UTAH NATIVE PLANT SOCIETY Newsletter

VOL II NUMBER 1 MARCH 1979

The Utah Native Plant Society spring meeting will be held in the M. L. Bean Life Science Museum theater on the Brigham Young University campus on Saturday, March 31 at 7:00 p.m. A slide show and discussion of unique Utah plants should interest many people.

Walter P. Cottam will be presented with an honorary life membership in the Utah Native Plant Society on Arboretum Day at the University of Utah May 4, 1979. For more information contact Dr. Richard Hildreth, University of Utah Arboretum, Salt Lake City, 84101.

It is felt that the Utah Native Plant Society should have a representative plant which will be used as a logo for the society's newsletter and letterhead. At the last UNPS meeting several plants were introduced as candidates and people were asked to vote on the plant of their choice. The four plants illustrated below received the most votes. Please vote for only one and send it promptly to Duane Atwood, 4054 W. Juniper Dr., Cedar Hills, Pleasant Grove, Utah, 84062. We hope to have the final choice ready for the spring meeting.

Primula maguirei

Primula specuicola

Penstemon utahensis

Arctomecon humilus

Goals and Objectives of the Utah Native Plant Society

by

Stanley L. Welsh
(Presented at opening session of Utah Native Plant Society)
30 September, 1978

Introduction

It seems necessary to evaluate the condition of our native plants, our resources, and our position before attempting to state potential goals and objectives for this society. The role of outlining the condition of the body politic generally lies with the ruling head of the organization, and it is thus foolhardy of me to provide such a state of the state address or the goals and objectives which might flow from such an analysis. Whatever qualifications I lack for these tasks, I will obscure by my ignorance and will walk with steadfastness into the lion's den. I will use as example and excuse the generations of politicians who have walked the battlefield in the sure knowledge that God will protect such fools.

My presentation will include three main sections; a review of the nature of the flora of Utah as it has been influenced by the activities of our civilization, the development of botanical taxonomic thought and of botanical resources available, and finally of some of the current problems with which this society and its members might be concerned.

The Flora: Historical Perspective

That the flora of Utah is unique has long been known, not only to the few professional botanists who have worked to understand that flora, but to a larger number of State and Federal workers, and to the numerous private persons with interest in our native plants. The study of that vast array of those evolutionary end products, our native species, allows for many possible approaches, as do the aspects of a multi-faceted jewel, and most of the approaches known in contemporary times have been employed to a greater or lesser extent, both the practical and the theoretical.

The comparison of our flora to a jewel of great beauty can be applied in yet another sense; i.e. as being representative of a national prize, equivolent in a real way to crown jewels.

For the most part, however, the plant species of Utah have not been regarded or treated with great reverence or respect by the populace as a whole. The region was pioneered and settled by people of a most practical nature, dedicated to the idea that food, clothing, shelter, heat, and light were necessities. The land and its vegetation were exploited to provide the materials required for existence in this remote area with its perennial economic depression. Over-riding preoccupation with "making a living" precluded more than a passing interest in plants as a portion of our national heritage.

The plants were regarded to have been placed here for the use of man, either in place or after being removed to some more distant place. The natural vegetation was sometimes treated as a mere obstacle to economic development;

the vegetation had to be cleared to provide arable land. Land quality was judged by its value for growing of agricultural crops, for construction of buildings, or for grazing. Lands suitable for growing of crops and for construction of dwellings and business establishments were to form the taxable base for local and state government. Grazing lands which could not support even a modest tax levy were not selected for private ownership and were to remain under Federal control.

Lowlands adjacent to sources of water for irrigation were cleared and planted to introduced Old World crop plants, an action that stimulated the introduction of weeds - those camp folowers of man. The first major retreat of indigenous flora had begun. Only about three percent of Utah came under irrigation, and only about an additional one and one-half percent of the state's 86,000 square miles were suitable for dry farm agriculture. To the four and one-half percent taken from the total for agricultural uses must be added other portions of the state, those intangible amounts cleared for the roads, railroads, canals, pipelines, fences, pole lines, and for the failures in agriculture.

That "hope springs eternal in the human breast" and that mankind is capable of expenditure of energy in monumental quantities is to be found in the cleared areas adjacent to tattered abandoned farmsteads, haunted by the ghosts of broken dreams, throughout the west. These are in areas which failed to produce crops following the tremendous labor of clearing, construction of irrigation systems, and of planting. An idea was extant during the pioneering period that climatic improvements followed close on the heels of clearing and cultivation of the land. For whatever reason, hardly a portion of our great state is free from scars which serve as evidence of failures in agricultural attempts. Agriculturalists, - farmers, ranchers, and others who grow crops (and weeds) - often yield to failure or to success with a stoic pessimism; conditions are bad now and are likely to get worse.

Because of the successful and unsuccessful attempts at agriculture, the nature of the indigenous vegetation prior to our occupation of the flat to gently sloping lands near streams is difficult to determine. We can get hints by searching throughout the cultivated areas for small plots, often in fence corners or in cemetaries, for a glimpse of what had been prior to tillage by European man. River bottoms and wet lands suitable for grazing came into private ownership and have undergone similar modification into cultivated regions. Grazing practices, utilization of wood for fire or lumber, establishment of canals, drainage modifications, construction of dams and reservoirs, and other uses dictated that much of the flavor of native plant communities would be lost or modified.

Coal and mineral exploration would place demands on the natural flora for timber, charcoal, and for space. The total acreage covered by natural vegetation would again be reduced and much of the remainder selectively modified. Roads and railroads, tramways, sluices, waste dumps, and buildings, smelters, and townsites would effectively replace the area occupied by native plants, and would provide still more areas ideally suited to the weedy species, those plants of man's footprints.

Not all of the attempts to recover mineral wealth from the earth were successful either. Passions of the human kind are stimulated by thoughts of great wealth, led on by obvious successful examples of the paying kind.

There is sufficient metallic stain in the rock outcrops of the state, and in its gravels, to cause generations of prospectors, those eternal optimists, to scratch at the land. Encouraged by the mining law of 1877, man-hours by uncounted millions have been poured into searches which have produced waste dumps of gigantic proportions when taken in their entirety. Further countless millions of hours have gone into the scheming, dreaming, and planning. It is said that more ore has been mined in the minds of men "in their cups" than was ever produced in all actual mining.

Undaunted by failures of previous prospectors to "strike it rich," each generation spawns a few more visionaries who are convinced that, in some way, all previous prospectors have overlooked a lode, which, when tapped, will yield great wealth. They point to those obviously successful prospectors of all generations to support their point of view. They do not consider the failures, only the successes, and discount the fact that most of those successes are no longer in operation (e.g. Tintic, Park City, Frisco, Newhouse, and many others). The view of the prospector of any age involves the idea that today is good and tomorrow will be better; prosperity is just around the corner.

Scars of other kinds mark our great land; those resulting from extraction of gravel, sand, clay, gypsum, salt, other earth products, coal, and oil. The end result of all of these extractive industries are scars of greater or lesser proportions.

Individuals, proprietors, partners, and companies have all been involved in exploitation of our resources. The larger the attempt at exploitation the more complex becomes the operation, and the more expensive. Dreaming is not the province of people as individuals alone; often dreams are shared by partners or even by great corporations. The corporate dream differs only in magnitude, and is for a profit based on efficient application of capital. The main difference between individuals and corporations involves the idea that the corporate stockholder does not often worry about how exploition is applied as much as whether there is a profit declarable as a dividend.

Dreams of the past have been dreamt, and capital has been applied, as indicated by roads, railroads, mine spoils, ash disposal areas, seisimograph roads, drill pads marked by weld-signatured pipes, by producing wells, mines, factories, businesses, and governmental offices. Every structure and mark on the land gives evidence to the productivity of our landscape. Schools, churches, governmental agencies - indeed, each of us is dependent upon that productivity. We live upon the surplus provided by exploition of our resources.

Native Plant Species

First collections of plants taken from what is now Utah were collected by John C. Fremont during expeditions which penetrated this region in 1843 and 1845. Later came Howard Stansbury, in 1849-50, and Edwin O. Beckwith, in 1854. Beckwith had been second in command to Captain Gunnison who met death during the expedition. All these expeditions were financed by the United States Government, and their specimens were destined for deposit outside of Utah.

The collections of those workers were summarized by Elias Durand (1859. A sketch of the botany of the Great Salt Lake of Utah. Tran. Amer. Philos. Soc. II. 11: 155-180), who included a discussion of specimens collected by a Mrs. Jane Carrington of Salt Lake City. Reputedly, Mrs. Carrington was a Mormon, and per-

haps the first Utahan to demonstrate an interest in Utah botany by making an actual collection. Her collections were communicated to Durand by Colonel Thomas L. Kane and are deposited with the Durand Herbauium in the Museum d'Historie Narutelle, Laboratorie de Phanerogamie, Paris. Specimens by the other early collectors are housed in herbaria in the eastern United States.

Exploration of the Fortieth Parallel brought still another governmental expedition to Utah in 1869-70. Sereno Watson, sometimes accompanied by Amos Eaton, collected in the canyons of the Wasatch and Uinta Mountains during that period. The 1870's brought a surge of collecting within the state. Dr. C.C. Parry and Dr. E. Palmer took specimens from southwestern Utah. Captain F.M. Bishop, Lester F. Ward, and Mrs. Ellen Thompson (sister of John Wesley Powell) collected in southern Utah as adjuncts or as parties to the Geological Survey of Powell. On the 17th of June 1879 there arrived in Salt Lake City a most unusual and energetic man, largely self-taught in botany, but with a classic education. Reared and educated in Iowa, this man, Marcus E. Jones, was to change the course of botanical study in Utah for all future time. From 1880 on, his activities centered in Utah, even though he spent much time traveling and collecting in other parts of the West. At a time when plant communities were still largely unchanged, Jones systematically botanized the region. He collected large species sets of plants which he sold or exchanged with other interested amatuers or institutions.

Jones amassed a huge collection of plants which was stored along with his printing press and library in a house on the avenues in Salt Lake City. As the race of eastern botanists, led by Asa Gray, declined, that of Jones grew disproportionately large. Soon, Jones was to regard the botany of Utah as his own private domain, and he published new species and comments on contemporary botanists in his now famous "Contributions to Western Botany", a work printed on his own press on type set by him in his house in Salt Lake. He began work on the monumental treatment of Astragalus early on, and printed a summary monograph of the group in 1923.

Our first resident professional built a collection of plants unparalleled in his time. The University of Deseret had at least a part time botanist by the name of Orson Howard, and early on Jones collected with him. The Howard collection resided at the University, along with specimens taken by Captain Bishop in southern Utah. Jones worked, from time to time, in a collaborative arrangement with the University, and reputedly helped himself to whatever specimens he wished.

His collection, along with at least some "taken" from the University of Utah was not to remain in the state. His complete collection, the most extensive early collection ever made, was sold to Pomoha College at Claremont, California, in 1923.

Alice Eastwood, later established resident botanist at the California Academy, trespassed on his domain in the 1890's, when she traveled with Alfred Wetherill through Grand and San Juan counties. A.O. Garrett, a teacher of botany at East High School and at the University of Utah, was tolerated with great deference by Jones. Marcus E. Jones was King, even though self appointed.

The earliest existing institutional herbarium in Utah was founded by Garrett at East High School in 1905. His personal herbarium, which passed to the University of Utah upon his death in the 1940's, is the earliest herbarium of consequence to be housed in Utah.

Attempts were made, contemporaneously with Garrett's beginnings, to develop collections at Utah State and at Brigham Young Universities. Charles Piper Smith taught at Utah State in 1909, and a great expedition to Central America by per-

sons from B.Y.U. yielded collections. These were stored in the furnace room at B.Y.U., and later were placed in the furnace.

The still extant institutional herbaria at the larger Universities were founded in 1923 (BYU), 1931 (UTC) and 1935(UT). Walter P. Cottam founded the herbaria both at the Brigham Young University and at the University of Utah.

The remainder of the history of collections of the herbaria of Utah involves Walter P. Cottam and Bassett Maguire (of Utah State), their students, and the generations of students who followed them; Seville Flowers, Bertrand F. Harrison, Desma Hall, Arthur H. Holmgren, and others have worked to build the collections. By 1960 there were some 200,000 specimens available for study in the herbaria of the state. Currently, almost half a million specimens are housed in institutional herbaria.

Some Goals and Objectives

Increased impetus in study and collection of our state flora has been dictated by corollary increase in activities of all kinds within Utah. Never has the demand upon our resources been greater. We are called upon to develop water supplies, coal, oil, uranium, earth products, and practically every other resource at an accelerated rate. Each of these demands has placed a greater strain upon the existing plant communities of the state. Lands wild a generation ago are being penetrated at an ever increasing rate, and for an ever increasing number of reasons. Each of you know of specific actual or potential impacts which are directed towards further reduction of total native plant cover as the state moves towards the Twenty-first Century.

Protection of segments of the flora, has been dictated by Federal Law - Endangered Species Act, International Convention of trade in Endangered Species, Environmental Protection Act. State laws typically have not kept pace with the Federal laws. We are caught on the horns of an apparent dilema, that protection of the environment is a necessary obstacle to economic expansion and development. The state and local governmental officials have tended to side with development and expansion in this apparently uncompromising battle.

Reasons for the existence of such a society as the Native Plant Society, must revolve around its capacity to provide information, to serve as a sounding board, to provide reason, and to stimulate and encourage the formulation of knowledge. We can provide an arena for interaction where private, public, federal and institutional professionals and interested informed amatuers, can meet to arrive at understanding.

Our goal in education must involve the perpetuation of native plant species and communities, whether by artificial propagation or by perpetuation in site.

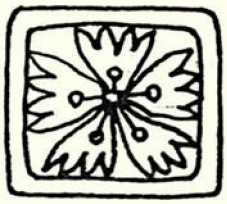
The flora of this state is incompletely known; the cadre of professionals has always been too small to survey it thoroughly. You can enlist in the task of aiding in the survey, of developing an appreciation for the aesthetics of our flora as a whole and in part. Species distributions must be plotted, and funding generated to enhance information availability and plant protection.

Unique, rare, endangered and threatened plants must be identified, their distributions plotted, and basic ecological requirements determined.

We must work with the state legislature in passage of laws which will enhance protection of the plants in the state, and which will give equal protection to species on state lands as to that protection now afforded only by Federal laws on Federal lands.

A state list of unique species should be compiled, and these treated to protection, if not by law, then by appreciation and education.

That the people of Utah are interested in protection and preservation of plants of the state is indicated by your presence here today. That we are not insensitive to the living heritage of our native plants is indicated by the great strides made, with much sacrifice, towards the goal of understanding the flora of the region. We are interested in preservation and understanding, not merely for the sake of those objectives, but to allow for a fuller appreciation of life and of living things as appurtenances to that fitful fever which marks the existence of each of us.



All kinds of information about plants and people who are interested in plants is needed for the newsletter. Please send your contributions (correctly typed and spelled) to Kaye Thorne, 1119 E. 2620 N., Provo, Utah, 84601.

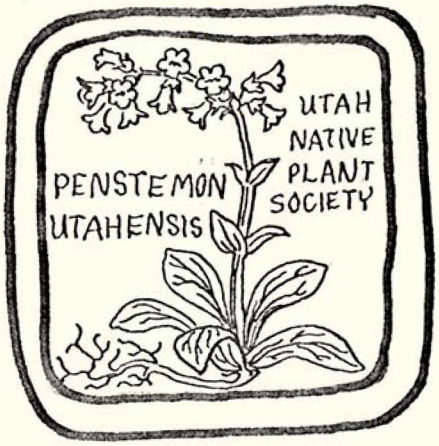
ANNOUNCEMENTS

Publication of papers presented to "The Endangered Species Symposium" at Provo, December 7, 1978, is in progress and will be distributed to the participants of the conference. "The symposium reflected the concern regarding the future of that portion of our heritage of living things which, by the nature of their distributional patterns, could be most easily eradicated as man is pressed to exploit the resources of the earth, both finite and renewable." (S. L. Welsh, 1978)

Dr. Stephen S. Talbot has accepted the position of Regional Bontanist for the U. S. Fish and Wildlife Service in Albuquerque, New Mexico, 87103.

SEND YOUR QUESTIONS OR MEMBERSHIP TO:

Walter J. Miller, Treasurer
1448 N. 500 E.
Centerville, Utah 84014



UTAH NATIVE PLANT SOCIETY

SEPTEMBER 1979 II

NEWSLETTER

Organization of Utah
Native Plant Society's First Chapter

A meeting on August 23 witnessed the creation of the first chapter in UNPS short history. The new Salt Lake Chapter installed Barbara and Glen Halliday, Claire Gabriel, Dan Allred and Kathy Wallentine as the steering committee, with Dick Hildreth as acting president, Pam Grubaugh as vice-president, and Barbara Halliday as secretary-treasurer. The program included the formation of the following committees:

local newsletter
refreshments
field trips
programs
membership
publicity
education
horticulture
publications
plant and seed sales
displays

Lois Arnow, curator of the Garrett Herbarium, conducted interested persons on a tour of the herbarium after the meeting.

On September 13, a seed collecting field trip was organized by Claire Gabriel for the members of the Salt Lake Chapter and their guests at Millcreek Canyon, Big Water picnic grounds. Some of the seeds will be used in the Spring plant sale.

Tellico Dam and the Snail Darter

The tiny, two inch fish which has been holding up construction on the Tellico Dam has been beaten by a vote from Congress.

The work was halted in 1974 when the area to be flooded was discovered to be the last known habitat of the fish. Environmentalists, under the Endangered Species Act, were able to win their fight in the courts to save the snail darter, but direct pressure from the House on the Senate altered the vote of enough Senators to have the bill to finish the construction on Tellico passed. The White House is unlikely to veto it.

Seven hundred snail darters were transported to a near-by river and according to Senator James Sasser, the number has increased to about 2,800. He also said the fish has been discovered in other Tennessee rivers.

Sunflowers

Flos Solis Peruuianus

Sunflowers! Our glorious, lusty, colorful roadside weed blooms amid junk in vacant lots, sneaks into legitimate gardens, lines up along freeways and spreads its' leaves across abandoned hills of dirt. Not liking competition, especially with grass, it chooses soil most other plants refuse or else becomes a pioneer on disturbed sites.

Sunflowers grew around here long before man. It is North America's only contribution to the world's crop plants. The seeds are delicious and a fine table oil can be pressed from them. So why are there no sunflower farms here? It seems the place where a plant evolves is the place where the particular insect pests and plant diseases which affect the plant also evolve. Pick a sunflower; you'll find several lunch-seeking bugs; try to grow a field of it and all the insects come to dinner. The biggest commercial sunflower crops are grown in southeast Asia.

SUNFLOWER from the Herbal of Mattiolus 1586

Our common sunflower is known as the great plains sunflower or scientifically as Helianthus annua. All the others are his brothers and relatives. The huge, unbranched commercial sunflower is the result of a ressive gene. The Hopi Indians grew a sunflower which was unbranched like the commercial one, but the heads were smaller. It was used in their religious rituals and often became a part of their pottery designs. A very rare and obscure sunflower, H. deserticola, has been put on the Utah endangered and threatened list.

It is true that the sunflower follows the sun; it faces east in the morning, straight up at noon, and west as the sun goes down. Exactly how or why it does this is not well understood (Edgar Anderson, 1954).

An old legend tells the story of a little peasant girl who loved to watch Helios, the sun god, as he traveled the sky each day. Her family would scold her and tell her she wasn't doing her work, but she persisted. One day, Helios saw her watching and feeling sorry for her because of the abuse she received from her family, he turned her into a sunflower so that she could follow him and still be useful to her family.

Membership schedule			per. yr.
Life	$250.00	Senior Citizens	$4.00
Supporting	$25.00	Individual	$8.00
Students	$4.00 per yr	Family	$12.00

Send your checks to: Walter J. Miller, Treasurer, 1448 North 500 East, Centerville, Utah 84014

To Members of Botanical Societies

We should like to bring to your attention the serious plight of rare plants on the Washington, D.C., political scene. As you may be aware, significant changes were made by Congress in the Endangered Species Act last fall. The new "God" committee to resolve conflicts such as that over the snail darter has been most widely publicized. Federal-state co-operative agreements for protection programs, hitherto restricted to animals, became possible. And acquisition of habitat by the Fish and Wildlife Service for purposes of protecting rare plants was authorized, something previously possible only if the plant were simultaneously listed under the Convention on International Trade in Endangered Species.

But other changes have slowed the entire listing process and, because plants were late in getting any recognition at all, they are the most seriously affected. The listing process includes two steps: a "proposed rulemaking" wherein the candidate species if formally proposed for "endangered or threatened" status through publication of a notice in the Federal Register, and after a minimum period for public comment, a "final rulemaking:, again published in the Federal Register, formally declaring the status of the plant. A so-called "critical habitat" must now be designated at the time of listing, and the economic impact of declaring the critical habitat has to be evaluated. The Fish and wildlife Service, a biological agency and not an economic agency, has not yet been able to formulate regulations for considering economic impact. Thus listing since last fall has been limited to species threatened by exploitation if their habitat is revealed, so that a strong case can be made for not designating critical habitat.

Some 1800+ plants have now been proposed for "endangered status". But a further amendment last fall requires that final rulemakings must be concluded by 10 November 1979 or the proposals must be dropped. Reproposal will be possible only with the existence of new information, and legal interpretations that have been made of this requirement suggest complications. Since listing essentially has been halted, most of the proposals will likely be dropped.

This spring and summer, both houses of Congress have been considering "reauthorization" legislation that primarily extends funding for activities under the Endangered Species Act. Further amendments to the act itself are possible during this process. On the Senate side, a bill has already been approved by the full Senate. A significant amendment included in this bill was one recommended by the General Accounting Office: that the consultation requirement between federal agencies having some jurisdiction over rare species and the Fish and Wildlife Service to ascertain the likelihood of adverse impact on the species be extended from only listed species to include also species proposed for listing, The GAO (the investigative arm of Congress) felt that this measure would minimize the chances of conflict at later stages.

Though this would seem to be a very worthwhile step, it has apparently had an undesirable effect. The Fish and Wildlife Service seems to have decided at some high level that it is unwilling to accept the additional workload and that the best course of action is to jettison as quickly as possible those species merely proposed for listing. Attempts to amend the Senate bill to grant an extension of time for plants in which to complete the listing process were refused because of Fish and Wildlife Service's opposition. As rare plants have only recently received any attention at all, this is a severe blow to their welfare.

What now seems clear is that plants need far more outspoken and well-organized friends in Washington than they have had so far. This is why we appeal to you now. If plants lose ground this time, we must be prepared to fight to regain that ground and to move forward when the next reauthorization legislation comes under consideration. Effective spokesmen for animals abound. Those of us, professionals and laypeople, interested in the welfare of plants, must unite and prepare to dip our toes into politics, no matter how distasteful or foreign it may seem to some of us or plants will continue to be shunted aside.

We request two things now:

1) That each botanical organization willing to involve itself in this effort advise us of the name and address of a contact person through whom information can be channeled about what is taking place in Washington and how best to try to influence the course of events.

2) That individuals willing to contact legislators when alerted also send their names, addresses, and phone numbers--as quickly as possible. It is not clear at this time whether anything will be possible in the House to alter their bill. If it proves feasible, it is likely to happen by mid-September and your help will be needed immediately.

Please send to: Alice Q. Howard
California Native Plant Society
Department of Botany
University of California
Berkeley, California 94720

Next Meeting: S. L. Chapter of UNPS

October 11 at 6:00 p.m., the chapter will meet at Native Plants, Inc. and a tour of the greenhouses and other facilities will be conducted by Clair Gabriel and Mike Alder. Adopt-a-plant program will be explained and interested persons can take a plant home to be raised for the spring plant sale.