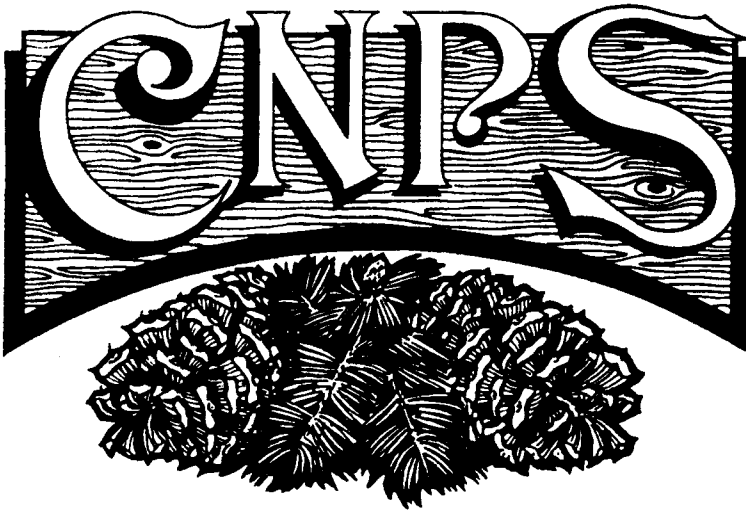


DEDICATED TO THE PRESERVATION OF THE CALIFORNIA NATIVE FLORA

BRISTLECONE • CHAPTER

NEWSLETTER



Vol.8, No.3

May 1989

NEXT MEETING

Wednesday, May 31, 7:30 p.m., in Bishop at the White Mountain Research Station on East Line Street.

Wayne Ferren, herbarium botanist at UC Santa Barbara, will present a slide program on the vegetation and flora of Fish Slough. Wayne has been working with the University on Fish and Game sponsored projects at Fish Slough for the past several years. His program will cover the botanical resources, land use history, management issues, and significance of the Fish Slough area.

Wayne will lead a special follow-up field trip the next day, Thursday, June 1, to see the Fish Slough area firsthand.

* * * * *

CNPS STATE BOARD MEETING, JUNE 3rd

Statham Hall, Lone Pine

Would you like to see what goes on in CNPS at the statewide level? If so, come to the State Board meeting that our Bristlecone Chapter is hosting in Lone Pine on June 3. You are all cordially invited to attend.

PRESIDENT'S MESSAGE:

The upcoming CNPS State Board meeting in Lone Pine will be a great opportunity for our members to get a perspective on what CNPS does as a statewide organization. Along with the state officers, the Chapter Presidents make up the State Board. The local chapters are the backbone of CNPS and representatives of most of the 27 chapters should be present.

Come on out, meet some interesting people and help welcome them to the Eastern Sierra. After all, as a member of the Bristlecone Chapter you're one of the hosts!

Don't forget that after the meeting we will have some special field trips on Sunday, June 4. See you there!

..... Mark Bagley

* * * * *

Chapter members are invited to attend the CNPS Executive Board meeting on Saturday, June 3, as announced in the president's message above. The place is Statham Hall, and the general session will begin at 9:30 a.m. This will be the first state board meeting to be held east of the Sierra. We can't produce an outstanding flower display, but we can be hospitable hosts and hostesses.

FIELD TRIP REPORTS

VEGETATION MANAGEMENT AND ECOLOGY OF THE OWENS VALLEY FLOOR

Approximately 35 members and guests turned out for the April 1st field trip led by Dr. David Groeneveld, Plant Ecologist for the Inyo County Water Department. The emphasis of the tour was on the plant ecology of Owens Valley and how it has been effected by water gathering activities by the Los Angeles Department of Water and Power.(DWP). Dr. Groeneveld explained what the future would hold under terms of the proposed water agreement now under consideration. His maps and charts helped interpret what we were seeing on the ground.

From our starting point at the Wildlife Viewpoint near Tinnemaha we caravanned to the Hines Spring site, now a dry, barren waste. He then demonstrated some of the scientific instruments used by his department to measure the moisture available for plants. He discussed the needs of various plants, and how the major plant communities would be maintained under by means of a monitoring system. The next stop was at another severely impacted area, the Independence Spring Field. The site, which was once a boggy area fed by springs, had lost up to a foot of top soil due to wind erosion following extreme pumping activity. It was now being planted to alfalfa under a mitigation project. That will stop the dust pollution, but the original spring field can never be brought back.

Other sites were visited. One showed sagebrush dying, not from lowering of groundwater but from the extended drouth. At a site on the Owens River the proposed rewatering of the lower section of river was explained

We were impressed with Dr. Groeneveld's excellent presentation during the tour and we appreciated his replying to our many questions. As a result we feel that we can make better input to water management proposals now under consideration.

..... Gordon Nelson

COPPER CANYON, DEATH VALLEY NATIONAL MONUMENT

We met in front of the Visitor's Center at 9:00 a.m. on a warm March day. Ed Rothfuss, Superintendent of the monument, and Ruben Scolnik, a park service volunteer, who were to be our leaders for the day, joined us there. This special trip up Copper Canyon to see fossilized tracks of prehistoric animals is done only once or twice a year, courtesy of the monument. We were most fortunate to be included.

Upon leaving our cars at the highway we hiked up a gentle alluvial fan until we entered the canyon. The entire route up that red-walled canyon was a scenic feast. Finally we came to the first and most dramatic tracks, those of a mastodon. Obviously, it had been a huge creature. From there we went on to see "the barnyard" where we saw camel, cat and horse tracks. Ed and Reuben explained that this entire area had at one time been a lake bed. The prints had been impressed in the mud and preserved through the ages.

It was a most enjoyable and educational field trip. There were few flowers en route-- too dry a year--but that had not been the purpose of our hike. It had been seven miles, round trip. We were tired but happy to have shared such a rewarding experience.

There was one casualty, Betty Gilchrist's Subaru. It died on the way to the trailhead, but we left it by the side of the road and took Betty on with us. That evening, on the return trip, Ed Rothfuss made arrangements to have it hauled (literally--on a flatbed) to Furnace Creek for the night. To make a long story short, it had to be taken to Las Vegas to be repaired. Betty finally returned home to the Alabama Hills Tuesday night.

..... Bette Sisson

DARWIN WASH AND ALABAMA HILLS

A field trip that takes Bristlecone members and guests into an area unexplored by many of us is a special field trip indeed. Such was our May 5th outing across the Darwin plateau, through the old settlement and down the grade to Darwin Wash.

We paused to search a rugged calcareous hillside for *Astragalus mohavensis* var. *hemigyris*. It had been last sighted somewhere in this area in 1941. This third year of drouth was not the best time to look for it. The few *Astragalus* leaves that we found (too dry for blooms) were not of the one we were seeking. We did find a few Mojave asters, *Xylorhiza tortifolia*, one bright bloom of Engelmann cactus, *Echinocereus engelmannii*, the strange paper-bag bush, *Salazaria mexicana*, and a few tiny annuals. Creosote bush, *Larrea tridentata*, seems to bloom in spite of the drouth.

The dirt road became sand tracks as we wound down the wash walled by cliffs of pink, soft lavenders, and somewhere a base of soft green. Some tufts of dry fern fronds clung in crevices, and the precipitous cliffs held other bits of dry or drying growth. At the cliff base, the thick-leaved ground-cherry, *Physalis crassifolia*, was surprisingly green in foliage and fruit. Large shrubs of wash rabbitbrush, *Chrysothamnus paniculatus* thrived in the sun, but dark green water-wally, *Bacharis glutinosa*, stayed in the shade of the cliffs.

We passed the site of China Garden Springs where a few introduced trees thrived by the small spring flow that dampened the road. It was named for the Chinaman who one raised vegetables there to supply miners of the area. The road ended at another water source where descendants of the Chinaman's celery patch followed a shallow stream moving slowly mid debris fallen from the tall willow trees roofing the extensive riparian area. We lunched in filtered light under a canopy of red willow trees, *Salix laevigata*, with a cheery expanse of *Mimulus guttatus* at our feet.

We finished the day by driving back to Lone Pine and up scenic Tuttle Creek Canyon to reach Betty Gilchrist's 12 acres in the Alabama Hills. On an alkaline slope we saw the endangered Owens Valley mallow, *Sidalcea covillei*, and the alkali mariposa, *Calochortus excavatus*, which often accompanies it. Alkali sacaton, *Sporobolus airoides* a favorite bunch grass, and Owens Valley milk-vetch, *Astragalus lentiginosus* var. *albifolius*, were there too. Other alkali-tolerant species included the dainty small-flowered cleomells, *Cleomella parviflora*.

It had been a good day and we felt fortunate that we have such a variety of habitats from which to choose.

..... Doris Fredendall

* * * * *

LET'S LOOK AT HABITATS

A study of rare plants raises so many questions, we should be trying to seek out the answers. By making note of our observations we may be able to contribute valuable clues to present and future research. These may include physical and chemical makeup of the soil in which the plant occurs. Does it thrive in protected crevices or do best in the full sun? How much moisture does it require? What other species commonly occur with it? How healthy is the population? Are there any threats to its well being or anything that might threaten its survival? If so, what? The more we learn of a plant's needs, the better we are equipped to protect it. This is the type of information which should be reported to the data base with any reports of new rare plant populations.

The Inyo Floristic Region has a high percentage of endemics, many of them extremely limited in range and numbers. What combination of conditions determine the sites of each rare species? So many of them appear to be limited to dolomite that it is appropriate to discuss that formation.

Dr. C. A. Nelson, retired from the Department of Geology, U.C.L.A., has kindly given us the following discussion of dolomite as it appears in the White-Inyo Range.

The great majority of carbonate sedimentary rocks are limestone (largely the mineral calcite - CaCO_3) and dolomite (largely the mineral dolomite ($\text{CaMg}(\text{CO}_3)_2$).

Pure limestone and pure dolomite formations are probably quite rare. Most are mixtures, ranging from dolomite limestone to limey dolomite. Consequently, very probably all the major carbonate formations, and even sandstones with carbonate cement, give up magnesium (Mg) ions when they undergo chemical weathering. It is their chemical constituents which appear to favor the growth of many rare plant species.

The sedimentary rocks of the White-Inyo Range contain a number of limestone and dolomite formations, such as the Lower Cambrian Poleta Limestone in the White Mountains and northern Inyos, the Middle to Upper Cambrian Bonanza King Dolomite in the northern Inyos and the Pennsylvanian Keeler Canyon Limestone in the southern Inyos.

The following list names some of the plant species which appear to be restricted to carbonate soils of mountain ranges in the region. While some seem to be limited to dolomite and others to limestone it is difficult to know where they draw the line

Chamaesyce fendleri
Cymopterus aboriginum
**Cymopterus gilmanii*
**Dedeckera eurekaensis*
**Draba cana*
**Draba Californica*
Draba oligosperma
Encellipsis nudicaulis
Erigeron clokeyi
**Eriogonum gilmanii*

**Forsythesia nevadensis*
**Gilia ripleyi*
**Heuchera duranii*
Leucelene ericoides
**Mimulus rupicola*
Notholaena jonesii
**Penstemon calcareus*
Penstemon scapooides
Petalonyx nitidus
Phlox covillei

Eriogonum heermanni Ssps.
**Eriogonum intrafractum*

Scopulophila rixfordii
**Tetradicus ilicifolius*

Those marked * are on The CNPS rare and/or endangered list.

BRISTLECONE CHAPTER FIELD TRIPS

JUNE 1, THURSDAY. FISH SLOUGH. Leader: Wayne Feren, U.C. Santa Barbara, herbarium botanist. For those who can make a weekday trip this will be a great follow up to Wayne's presentation at our May 31st meeting. We will look at both upland and aquatic habitats, Wayne's speciality, and see some of the impacts in this very special and sensitive area. Easy walking. Meet at 9:00 am at Wye Road and Highway 6, behind the gas station, north of Bishop. Bring lunch and something to drink.

June 4. FIELD TRIPS FOR STATE BOARD MEETING PARTICIPANTS. The CNPS state board meeting will be held in Lone Pine on June 3rd. Location of Sunday field trips have not been decided yet. Look for notices in the paper or call Vince Yoder, 876-4275, or Gordon Nelson 8732-7489, for details. All chapter members are invited to participate in the meeting and/or field trips.

June 17. WHITE MOUNTAINS. Leader: Doris Fredendall. We will take an easy walk of 2-3 miles along a wash at about 7000 feet. It will be a good identification review of plants in the Pinyon-Juniper Community. Meet Saturday at 9:00 am at the Pinyon Picnic Area. To get there, take Highway 168 east from Big Pine for 13 miles to the White Mountain road; then about 3 miles up to the picnic area.

July 15. LITTLE BLACK ROCK SPRINGS, ETC. Leader: Mary DeDecker. A before and after trip to see critical sites in Owens Valley. meet at 9:00 am at the turnoff to Black Rock Fish Hatchery from Highway 395. There will be little walking, but be prepared to drive from site to site. Take lunch and water and the usual sun protection.

July 29. LONG LAKE. Leaders: Jack and Pat Crowther. This will be a botanizing walk for subalpine flowers at elevations from 9000 to 10,000 ft. Meet Saturday at 8:00 am at the South Lake parking lot, 14 miles west of Bishop. We will be hiking about 6 miles with a gain of about 1000 ft in elevation.

August 19. THE INYO MOUNTAIN CREST. Leaders: Paul and Mary DeDecker. A 4-wheel-drive trip, overnight. Meet at the corner of highway 395 and Citrus (Mazourka) Road at the south edge of Independence, at 9:00 am. Vehicles must be 4-wheel-drive, in good condition, with high clearance. Drivers must be experienced in 4-wheel driving. Dry camping overnight. Take plenty of water. Please contact leaders (878-2389 or P.O. Box 506, Independence, 93526) to reserve a place on the trip.

NOTE: Members and guests are encouraged to participate in field trips. Please see the last issue (March 1989) of the Bristlecone Newsletter for Field Trip Policies. We hope to see you on one or more of the above.

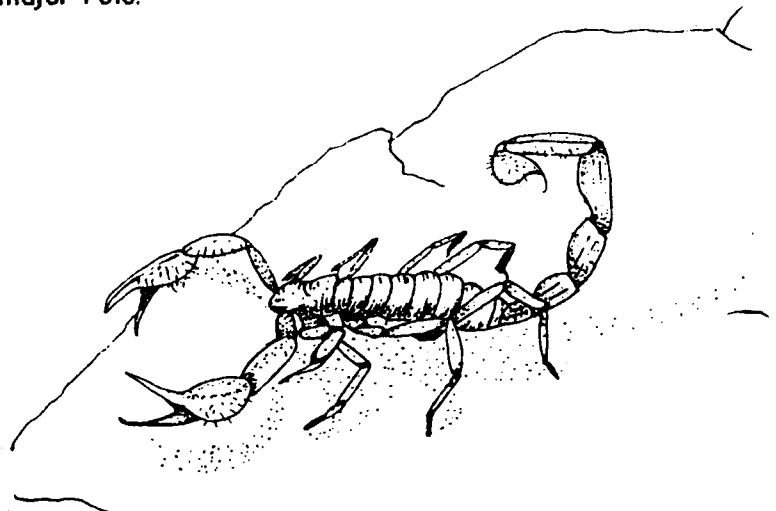
WE ARE PLEASED TO WELCOME THE FOLLOWING NEW MEMBERS

Monty Bengochia, Bishop
Dr. William Grimshaw, Yuba City
Karen Plateau, Bishop
Charles E. Vandemoer, Bishop

W A T E R

Six public hearings have been held on the proposed water agreement between Inyo County and Los Angeles. The concept of the agreement, designed to protect the environment of Owens Valley, has for the most part been well received. This positive position has been tempered, however, by concern over loopholes which could prove devastating in the future. Many citizens insist that such words as "significant" and "feasible" be explicitly defined, and that any mitigation be applied at the scene of impact. Past "Enhancement/Mitigation" measures have been more cosmetic gestures than meaningful mitigation, and water to maintain them has come out of Inyo's share. Some of the wording, which could allow weakening of the terms in the future, causes concern. The Bristlecone Chapter has kept abreast of the progress of negotiations and has given considerable input on the resulting proposal. A statement of concerns has been sent to the Inyo County officials. It is assumed that negotiations will continue. We hope that Los Angeles will see the wisdom in giving Inyo more security. On the surface the proposed agreement assures Inyo that there will be no further degradation of the environment, but the loopholes must be eliminated to make it acceptable to the people of Owens Valley. We deeply appreciate the intelligent effort that has been put into this, and is continuing, on the part of the Inyo County Supervisors, the Inyo County Water Department and staff. Los Angeles is finding that they are up against extremely capable adversaries, supported by an informed citizenry. Times have changed.

CORRECTION; The Bristlecone Chapter was inadvertently omitted from the list of sponsors of the Eastern Sierra Water Symposium on page 3 of the March issue of the Bristlecone newsletter. This chapter played a major role.



In searching for spring blooms this third year of drouth we find that the shrubs are doing reasonably well. It appears that the early rains and snows in Owens Valley enables them to get through the season, while the surface became far too dry for lesser plants. Following is a reprint of an article on one of our major shrubs. (written for the local newspaper.)

H O P S A G E

Chenopods are prominent in the vegetation of the basins and flats of Inyo-Mono. This is a term used for members of the Saltbush or Goosefoot Family (Chenopodiaceae). It includes most of the hardy shrubs which tolerate heavy clay, concentrations of alkali, and extreme temperatures, a forbidding combination for most plants. Each species has its own set of tolerances, so these plants are valuable indicators of local conditions. Most of them rely on groundwater to exist. Those on alluvial fans are exceptions.

Their flowers for the most part, are dioecious. That means that the staminate (male) and pistillate (female) flowers are on different plants, a confusing feature for anyone learning to recognize the various species. The flowers are relatively inconspicuous, so it is the ripening fruit which attracts attention. (A botanist defines "fruit" as the seeds and the parts which enclose them, not limited to the fleshy type.)

The showiest of these shrubs is Hopsage, *Grayia spinosa*. Its fruit becomes highly colored, varying from flesh color to deep rose-red, making attractive accents in the gray desert scrub communities. These are commonly assumed to be blooms because they are so colorful. The seeds are enclosed in flattened sacs of disc-shaped, tissue-like bracts joined together at the edges, and it is these sacs which are so showy. The shrub is moderate in size, mostly 1 to 3 feet high. Its leaves are more or less oblong, $\frac{1}{2}$ to 1 inch long, and green with a grayish cast. Early leaves appear frosted on the edges. The shrub is easily identified by the striate branches of the previous season's growth.

Although Hopsage is closely related to the saltbushes (*Atriplex* species) it has little tolerance for heavy alkaline soils. It is mostly on the alluvial fans or on mountain flats where it finds the well drained habitats that it likes. It can, however, tolerate quite arid conditions. Its range is extensive throughout the high deserts and Great Basin, and it has a broad elevational range also. It has been found as high as 9350 feet in the Inyo Mountains.

It was first noted by David Douglas, the Scotch collector, in 1826. Although he gave the type locality as "Interior of Northern California", it is thought to have been in the Columbia Basin of eastern Washington. The genus name honors Asa Gray, who was a prominent American botanist, while the species name refers to the spiny character of the shrub.

It is considered an essential part of the Tule Elk's diet, during the period of its lush growth, and is also a valuable browse plant for deer. Cattle and sheep use it too.

. Mary DeDecker

CALIFORNIA NATIVE PLANT SOCIETY - Membership Application

The California Native Plant Society is an organization of lay persons and professionals united by an interest in the plants of California. It is open to all. The Society, working through its local chapters, seeks to increase understanding of California's native flora and to preserve this rich resource for future generations. Varied interests are represented.

Name _____ P.O. or Street _____

City _____ State _____ Zip _____ Phone _____

Membership Category:

- _____ Life, Couple \$500
- _____ Life, Individual 450
- _____ Supporting 50
- _____ Household 30
- _____ Individual or Library 18
- _____ Student or Retired 12
- _____ Retired Couple 15

I wish to be affiliated with the
Bristlecone Chapter _____
Other _____

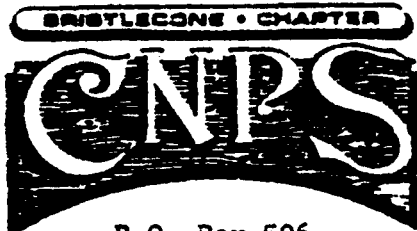
Please make check payable to:
California Native Plant Society

Mail to: Bristlecone Chapter, CNPS
P.O. Box 506
Independence, CA 93526

GIFT contribution: Where most
needed _____ Conservation _____

The BRISTLECONE NEWSLETTER comes out bimonthly. It is mailed free to members of the Bristlecone Chapter, CNPS. The subscription is \$5.00 per year for others.
Editor: Mary DeDecker.

California Native Plant Society



P.O. Box 506
140 West Pavilion Street
Independence, CA 93526

