



THE NATIVE PLANT SOCIETY
OF NEW MEXICO

Received
1976

Dear Friend,

This is the first newsletter of the newborn Native Plant Society of New Mexico. We hope in them not only to keep ourselves informed, but to provoke your thoughts about new directions the Society might take, and resources it might draw upon. The Society is modeled on Native Plant Societies in a number of other states. The people who urged its inception are interested in a number of different aspects of interest in the native flora of the state: the encouragement and proper use of native plant materials for landscaping, the aiding of enforcement of the Endangered Species Act of 1973 and other laws which protect the endangered and threatened species of the state, and the development of educational materials and demonstration projects to help raise awareness of and appreciation for our native plants.

Our first organizational meeting was held in February in Santa Fe in spite of the maze of dirt roads in the dark, folks coming from as far as El Paso, Las Cruces and Albuquerque. It was an exploratory meeting, meant to discover what people would like from the Society. The following is a brief discussion of what emerged and was subsequently developed.

There is a great interest in field trips, and later discussions with our great naturalist Bill Issacs produced these suggestions for this summer's fare, proposed field trips to:

- La Joya and Bosque del Apache on the Rio Grande for wetlands, perhaps in spring,
- the Santa Fe ski basin for a spring wildflower tour,
- Bandelier for spring mushroom trip
- the Gila wilderness area in June
- the Animas area in early summer for desert ecosystem
- the Villanueva area near Las Vegas
- the National Grasslands near Springer for grasses in mid-August
- the Canillon area
- the Manzanos Mountains
- the Cochiti region in the fall
- the Carlsbad area and Botanical Gardens

We are looking for fervent requests plus leaders to these and other areas of botanical interest. Suggestions?

At the next meeting, which Claudia and John Hubbard have consented to host--planned for the 20th of April, a Tuesday, at 7 p.m.--at 2097 Camino Lado; at the corner of Siringo, we plan to break into groups to pursue these interests, which emerged at the first meeting:



* the great interest in native plant materials for landscaping. There is a need to identify trees, shrubs, and grasses that are suitable for planting in our dry Southwest, particularly those which do not need quantities of water to sustain them. We are looking for people to work on compiling information on good natives to use, and good techniques to use for planting and care. We hope to publish individual sheets on natives, toward a goal of publishing a guide to native landscaping materials. We would also like to encourage the availability of these plants, many of which are exceptionally graceful and handsome, and most of which are difficult to obtain through traditional nurseries. We are looking for energy to instigate a native plant sale on the Plaza in early June to offer some of these, difficult to find ornamental natives. Suggestions? Melissa Savage (in Santa Fe-983-1113) is a contact.

* the intense interest in the various laws which affect and protect native flora of the state. We would like to work toward sponsoring a one or two day workshop on that legislation--to explain the laws, State and Federal, to clarify which agencies are responsible, and to begin to delineate what informed amateurs and botanists can do to assist in monitoring the flora. Possibly we can expand the list of threatened plants if need be. Nan Nalder (983-8743 in Santa Fe) is a contact person.

* the admirable interest in developing materials to educate and inform about our natives. Slide shows, lectures, printed materials and photo collections would be much in demand. Particularly appropriate would be such materials, and guided tours, designed for the school systems. A good deal of materials and a wealth of slides already exist and need some devoted hands to arrange. Claudia Hubbard (988-5918 in Santa Fe) is the contact for offers and ideas.

* a number of juicy projects are waiting to be done. For example, the City park on Cerro Gordo Rd in Santa Fe which was for many years the sheriff's posse's pasture, is yet undeveloped, and the local neighborhood association would like it to remain without tennis courts etc. One good alternative is to plan it as a nature resource; to mark the plants, develop tours for school children and the like, which the Society could aptly do. Plus, as an offering at the next meeting, Bill Issacs will speak about the possibility of recreating on the Rio Grande, on a piece of land lent by a conservation group, a wetlands ecosystem. The Society could design and replant the plant materials that are apt, and monitor the progression of the growth, the reestablishment of fauna...an ambitious and delicious scheme.

* One of our most important tasks in our first year will be locating the human resources in our state who would like to further these and other aims of the Society. Search your acquaintances for people with extensive knowledge about a particular ecosystem, someone with lots of slides of natives, with lots of knowhow about planting natives, someone who just loves our native flora, etc. etc... In the face of the great gap of organized concern for native plants, we can and should establish ourselves as a reliable and informed organization on our native flora.



* One of our major and long-term objectives should be the inventorying of the distribution of our indigenous plants. We should develop a master list and keep an inventory of what plants are where. This will aid inestimably in protecting rare plants, and will probably add delightful items such as keeping track of the tree with the largest girth etc. We might usefully seek a grant to do an area ecological study, perhaps a range area might be most appropriate, with a eye to the stresses, recreational and other, that affect the botanical composition.

* And...all the pressing and ripe involvements that have not yet been mentioned.

Second Meeting -Native Plant Society

April 20 - Tuesday - 7 p.m.

At Claudia and John Hubbard's
2097 Camino Lado-at the corner of Siringo
Santa Fe, N.M.

Those who wish to see the Hubbard's wildflower
garden come a bit early while there's still light

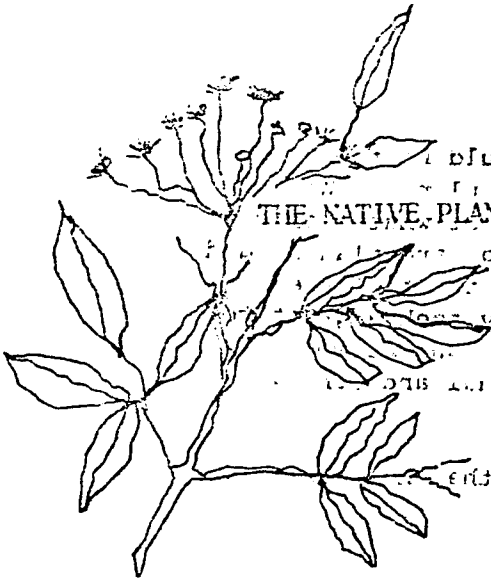
Bill Issacs speaking on and

illustrating

Rio Grande wetlands ecosystem and
describing a project to recreate such
an ecosystem by designing and replanting
apt native plants.



May 76



THE NATIVE PLANT SOCIETY OF NEW MEXICO

announces

May meetings

Thursday -- May 20th -- at 7-pm

John Hubbard describing and illustrating with slides, the marsh habitat typical of the Rio Grande with special emphasis on the marsh north of Espanola which will be jointly managed by the Game and Fish Department and the Highway Department. The marsh is an ideal site for a demonstration project of habitat rehabilitation.

At the home of Melissa Savage, 1404 Cerro Gordo Rd, Santa Fe (off East Palace Ave) 983-1113.

followed by

Saturday May 22nd

A field trip to the same marsh on the Rio Grande north of Espanola, led by John Hubbard. Cars will meet in the DeVargas Shopping Center parking lot, behind the Gulf station (look for sign) promptly at 8 am. It takes about half an hour to drive to the marsh. We will be back in Santa Fe by lunchtime. Anyone needing rides please contact Melissa Savage.

Bring your plant guides.



General matters concerning the Society will be touched on at the evening meeting.

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the faculty and students of our various state universities, as well as other institutions throughout the U.S. Also, many individuals and environmental groups have contributed much information to our data base. This information is then transcribed onto computer cards and stored such that it can be recalled, depending upon the type of information required by the user. For example, one could ask for all information concerning the occurrence of endangered plants or animals that are to be found in our New Mexico State Parks. The user would be provided with a computer printout with all known occurrences of anything from titmice to turtles that have been found in State Parks. This information is of obvious value to planners and resource managers throughout the State.

The New Mexico State Heritage Program has been in existence for slightly more than one year. A report summarizing its work has just been completed and given to the State Planning Office which is the administrative arm of state government to which the Heritage Program is attached. This program is thus a cooperative effort between state government and the Nature Conservancy, a private organization. As of July 1, 1977 the Nature Conservancy Heritage Program is being transferred to the State Game and Fish Department where it will become an integral part of the planning effort of Game and Fish to deal with the natural diversity of New Mexico.

Anyone who is interested in our program is encouraged to come to 1117 Jefferson St., Suite C, Santa Fe, so that he or she can see what we are doing on a firsthand basis.

--Bill Isaacs

NATIVES FLOURISH ON TEXAS BYWAYS

In the 1930's Gibb Gilchrist, the state highway engineer of Texas directed his engineers and maintenance crews to collect seeds of native trees, shrubs and wildflowers to use along roadsides.

The Texas Highway Department over the years from this initial leadership has become the largest "landscape gardener" anywhere. It cultivates 800,000 acres of roadsides with natives -- 71,000 miles of Texas highway, more beautiful for the driver and safer because the driver is led to be more aware of his surroundings.

Working with native plants, not introduced plants, makes very good sense, for it is impossible to foresee the consequences of introducing plants. Parts of the South are being overrun by the kudzu vine which was introduced with an entirely worthwhile aim-- erosion control.

The Texas Highway Department is its own harvester of wildlife seed. Highway crews do not mow until wildflowers have bloomed and the seeds have matured. Then the "flower hay" is mowed, part is left where it stood, part taken to new locations, sometimes top soil is moved as well to the new location. And topsoil is always saved before construction and earth moving projects begin. After they are

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completed and the pavement is down, the topsoil, rich in humus and seeds, is brought back. A 3-to-1 slope is generally adopted for highway cuts and fills; this reduces wash off of seed and topsoil, and mowing is still possible.

The following things have been achieved by the Texas wildflower program, 1) beauty, spring, summer, fall, 2) erosion control, 3) studies of ecology of individual plants, e.g. Lupinus spp. are planted with their bacterial inoculates so they can carry on nitrogen fixation 4) and what amounts to wildflower sancturaries. Some flowers seen along the highway have entirely disappeared from ranches and farms (in the early days of the program ranchers and farmers were asked for seed, now it would have to be the other way around).

The Texas Highway Dept. encourages moves in a direction such as theirs by giving lists of native wildflower seed suppliers, by publication of colorful flowerguides for amateurs, and first and foremost by thier example--the beautiful roadsides.

There have also been impressive national efforts, legislative and by private organizations, to encourage highway attractiveness: the 1965 Highway Beautification Act, the national Keep America Beautiful organizations, the Lady Byrd Johnson Award for Highway Beautification, and the Federal Highway Administration annual award for achievement, and the 1973 Federal Highway administration "Operation Wildflower."

New Mexico has not been blind to all this. Men like Dick Brammer of the NM Highway Deaprtment have seen to it that native plants have been used, e.g. Fourwing Saltbush in some harsh areas. And our highway department revegetated with native grasses; native wildflowers might be used if there were a supplier.

We should learn about what is going on in the state to see if we might be of some use. I hope Dick Brammer will see to it that we become better informed; and Mrs. Parker Kolloch of Albuquerque chairman of the Bicentennial Beautification Committee, as well as 17 years chairman of the Civic Beautification Committee of greater Albuquerque Chamber of Commerce, has promised to let us know all about the efforts of the groups she has worked with.

--Gail Haggard

Have a lovely March, everybody; see you at 'the end of April. Those who want to join, please send \$5.00 dues (\$8.00 family) to Claudia Hubbard, 2079 Camino Lado, Santa Fe. (send slip below)

1977 MEMBERSHIP DUES ARE DUE!!!

Name: _____
Street: _____
City: _____ Phone: _____

Check enclosed for: _____ (Those who paid late in 76 needn't repay)

If you have special interests or would like to lead a field trip, let us know.

August 1976

Special Announcement

of

The Native Plant Society of New Mexico

The Native Plant Society of New Mexico will re-inaugurate this fall's program with a field trip to the Madrid area and the region behind the Sandia Mountains. Led by the inimitable Bill Issacs, the trip will begin in the morning of Sunday, September 19th. A group will be meeting to leave from Santa Fe promptly at 9 a.m. from in front of Furr's Market in the Coronado Shopping Center. Further information from Bill Issacs (983-4498) or Melissa Savage (983-1113). Please bring lunch. Another excellent opportunity to learn plants and habitats of Northern New Mexico.

September newsletter to follow closely. October field trip led by Larry Palmiter up to Santa Fe Basin.

August 1976

THE NATIVE PLANT SOCIETY OF NEW MEXICO

September, 1976 Newsletter

Melissa Savage, Editor

The Native Plant Society of New Mexico is resuming a full schedule now that autumn is here. We are looking forward to a field trip and lecture series and increasing participation in several very promising projects. The Society is a group of New Mexicans whose common bond is a interest in and love of the native flora of our State, who wish to learn more about natives, contribute more to a knowledge of their distribution and habits, encourage a greater use of them in landscaping, and help protect them in their habitats. We began organizing last spring inspired by similar societies in other states, and welcome contacts and suggestions. Please let us hear from you.

Our first field trip is just around the corner, to catch the fading season. Bill Issacs will lead a trip to the Madrid region and the area behind the Sandia Mountains, on Sunday the 19th of September. The Santa Fe contingent will meet directly in front of Furr's market in the Coronado Shopping Center promptly at 9 a.m. If you need a ride or have room in your car to spare, please call Bill at 983-4498. For those coming from out of Santa Fe, call for directions and a meeting place in Madrid. Please bring a lunch; the trip should last until the end of the afternoon. The weather should be excellent, and the plant hunting fine, particularly if we locate some late mushrooms.

In October, Larry Palmiter will lead us up into the Santa Fe Basin, and in November, Tom Ray Riddle of Albuquerque has consented to spend an evening discussing landscaping with natives. We regret the lack of summer field trips this past summer, and plan to remedy that this coming summer. We plan to trek to the southern part of the State frequently, and welcome specific requests about location. Please let us know your interests and desires. Perhaps a few trips to see endangered species would be helpful in lobbying for their protection.

Last season's program finaled in June with a superb outing to the Gila Forest area near Silver City. Lead by the inimitable Bill Issacs and resident naturalist Myra McCormick, we progressed through a number of life zones and habitats in the Cherry Creek Canyon area, in the Pinos Altos Mountinas, and in Red Rocks State Park. We were guests of Myra McCormick's excellent accomodations, whose food and library were both generous and savory. Several enterprising members brought back collections of seed which the clever have succeeded in germinating, and which the persistant might obtain some of if they inquire. The list of species identified (80) is enclosed to those who were on the trip; others may have it by request.

From Bill Issacs:

Mel Lawrence of the Navajo Ceremonial Museum has asked our assistance in planning a new herbal garden emphasizing herbs utilized by the local Indians both as food and in their arts and crafts. Dye plants, herbs, usable tubers, fruits, berries, etc., are but some of the types of plants that could be included. An added bonus is the possible planting of the rock garden on the east side of the Museum. The garden is already there and just needs some of our fine native plants in it! Perhaps a few Penstemons and Castillejas would be nice. Any suggestions and direct assistance from members would be greatly appreciated. Can we hear from you?

Similarly, the Friends of Cerro Gordo Park, a small community (City) park on Cerro Gordo Road on the east side of Santa Fe, have requested the Society's help in designing an area which can serve as an educational resource about the native vegetation of the park. The botanical resources area, along with a bird resource area, plus other park features, will be utilized by the City in their development of the park next summer. Members who have an interest in helping to design the resource area or suggestions to make, please contact the editor.

Business

At the last meeting of the Society, the following officers were elected: Melissa Savage and Noreen Poitras-Co-Chairmen; Bill Issacs-Vice-Chairman; and Claudia Hubbard-Secretary. The Society incorporated this summer as a non-profit organization and a bank account opened with the First National Bank of Santa Fe. Dues have been set at \$5 individual membership, \$8 family. We are welcoming nominations to the Board of Directors, particularly those from central and southern N.M., so that we will have a statewide balance.

Shared Info

Gussie Schooley sends along the following information about the Penstemon Society. The Society publishes yearly bulletins about Penstemons growing in gardens throughout the US, includes "trip reports" about those growing in the wild, offers a seed list and seed exchanges and sells packets of Penstemon seed. Membership chairman is Howard McCready, 1547 Monroe St., Red Bluffs, California 96080; regular membership is \$3.

One of our members, Gail Haggard of Santa Fe, has proposed an informal discussion group to share thoughts on various apt books about plants. Among those suggested for this fall are

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"Morphogenesis, An Essay on Development" by John Tyler Bonner, and D'Arcy Thompson's "Growth and Form." Those who had read or re-read the book or essay would simply sit around and share their thoughts about it with others. Any takers? Any book suggestions?

Solicitations

Toward a spring sale of native plant materials by the Society, a number of us are making good use of the winter to propagate native from seed and cuttings. If you wish to propagate yourself, to get or give advice about plant materials or about growing, or help plan and execute the spring sale, please get in touch with us.

The Society is planning to publish an annotated bibliography of relevant materials on Southwest native plants, and we are again soliciting materials and thoughts.

We are planning to begin including brief book reviews of relevant materials and would like to solicit brief and incisive reviews of books on native plants of New Mexico or the Southwest; drop us a line with your suggestions for review, and of course we welcome reviews. The following is our first such.

Woody Plants of the Southwest, A Field Guide with Descriptive Text, Drawings, Range Maps and Photographs. Samuel H. Lamb. Sunstone Press. 1975. Santa Fe, N.M. \$8.95. 177 pp.

This "guide" is the successor to Woody Plants of New Mexico and Their Value to Wildlife. Bulletin 14, New Mexico Department of Fish and Game. It has been expanded to include southern Colorado, southern Utah, southern Nevada, southeastern California, and all of Arizona. Some species are also found in Texas and northern Mexico. The book can hardly be described as a guide since it is 12 x 9". The binding is paper and the paper stock is of good quality and the print is large and clearly done. Arrangement of the species included is alphabetical by family with common names (i.e. Goosefoot Family, etc.) A short description of the species or group is given. English equivalents of both the generic and specific names from Latin are given. The habit, habitat, plant associates, and range in the various states are included. As indicated in the title, wildlife uses are given some discussion. Range maps for species in the SW (including the counties) are shown with species range indicated by half tone shading. Line drawings by Norma Ames may accompany the descriptive material and habitat photos are often included.

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In general this is a very useful and informative book. The discussion of Limber Pine and Mexican White Pine is excellent with the author concluding, "...I prefer to consider all the pines of this type growing in New Mexico and southern Arizona to be P. strobiformis or Mexican White Pine." Recent studies of our "Limber Pine" in the Sangre de Cristos indicate that the population in northern New Mexico is probably a hybrid swarm. The inevitable mistakes can be found such as on page 10, where the ranges of Wilcox and Fremont Mahonia are transposed. No mention is made of the new distinction between our Bristlecone Pine (P. aristata) and the newly created Pinus longaeva D.K. Bailey, this latter now being the oldest known living thing.

Three items are of more real substance, however, which detract from the value of this book. One is the inefficient use of page space which leaves great empty gaps in the text and illustrations. Another is the lack of any keys. In conjunction with the use of the alphabetical arrangement of families, one is often at a loss to find an unknown plant. Finally, a number of the habitat photos are so dark as to be unrecognizable. Perhaps with a new edition some of these problems will be eliminated, but the book is very useful as it is.

--Bill Issacs

A number of people now are the mailing list were suggested by friends. We are weeding out the mailing list so as not to be unwelcome mail to anyone, and to reach our real audience. If you wish to continue to receive the newsletter and notification of Native Plant Society activities, please drop a note to the editor, Melissa Savage, 1404 Cerro Gordo Rd., Santa Fe, NM 87501 or call 983-1113. Of course, your dues of \$5 or \$8 would be a welcome enclosure to help defray printing and mailing costs.

NOTE! NOTE! NOTE! NOTE! MUSHROOM SHOW ON THE 18th of SEPT.
LA FONDA HOTEL LOBBY 10 A.M. to 4 P.M. See you Saturday!!!



THE NATIVE PLANT SOCIETY OF NEW MEXICO

October, 1976 Newsletter

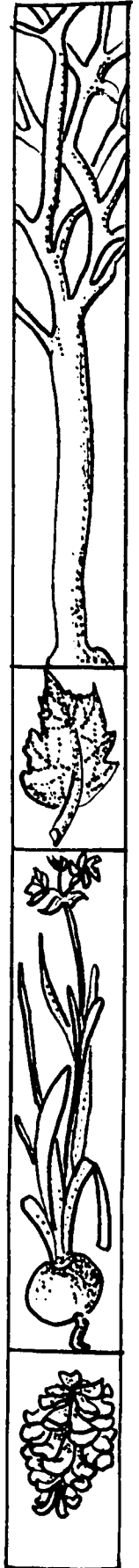
Melissa Savage, Editor,
983-1113 in Santa Fe, NM

Our October field trip is just outside of Santa Fe. This coming Sunday, October 10th at 9:30 am sharp, we will meet in front of the Masonic Temple (at the foot of Bishops's Lodge Road) to proceed up to the Santa Fe Ski Basin to spend the day with Larry Palmiter. Bring a lunch. The scenery should be spectacular, and we will be concentrating on foliage rather than blooms. Call the editor with questions.

The Tuesday of the following week, October 19th, Larry Palmiter has consented to hold forth on The Plant-Geography-of-the Southern Rocky Mountains, which, if you know the breadth of Larry's knowledge, should prove an exceptional evening. 7:30 pm at the home of Melissa Savage, 1404 Cerro Gordo Road, Santa Fe (one mile off East Palace Ave.)

Bill Isaacs reports: Our trip to the sandias (Sept. 19, 1976) was most interesting as we found sixty species of plants and saw some really interesting country. Alligator Juniper was in fruit and could easily be compared with One-seed and Rocky Mountain Juniper, all growing in the same location. We also found in fruit a large leafy herb in the campground at Sandia Crest. At the time I identified it as Deer's Ears, but it is something entirely different. On returning to the car I was able to track the plant down to Scrophularia montana, a snapdragon of sorts limited to the central mountains of New Mexico. We found an excellent example of Osha, Ligusticum porteri, on the road up to Sandia Crest. Earlier in the day we were able to see some beautiful examples of Desert Holly, Mahonia haematocarpa, in the Madrid area and the material we saw was in full fruit with bright red, juicy berries. Bush Muhly, Muhlenbergia porteri, grows in profusion in this area, but property owners are more reluctant to allow groups on their land, where some of the best stands in this area are.

Claudia Hubbard reports: Those able to stop by the La Fonda Lobby on Saturday September 18th for the Native Plant Society's First Annual Mushroom Show will agree it was a great success. Two circumstances made the show possible: 1) Lou de Bourbon from the Santa Barbara (Ca.) Mycological Society turned up, suggested the show, and lent his considerable energy and experience to assembling it, and 2) the mushroom season hung around for an unprecedented length of time. Special thanks are also due to Chuck Barrows, Bill Isaacs, Hilda Voetberg, Miriam Fricken, Betty Mulligan, Gail Haggard, and the mushroom class from the College of Santa Fe. There were approx. 110 species of mushrooms from at least 60 genera and 20 families. I am thrilled to realize that there is such a great variety of mushrooms in



our nearby mountains. The specimens were gathered over the previous week from the Pecos, Sangre de Cristo, and Jemez Mountains. If anyone wishes to see a species represented list, please contact me, Claudia Hubbard, at 988-5918.

Claudia Hubbard is also hard at work developing a badly-needed curriculum in natives for the Santa Fe public school system. There is an astonishing gap in this area in our schools, and Claudia is doing several things to remedy it. She is leading a class of sixty fourth, fifth, and sixth graders from Chaparral School on field trips and will now be moving indoors with them to work further with plant materials and other areas, on Tuesday afternoons. She is looking for assistants in this, not experts, of course, but people willing to learn themselves and teach. Claudia is also putting together a collection of slides of native plant materials, for the high school and vo tech, and is soliciting slides or other photographic materials to help fill this crying need in our schools.

The Native Plant Society's participation in developing an Indian ethnobotanical garden at the Navajo Ceremonial Museum is continuing apace. A meeting is planned shortly to discuss the various aspects of design and planting of the garden. Anyone interested in participating please contact Bill Isaacs at 983-4498.

We are presently working with the U.S. Forest Service to obtain the necessary permits to begin a systematic study of the plants in the Santa Fe and Carson National Forests. A letter will be sent to Superintendent Wendell Gore of the Tesuque Ranger Station which will set up the necessary procedures to obtain permission for the Society to begin work. A listing of both vascular plants and higher fungi will be prepared along with herbarium material.

If you would like to continue receiving the newsletter, please let us know; no need to waste . Drop us a line, and enclose dues if you would like to be a member: \$5.00 a year for individuals, \$8.00 family.

THE NATIVE PLANT SOCIETY OF NEW MEXICO

October, 1976 Newsletter

Melissa Savage, Editor
1404 Cerro Gordo Rd.
Santa Fe/983-1113

Calender

- Sunday, November 7
9 a.m. Bill Issacs will lead a field trip to La Joya State Game Refuge, located just north of Socorro (about 120 miles from Santa Fe) meet 9 a.m. Furr's parking lot, Coronado shopping center, carpooling, will be gone all day, bring lunch
- wednesday, November 17
7:30 p.m. Tom Ray Riddle will talk on landscaping with native plants
Laboratory of Anthropology, Old Santa Fe Trail

News

Our thanks to Larry Palmiter for his talk and field trip!

Encourage people to join the Native Plant Society membership: \$5 individual, \$8 family; send to Melissa Savage, address above

The League of Women Voters is working to set up a central office for all voluntary efforts in Santa Fe, called Volunteer Information Service. Anyone wishing to volunteer time could learn at such a meeting place about the wide range of things being attempted; and certainly it would be a place where ideas could be shared and plans worked on, coordinated, and streamlined. Gertrude Landmann is in charge of this project (the League will withdraw when the project is underway). They could use help after the middle of November, the office is 223 Cathedral Pl., in the same building as Visiting Nurse Service. The Native Plant Society would like to join in such a service. We would benefit if people learned about us and were interested in volunteering work. And we could be helpful partners to other organizations with aims similar to our own. Many organizations in Santa Fe are committed to the same wish - the wish for a more beautiful environment, more knowledge about it, and enhanced respect and enjoyment of it.

Native Plants for Landscaping

The following list of native shrubs, trees and herbs with landscaping potential is printed in the October Newsletter for two reasons. First, Tom Ray Riddle will speak on landscaping with natives (Nov. 17) and it is hoped this will stoke the fire for that talk. Secondly, the Native Plant Society hopes to put out a booklet this spring on natives for landscaping and we want to elicit additions to this beginning list, and suggestions about how best to grow the plants.

NATIVE PLANTS FOR LANDSCAPING

- Abies concolor*, White Fir (Pinaceae)
flat sprays; color variants-with bluish strain the most attractive; good under drain spouts
- Amorpha fruticosa*, Indigo bush (Leguminosae)
somewhat leggy but with attractive flowers; endures dry conditions
- Arctostaphylos pungens*, Manzanita (Ericaceae)
requires acid soil; evergreen; bees like flowers
- Arctostaphylos uva-ursi*, Kinnikinnick (Ericaceae)
requires acid soil; "one of the finest ground covers known, esp. for dry banks" Hitchcock
- Artemisia arbuscula* and *frigida*, Sage (Compositae)
easy to transplant; useful as a space "filler" where soils are poor
- Barberis fendleri*, Fendler's barberry (Berberidaceae)
good for erosion control where moisture is adequate; can be weedy
- Barberis nervosa*, Oregongrape (Berberidaceae)
transplants easily; fruit makes good jelly; good bee plant
- Cercocarpus montanus*, Mountain-mahogany (Rosaceae)
drought enduring; thrives in rocky soils
- Chilopsis linearis*, Desert willow (Bignoniaceae)
can be grown from seed; grows below 6,000 ft.; good ornamental in desert and semi-desert localities
- Cornus stolonifera*, Red osier or Dogwood (Cornaceae)
requires some moisture; grow on north side of house; flowers, leaves and stems attractive; visited by bees will grow from cuttings, and it layers
- Elaeagnus angustifolia*, Russian-olive (Elaeagnaceae)
introduced but naturalized; flickers like fruit; drought enduring; attractive greyish color
- Fallugia paradoxa*, Apacheplume (Rosaceae)
flower size proportional to water received; drought enduring
- *Fendlera rupicola*, Fendler's cliffbush (Hydrangeaceae)
very attractive flowers and fruits; grows in sun or partial shade; drought enduring

- *Forestiera neomexicana*, Privet (Oleaceae)
grows from slips; flowers before leaves out-early spring;
good bee and butterfly plant
- Gilia aggregata*, Skyrocket (Polemoniaceae)
hummingbird flower; biennial; attractive flowers; trans-
plants readily and can be grown from seed
- Holodiscus dumosus*, Rock spiraea (Rosaceae)
beautiful flower heads; grow on north side of house
- Lycium pallidum*, Wolfberry (Solanaceae)
interesting flower; moth pollinated; transplants; deciduous
underground runners; can be aggressive
- Mahonia haematocarpa*, Desert holly (Berberidaceae)
attractive flowers and bright red fruits; birds like fruits
drought enduring
- Mirabilis grandiflora*, Four o'clock (Nyctaginaceae)
beautiful purple flowers open in the afternoon; sunny
locations; perennial; drought resistant
- Morus microphyllus*, Mulberry (Moraceae)
interesting leaf shapes; attracts birds; relatively
drought resistant; frost sensitive
- Opuntia imbricata*, Tree cholla (Cactaceae)
grows from broken-off pieces, can form a "fence" with it;
birds like the fruits, e.g. housefinches
- Penstemon barbatus*, Scarlet bugler (Scrophulariaceae)
hummingbird flower; propagates well from seed; tall and
long bloomer
- Philadelphus microphyllus*, Mock orange (Hydrangeaceae)
very attractive flowers; sunny warm hillside or open areas
takes dry conditions well
- Physocarpus capitatus*, Ninebark (Rosaceae)
looks like spiraea; grow on north side of house
- Prunus virginiana*, Chokecherry (Rosaceae)
fruits attract birds; can be weedy, needs careful prun-
ing of suckers
- Psilostrophe tagetina*, Paperflower (Compositae)
attractive flowers, often used in dry arrangements; seeds
used by birds; odor distinctive; sunny location
- Ptelea trifoliata*, Waferash (Rutaceae)
attractive fruits; requires pruning otherwise leggy;
good for protected areas

- Quercus gambelii*, Gambel's oak (Fagaceae)
difficult to transplant; slow growing; drought resistant;
grown from acorns, water helps seedlings grow faster
- Rhus trilobata*, Squawbush or Skunkbush (Anacardiaceae)
birds like red fruits; drought resistant; fruits make a
good drink; takes pruning well
- Robinia neomexicana*, New Mexico locust (Leguminosae)
can be weedy; color variants, dark reddish flower most
attractive; can be pruned into a small tree
- Salix irrorata*, Plum-colored willow (Salicaceae)
bush; attractive "bloom" on foliage; white under-leaf;
needs some water
- Shepherdia argentea*, Buffalo-berry (Elaeagnaceae)
birds like fruits; drought enduring
- Symphoricarpos oreophilus*, *albus*, etc., Snowberry (Cap-
rifoliaceae) attractive fruits; north side; requires
water
- Yucca glauca*, Soapweed yucca (Liliaceae)
attractive flowers; moth pollinated; very long tap root;
drought enduring
- Zinnia grandiflora*, Zinnia (Compositae)
attractive flowers; perennial; good bedding plant;
sunny locations

The Genus Penstemon in New Mexico

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TAXONOMIC TREATMENT

KEY TO THE PENSTEMONS OF NEW MEXICO

1. Corolla some shade of red; if pink to rose color, the upper stem leaves connate-perfoliate 2
1. Corolla white or some shade of blue or purple; if pink, the upper stem leaves not connate-perfoliate 14
2. Upper stem leaves connate-perfoliate; corolla pink to rose color.... 3
2. Upper stem leaves sessile or subcordate; corolla some shade of red but not pink to rose..... 4
3. Corolla throat expanding gradually; staminode glabrous.
1. *P. pseudospectabilis* ssp. *connatifolius*
3. Corolla throat expanding abruptly; staminode bearded.
2. *P. palmeri* ssp. *palmeri*
4. Leaves 1 mm. wide and 10 to 20 mm. long..... 3. *P. pinifolius*
4. Leaves more than 1 mm. wide and more than 20 mm. long..... 5
5. Corolla constricted at the orifice..... 6
5. Corolla not constricted at the orifice..... 7
6. Stem leaves moderately thin, broadly lanceolate, oblong, or lance-ovate, lower ones 10 to 12 cm. long; calyx 3 mm. long.
4. *P. cardinalis* ssp. *cardinalis*
6. Stem leaves moderately thick, ovate or subcordate, lower ones 5 to 6 cm. long; calyx 4 to 6 mm. long.... 5. *P. cardinalis* ssp. *regalis*
7. Anther sacs dehiscence by a short slit across the connective, the free tips remaining closed 6. *P. bridgesii*
7. Anther sacs completely or partially dehiscence, the free tips open.... 8
8. Anther sacs explanate 9
8. Anther sacs not explanate 10
9. Staminode bearded; stem leaves oblong to broadly ovate.
7. *P. superbus*
9. Staminode glabrous; stem leaves lanceolate 8. *P. alamosensis*
10. Inflorescence glandular-pubescent 9. *P. lanceolatus*
10. Inflorescence glabrous or slightly puberulous 11
11. Corolla not strongly bilabiate, lower lobes short, rounded, usually spreading 10. *P. catonii*
11. Corolla strongly bilabiate, lower lobes long, narrow, reflexed 12
12. Base of lower lobes of corolla bearded with yellow hairs; calyx lobes 6 to 10 mm. long 11. *P. barbatus* ssp. *barbatus*
12. Base of lower lobes of corolla glabrous or bearded with a few white or yellowish hairs; calyx lobes less than 6 mm. long 13
13. Anthers glabrous 12. *P. barbatus* ssp. *torreyi*
13. Anthers bearded 13. *P. barbatus* ssp. *trichander*
14. Foliage glabrous and slightly to heavily glaucous 15
14. Foliage glabrous or puberulous, not glaucous 18

GENUS PENSTEMON IN NEW MEXICO

15. Most of the bracts prominent; inflorescence compact, not secund, the very short pedicels and peduncles giving the effect of a spike of flowers 16
15. Only the lower bracts prominent; inflorescence not spike-like, either somewhat compact and secund or open and not secund 17
16. Bracts broadly ovate, subcordate, mucronate, usually obtuse, retuse, or occasionally acute; corolla pale lavender-blue; tip of staminode sparsely bearded with yellowish hairs 14. *P. buckleyi*
16. Bracts lance-ovate or ovate, caudate or rarely acuminate; corolla sky-blue, violet-blue, or pink; staminode bearded with deep yellow hairs for fully half its length 15. *P. angustifolius* ssp. *caudatus*
17. Bracts lanceolate; inflorescence somewhat compact, secund; corolla throat gradually expanded, bearded at base of lower lobes.
16. *P. secundiflorus*
17. Bracts broadly ovate with a short, abruptly pointed tip; inflorescence open and not secund; corolla throat narrow and often somewhat curved, expanded only at the orifice, glabrous at base of lower lobes.
17. *P. fendleri*
18. Leaves mostly linear, less than 35 mm. long 19
18. Leaves lanceolate or wider, or if linear, much more than 35 mm. long 28
19. Staminode glabrous; stems much branched above the base; corolla throat not 2-ridged ventrally 20
19. Staminode bearded; stems not branched except at or near the base; corolla throat 2-ridged ventrally 24
20. Corolla pink externally, white on face of lobes 21
20. Corolla blue, blue-purple, or red-purple 23
21. Corolla 15 to 24 mm. long, throat narrow and curved, upper lobes reflexed, lower lobes projecting 22
21. Corolla 12 to 15 mm. long, throat narrow and somewhat curved or gradually expanded, upper lobes reflexed or spreading, lower lobes projecting or spreading 19. *P. ambiguus* × *thurberi*
22. Stems puberulous 18. *P. ambiguus* ssp. *ambiguus*
22. Stems glabrous 20. *P. ambiguus* ssp. *laccissimus*
23. Corolla 10 to 14 mm. long, throat gradually expanded, all lobes spreading 21. *P. thurberi*
23. Corolla 12 to 15 mm. long, throat narrow and somewhat curved or gradually expanded, upper lobes reflexed or spreading, lower lobes projecting or spreading 19. *P. ambiguus* × *thurberi*
24. Stems and leaves puberulous with flat scalelike hairs; leaves scattered on flowering stems; bracts much reduced in size; calyx lobes acute or very short acuminate, scarious margined almost to the tip 25
24. Stems and leaves puberulous with fine erect or retrorse hairs, or leaves glabrous; leaves numerous on flowering stems; bracts not reduced in size; calyx lobes long acuminate, scarious margined only at the base .. 27
25. Stems mostly erect, several; corolla strongly bearded at base of lower lobes; staminode bearded most of its length with golden hairs 26

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25. Stems ascending or decumbent, numerous; corolla lightly bearded at base of lower lobes; staminode strongly bearded at tip with golden hairs and behind the tip with white or yellowish hairs.
 24. *P. linarioides* ssp. *coloradoensis*
26. Leaves mostly linear 22. *P. linarioides* ssp. *linarioides*
26. Leaves mostly oblanceolate 23. *P. linarioides* ssp. *maguirei*
27. Leaves glabrous ventrally 25. *P. crandallii* ssp. *glabrescens*
27. Leaves puberulous with fine erect or retrorse hairs.
 26. *P. crandallii* ssp. *glabrescens* var. *taosensis*
28. Inflorescence glandular-pubescent 29
28. Inflorescence glabrous or puberulous 38
29. Fascicles of small, obscurely toothed leaves in axils of stem leaves.
 28. *P. pulchellus*
29. No fasciculate leaves 30
30. Anther sacs explanate 31
30. Anther sacs not explanate 35
31. Corolla dull purple, lower lobes projecting, 3 to 5 mm. longer than upper lobes 27. *P. whippleanus*
31. Corolla white, pale lavender, violet-blue, blue-purple, lower lobes not projecting, not noticeably longer than upper lobes 32
32. Corolla not bearded at base of lower lobes; staminode sparsely bearded at the tip 32. *P. albidus*
32. Corolla bearded at base of lower lobes; staminode conspicuously bearded 33
33. Corolla 5 to 6 mm. wide, orifice as high or higher than wide; lower lip not glandular within; staminode not or barely exerted.
 31. *P. breviculus*
33. Corolla 8 to 15 mm. wide, orifice much wider than high; lower lip glandular within; staminode prominently exerted 34
34. Corolla 25 to 35 mm. long, 10 to 15 mm. wide.
 29. *P. jamesii* ssp. *jamesii*
34. Corolla 17 to 22 mm. long, 8 to 10 mm. wide.
 30. *P. jamesii* ssp. *ophianthus*
35. Staminode glabrous 33. *P. dasyphyllus*
35. Staminode bearded 36
36. Leaves finely toothed 34. *P. gracilis*
36. Leaves entire or undulate 37
37. Median stem leaves shorter than internodes; bracts much reduced; lower lobes of corolla longer than upper 35. *P. oliganthus*
37. Median stem leaves longer than internodes; bracts not much reduced; upper and lower lobes of corolla subequal 36. *P. auriberbis*
38. Inflorescence not at all secund, corollas in dense fascicles usually separated by long internodes, corolla 10 to 14 mm. long.
 37. *P. rydbergii*
38. Inflorescence more or less secund, corollas not in dense fascicles, or if so, the fascicles not separated by long internodes, corolla 15 to 40 mm. long 39
39. Leaves lance-ovate or oblong; inflorescence usually broad and compact; corolla 30 to 40 mm. long 38. *P. alpinus* ssp. *brandegei*
39. Leaves linear or lanceolate; inflorescence usually narrow and elongated; corolla 15 to 30 mm., occasionally 35 mm. long 40
40. Anthers villous 41
40. Anthers glabrous 42
41. Calyx lobes 3 to 6 mm. long; corolla throat moderately inflated above and below; staminode glabrous or with a few short hairs at the tip.
 39. *P. strictus* ssp. *strictus*
41. Calyx lobes 8 to 10 mm. long; corolla throat ventricose below, not inflated above; staminode more or less bearded.
 40. *P. strictus* ssp. *strictiformis*
42. Corolla 15 to 24 mm. long, 7 to 10 mm. wide, glabrous or lightly bearded at base of lower lobes; staminode narrow or somewhat dilated; stems puberulous or glabrate 41. *P. virgatus*
42. Corolla 25 to 35 mm. long, 10 to 17 mm. wide, usually strongly bearded at base of lower lobes; staminode much dilated and often notched at the tip; stems glabrous 42. *P. neomexicanus*