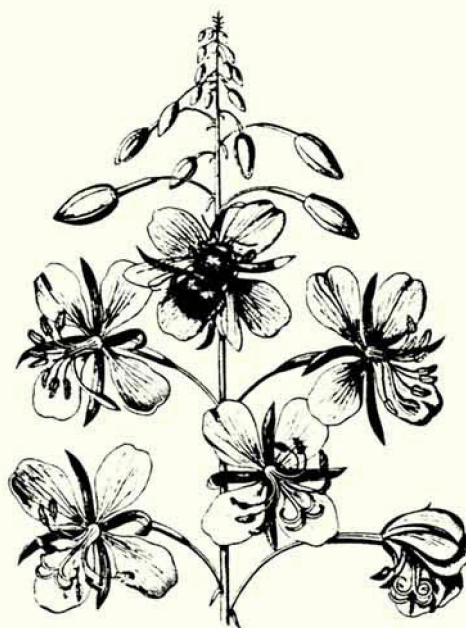
1. Good soil preparation prior to planting is critical to successful establishment of groundcovers. Till the soil to a depth of eight inches, add organic matter and a complete fertilizer.

2. Plants, plugs or divisions are the most common means of establishing groundcovers and therefore, planting large areas with a groundcover can be an expensive proposition. To economize, choose the more visually important areas such as those near the house and space the plants close together so they will cover quickly. In other areas spread the plants farther apart and gradually fill in with divisions. Bark mulch looks attractive until the groundcover fills in.

3. Although many groundcovers are drought tolerant, they will need supplemental watering during dry spells and careful watering to get established. We recommend installing a drip irrigation system to conserve water and save time.

4. Mulching is a technique used to protect plants from temperature extremes and dessication. It should be done as soon as the upper one inch of soil freezes. Mulching will keep the soil frozen instead of permitting alternate freezing and thawing. One problem that often occurs in northern Arizona is frost heaving. Heaving is the lifting effect caused by freezing and thawing of the ground; it loosens young plants thus damages roots by exposing them to drying air and sun. If this happens, push heaved plants back into the ground to minimize root drying. To avoid frost heaving, a mid-summer planting is recommended rather than late fall. This gives the plant a chance to get well anchored in the ground.

From: "News from the Arboretum at Flagstaff,
Fall, 1986, Vol. 3, No. 3



"It is precisely in its smallest and simplest structures that nature shows itself most perfect and accomplished." Pliny the Elder

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Editor's Notes

Lisa McClanahan

This is my first issue of Sego Lily and I'm still feeling my way along. I would really appreciate articles or suggestions for article sources from any interested UNPS members.

The calendar is the place I need your help most. Any event you are aware of that would interest our very diverse membership can be included in the calendar, space permitting. If you do know of an event of interest, note the pertinent information, it doesn't have to be typed. and send it to:

Lisa McClanahan
Editor, Sego Lily
2207 E. Claybourne Ave.
Salt Lake City, Utah 84109

Be sure to give time, day and date, location and a description of the event. It's also very helpful if a contact person or organization is identified to contact for additional information.

The tentative publication schedule for Sego Lily will be a February March issue, April May issue, June issue, July issue, August issue, September issue, October November issue and a December January issue.

Submission deadlines for Sego Lily are:

April May issue	March 22, 1987
June issue	May 17, 1987
July issue	June 14, 1987
August issue	July 19, 1987
September issue	August 16, 1987
October November issue	September 27, 1987
December January issue	November 22, 1987

Calendar entries must be mailed before the submission deadling to be included in the upcoming issue. You can submit calendar entries several months in advance if the relevant information is available. I'll keep items on file for the appropriate calendar.

I will also print letters from members of UNPS as space and editorial constraints permit. I don't guarantee that every letter will be printed, but any information of general interest to UNPS members certainly belongs in the newsletter.

Do get in touch with comments, articles and calendar entries. This is not intended to be a one-man-show. UNPS is a small organization with very specific goals and every member can make a contribution and make their voice heard.



Cache Valley Chapter

In the upcoming year, the Cache Valley Chapter will be providing a variety of lectures, field trips and workshops. We hope to continue our present strong rate of growth through 1987. We plan to do so by offering programs that appeal to a broad cross section of our local community. We're looking toward the future in 1987 and planning to elect Cache Valley Chapter officers by the end of the year. This should be given high priority: first, to insure a viable program with a variety of new ideas and interests; second, to get more members involved in the decision making process; and third, to ensure the future existence of our chapter should one or more of the organizers move on to other horizons (as has a tendency to occur these days - we miss you, Kate D.)

With a little work and a lot of enthusiasm, I believe 1987 will be an important year in the establishment of the Cache Valley Chapter, UNPS.



Sego Lily

Newsletter of the Utah Native Plant Society

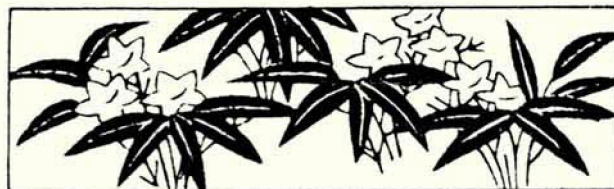
Vol. 10, No. 3

April/May 1987

When, Where, What

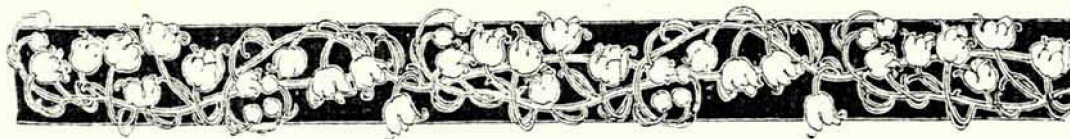
- April 9
Thurs.
7:30 p.m. Final Public Hearing - Dimple Dell Regional Park. Will it be a golfcourse or a natural area? Come out and express an opinion. For more information, see UNPS Update inside.
- April 15
Wed.
5:00 p.m. to
7:00 p.m. State Arboretum of Utah Pruning Workshop - Shrubs, Vines and Ground Covers. Bring gloves, shears and loppers. Advance registration required. Call 581-5322 for more information.
- April 18
Sat.
9:00 a.m. to
11:00 a.m. State Arboretum of Utah Ornamental Plants for Home Landscapes - Herbs. Taught by Mary Alyce Kobler, U. of U. Department of Biology. \$3.00 fee, advance registration required. Call 581-5322 for more information.
- April 23,
24, 25 Annual Utah Threatened/Endangered Plant Meeting, Dixie State College, St. George, Utah. Meetings on April 23, field trips on April 24 and 25. See agenda enclosed.
- April 25
Sat.
9:00 a.m. to
11:00 a.m. State Arboretum of Utah Containers for Decks and Patios - Mary Pat Matheson, Arboretum Horticulturist. Advance registration required. Call 581-5322 for more information.
- April 30
Thurs.
7:30 p.m. Salt Lake Chapter Meeting Riparian Plant Communities - Wayne Padgett. Room 323, Student Union, University of Utah. Free/open to public.
- May 16
Sat. UNPS Field Trip - *Primula maguieri* trip with Cache Valley Chapter. Date subject to change. Call Andrew Boyac (278-8596) or Duane Atwood (625-5599) for more information.
- May 16
Sat.
9:00 a.m. to
3:00 p.m. State Arboretum of Utah "Tree Cheers"- Eighth Annual Arboretum Plant Sale and Green Spree. Plants of every description: herbs, trees and shrubs, vegetables, houseplants, native plants, cacti, perennials and annuals. University of Utah campus. Call 581-5322 for more information.

- May 23
Sat. State Arboretum of Utah Spring Wildflowers of the Wasatch Foothills - Dr. Ty Harrison, plant ecologist. Field trip starts from the Arboretum Office on the U. of U. campus. Register before May 8. For more information, call 581-5322.
- May 28
Thurs.
7:30 p.m. Salt Lake Chapter Meeting Indian Use of Native Plants - Dr. Stephen Clark. Room 323, Student Union, University of Utah. Free/open to public.
- June 6
Sat. UNPS Salt Lake Chapter Field Trip Field Photography Workshop - Lisa McClanahan. All types of cameras welcome, light meter and tripod optional. Bring color slide film. Call Lisa McClanahan (487-0094) for more information.



UNPS Wildflower Poster

The Utah Native Plant Society is excited about a new project - a wildflower poster of common Utah native plants. Please help us by making a list of your favorite native flowers. Particular emphasis is being place on showy blossoms of plants whose genus might be found throughout the state. i.e. *Penstemon* (though the same specie might not be found everywhere, the genus is common). We don't wish to include rare or endangered species in this project, we'll be filling in with flowers that may be common only to a certain zone or habitat as the need for color and size dictate. We hope you will all get involved as soon as possible as we want our list ready for the artist by mid April. Send your candidates for favorite common Utah wildflowers today. Mail to: Jo Stolhand, 264 Williams Ave., Salt Lake City, UT 84111.



UNPS Update

David Wallace

Last month we discussed some of the changes at the Utah Native Plant Society. Now we have another item to add to the list!

The UNPS has been reluctant to get involved in controversial disputes in the past, but the Board of Directors decided to take a stand on the Dimple Dell Regional Park issue. We are sending a letter to the Salt Lake County Commission concerning the proposed development of this natural area.

The park is a 644 acre island of undisturbed land in a sea of residential and commercial development. Also known as Dry Creek, it is probably the last example of an oakbrush/grassland ecosystem in the county.

The area is unsurpassed in its educational value to the community. The UNPS has sponsored field trips here and it is used by other nature groups, families, school groups and horsemen. Wildlife is common and plants that have been displaced from the rest of the valley still grow here.

In spite of these natural values the Salt Lake County Recreation and Parks Division has recently altered plans to maintain the park as a natural area. Extensive development is planned, including an 18 hole golf course.

The UNPS recognizes the need for recreation, but we also realize the loss that would result from irresponsible development. The letter we are sending to the county emphasizes the need to preserve these natural values and we recommend ways of developing the area in an acceptable, controlled fashion.

A public hearing will be held April 9 at 7:30 p.m. in the Mount Jordan Middle School Auditorium at 9400 South 300 East. The UNPS will present our official position. Members of UNPS and all other concerned individuals are encouraged to attend and express their personal views.

In the mean time, get out to Dimple Dell and see for yourself. The portion UNPS is most interested in preserving is the eastern portion beginning at 1300 East and 103000 South. Feel free to call us (Dave at 466-2719 or Pam at 5815322) for more information or directions.

By the way, I found my first wildflower of the spring here on March 9, Orogenia linearifolia, the indian potato.

Unfortunately, the location is planned to become either the golf course clubhouse or a "Little Buckaroo Horsemanship Arena".

Note: We have received many favorable comments on our new newsletter format. Editor Lisa McClanahan's graphic art background is showing! She should be congratulated for the fine job, especially since it isn't costing any more money.



Agenda

Annual Utah Threatened/Endangered Plant Meeting, April 23, 24 and 25
Dixie State College Student Center, Student Council Room

Thursday morning, April 23

Moderator: Duane Atwood

- 8:00 Introductions - Andy Barnum, Dixie State College, St. George
- 8:15 History of Utah plant collectors - Stan Welsh, Brigham Young University
- 9:00 Monitoring strategies for rare plants - Kim Harper, Brigham Young University
- 9:30 Break
- 10:00 A management plan for Arctomecon humilis - Bob Douglas, BLM, Cedar City
- 10:15 Graduate studies on Arctomecon humilis - Deanna Nelson, Brigham Young University
- 10:35 U.S. Fish and Wildlife Service endangered species program - a national perspective, John Fay, USFWS, Washington, D.C.
- 11:05 Rare plant activities in the State Arboretum of Utah - Pam Poulson, State Arboretum of Utah, University of Utah, Salt Lake City
- 11:20 Question period
- 11:40 Lunch

Thursday afternoon, April 23

Moderator: Stan Welsh

- 1:00 Current studies on Primula maguirei - Wayne Padgett, Forestry Science Lab, Logan
- 1:15 The Nature Conservancy activities in Utah - Dave Livermore, Salt Lake City
- 1:35 Other state and federal agency activities -
 - Daryl Trotter, BLM, Moab
 - Bob Thompson, USFS, Price
 - Ron Bolander, BLM State Office, Salt Lake City
 - Kevin Carter, State Lands, Cedar City
 - Larry Hays, Zion National Park, Springdale
 - Sherel Goodrich, USFS, Vernal
- 2:15 Nevada Heritage Program - Teri Knight, Carson City, Nevada
- 2:35 Sclerocactus wrightiae study - Liz Neese, Salt Lake City
- 2:50 Break
- 3:15 Review Utah T/E/S plant list
- 5:00 Adjourn

Thursday evening, April 23

Moderator: Alyce Hreha

- 7:30 Rare plant slide presentation - Stan Welsh, Liz Neese, Lelia Shultz, Duane Atwood
- 8:30 Slide presentation on Utah Research Natural Areas - Joel Tuhy, Logan
- 9:00 Adjourn

Friday, April 24

Field Trip

- 7:30 Meet at County Administration Building parking lot, 197 E. Tabernacle for truck pooling

- 7:45 Stop 1 - Chinle formation on Shivwits Indian Reservation west of Santa Clara
- 8:30 Stop 2 - Arctostaphylos pringlii, relay tower road, Beaver Dam Mountains
- 9:15 Stop 3 - Castle Cliffs
- 10:00 Stop 4 - Bulldog Knolls
- 12:00 Stop 5 - Lunch at and tour of Lytle Ranch on Beaver Dam Wash
- 3:00 Stop 6 - Baird Cove
- 5:30 Break for dinner

Note: Bring your own lunch and drinks. Coolers will be provided to keep lunches and drinks cool. Field clothes and boots are advised and a truck would allow easier access to some stops.

Saturday, April 25 Field Trip

- 7:30 Meet at the I-15 Bloomington exit
- 8:00 Stop 1 - Arctomecon humilis on Price City hills area
- 9:00 Stop 2 - White Dome
- 10:00 Stop 3 - Warner Ridge
- 11:30 Stop 4 - Lunch at Red Cliffs campground
- 1:00 Disperse for home

Accommodations

Rodeway Inn (801) 673-6161
Coronada (801) 628-4436
Four Seasons (801) 673-4804

Reservations should be made as soon as possible. Anyone who wants to rough it can camp at the Lytle Ranch on the Beaver Dam Wash.

For more information, call Duane Atwood (625-5599), Pam Poulson (581-5322), Andrew Boyac (278-8596) or Dave Wallace (466-2719)



Salt Lake Chapter Meeting

Summary, Alyce Hreha

At our February meeting, we were treated to an excellent presentation on Utah's Endangered Plants by Dr. Liz Neese. The theme of the lecture was "the richness and diversity of Utah's flora, a product of geology and climate." Many of Utah's plants are endangered and threatened with extinction because they are restricted to specific geological substrates. Liz stimulated many questions about our rare endemic species. Her slides covered numerous rare plants and their habitats from various floristic provinces within the state.

The biology of rare plants is essentially the biology of narrow endemics. There are over 340 endemic plant species in Utah. According to Welsh (1979), 81% are restricted to specific layers of major geologic strata such as the Cutler, Moenkopi, Chinle, Carmel, Entrada, Morrison, Arapien Shale, Tropic Shale and Green River Shale formations. These formations tend to resemble each other in texture and in their amounts of soluble salts.

Clays, silts and muds comprise the greater proportion (38%) of these strata, while sands (24%) and limestones (19%) make up the remainder. Soils derived from these rock layers are rich in calcium carbonate, gypsum and other minerals. Similarities of geological formation in chemical and physical properties seem to be more important than the geological strata themselves (Welsh, 1979).

These plants are found on harsh substrates that are barren of most vegetation. Some plants are totally restricted (common on only one stratum) while others are only partially restricted (common on a few strata). Edaphic or soil features are the primary controlling factor in their distribution. Different geologic strata which produce different soil types isolate these rare plant populations from the surrounding vegetation types on edaphic islands. These edaphic habitat islands determine where you are most likely to find rare plants growing. Most of the rare plants occur at elevations below 6,000 feet in the desert shrub and pinyon/juniper vegetation types (Welsh, 1979). Below this elevation, water and minerals are scarce and soil development is poor. Such rare plants also occur at higher elevations in various forest types on ridges and along bluff margins where vegetation is sparse and rock outcrops are prevalent.

Habitat destruction is a major cause of plant rarity in many cases and a contributing factor to their being listed as "Threatened or Endangered" by the U.S. Fish and Wildlife Service. Dr. Neese related some of the difficulties she has been faced with while trying to determine if certain plants are really as rare as botanists have predicted. She outlined several factors that should be taken into account when determining a plant's rarity:

1. Rarity may be an illusion created by herbarium labels. Sometimes a plant may appear to be rare only because it has been under-collected by local botanists.
2. Or, it may be a narrow endemic restricted to a specific geologic layer and having a range of a few square miles.
3. Then there are inevitable taxonomic problems. Where do you draw the line between one species and another? Are you a 'lumper' or a 'splitter'.
4. The reliability of the inventory scientist has to be considered. Can they distinguish the rare species from other common species that occur in the same habitat?
5. Last, are we observing a population fluctuation? How can you determine this from the minimal field data available upon which you are required to base your decision?

As she reviewed her slides, Liz pointed out some of the many relationships that have evolved between these endemic plants and the rock layers that they inhabit.

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She posed a number of unanswered questions for her audience: Why are there so many edaphic endemics in the Uinta Basin and why do several of them congregate along the Mahogany Beds of the Green River Shale Formation? Why is Sclerocactus wrightiae found on every geologic substrate in the Hanksville area including shale, mudstone and siltstone with gypsum and gravel litter on the surface? Why is the Moenkopi Formation home of the Bear Claw Poppy (Arctomecon humilis) and Pediocactus sileri near St. George? Why does the snad-loving penstemon (Penstemon ammophilus) which grows on Navajo Sandstone in Washington County have inflated stems? Is the small pink catchfly (Silene petersonii) found near Manti and in Red Canyon on the Flagstaff Limestone Formation the same or are there two different varieties?

If you are interested in reading more about edaphic endemics or endangered species, you can find interesting material in the following publications:

Welsh, S.L., 1979. Endangered and threatened plants in Utah; a case study. Great Basin Natr. Mem. 3:69-80.

Welsh, S.L. and L.M. Chatterley, 1985. Utah's rare plants revisited. Great Basin Naturalist 45:173-236.

Welsh, S.L. and K. Thorne, 1979. Identification manual of endangered and threatened plants of Utah. U.S. Fish and Wildlife Service Publication. 399 p.

Welsh, S.L., N.D. Atwood, S. Goodrich and L.C. Higgins - editors, 1986. A Utah Flora. Great Basin Natr. Memoirs.

Note: Most of these publications can be found in the Marriott Library, University of Utah, or you can obtain copies of them directly from the Great Basin Naturalist Office in the Monte L. Bean Museum on the Brigham Young University campus in Provo.

Membership Application

() New member () Renewal () Gift

Name _____

Street _____

City/State _____

Zip _____ Phone _____

If gift, from: _____

Check membership category desired:

- () Student/Senior...\$ 5.00
- () Individual.....\$ 10.00
- () Family.....\$ 15.00
- () Supporting.....\$ 30.00
- () Corporate.....\$ 30.00 and up
- () Life.....\$250.00

() Please send a complimentary copy of the Sego Lily to the above individual.

Please enclose a check, payable to Utah Native Plant Society, and send to:

Pam Poulsen, Treasurer, 3631 South Carolyn Street, Salt Lake City, Utah 84106.

Audubon Society Note

Bridgerland Audubon's Annual Banquet will be held on April 24. Social hour at 6:00 p.m., dinner at 7:00 p.m. followed by a slide presentation "The Great Whales of Baja California" by C Allan Morgan. Morgan's credits include publication in National Wildlife, Natural History and National Geographic.

The cost is \$10.00 per person. Call Jillyn Smith (753-6109) or Scott Cheney (753-1893) for reservations and additional information. Reservations must be made by April 20.



Sego Lily

Newsletter of the Utah Native Plant Society

Vol. 10, No. 4

June 1987

When, Where, What

June 6
Saturday
9:00 a.m. to
1:00 p.m.

UNPS Salt Lake Chapter Field Trip Field Photography Workshop - Lisa McClanahan. All types of cameras welcome, light meter and tripod optional. Bring color slide film, preferably Ektachrome or Fujichrome. Meet at the Red Butte Arboretum Garden parking lot, east of the University of Utah. Field trip will cover basics of exposure, composition and how to outsmart your automatic camera. Call Lisa McClanahan (487-0094) for more information. The Salt Lake Chapter meeting on June 25 will feature slides shot during the workshop. P.S. Everyone is welcome to take our UNPS field trips, society member or not. The trips are free and last from four to seven hours depending on location and activities planned. Plan on bringing a lunch, camera or sketch pad and clothing /footwear appropriate to the weather and terrain.

June 25
Thursday
7:30 p.m.

Salt Lake Chapter Meeting
Join us for a gentle critique of slides shot on the June 6 photography field trip. If you didn't come on the field trip but have slides you'd like to show for suggestions on photographic technique bring them along.
Room 323, Student Union, University of Utah

June 27
Saturday
9:00 a.m. to
1:00 p.m.

State Arboretum of Utah
Walk in the Wasatch - Trees and Shrubs of the Wasatch - Alyce Hreha, instructor
Wear field clothing and sturdy footwear. Field trip starts at the mouth of Little Cottonwood Canyon. Register in advance with the State Arboretum of Utah (581-5322).

June 27
Saturday
10:00 a.m.

UNPS Cache Valley Chapter Field Trip
Tony Grove Lake - led by Leila Shultz, curator of the Utah State Herbarium. The trip will be a highlight of the summer season and well worth the drive. Members and friends of the Salt Lake Chapter are welcome. Driving time from

Salt Lake is about 2 hours, 45 minutes. The turnoff from Highway 89 is about 30 miles east of Logan, then five miles to Tony Grove Lake campground. Late arrivals can easily catch up with the group somewhere around the perimeter of the lake.

June 25-28

Teton Science School Field Seminar
The First Botanist, a Study of Indian Uses of Plants, Dr. Steve Clark, instructor. Tuition is \$145, college credit is available. Contact the Teton Science School for more information; P.O. Box 68, Kelley, Wyoming 83011, (307) 233-4765

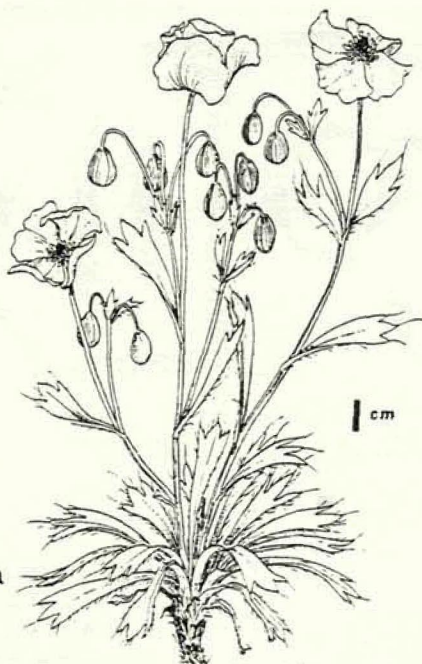
July 11
Saturday
9:00 a.m.

Salt Lake Chapter Field Trip
Uinta Field Trip
This field trip along the Mirror Lake road from Kamas to the Bald Mountain Overlook is one of our most popular trips. The area has an exceptional range of habitat including sage brush slopes, pine forests and alpine meadows surrounded by spruce and subalpine fir. All are easily accessible from the highway.
Meet in the K-mart/Regency Theatre parking lot, 2745 E. Parleys Way in Salt Lake. For those who want to join the trip in progress, the first stop will be the Kamas Ranger station about 10:00 a.m., the second stop will be the Forest Service boundary sign, six miles east of Kamas on Highway 150. For more information, call Andrew Boyack (278-8596)

July 4th
Weekend

Salt Lake Chapter Field Trip
Holiday weekend trip to Great Basin National Park/Wheeler Peak. Possible activities include climbing and botanizing on 13,000 foot Wheeler Peak and touring Lehman Cave. Call Dave Wallace (466-2719), Pam Poulson (581-5322) or Andrew Boyack (278-8596) for more information.





Bearclaw Poppy Bulletin

David Wallace

So many things have been happening with the endangered bearclaw poppy it may be hard to summarize everything!

A field trip to the poppy habitat was organized as part of the Annual Threatened and Endangered Plant Meeting on April 25. We visited the BYU study site and helped place signs around the area. These "area closed to motorized vehicles" signs were provided by the Bureau of Land Management. We took photos of our activity for the Spectrum (one of the St. George newspapers) and were rewarded with a nice article.

Deanna Nelson (the graduate student doing our research) has really been busy and a lot has been accomplished. BYU has also been very helpful by providing equipment and expertise as needed. The study plot has been mapped and all 400 poppies in it were tagged and measured. Reproduction studies are under way and it looks as if an insect pollinator has been identified. Some of the remote populations are being scouted, and the surrounding vegetation is being characterized.

The plants have been blooming vigorously. One individual in the test plot had over 160 flowers! Unfortunately it doesn't look like a good year for reproduction. No new seedlings have been discovered, and it looks as if plants have been dying recently. (Hopefully this is just due to weather variations, and the population will recover soon).

I went down to St. George two weeks after our field trip to help with the research. It was hot work standing in the sun with a surveying compass, but the reward of using a starlight scope to spot night-flying insects made it worthwhile. (Deanna could use help like this in her research. Please contact Dave at 466-2719 or Pam at 581-5322 if you are interested).

Staying up at the site for half the night provided a fascinating firsthand look at how the flowers bloom. At midnight the buds were nodding at the end of their stems. They were closed up tight and the anthers inside had not opened. By six AM the new flowers were in full bloom! The stems were erect and the petals had spread so far they were almost pointing back toward the ground. The anthers had opened so the fresh pollen would dust your finger when you touched it. It would be wonderful to see this happening with time-lapse photography!

Off-road vehicles are still a problem. Several rode right past the 'closed area' signs near the study site, and a few signs along the main gravel road had been thoroughly vandalized. It will be a constant battle keeping them off the study area.

Note: Several people have questioned the wisdom of attracting attention to *Arctomecon humilis*. We do not do this for our other endangered plants, and they fear that it may actually precipitate destructive acts. This is a good time to explain the UNPS policy on this issue:

Arctomecon humilis, the bearclaw poppy, is an example of a plant well along the path to extinction. This is not due to natural circumstances. It is man's activities that are doing the damage. Off-road vehicles are grinding it into oblivion in some locations, but the real threat is from development. Freeway construction, the state road shed and the expansion of Bloomington have destroyed far more plants than motorcyclists have.

This plant will escape extinction only if the local people want it to be saved, but this can't happen until they learn about it. Problems of motorcycles and incidental vandalism will be resolved when the people learn to value the poppy and its continued existence.

Utah Native Plant Society activities are directed toward this goal, which means promoting news coverage, distributing brochures, developing school education programs, and encouraging involvement by local residents.

I can already see progress along this line. I got a good response from motorcyclists I stopped at the study site. and some of the local people we have been in contact with are excited and enthusiastic about the poppy.

The people of Bloomington care a great deal about Indian petroglyphs in the town site. They have written provisions into property deeds that require homeowner protection, and a Boy Scout helped create a park at one site for his Eagle project. I am confident that people who appreciate unique and rare things like petroglyphs will do the same for an endangered poppy.



A Forager's Notes

David Gardner

At a time when man's impact on the planet seems all pervasive, advocating the use of native plants as a food source requires the extension of ethical constraints. For instance, many species of native orchids are edible but their rarity and beauty should exclude them from use. Care should always be taken in harvesting from any given population to avoid overuse. Taking crowded individuals from areas of abundance can do no lasting harm. Act as if you are thinning a garden. Harvesting tubers, corms and other underground storage organs obviously kills the entire plant where use of leaf or stem sections (if carefully pruned) will allow the individual plant to continue. Take the bulk of your wild foods from the fruit or "greens" section.

The forager should be able to identify poisonous as well as edible species during all stages of growth. Particularly dangerous are the species of *Zigadenus* (Death Camas), *Cicuta douglasii* (Water Hemlock) and the introduced *Conium maculatum* (Poison Hemlock - an extract of this plant is believed to be the poison administered to Socrates.) These plants have a superficial resemblance to some of the edibles.

Primary selenium accumulators, such as occur in some *Astragalus*, *Stanleya*, and *Xylorhiza* species, decay and release selenium that may be absorbed secondarily by other plants. In some areas where these "indicator" species are abundant, forage plants have been found to contain toxic levels of selenium.

The characteristic odor of some seleniferous *Astragali* indicates that selenium is present. I would certainly avoid collecting for the table in such localities. Some of the major selenium indicators found in Utah are:

- Stanleya pinnata* (primary selenophyte)
- Xylorhiza* species (primary or secondary indicators)
- Astragalus bisulcatus* (all varieties)
- A. eastwoodae*
- A. flavus* (all varieties)
- A. iselyi* (obligate selenophyte - endemic)
- A. moencoppensis*
- A. pattersonii*
- A. praelongus* (mainly, not all populations)
- A. preussii*
- A. racemosus*
- A. sabulosus* (endemic) and
- A. toanus*.

Some edibles i.e. *Chenopodium album* can develop toxic levels of nitrates where over-fertilized and underwatered (in agricultural areas or barnyards.) This problem affects livestock, but to my knowledge, there is no record of humans being poisoned in this manner. The volume ingested is no doubt a factor here.

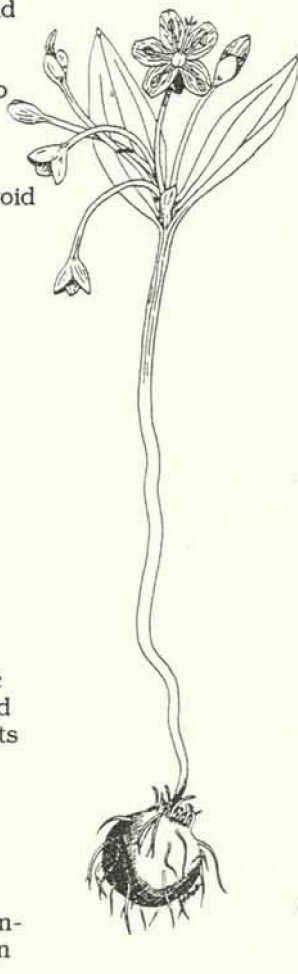
The possibility of exposure to herbicides or pesticides exists in Utah where wholesale spraying of road shoulders for "noxious weeds" (some of them delicious) is common. It's advisable to collect your dinner well away from the pavement.

There is a time to harvest wild plants and a time to pass them by. No one finds the latex-ridden leaves of garden lettuce gone to seed appealing. The same applies to wild harvests. Picked at the right time many are delicious. Picked too late, they may be a nightmare for the taste-buds.

As the snow recedes, one of the first plants of any kind to appear is *Orogenia linearifolia*, alias, the Indian Potato. I found it growing in Emigration Canyon during the first week in March this year. Look for the flowers close to the ground in sagebrush/grass and mountain brush communities when the ground is still saturated with snowmelt. It is the globose or fusiform root that is edible and it is easy to dig at this time. Remove the bitter brown coating from the roots and use them as you would potatoes - au gratin, scalloped, in stew or simply steamed until tender.

Among the early arrivals, *Claytonia lanceolata* (Spring Beauty) is perhaps the loveliest. The flowers, buds, leaves and corms can be eaten raw in salads or as a potherb. Please note that the destruction of these beautiful plants by using the corms should be limited to survival situa-

tions or an occasional nibble. A considerable quantity of the plant can be picked where Spring Beauties are abundant by taking one leaf and portions of the flower buds from random plants. I often use this technique while foraging in the higher mountain regions and combine the leaves of Spring Beauty with those of the Avalanche Lily (*Erythronium grandiflorum*) for an excellent salad or cooked potherb. Spring Beauty can be found from the foothills of the Wasatch front to nearly timberline elevations, so the season of availability is quite long.



Claytonia lanceolata



Orogenia linearifolia

An elemental contact with and greater sensitivity toward the thin veil of plants that support life are the rewards of foraging. You are, in a sense, seeing life as your ancestors may have lived.

For in depth information and excellent recipes I suggest:

Bradford Angier; Feasting Free on Wild Edibles and Food from the Woods Cooking

Beath, Gilbert and Eppson; The use of indicator plants in locating seleniferous areas in western United States. I and II American Journal of Botany 26:257-269, 296-315, 1939. Also III. Further studies, Am. Journal of Botany 27:564-573, July 1940.

Euell Gibbons; Stalking the Wild Asparagus and Stalking the Healthful Herbs.

E. Gibbons and Tucker; Handbook of Edible Wild Plants.

H.D. Harrington; Edible Native Plants of the Rocky Mountains.

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Inwood, Jason, Jason and Manning: Some Useful Wild Plants

J.M. Kingsbury: Poisonous Plant of the United States and Canada and Deadly Harvest.

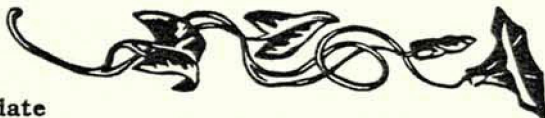
A.D. Kinghorn: Toxic Plants.

W.C. Muenscher: Poisonous Plants of the United States.

Nancy J. Turner: Food Plants of British Colombia Indians, Part 2, Interior Peoples.

Stanley L. Welsh et. al.: A Utah Flora; *Fabaceae* - *Astragalus*.

Darcey Williamson: How to Prepare Common Wild Foods.



UNPS Update

David Wallace, President

BLM Cooperative Management Agreement: The Utah Native Plant Society is pleased to announce our support of the Utah Chapter of the National Audubon Society in gaining control of 589 acres of Bureau of Land Management rangeland. This unique arrangement will place nearly one square mile of prime winter deer habitat and three fourths mile of Weber River frontage under the management of a conservation group, a first for Utah!

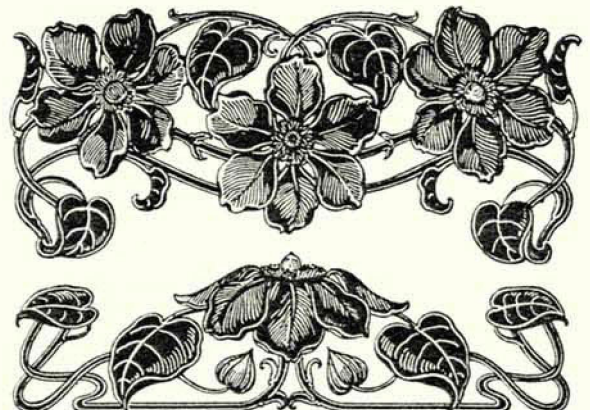
UNPS involvement will primarily be concerned with providing expertise and manpower in evaluating and rehabilitating vegetation. This land had previously been managed as winter deer habitat. It is in fairly good overall condition, but there are obvious problems where improvements can be made along the river. Look for announcements in the Sego Lily for future site visits, monitoring activities, and revegetation work. We will need all the help we can get!

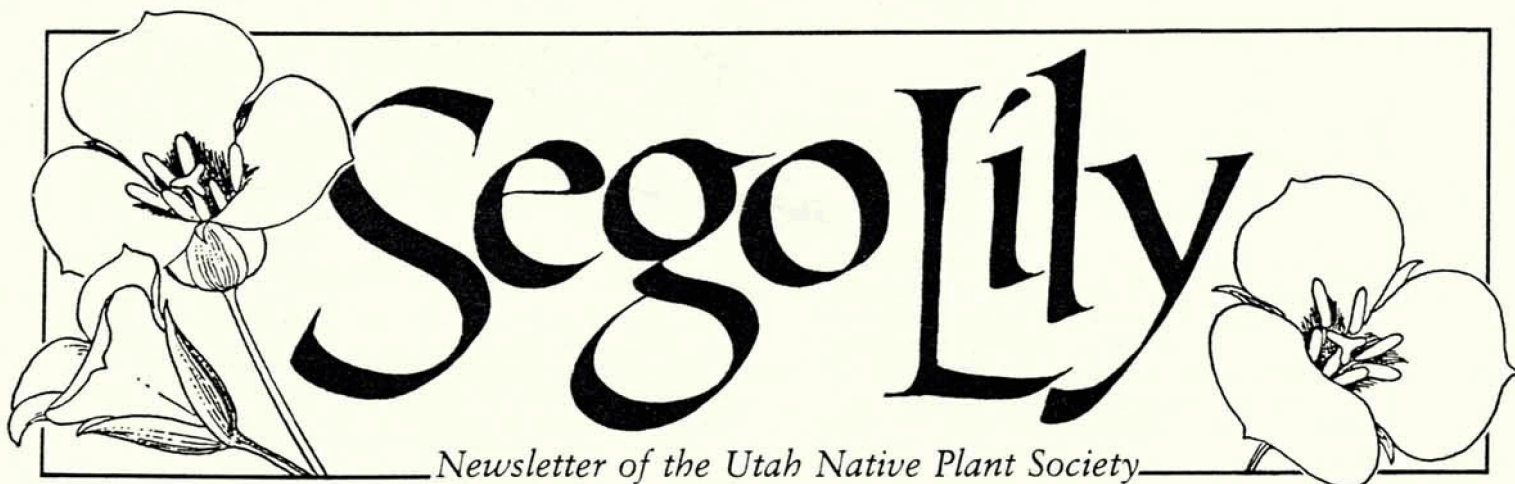
You can visit the site yourself in the meantime. The land is along Interstate 84 east of Ogden and begins about two miles west of the Devils Slide exit. Call Dave at 466-2719 or Pam at 581-5322 for more information or a map.

Dimple Dell Regional Park: The last Sego Lily detailed the UNPS position on the Dimple Dell issue. The majority of the audience at the public hearing seemed to be in favor of preserving the natural values of the area, but the commenting procedures ensured equal representation from each side.

It looks as if Dimple Dell will stay undeveloped for now. Recent newspaper articles state the county Recreation and Parks Department has been unable to make a recommendation, and the Planning Commission will not grant a permit for the golf course. The issue is far from dead, however. We will be keeping an eye on the situation to see if further input is in order.

Annual Utah Threatened and Endangered Plant Meeting: The T&E meeting at St. George was a great success. UNPS members, botanists and professional land managers from Utah and adjacent states attended. Meeting proceedings will be published in a coming issue of the Sego Lily.





Sego Lily

Newsletter of the Utah Native Plant Society

Vol. 10, No. 5

July 1987

When, Where, What

July 4th
Weekend

Salt Lake Chapter Field Trip
Great Basin National Park
Holiday weekend trip to the Great Basin National Park/Wheeler Peak area. Get acquainted with our newest (and nearest) national park.

Friday's activity will be a hike (pack a lunch) to an ancient bristlecone pine grove. We will see the site where the famous 5,000 year old tree was cut down, play on the snow of an icefield and visit primrose bordered streams and lakes. Options for the rest of the weekend include botanizing on 13,000 foot Wheeler Peak, touring Lehman Cave or exploring other areas of the park. Park naturalists also provide guided tours and interpretive programs.

Meet at 9:00 a.m., Friday morning at the trailhead at Wheeler Campground entrance. Call Dave Wallace (466-2719), Pam Poulson (581-5322) or Andy Boyack (278-8596) for more information or to assure a camping spot on this busy weekend.

Be sure to come prepared for cool nights and possible bad weather - nights at 10,000 feet can be cold even when the weather is good. The bristlecone pine grove is an easy two mile hike on a good trail, but some of the other hikes may be strenuous.

July 11
Saturday
9:00 a.m.

Salt Lake Chapter Field Trip
Uinta Field Trip

This field trip along the Mirror Lake road from Kamas to the Bald Mountain Overlook is one of our most popular trips. The area has an exceptional range of habitat including sage brush slopes, pine forests and alpine meadows surrounded by spruce and subalpine fir. All are easily accessible from the highway.

Meet in the K-mart/Regency Theatre parking lot, 2745 E. Parleys Way in Salt Lake. For those who want to join the trip in progress, the first stop will be the Kamas Ranger Station about 10:00 a.m., the second stop will be the Forest Service boundary sign, six miles east of Kamas on Highway 150. For more information, call Andy Boyack (278-8596).

A limited number of "Uinta Basin Flora" field manuals will be available free of charge for UNPS members. This publication, authored by UNPS members

Sherril Goodrich and Elizabeth Neese, has over 300 pages of descriptions and identification keys, but no illustrations or photographs. An informal workshop will be offered at the end of the field trip for those who would like help in learning to use a plant key for plant identification.

July 15
Wednesday
6:00 p.m.

UNPS Executive Committee Meeting
UNPS officers and committee chairmen should attend this meeting. Business items include progress reports from chairmen, reviewing mid-year finances, UNPS involvement in the Threatened & Endangered Plants process and establishing a nominating committee for next year's Board of Directors. Meet at State Arboretum of Utah on the University of Utah campus.

July 18
Saturday
9:00 a.m.

Devil's Slide Tour and Survey
UNPS/Utah Audubon Society joint trip
This combined trip with the Audubon Society concerns the BLM land we are managing. UNPS is responsible for the vegetation in the area, others will survey the birds and wildlife. Knowledgeable members are asked to assist in assessing the plant life but anyone can come along and learn more about plant identification and help count plants. (This trip will also provide a great opportunity to get to know our Audubon Society counterparts and learn about the birds and wildlife from others.) Meet at the Taggart exit (exit 108) about 20 miles east of Ogden on I-84. Call Dave Wallace (466-2719) for more information.

July 20 - 25

Teton Science School Field Seminar
Flora of the Tetons, Dr. Leila Shultz, instructor. College credit is available. Contact the Teton Science School for more information: P.O. Box 68, Kelley, Wyoming 83011. (307) 233-4765.

P.S. UNPS field trips are open to everyone including non-members. The trips are free, lots of fun and an opportunity to learn from enthusiastic and highly qualified trip leaders. Most trips last from four to seven hours depending on the location and activities planned. Plan to bring a lunch, drinking water, camera or sketch pad and clothing/footwear appropriate to the terrain and weather.

Preview Native Plant Sale

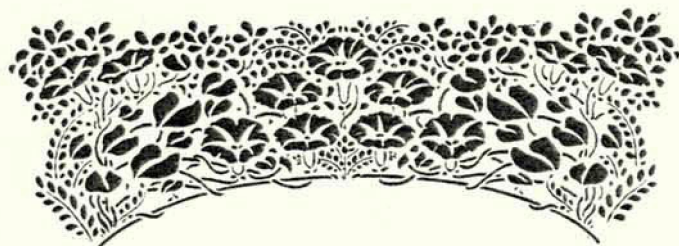
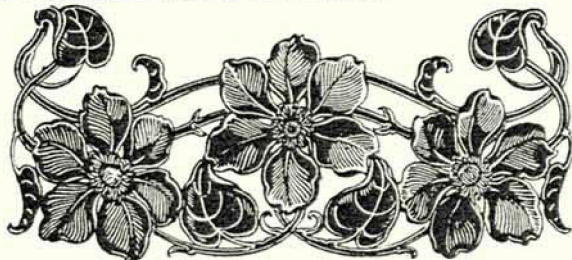
The Utah Native Plant Society has so many plants, we're offering some for sale in advance of the sale at summer's end. This is a great opportunity to pick up the choicest plants while there is a good supply. Our annual fall plant sale will still take place as usual.

The horticulture committee ran into a real windfall when a local native plant nursery ran into trouble. Thousands of plants were in danger of dying from lack of water when UNPS sent volunteers to help. The company is repaying us by donating plants. We're selling some now so we can carry the others over in good shape for the rest of the summer. Plants for sale range from 'tubelings' to 5 gallon size, including,

- Blanket flower
- Blue and mixed color columbines
- Yellow and blue flax
- Red-osier and Canadian dogwood
- Royal and pine-needle penstemon
- Wild strawberry (a good fruiting variety)
- Shrubby potentilla
- Ninebark
- Bristlecone and pinyon pine
- Rocky mountain and Utah juniper
- New Mexico locust (grows at Zion National Park)
- Purple coneflower
- Hackberry
- Canyon live oak (*Quercus turbinella*)
- Snowberry
- Chokecherry (red leaved and green)
- Elderberry
- Thimbleberry
- Squawberry
- Mountain lover
- Arizona grape (grows in Zion National Park)
- Shadscale
- Sagebrush (three species)
- Curleaf and birchleaf mountain mahogany
- Serviceberry
- Old-man wormwood (dwarf)
- Pussytoes
- Sandcherry
- Potawatamie plum
- Mountain ash
- New Mexico privet
- Maple (three species)
- Globemallow
- Wild geranium
- Blue spruce

Volunteers are needed to help pot plants and to care for some until fall and the sale come around. Contact Dave Okelberry at 968-6190, if you are interested in helping or purchasing plants.

Special thanks for help in the plant rescue effort to Mike Chulchy, Lisa McClanahan and her daughter Stephanie, Sherrie Harbrecht, Janet Williams, Marv Poulson, Dave Wallace, Dick Page, Andy Boyack and of course, the Okelberry clan, particularly Kathy, for plant hauling and tractor driving above the call of duty.



Native Plant Society Field Trip Policies

The UNPS wishes to remind field trip participants of the guidelines for participating in our field trips. By joining a UNPS field trip, you indicate acceptance of these policies. We certainly don't wish to discourage anyone from joining our field trips. We do want to insure that all trip participants enjoy the experience and that our appreciation and enjoyment of native plants is not in any way harmful or destructive.

Plant collecting is not permitted on UNPS field trips, with two exceptions:

Collecting is permissible for scientific study (with the appropriate collecting permit, if one is required for the area in question.) "Scientific study" means, for the purposes of this policy, study by a trained botanical scientist with an expectation that the study results will lead to published information. Collected specimens will be deposited in a recognized, publicly accessible herbarium.

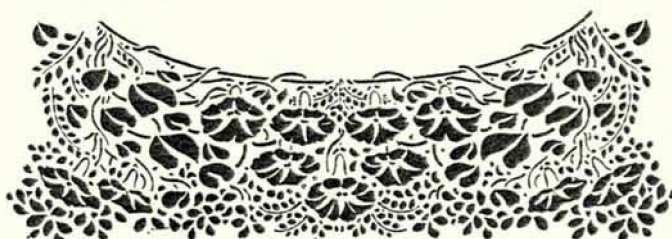
A trip leader or other person whose responsibility is to instruct trip participants may collect plants for immediate demonstration, explanation or keying for full identification. Such collecting should be done inconspicuously (so that persons not with the trip group are not offended or motivated to do likewise) and with reasoned regard for any possible effect on the plant population. However, collecting of any rare, threatened, endangered or sensitive species should never be done for instructional purposes.

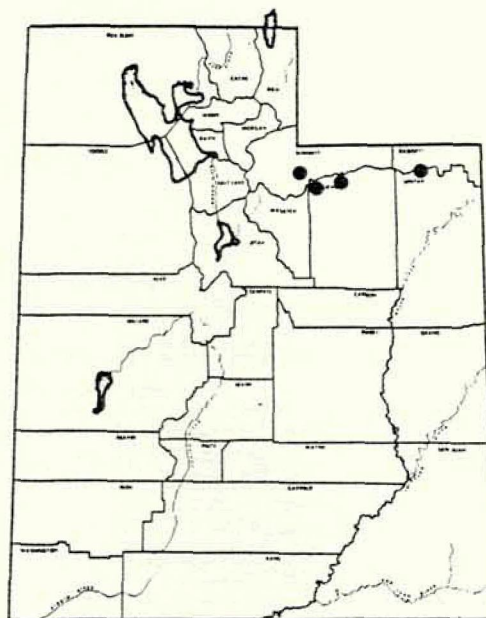
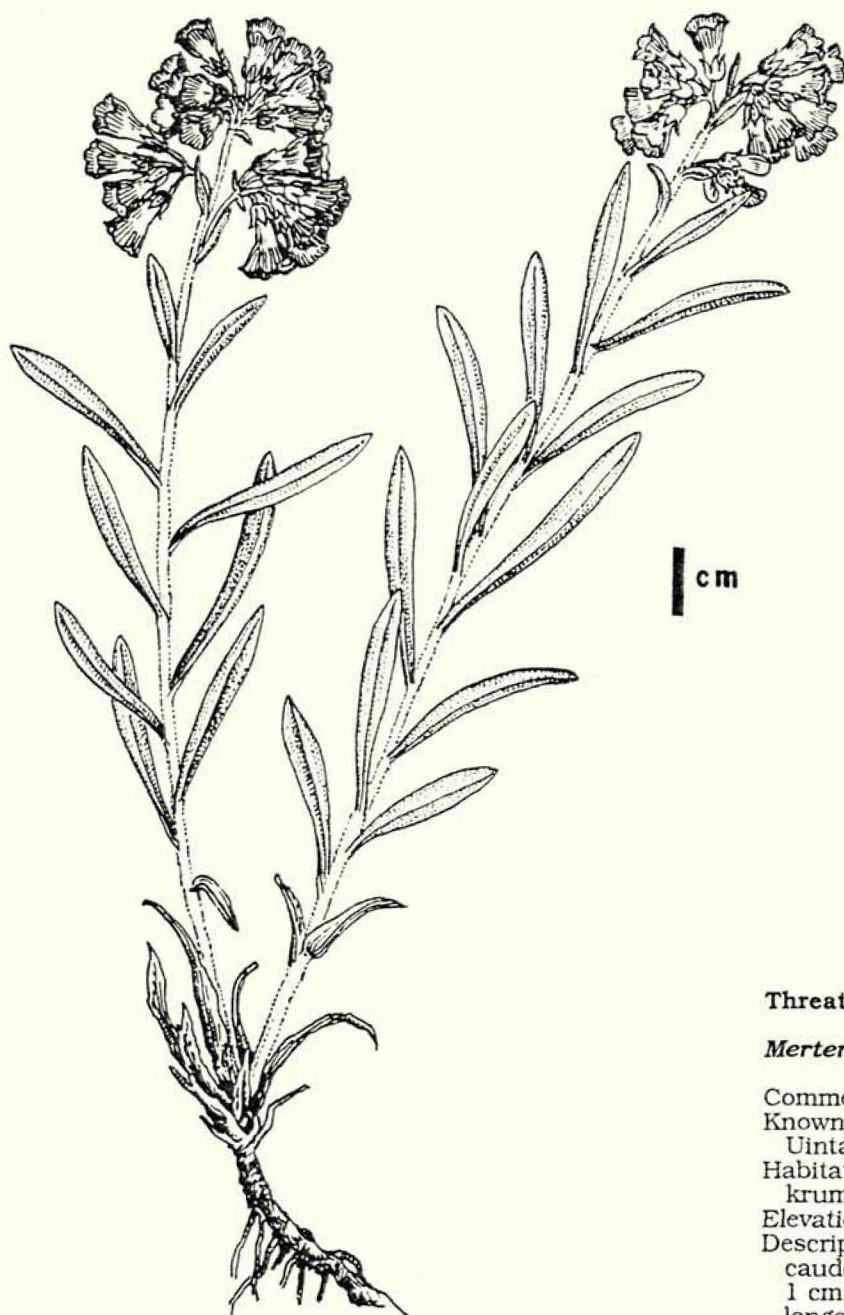
Car-pooling and ride sharing are encouraged on UNPS field trips. It is considerate to offer to assist the driver in covering gas costs for the trip. No set amount is suggested except that it should be proportionate to the length of the trip and number of riders in the vehicle.

Our field trip itineraries are set principally for adults. Parents who wish to include their families on our field trips are certainly welcome to do so. Parents should be aware that our field trips frequently take us into very interesting, challenging and occasionally hazardous terrain. Parents are responsible for the safety of their children while on a field trip and should be aware of the potential hazards.

UNPS expressed purpose is promoting appreciation and preservation of our native flora. Use it lightly. Take care not to damage the very features you have come to see and enjoy. Take photographs, sketches or other means of recording the plants you see, and please do not pick plants or plant parts.

(adapted from the May 1987 issue of *Aquilegia*, newsletter of the Colorado Native Plant Society.)





Threatened and Endangered Plants of Utah

Mertensia viridis* var. *cana

Common Name: Canescent bluebell

Known Distribution: Daggett, Duchesne, Summit and Uintah counties, Utah

Habitat: Precambrian quartzite; alpine tundra and krummholz communities on rock stripes and humus.

Elevation: 3050 to 3721 meters (10,000 to 12,200 feet)

Description: Stems ascending from a branching woody caudex; basal leaves lanceolate, 1.5 - 3 cm long, 0.5 - 1 cm broad, glabrous below, strigose above, petiole longer than the blade; cauline leaves linear to narrowly ovate, more or less densely canescent on both surfaces, somewhat involute; inflorescence a crowded modified scorpioid cyme; pedicels strigose; calyx 2 - 6 mm long, divided almost to the base, strigose; corolla tube 3 - 9 mm long, corolla limb 4 - 9 mm long, somewhat expanded, fornicies conspicuous, glabrous to densely pubescent; style various, exceeding the anthers and about as long as the corolla to shorter than the tube; nutlets 2 - 3, rugose. Note: *M. viridis* var. *cana* is distinguished from its near relative, *M. viridis* var. *dilatata*, by the white pubescence on its leaves and stem.

Existing or Potential Threats: Some roads, and off-highway and trail use have reduced the known total habitat.

Land Ownership/Management: U.S. Forest Service

From: Illustrated Manual of Proposed Endangered and Threatened Plant of Utah; S.L. Welsh - Text, K.H. Thorne - Illustrations, Herbarium, Brigham Young University, Provo, UT; Funded by U.S. Fish and Wildlife Service, Bureau of Land Management, U.S. Forest Service, 1979.

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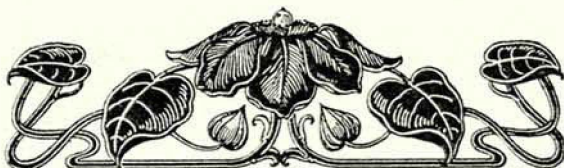
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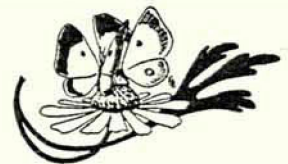
Please enclose a check, payable to Utah Native Plant Society, and
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Pam Poulsen, treasurer, 3631 South Carolyn Street,
Salt Lake City, Utah 84106



UNPS Update

Dave Wallace, President



"Summertime, and the living is easy." Porgy and Bess may have said this, but not very many people in the Utah Native Plant Society. Summer is that brief season when we cram a year of botanizing into a few months of hectic activity. This can create problems for UNPS, but we're handling it so far.

One way we do this is by limiting activities. The chapters alter their meeting schedule for the summer, and we try to avoid planning field trips for consecutive weekends. The other way we accommodate the summer rush is simply by asking a little extra from our members. Officers and committee chairmen often take extra time from their busy schedules to help with summer UNPS activities. Our members who are professional botanists are extremely busy because they spend so much time in the field. We try to leave them alone during this period, but they still make time to get involved.

We really appreciate this work from our members, especially the professional botanists. The UNPS does not charge for our activities, but we don't pay for the professional services of our field trip leaders either. Tell the leader on your next field trip how much you appreciate his or her efforts, especially if it is led by a botanist or other specialist/professional.

You can also help by contributing some of your time. Let us know if you are willing to get involved. For example, the horticulture committee needs volunteers to help with potting plants and caring for them until the plant sale. The Cache chapter needs people to survey the known populations of *Primula maguirei* in Logan Canyon. And the editor needs articles for the Sego Lily. Call Dave Wallace (466-2719) or Pam Poulsen (581-5322) for more information or to volunteer. Any and all help is appreciated very much.



Sego Lily



Newsletter of the Utah Native Plant Society

Vol. 10, No. 6

August 1987

When, Where, What

August 1
Saturday
9:00 a.m.

Salt Lake Chapter Field Trip
Albion Basin Wildflower Extravaganza
This is one of the best and most popular of all UNPS field trips. The trip features spectacular scenery, a wide variety of flora and an exceptionally knowledgeable trip leader, Dr. Elizabeth Neese. If you have never gone on this trip, it is very worthwhile. The late July rains should produce a terrific display of flowers. Be sure to bring a lunch, drinking water and a light jacket in case of showers. Meet at the east end of the Alta parking lot, at the head of Little Cottonwood Canyon (where the pavement ends.) The road into the Basin from the parking lot is in better shape than last year, but for anyone who doesn't wish to take their own car up the unpaved portion, we can car pool from the top of the parking lot. For more information, call Andy Boyack (278-8596) or Dave Wallace (466-2719).

August 12
Wednesday
6:30 p.m.

UNPS Executive Committee Meeting
All committee chairs should plan to attend. Subjects to be discussed include budgets, T & E Plants, nominations and committee reports. Meet at the State Arboretum of Utah offices on the University of Utah campus.

August 18
Tuesday
6:30 p.m.

Seed Packaging Party
Share an evening with friends and help us package and label seeds for the UNPS Plant Sale in September. We'll be getting together at the State Arboretum of Utah offices on the University of Utah campus. plan to bring something to drink (non-alcoholic) and snacks and join the fun. For more information, call Lisa McClanahan (487-0094).

August 27
Thursday
7:00 p.m.

Mushroom Hunt Meeting
Everyone is invited to join us for the preliminary meeting to discuss this year's Mushroom Hunt (we hope.) Dr. Frank Anderson will lead the hunt again this year if there has been enough rain in the Uintas to produce mushrooms. Dr. Anderson's slides of fungi, edible and otherwise, are worth seeing and hopefully there will be good news this year about the availability of enough mushrooms to

August 29
Saturday
8:00 a.m.

hunt. The meeting will be in the Student Union Little Theater on the University of Utah campus.

Annual Mushroom Hunt

This year, with a bit of luck and some rain in the Uintas, we will have our annual (well, as annual as possible) mushroom hunt. Last year and the year before the hunt had to be cancelled due to extremely dry conditions in the Uintas and the resulting absence of mushrooms to hunt. This year conditions look more promising. Given enough rain, the Uinta Mountains host a large population of chanterelles, coral fungi, boletes, puffballs and ear fungus.

Dr. Frank Anderson, the trip leader, took a master's degree in botany with the intention of becoming a mushroom taxonomist. He changed to a more marketable career course, however, pursuing doctoral studies in air pollution science. Dr. Anderson has pursued his avocation for fungi and is frequently consulted by the Poison Control Center to identify mushrooms consumed by children (and occasionally incautious adults.) Dr. Anderson will share his expertise on the mushroom hunt with first-time foragers and amateur mycologists. You don't need to know a lot about mushrooms in advance for this to be an enjoyable trip. Bring a jacket or poncho in case of rain and bring a lunch or potluck dish for a mushroom picnic at the end of the hunt.

Meet at the east side of the K-mart/Regency Theater parking lot at 2745 East Parleys Way. Car pooling can be arranged at the meeting place. For additional information, call Andy Boyack (278-8596).

September 12
Saturday
8:00 a.m. to
5:00 p.m.

UNPS Annual Native Plant Sale
This should be the biggest and best of our native plant sales. We have a large selection of native trees, shrubs and flowers, mostly in gallon cans to sell this year. And September is an excellent time to plant natives in the garden. Summer's heat is mostly past and there is enough

When, Where, What

time for the plants to get settled in before winter arrives. The selection this year will range from bristlecone pine (hurry, these to fast) to a good fruiting variety of wild strawberry. The sale is graciously hosted again this year by Millcreek Gardens Nursery at 3500 South 900 East in Salt Lake. For more information, call Dave Okelberry (968-6190).

P.S. If you would like to help with the plant sale and meet lots of interesting people, call Dave. It's a lot of fun and an opportunity to learn more about using native plants in your garden. You don't have to be an expert to help out at the plant sale.

October 22
Thursday
7:30 p.m.

UNPS Salt Lake Chapter Meeting
Natives in Your Garden and Mine,
presented by Dick Hildreth of the State
Arboretum of Utah. Room 323. Student
Union Building, University of Utah.

UNPS Update

David Wallace, President

Our accomplishments at the Utah Native Plant Society result from the efforts of our members. Every member contributes in some way, even if it is just by paying dues. Some people take a more active part than others, but it is the contributions of our officers and committee chairmen that keep us going.

Sometimes we fail to realize how much we benefit from these members. We often mention our committees without saying much about them, so I am taking this opportunity to tell you now.

Field trips: If you have attended a field trip, you can thank this committee. The chairman decides which trips will be sponsored and sees that all the details are taken care of. This includes arranging for leaders, meeting places, publicity, and so forth. Our current chairmen, Andy Boyack, has even been known to scout out the route a day in advance to be sure of finding the best places for flowers.

Newsletter: Publishing the Sego Lily is both the biggest and the single most important job in the UNPS. Without this communication our organization would be crippled. Editor Lisa McClanahan has also done a lot to upgrade the appearance of our newsletter, but she needs more articles from members!

Seed: The UNPS has always tried to promote the cultivation of native plants by offering seed. Jennifer Harrington passed the chairmanship of this on to Dick Page, but she still finds time to help on the committee. Occasionally they will arrange a "seed party" where members can help package seed for sale. Dick also has been experimenting to find the best way to germinate and grow our seeds.

Conservation: Promoting the conservation of native plants is mandated by our charter. This job entails interfacing with other plant conservation groups, commenting and writing letters in behalf of the UNPS, keeping track of legislation, etc. Alyce Hreha recently replaced Tony Frates as Conservation Committee Chairman after several years of outstanding work.

Rare Plants: One of the most important responsibilities of this committee is the annual Rare and Endangered Plant Conference. This work requires more botanical knowledge than any other position in the UNPS. It is fortunate we have professionals like Duane Atwood and Sherrel Goodrich for this committee.

Horticulture: Our annual September Plant Sale has developed into our biggest fund raising activity. This year Dave Okelberry is making sure we have more than enough plants for a successful sale. Dave needs help caring for plants now and help with the sale in early September.

Photography: This job is open now! We need someone to create and maintain a photo file.

Education: Debbie Noel and Janet Williams are doing a great job with this new committee. One of their projects in progress is to make a filmstrip to teach school children about endangered plants.

Membership/publicity: Kathy Mutz has been doing a lot with this committee to promote the UNPS, including sponsoring our booth at the Salt Palace Home and Garden Show and mailing information packages to interested people and groups.

These people really don't seem much different from everyone else in the UNPS. Various family, work situations and ages are represented, just as they are in our general membership. They care about native plants, but who doesn't in an organization like this? I can't tell which people are willing to help by looking at them, but as president it sure would make life easier if I could.

You see, this is the season when we form the nominating committee. We are always looking for willing members to help with projects and committees, but now we get serious. We need likely candidates to continue the good work being done by our current officers and committee chairmen. Let us know if you want to help in any way, or if you know someone who may be interested. Call Pam at 581-5322 or leave a message with Dave at 466-2719.

Tony Grove Lake Field Trip

Andrew Boyack

Tony Grove Lake in the mountains east of Logan was a beautiful site for the Cache Valley Chapter field trip on June 27. The group that assembled at the lake viewpoint was so large that it was split into two groups. The Cache Valley Chapter members were joined by members of the Logan Garden Club and a number of Salt Lakers. John Schultz led one group, Leila Schultz, the other.

The lake vicinity had an almost garden like appearance due to the profusion of flowers in bloom. On the higher slopes were stands of scarlet gilia, potentilla and blue flax interspersed with silvery clumps of sagebrush. Near the lake were columbine, mountain bluebells, erigeron, elephant heads and bog orchids.

A nature trail has been established around the lake by the Forest Service with marked stations at frequent intervals. Forest Service pamphlets describing the stations of the trail are available.

Great Basin National Park Field Trip

Jo Stolhand

Diverse plant communities from sage to alpine, riparian to desert were explored by several UNPS members over the Fourth of July weekend in the newly formed Great Basin National Park. Camping in the Wheeler Peak

Campground at nearly 10,000 feet gives you a head start on the climb to Wheeler Peak at over 13,000 feet but opting to adjust to the altitude, members chose the gentle climb of the trail to the Bristlecone pine groves on the flank of Wheeler Peak for the first hike. Dave Wallace, who scouted the area in 1986, led us to the stump of the 5,000 year old Bristlecone with a little off-trail boulder hopping. Many trees, two to three thousand years old, look more dead than alive with only a strip of bark leading to a cluster of living branches, dramatic examples of survival. We pondered the forbidding landscape with fields of boulders and constant wind and wondered how these ancient trees ever gained a foothold and survived.

From the Bristlecone pine groves we returned to the campground by way of Teresa Lake and the short loop trail to Stella Lake. Along the way we passed a memorable stand of *Primula parryi*. The two foot tall, vivid magenta Parry's primroses were in full bloom along the narrow clear brook feeding into Teresa Lake. At Stella Lake we noticed the rather unremarkable *Castilleja nana*. Unremarkable in that its relative lack of color, a pale dusty rose, makes it appear as though it grew along a dusty path, but distinguishable because it is only two to three inches tall.

On Saturday, we hiked down the Lehman Creek Trail which descends from the Wheeler Peak Campground at 10,000 feet to the Upper Lehman Creek Campground at 7,000 feet. Starting in the patches of Engelmann fir and pine the trail leads past wet meadows colored with shooting star bordered with columbine and heart leaf arnica. The shooting star gave way to fields of yellow thermopsis as we dropped into aspen groves then on down into mountain mahogany and in turn to sagebrush. The upper sagebrush areas were colored with gilia and paintbrush but another short descent brought us into an area of sagebrush mixed with cactus which appeared to be at their peak bloom. Several of the plants displayed showy flowers in yellow and pink on the same plant although most of the cacti had only yellow flowers. Spread lavishly among the cactus and sagebrush were sego lilies in full bloom. This trail, in four miles, leads the hiker through a cross section of nearly all the zones found in the park. It is one of the most remarkable short hikes several of us had ever taken.

The trip would not have been complete without a climb to look at the alpine flora. Here we found a small rock garden of red sedum snuggling up to mat-forming white phlox. Here everything is in miniature except the winds and the length of the trail to the peak. Silene and phlox grow in cushions hugging the ground for protection from the elements. Sky pilot and Jacob's ladder are seen along the trail and an eagle-eyed hiker can even detect a pygmy *Lewisia*.

This was a wonderful field trip for the members who went, and to the rest of you we can only say, "Eat your hearts out."



Uinta Field Trip

Andrew Boyack

The flora communities at various elevations were explored on our Uinta field trip, July 11. These included the ponderosa pine at 7,000 feet, the lodgepole pine at the 8,000 foot level and spruce/alpine fir at 9,000 to 10,000 feet. The trip was ably led by Dave Wallace. After lunch at Bald Mountain Pass, Dave gave a short demonstration on the use of botanical keys.

The plants we found blooming, particularly at the higher elevations, gave striking evidence of the early flowering season this year. Apparently the warm, dry weather from April through June and the early snowmelt caused many of the flowers to bloom nearly a month earlier than the previous year. At Lily Lake, stands of erigeron, potentilla and indian paint brush had replaced the earlier flowering glacier lily, spring beauty and marsh marigold which we found on our mid-July trip last year. Many of the earlier flowers were still in bloom, among them, shooting star, the beautiful deep violet *Penstemon whippleanus* and two species of *Pedicularis*.



Introductions

Lisa McClanahan, Editor

First, an apology, due to space and time constraints I have fallen behind in acknowledging new members. If I haven't welcomed you to UNPS promptly I'll try to make amends by letting you know how much we appreciate your support. And I'll try to keep the new member listing up on a more current basis.

Particular thanks are due to those who have generously made contributions in addition to their regular dues. Your donations are warmly appreciated and certainly should not go without mention. Past due but sincerely tendered thanks for donations go to:

Dr. Maureen Ellis, Salt Lake City
Larry and Melinda Greenwood, Richfield
Margaret Halpin
Walter J. Horton
Wayne Padgett
Clark T. Rogerson, New York Botanical Garden
Thomas Wooten

And welcome to all the new (and not quite so new) members:

Tammy Baird, Ogden
Nancy Blatt, Sandy
Ron Bolander, Salt Lake City
Richard Campanella, Logan
Scott D. Cheney, Logan
Elaine, Jerry and Chris Christensen, Salt Lake City
Jane Cole, Phoenix AZ
Bette Cook, Salt Lake City
Don Falk, Jamaica Plain, MA
Kurt Fisher, Salt Lake City
Ben Franklin, Provo
M.B. and Frances B. Harris, Salt Lake City
Dawn Hendry, Salt Lake City
Rebecca Irish, Midvale
Karen Jones, Ogden
Glen Lyon, Ogden
Sandy Malone, Salt Lake City
Richard Mueller, Logan
Torryann Nielsen, Salt Lake City
O. Edward and Ruth M. Ogilvie, Salt Lake City
Scott Peterson, Arlington VA
Ann M. Rantanen-Lee, Sandy
Cindee Rigdon, Salt Lake City
Tom Sheehan, Salt Lake City
Betty Storrs, Salt Lake City
Kathleen Swenson, Springville
Penny L. Thomas, Murray
Edda Williams, Riverton
Maureen Wilson, Salt Lake City
Merilyn Woolstenhulme, Salt Lake City

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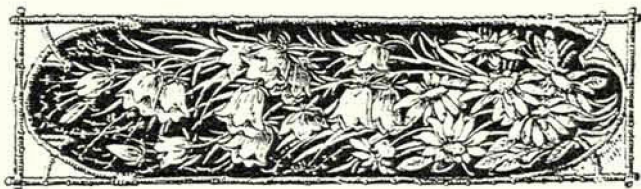
Help Wanted

Dick Page, Seed Committee Chairman

The Seed Committee is giving birth to a new area of responsibility, plant propagation. We would like to grow native plants from seed for many reasons. Some of the plants would increase the selection available at the plant sale. Some would be kept to flower and produce more seed. But most importantly, many of our native plants would enjoy an extra measure of security if seed stocks could be preserved and increased. But plant propagation is time and space consuming. Some of the natives require specialized conditions to germinate. Many of the seedlings are temperamental about their growing conditions and can be frustrating to bring to maturity. But it's not an entirely thankless task, a healthy plant grown from seed is a special accomplishment and in its own way a considerable reward.

At this point, however, my wife's nearly endless patience may be nearing an end. At times, every flat surface in the house is covered with seedling flats. It would be very encouraging to find other members willing to help with plant propagation. Amateurs, green thumb gardeners and anyone with relevant expertise would be a welcome addition to the effort. Volunteers can care for established seedlings, help with germination, transplant seedlings to pots and just generally help out. Donations of potting soil and new pots would be very helpful, and in the area of wish fulfillment, if anyone would be willing to contribute some greenhouse space it would be a terrific help.

Anyone interested in volunteering any amount of time can contact Dick Page (255-7769) or Dave Wallace (466-2719).



Membership Application

☐ New Member ☐ Renewal ☐ Gift

Name _____

Street _____

City/State _____

Zip _____ Phone _____

If Gift, from: _____

Check membership category desired:

- ☐ Student/Senior\$ 5.00
- ☐ Individual\$ 10.00
- ☐ Family\$ 15.00
- ☐ Supporting\$ 30.00
- ☐ Corporate\$ 30.00 and up
- ☐ Life\$250.00

☐ Please send a complimentary copy of the Sego Lily to the above individual.

Please enclose a check, payable to Utah Native Plant Society, and send it to:

Pam Poulsen, treasurer, 3631 South Carolyn Street,
Salt Lake City, Utah 84106

(If you prefer not to cut this out of your **Sego Lily**, feel free to copy the membership form or simply write the information down and mail it with payment for the category of membership.)

Sego Lily

Newsletter of the Utah Native Plant Society

Vol. 10 No. 7

September/October 1987

When, Where, What

September 24
Thursday
7:30 p.m.
Salt Lake Chapter Meeting
The Evolution of Desert Shrubs: The enthusiasm Dr. Howard Stutz expresses on this subject may change your outlook on this significant but often overlooked part of our native flora. Meet in Room 323, Student Union Building, University of Utah.

September 25 & 26
Friday night & Saturday
Desert Plant Field Trip
UNPS Field Trip to Rush Valley to study desert flora with Dr. Howard Stutz, professor at BYU. This will be a field seminar follow up to the Salt Lake Chapter Meeting of the 24th. Dr. Stutz is an expert on the family *Chenopodiaceae*. We plan to meet on Friday evening, the 25th, at the Ophir City Park, camp overnight and get an early start Saturday morning for the day-long field trip. Dave Okelberry is making his sourdough pancakes for all of us on Saturday morning so be sure to bring your breakfast fixings and anything you want for breakfast in addition to the pancakes.

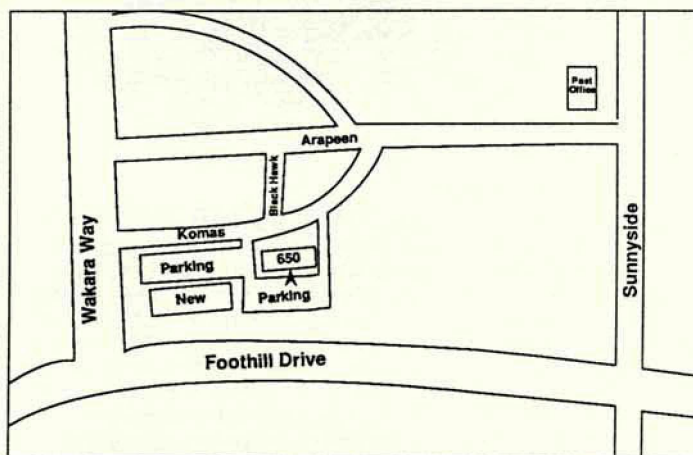
The Ophir City Park is a campground and has been reserved for us Friday night. The park is located about a half mile up canyon from the Ophir store and about 200 yards past the yard with the new pole fence. Ophir is an old mining town in the Oquirrh Mountains south of Tooele. The drive from Salt Lake City takes approximately one and a half hours. Take Interstate 80 west to the Tooele exit and drive south on Utah Highway 36 through Tooele and Stockton. From Stockton continue four miles south to the junction with Utah Highway 73. Take Utah 73 (to the left or southeast) roughly four and a half miles to the Ophir turnoff. The turnoff goes to the left and meanders down into the mouth of Ophir Canyon then continues into the canyon to the small town of Ophir.

Anyone who would like to join us on the field trip but can't camp with us Friday night is welcome to join us at the campground before 7:30 a.m. Saturday morning. For more information, call Andy Boyack (278-8596).

October 1
Thursday
7:00 p.m.

UNPS Annual Members Meeting and Native Plant Pot Luck Dinner. You really don't want to miss this meeting. Last year's native plant pot luck dinner was a memorable feast with dishes ranging from five-bean chili to delicious corn bread and brownies for dessert. The dishes featured native American plant foods including corn, tomatoes, beans, potatoes, pine nuts, vanilla and chocolate. Bring a generous number of servings of your favorite dish and join the feast.

In addition to the edible feast, this meeting will provide a feast for the eyes as well. Photographer Marv Poulson's multi-media show combines wonderful sights and sounds. UNPS members will also have the opportunity to vote for next year's Board of Directors. The meeting will be held at Evans & Sutherland, Building # 650 in Research Park, in Salt Lake City. See map below. For more information, call Dave Okelberry (968-6190) or Lisa McClanahan (487-0094).



Enter through ground floor door in the center of the west side of building, facing parking lot.

October 3
Saturday
9:00 a.m.

Devils Slide Revegetation Project
This is a joint UNPS/Utah Audubon Society activity. We will be clearing weed infested areas and planting native species in their place on land in our

October 3
Saturday
9:00 a.m.

BLM Land Use Agreement area in Weber Canyon. The work area along the river is part of the 589 acres of BLM rangeland now under the control of the Utah Chapter of the Audubon Society. UNPS is providing expertise and hopefully some volunteer manpower to rehabilitate vegetation on some parts of the area. Bring a lunch, drinking water, gloves and, if possible, garden tools.

Meet at the Taggart exit on Interstate 15 east of Ogden. Or come directly to the site along Interstate 84 east of Ogden, about two miles west of the Devil's Slide exit.

October 22
Thursday
7:30 p.m.

Salt Lake Chapter Meeting
Natives in Your Garden and Mine: Dick Hildreth of the State Arboretum of Utah will speak about native plant landscaping and gardening. He will also discuss expansion of the arboretum. Room 323, Student Union Building, University of Utah.

November 19
Thursday
7:30 p.m.

Salt Lake Chapter Meeting
Annual UFO (Unidentified Flowering Objects) Meeting. Frustrated because you have no idea what that beautiful flower in your favorite slide is? Or do you have a picture of that plant in your garden that turned up as a mystery bonus in a packet of wild flower seeds? Bring your slides, photos or specimens of native plants for UNPS botanists to identify at this popular annual event. We don't guarantee to identify everything but in past years we've come awfully close. Meet in Room 323, Student Union Building, University of Utah.



UNPS Update

David Wallace, President

Landscaping: The Utah Native Plant Society is sponsoring activities to promote the use of native plants in landscaping. The approach of fall signals the best time for planting perennial plants, trees and shrubs after the end of summer's heat. Landscaping information will be available from Dick Hildreth when he addresses the Salt Lake Chapter on October 22 (details can be found by referring to the schedule on the front page.) It isn't always easy to find native plants to satisfy your landscaping needs, but Dave Okelberry still has a supply of plants in case you missed the annual Native Plant Sale, September 12. Call Dave Okelberry (686-6190) for further information.

Cooperative Land Use: The Utah Native Plant Society role in assisting the Utah Audubon Society was announced in this column in June. Since then we have participated in a wildlife and plant survey with the Audubon Society and are now preparing for revegetation of abused areas. More survey activity is still to be done, and we need lots of volunteers to help with weeding and planting on October 3 as noted in the calendar. Call Dave Wallace (466-2719) if you are interested in survey work or for more information in general.

Dimple Dell Regional Park: Readers of Sego Lily are probably aware of UNPS involvement in commenting on plans to build a golf course at the Dimple Dell Regional Park. Recently, the Salt Lake County Recreation and Parks Department recently modified their plans and opted for building the course on higher ground with less impact on the natural areas. The County Commission voted to accept this new plan, but arranging the funds and federal approval will be another matter. While some may contend any development here is unfortunate, the UNPS is pleased to not the new plan appears to avoid those areas we were most concerned about.

We are also pleased to announce the Recreation and Parks Department requested that Dave Okelberry, our current Chairman of the Board and Horticulture Committee chairman, act in an advisory capacity on planning for the park.



Mushroom Hunt Finally Held

Andy Boyack

Finally - after two years of postponements due to the lack of mushrooms due to dry August weather, we held our annual (well, as annual as possible) mushroom field trip on August 29th. This year we watched the August weather anxiously. The month started dry, then toward mid-month we had a little rain but no mushrooms. Finally, the week before the scheduled field trip, rain came, four good days of rain in the mountains. At the Salt Lake Chapter meeting August 27th, Dr. Anderson reported the results of his scouting trip. He found a good supply of mushrooms and the hunt was on.

108 people joined for this field trip, including many non-members of UNPS, the largest turnout we've ever had. With Dr. Anderson's guidance and over a hundred people combing the terrain we found plentiful supplies of mushrooms between the 8,000 and 10,000 foot elevations. Frank Anderson's skills were essential in sorting out edibles from non-edibles. Most of us are novices at mushroom identification and collected every sort of fungus in sight. Among the edible species found were *Chanterelles*, *Suillas*, *Leccinum*, *Lactarius deliciosus*, *Boletus edulis*, *Agaricus campestris* and *Hydnum imbricatum*.

In mid-afternoon we assembled at the Bald Mountain picnic area to picnic and sample the edible mushrooms that were collected. Everyone had their own opinion regarding the relative merits of the various mushrooms that were sauteed in butter and shared around. The *Chanterelles*, *Lactarius deliciosus* and *Boletus edulis* seemed to share equal honors for taste and texture. Special thanks are due to Dr. Anderson for his patience and good nature in identifying several thousand specimens of mushrooms and to everyone who brought cooking gear and contributed food for the picnic.



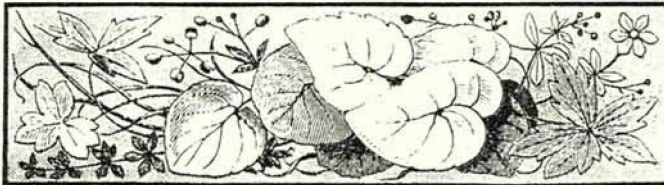
Albion Basin Field Trip

Andrew Boyack

Albion Basin, at the headwaters of Little Cottonwood Creek above Alta, displayed a wide range of plants in flower for us again this year. Prominent in the glades among alpine fir and Engelmann spruce were lavender red fireweed, white Engelmann aster and various species of scarlet indian paintbrush. Botanist Elizabeth Neese and Dave Wallace showed us enchanting microclimates with their special plants, brook saxifrage and bittercress in the stream beds, red and yellow *Mimulus* along the banks, parnassia and flaxflower on moist slopes, Ivesia, owl clover and *Gentianella amarella* on rocky slopes where the air was perfumed with the odor of mountain pennyroyal.

After lunch, Dave Wallace gave an excellent impromptu talk to a group of 40 senior citizens from the Cottonwood LDS church at the request of their leader, Joan Fisher.

Our botanist and members found and identified over 70 species of plants in addition to those listed in 1986. Trying to remember the names and features of so many plants is bewildering and a suggestion was made that the UNPS might arrange some classes. The study of plants and plant families can reduce bewilderment and enhance everyone's knowledge, understanding and enjoyment of the native flora.



Albion Basin Wildflower Checklist

Compiled by Dave Wallace

This is a listing of plants identified on the UNPS field trips to Albion Basin August 2, 1986, and August 1, 1987. The listing is not intended as a comprehensive botanical inventory, but a sampling of the readily identifiable plants encountered in the basin on those dates. Seasonal variation can affect the degree of development (and flowering) from year to year.

Family - Apiaceae (Carrot Family)

Scientific Name	Common Name
<i>Angelica pinnata</i>	small-leaf angelica
<i>Heracleum sphondylium</i>	cow parsnip
<i>Lomatium nuttallii</i>	threadleaf lomatium
<i>Ozmorhiza occidentalis</i>	sweet cicely

Family - Asteraceae (Sunflower or Aster Family)

<i>Antennaria</i> spp.	pussytoes
<i>Achillea millefolium</i>	yarrow
<i>Arnica latifolia</i>	broadleaf arnica
<i>Arnica mollis</i>	hairy arnica
<i>Artemisia ludoviciana</i>	white sage
<i>Aster engelmannii</i>	Engelmann aster
<i>Aster foliaceus</i>	leafy aster
<i>Aster perelegans</i>	Nuttall aster
<i>Cirsium eatonii</i>	Eaton thistle
<i>Erigeron caespitosus</i>	tufted fleabane
<i>Erigeron compositus</i>	fernleaf fleabane
<i>Erigeron coulteri</i>	Coulter fleabane
<i>Erigeron eatonii</i>	Eaton fleabane
<i>Erigeron peregrinus</i>	subalpine daisy
<i>Erigeron speciosus</i>	showy fleabane

<i>Haplopappus macronema</i>	whitestem goldenweed
<i>Haplopappus parryi</i>	Parry goldenweed
<i>Helianthella uniflora</i>	little sunflower
<i>Hieracium scouleri</i>	woolyweed
<i>Machaeranthera kingii</i>	King's tansy aster
<i>Rudbeckia occidentalis</i>	western coneflower
<i>Senecio crassulus</i>	mountain meadow groundsel
<i>Senecio multilobatus</i>	lobeleaf groundsel
<i>Senecio streptanthifolius</i>	groundsels
<i>Senecio triangularis</i>	arrowhead groundsel
<i>Viguiera multiflora</i>	showy goldeneye

Family - Boraginaceae (Borage Family)

<i>Hackelia floribunda</i>	western tickweed
<i>Hackelia micrantha</i>	Jessie's tickweed
<i>Mertensia ciliata</i>	mountain bluebells

Family - Brassicaceae (Mustard Family)

<i>Cardamine cordifolia</i>	heartleaf bittercress
<i>Descurainia californica</i>	California tansy mustard
<i>Erysimum asperum</i>	western wallflower
<i>Lesquerella utahensis</i>	Utah bladderpod
<i>Rorippa curvipes</i>	curvepod yellowcress

Family - Callitrichaceae (Water Starwort Family)

<i>Callitriche palustris</i>	water starwort
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Family - Caprifoliaceae (Honeysuckle Family)

<i>Lonicera involucrata</i>	honeysuckle/twinberry
<i>Sambucus racemosa</i>	red elderberry
<i>Symphoricarpos oreophilus</i>	snowberry

Family - Caryophyllaceae (Pink Family)

<i>Silene douglasii</i>	Douglas campion
<i>Stellaria jamesiana</i>	James chickweed
<i>Stellaria obtusa</i>	starwort

Family - Celastraceae (Stafftree Family)

<i>Pachistima myrsinites</i>	mountain lover
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Family - Crassulaceae (Stonecrop Family)

<i>Sedum debile</i>	stonecrop
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Family - Cupressaceae (Cypress Family)

<i>Juniperus communis</i>	common mountain juniper
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Family - Cyperaceae (Sedge Family)

<i>Carex aquatilis</i>	water sedge
<i>Carex geyerii</i>	elk sedge
<i>Carex microptera</i>	smallwing sedge

Family - Equisetaceae (Horsetail Family)

<i>Equisetum arvense</i>	horsetail
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Family - Fabaceae (Pea Family)

<i>Lupinus argenteus</i>	silvery lupine
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Family - Gentianaceae (Gentian Family)

<i>Gentianella amarella</i>	little gentian
<i>Swertia radiata</i>	green gentian

Family - Geraniaceae (Geranium Family)

<i>Geranium richardsonii</i>	Richardson geranium
<i>Geranium viscosissimum</i>	sticky geranium

Family - Grossulariaceae (Gooseberry Family)

<i>Ribes montigenum</i>	gooseberry currant
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Family - Hydrophyllaceae (Waterleaf Family)

<i>Phacelia hastata</i>	scorpionweed
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Family - Juncaceae (Rush Family)

<i>Juncus mertensianus</i>	subalpine rush
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Family - Lamiaceae (Mint Family)

<i>Monardella odoratissima</i>	mountain pennyroyal
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Family - Liliaceae (Lily Family)

<i>Veratrum californicum</i>	false hellebore
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Family - Linaceae (Flax Family)

<i>Linum kingii</i>	yellow flax
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Family - Onagraceae (Evening Primrose Family)

<i>Epilobium alpinum</i>	alpine willowherb
<i>Epilobium angustifolium</i>	fireweed
<i>Epilobium ciliatum</i>	northern willowherb

Family - Orchidaceae (Orchid Family)

<i>Habenaria dilatata</i>	white bog orchid
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Family - Pinaceae (Pine Family)

Abies lasiocarpa subalpine fir
Picea engelmannii Engelmann spruce

Family - Plantaginaceae (Plantain Family)

Plantago lanceolata English plantain

Family - Poaceae (Grass Family)

Agropyron spp. wheatgrass
Bromus carinatus mountain brome
Dactylus glomeratus orchard grass
Deschampsia spp. hairgrass
Elymus spp. wild rye grass
Phleum alpinum alpine timothy
Stipa columbiana needlegrass
Stipa lettermanii needlegrass

Family - Polemoniaceae (Phlox Family)

Gilia aggregata scarlet gilia
Linarthus nuttallii flaxflower
Polemonium foliosissimum leafy Jacob's ladder
Polemonium pulcherrimum pretty Jacob's ladder

Family - Polygonaceae (Buckwheat Family)

Eriogonum heracleoides
Eriogonum umbellatum sulphurflower
Oxyria digyna mountain sorrel
Polygonum douglasii Douglas knotweed
Polygonum kelloggii Kellogg knotweed
Rumex salicifolius willow dock

Family - Polypodiaceae (Fern Family)

Asplenium viride green spleenwort
Cystopteris fragilis brittle bladder fern
Pellaea breweri Brewer cliffbrake

Family - Primulaceae (Primrose Family)

Androsace filiformis slender rock jasmine
Dodecatheon pulchellum shooting star

Family - Ranunculaceae (Buttercup Family)

Aconitum columbianum monkshood
Anemone multifida anemone
Aquilegia caerulea Colorado columbine
Delphinium occidentale western larkspur
Ranunculus adoneus alpine buttercup
Ranunculus inamoenus buttercup
Thalictrum fendleri meadowrue

Family - Rosaceae (Rose Family)

Amelanchier alnifolia Saskatoon serviceberry
Ivesia gordonii Gordon Ivesia
Potentilla glandulosa gland cinquefoil
Potentilla gracilis soft cinquefoil
Sibbaldia procumbens Sibbaldia

Family - Salicaceae (Willow Family)

Salix spp. willow

Family - Saxifragaceae (Saxifrage Family)

Heuchera rubescens red alumroot
Parnassia fimbriata grass of Parnassus
Saxifraga odontoloma brook saxifrage

Family - Scrophulariaceae (Snapdragon Family)

Castilleja applegatei sticky indian paintbrush
Castilleja rhexifolia Splitleaf indian paintbrush
Mimulus guttatus yellow monkeyflower
Mimulus lewisii Lewis monkeyflower
Mimulus moschatus musk monkeyflower
Mimulus tilingii Tiling monkeyflower
Orthocarpus tolmiei Tolmie owl clover
Pedicularis groenlandica elephanthead
Penstemon cyananthus Wasatch penstemon
Penstemon humilis low penstemon
Penstemon whippleanus Whipple penstemon
Veronica americana brooklime
Veronica wormsjoldii alpine speedwell

Family - Valerianaceae (Valerian Family)

Valeriana acutiloba sharpleaf valerian
Valeriana edulis edible valerian

When is a Plant a Native?

William Weber

(reprinted from *The Green Thumb*, journal of the Denver Botanic Gardens.)

Some terms for non-indigenous plants are: "adventive" - coming from elsewhere, usually accidentally; "introduced" - deliberately brought in; "escaped from cultivation"; "weed" - often used in the same context but even native plants can behave as weeds, *Helianthus annuus* (common sunflower) and *Cleome serrulata* (Rocky Mountain bee plant, for example. The word "weed" has an enormous number of different connotations; they don't concern us here. People probably get the notion from using floras that the botanist has some miraculous way of knowing whether a particular plant is indigenous or not. Unfortunately, they do not; and too often they dutifully copy what someone else has said without applying their minds to the local situation.

The indigenous flora of the eastern front range foothills of the Rocky Mountains is somewhat an extension of the Black Hills flora; eastern woodland-prairie species formerly reached to the base of the Rocky Mountains along the river systems, and Rocky Mountain species occurred along the ridges as far east as western Iowa. The drying up of the Great Plains left bits and pieces of the eastern flora in cool protected gulches of the foothills. There are a number of indisputably indigenous species in this category. *Pedicularis canadensis* (a lousewort), *Hypoxis hirsuta* (yellow-eyed grass), *Stipa spartea* (porcupine grass), *Betula papyrifera* (paper birch), and *Sporobolus heterolepis* (prairie dropseed) are good examples. They are scattered in small populations near to extinction up and down what will soon be a completely 'urban corridor'.

Several indigenous plants of the eastern United States, however, were discovered in such places around Boulder,



FIGURE 162.—*Linaria vulgaris* Hill. Yellow toadflax. A, Habit— $\times 0.5$; B, flowers— $\times 0.75$; C, capsules— $\times 1.5$; D, seeds— $\times 5$.



CO. *Viburnum lentago* (nannyberry), *Impatiens capensis* (jewelweed) and *Sambucus canadensis* (elderberry) are a few examples. After a lot of waffling, I finally decided that these were not indigenous but introduced. Why? First, they did not occur in any other localities, but only around Boulder. The elderberry only occurred along ditches that carried runoff water from the Darwin M. Andrews nursery (he specialized in growing natives). Jewelweed also occurred only along ditches (it has later spread to to other flood plains.) Nannyberry grows in Bluebell Gulch, along with *Narcissus*; *Berberis vulgaris*, common barberry; *Viburnum lantana*, wayfaring tree; *Lonicera*, honeysuckle; and *Papaver orientale*, Chinese poppy. I suggested that the early settlers of Boulder, having no irrigation but wanting to grow some of their favorites, planted them in the gulch where they would not need irrigation. The occurrence of these eastern natives along with obvious introductions could be called "guilt by association". I presume I guessed right, but I may be wrong, just as the senator (Joe McCarthy) was.

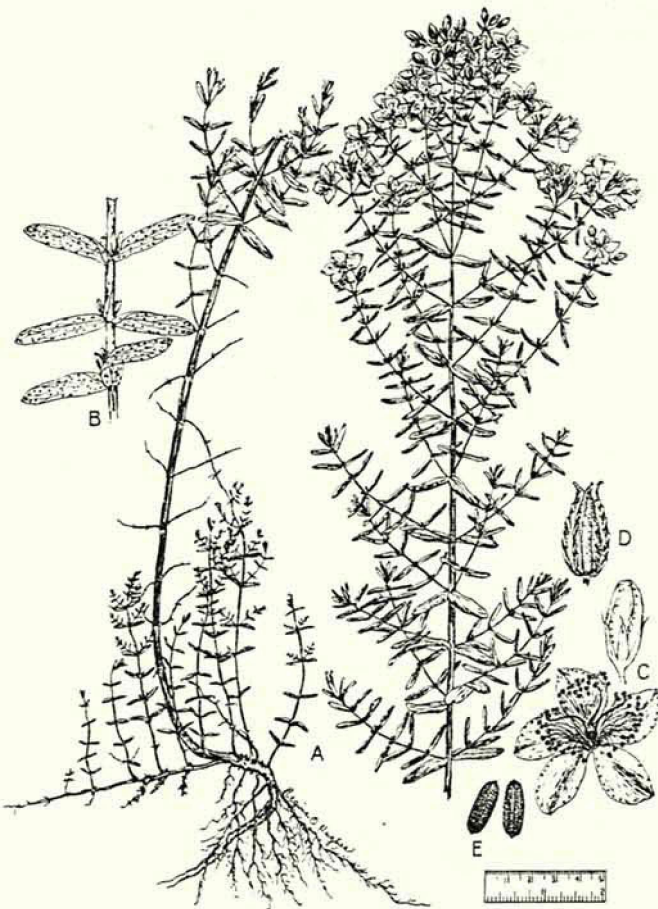


FIGURE 131.—*Hypericum perforatum* L. St. Johnswort. A, Habit— $\times 0.5$; B, enlarged leaves— $\times 1.5$; C, flower and bud— $\times 2$; D, capsule— $\times 3$; E, seeds— $\times 10$.

Many of our introductions originally were garden plants from the mining days: *Saponaria officinalis*, bouncing bet; *Papaver croceum*, Iceland poppy; *Linaria vulgaris*, butter and eggs; and *Clematis orientalis*, oriental clematis. Some of these behave themselves very well as roadside weeds. Oriental clematis probably was cultivated in Idaho Springs and spread up and sown the Clear Creek Valley but nowhere else - until recently; with highway construction, it has turned up in Moffat and Garfield counties. St. Johnswort, a poisonous plant that photosensitizes white cattle that graze on it, may have been introduced with straw during the building of the railroad around 1918 and for many years it covered thousands of acres on Rocky Flats without showing any tendency to spread. Suddenly it has begun to spread along road up into the mountains and is established near Glenwood Springs.

A little southern European annual *Alyssum minus* appeared in a pasture near Kiowa in 1953. In 1964 it dominated the embankments of the Boulder-Denver turnpike. Now it is all over the plains and the western slope, coloring the rights-of-way pale green in May, but not giving late-comers much competition since it withers within a few weeks. The big thistle, *Carduus nutans* first appeared in Boulder County as a few plants in the flood plain of South Boulder Creek. Now it covers enormous tracts in pastures, fields and rights-of-way all over Colorado. There are new examples almost every year of weeds that evidently started in a small patch, sat there and patiently let natural selection bring out an ecotype perfectly adapted to the area and all of a sudden - Poof! A new plague! Why are some introductions so terribly aggressive and some so tame?

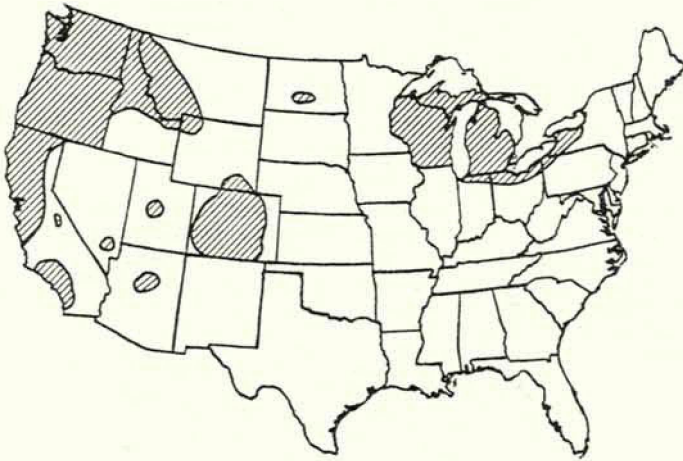
Some introductions do not "take". Luckily, this seems to be true of some Mediterranean weeds imported in flower seed packets meant to "revegetate" disturbed areas. A baby's breath, a bright scarlet flax and other strangers have turned up on the Mesa Trail near Boulder, but thus far the introductions have been unsuccessful. Revegetation so often means covering an area with something - anything - green. Why can't we Americans learn the lesson of Australia that you cannot casually introduce plant species and expect them to stay put. Australia introduced the prickly pear and then introduced the rabbit to take care of the prickly pear and then all hell broke loose. This could happen here with misguided revegetation buffs seeding our roadsides, quarries and denuded forests broadsided with everything under the sun.



FIGURE 161.—*Linaria dalmatica* (L.) MILL. Dalmatian toadflax. A, Habit— $\times 0.5$; B, flower— $\times 1.25$; C, capsule— $\times 2$; D, seeds— $\times 12.5$.

A gigantic species of butter-and-eggs, *Linaria dalmatica*, invaded an iris covered slope near my house, the first time I had encountered it in Colorado. Now it covers acres

and acres in the Arkansas Valley near the Chalk Cliffs and in eastern Moffat County. But strangely enough, without any attempt on anyone's part to control it, the population near my house has disappeared almost without a trace. Why? I have no idea, but it's a very interesting fact. But there seems to be a natural check on some weeds, easy come, easy go!



Distribution of *Linaria dalmatica* (L.) Mill. (incl. var. *macedonica* Penz.)

Introductions are not always from one continent to another nor accomplished by the hand of man. In Boulder there is a fine specimen of scarlet oak perched at the base of the first Flatiron rock. I do not think that Ernest Greenman, who planted Gambel oaks around here to see if they would survive in the wild north of Denver and Evergreen, was responsible. A beautiful purple-leaved *Rosa* also has colonized the Flatiron scree. The vector is probably the Steller's jay, carrying fruit from gardens in town. A pinon pine tree about 40 years old once stood in middle Boulder Canyon, probably moved from Goodview Hill east of Boulder. Isolated trees in Rist Canyon and other places near Fort Collins probably came from seeds brought by birds from the Owl Canyon population (which, incidentally, seems to have been "introduced" by squirrels riffling an Indian trader's pack.)

Then there are the tumbleweeds and other weedy plants of the desert-steppe areas of the West. While it is taken for granted that the Russian thistle/tumbleweed is an introduction, this weed probably has been here as a native from Tertiary times. It is not the *Salsola kali* of the Atlantic seacoast but rather what Aven Nelson called *Salsola pestifer*. It is known under an older name, *Salsola iberica* (Iberia does not mean Spain in this case, but the Caucasus!) and probably it is one of the old Tertiary Asiatic-western American things. The stickseeds, *Lappula redowskii* and its relative *Lappula diploloma* (or something very similar) belong to a diverse Asiatic genus. And only a few years ago, the first American species of the Russian mustard genus *Stroganovia* was discovered, a clear native, in Nevada!

When was tamarisk introduced? Most people think fairly recently, but Father Escalante talks about crossing river bottoms filled with it in his journey of 1776. There seems not doubt that it was introduced, but when and by whom - the Spanish? Or the Carthaginians who Barry Fell (Harvard author of *Saga America*) says traveled all over our area leaving their tracks in coinage and rock drawings in the times of the Punic Wars. Whichever answer is right, we have to be openminded and careful not to accept blindly the first answers that come to mind (Editor's Note: there is considerable evidence for the later introduction of tamarisk. Apparently, the question is not entirely resolved however.).

One summer day I took a Russian botanist up to Geneva Basin. I had explained to him that we have no species of *Caragana* growing here outside of gardens and that its place is largely taken in America by *Cercocarpus*

mountain-mahogany. Darned if we didn't round a bend four miles north of Grant and come upon a whole colony of *Caragana aurantiaca* thriving as if it belonged there. We think this species was once planted by the Forest Service for erosion control but it is hard to locate the records. Near Creede there is a mountainside covered with buffalo-berry, *Elaeagnus commutata*, probably planted by the Civilian Conservation Corps during the depression. It's obvious, isn't it, that in order to know whether a thing is native or introduced, a whole body of history and plant geographical information has to be available to us.

Now here is something that intrigues me. In a chapter I wrote for a Swiss book on the Grand Canyon, I pointed out that European tourists should always feel at home traveling by bus on the highways of our West because, since they cannot see beyond the right-of-way, practically all of the plants they do see are ones they are familiar with in Europe. Why are the European plants, not necessarily weedy in their homelands, so aggressive here? Why are not American native species becoming equally aggressive weeds in Europe and elsewhere. Mesquite is a pest in India; *Parkinsonia* in other dry tropical areas such as the Galapagos Islands.

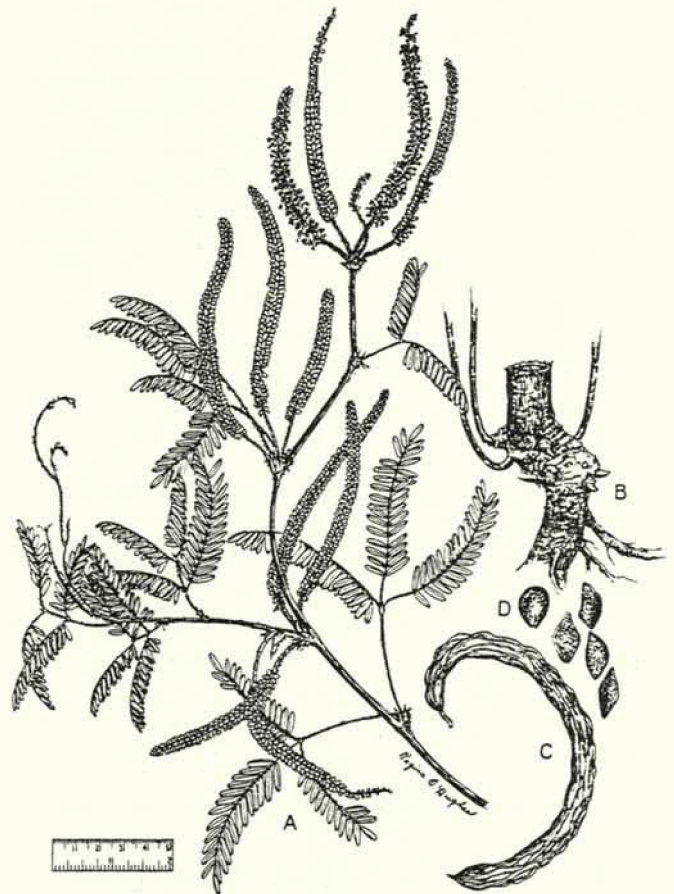


FIGURE 115.—*Prosopis juliflora* (Sw.) DC. Mesquite. A, Habit— $\times 0.5$; B, rootstock portion $\times 0.5$; C, pod— $\times 0.5$; D, seeds— $\times 1.25$.

Adventive plants arrived in our country by ship during the 19th century, the seeds being dumped at our ports with ballast carried in the empty cargo holds. Portland, New York and Charleston were major jumping-off places. After acclimatization, the weeds simply followed the railroads west or east, eventually arriving in Colorado. Jim Hill mustard commemorates one of the railroad magnates of the day. There are some ballast sites in Europe but not many American plants seem to have spread from them. However, plant collecting in Sweden, for example, has been so intensive over the centuries that the precise direction and speed of the spread of weeds is comparatively well known and documented.

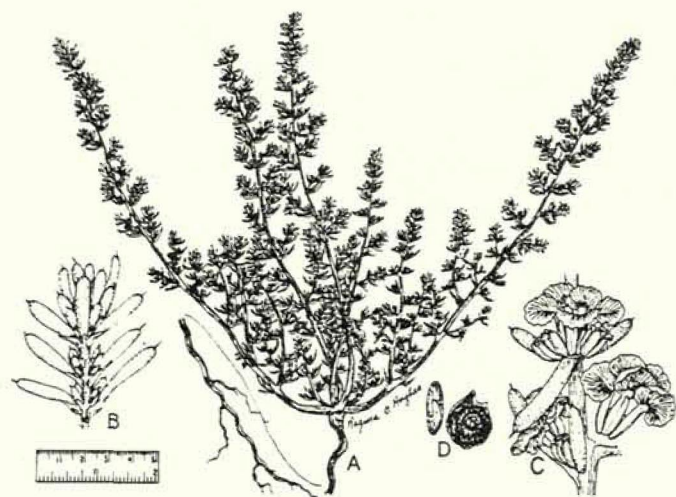
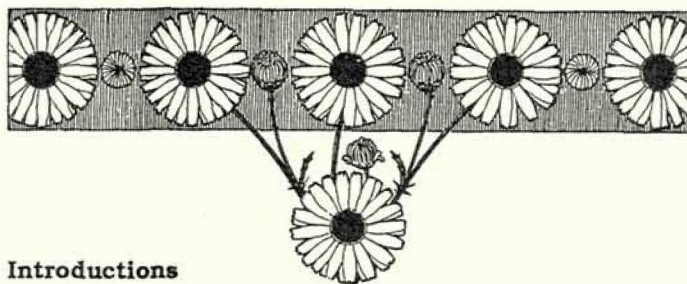


FIGURE 65.—*Halogeton glomeratus* (M. Bieb.) C. A. Mey. Halogeton. A, Habit— $\times 0.5$; B, enlarged leaves— $\times 2.5$; C, flower— $\times 5$; D, seed, 2 views— $\times 6$.

Alien plants cannot survive in a new area unless they are suited to the climate. The distribution of aliens in our country mirrors the climate of the areas in which they were native. Therefore, each region of the United States has a special adventive flora. California has species from the Mediterranean shores. Colorado seems to have a southeast Europe-Middle East flavor. Salt Lake City has still another species spectrum not found in Colorado. In other words, the kinds of introduced plants that survive in an area should indicate precisely what parts of the world have the most similar climates. Such information cannot be gotten as cheaply or quickly by the most sophisticated instrumentation available to science.



Distribution of *Halogeton glomeratus* (M. Bieb.) C. A. Mey.



Introductions

Lisa McClanahan, Editor

Welcome and thank you to those who have joined or renewed their memberships recently. Your participation and interest encourages all our efforts and makes UNPS activities seem even more worthwhile.

Kathy Anderson, Salt Lake City
 Bobbi Brown, Salt Lake City
 Mark R. Leftwich, West Valley City
 Joseph E. Leigh, Kearns
 Melanie Mendenhall, Fillmore
 J.C. Ryburn, Salt Lake City

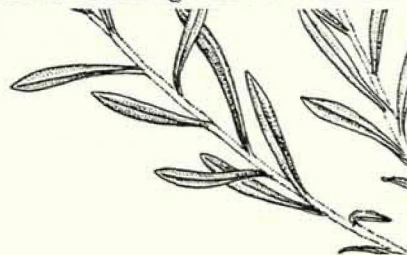
And very special thanks to members who have made donations in addition to their membership dues.

Sherel Goodrich, Vernal
 Willard Higdon, Layton



Native Plant Seeds Packaged

Several dedicated UNPS members met at the State Arboretum of Utah offices on August 18 to package seeds for the Native Plant Sale. Dick Page had collected Utah native plant seeds in bulk over the past several months. Under Dick's direction, the group weighed out individual packets and attached labels. Label information included scientific and common names of the plant, growing instructions and germination test data. The packets of native seeds are a popular item at the plant sale. Thanks to everyone who helped package seeds including Helen Burnett, Robert Fitz, Jennifer Harrington, Karen Marshall, Lisa McClanahan, Dick Page and Jo Stolhand.



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c/o Lisa McClanahan
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