DEDICATED TO THE PRESERVATION OF THE CALIFORNIA NATIVE FLORA

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NEXT CHAPTER MEETING

The next meeting will be on **Wednesday, January 28** at 7:00 PM at the White Mtn. Research Station in Bishop. National Park botanist, Renee Beymer will be our speaker. Renee will provide us with "An Update on Death Valley National Park Vegetation Management".

Upcoming Chapter Meeting Presentations

Wednesday, March 25, 7:00 p.m. at the Big Pine Methodist Church. Rosemary Donlon, past president and current member of the Monterey Bay Chapter, will present a slide program on the life and writings of renowned California Horticulturist, Lester Rowntree. Lester Rowntree, who died at age 100 in 1979, wrote several books and more than a hundred articles on California plants and seeds. She settled in California in 1929, but traveled extensively, and became an expert on the California flora. Rosemary has compiled an extensive bibliography of Lester's articles, and has put together a popular program that she has presented at many CNPS chapter meetings.

On Wednesday, April 8, at 7:00 p.m., Forest Service geneticist Connie Millar will give a talk at White Mountain Research Station, co-hosted by CNPS and the Audubon Society. More information on the talk will be in the March newsletter.

NEXT CHAPTER BOARD MEETING

Tuesday, January 20th at 7:00 p.m. at Doris Fredendall's residence in Big Pine. All chairpersons are welcome and encouraged to attend.

PRESIDENT'S MESSAGE

With a new year upon us I would now like to take a few minutes and thank all of you in our chapter who have helped so much in the past year. The Bristlecone chapter does not run by itself. I am really amazed by how many people help out!. No job is too small and if a job starts to get too big then we form a committee and all kinds of people can join in the fun. So many of you help out that it is impossible to thank you all by name. But rest asured that I appreciate all the hard work that you are putting in.

Some of us have been performing one or more tasks for the chapter for quite some time. If anyone out there is getting a little burned out from what you are doing please let me know. I'll scream and yell until I can get someone to either help you or take over for you. We have lots of fun in our chapter and I do not want anyone getting too bogged down on work, work, work! Hey, I think I'm getting a little tired of writing this stuff right now so I'm going to stop and go for a nice walk. Have a happy New Year!!!!!

Yours truly,

……..Scott Hetzler

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Upcoming Events

The Jepson Herbarium Weekend Workshops on Botanical Subjects

Class V - Medicinal Plants of the Bay Area
January 31 & February 1, 1998
Tom Carlson

Class VI - Bryophytes
February 21 & 22, 1998
Brent Mishler

Class VII - California Indian Plant Uses Past and Present
March 6-8, 1998
Beverly R. Oritz

Class VIII - Seaweeds
March 27-29, 1998
Paul Silva, Dick Moe, Max Chacana

Class IX - Serpentine Plant Ecology
April 18 & 19, 1998
Scott Martens

The classes are limited to 20 participants and enrollment is on a first-come, first-served basis, So register early! For Further information, please call Susan D'Alcamo at the Jepson Herbarium, (510) 643-7008.

Bristlecone Chapter Highlights

Phase I of the DeDecker Database Complete

Thanks to the many volunteers that spent their

early morning and evening hours behind a photocopying machine - all of Mary's 6,500 specimen cards have now been copied! The project took about 3 weeks and went very smoothly. Hats off to all that helped with this project: Derham Giuliani, Denise Waterbury, Sally Manning, Daniel Pritchett, Kathleen Nelson, Karen and Steve Ingram, Kathy Duvall and Scott Hetzler.

Now the second and most time consuming phase will begin - the consolidation of all this valuable information into an electronic database. If you think you may want to help with this phase of the project please contact either Daniel Pritchett at 873-8943 or Anne Halford at 873-6714.

Rare Plant Scientific Advisory (RPSAC) Committee Meeting

The Rare Plant Scientific Advisory Committee meeting was convened in Berkeley by Chairperson Barbara Ertter on December 5, 1997. Representatives from the Bristlecone Chapter and the Eastern Sierra Rare Plant Working Group attended the meeting and included Steve Ingram, Anne Halford and Kathleen Nelson .

The main topics of the meeting included a discussion of the development of the 6th Edition of the CNPS Inventory, the establishment of additional regional working groups and the establishment of a scientific response network. The Eastern Sierra Group presented a synopsis of how their group is structured and what goals they hope to achieve, such as providing a forum for discussing regionally specific rare plant issues, improving the rarity ranking criteria and developing a regionally specific rare plant database that can tier off the CNPS Electronic Inventory and Rare Find software programs.

A meeting of the Eastern Sierra Rare Plant Working Group will be convened sometime in February to provide more information about the RPSAC state-wide meeting and to review the long awaited lists of rare plants that were submitted by Chapter members for inclusion in the upcoming 6th Edition of the CNPS Inventory.

An information packet will be sent out prior to our meeting and I hope to see all of you that participated in last year's discussions again!

……..Anne Halford

Native Plant Notes

Native Plant Notes is a column for sharing techniques about how to grow our native plants. All contributions are welcome so let your ideas germinate.

Red Columbine (*Aquilegia formosa)*

Red columbine (*Aquilegia formosa*) is one of our native plants that draws a crowd when it flowers. Darting among the dangling blooms is usually the black-chinned hummingbird, although visitors can also include the rufous and the tiny calliope hummingbird. The shiny blue-black carpenter bee can also be seen buzzing around the flowering columbine.

Observing the pollinator/plant interactions in your own garden is a great pleasure. Red columbine is a common perennial along shady creeksides in the Sierra and also in moist places in the desert mountains. It occurs throughout the western United States from Baja to Alaska. Although the lush, deeply lobed foliage will not reach more than a foot high mound, the candelabra-shaped inflorescence can top several feet.

In my experience, rabbits and rodents will leave columbine alone, while deer will indulge in the late fall when there is not much else to eat. As to be expected from all the hybrid columbines on the market, columbine is easy to grow in the garden. It does best in a moist location with morning sun and protection from the afternoon sun. Light shade all day is satisfactory but too much shade will make the plants a bit leggy and less floriferous. Columbine is easy to grow from

seed directly sown into the garden or in flats in the spring. No pre-treatment is necessary but germination can take a month or longer. Aphids can be a problem on flowering plants but can be reduced by either spraying with a hard stream of water, or an application of Safer's organic insecticidal soap, or with some help from especially diligent hummingbirds (they eat bugs, too!).

……..Karen Ferrell-Ingram

Types of Pollination and Plant Adaptations

During these cold days it is indeed a joy to think about those vibrant spring flowers and all the bird and insect activity they incite. Here are a few snippets of information that may make you look for some interesting clues about who visits whom and why.

Types of Pollinator Agents

Bird Pollination (Ornithophily) - Hummingbirds, honeycreepers, honey-eaters are the major agents. Most have long tongues, often brush-tipped, and long slender bills which fit the curvature of preferred flower species. Some are flower piercers.

General Flower Characteristics: Vivid red or bright orange color, long floral tube, usually without landing platform, and unscented. Copious nectar is the most important feature.

Examples: Plants in the pea, snapdragon and buttercup families.

Insect Pollination (Entomophily) - Remarkable examples of coevolution; specialization's often species-specific. Perianth conspicuous, with colors, scents, and patterns insects recognize. Plentiful "reward" for floral constancy. Flowers usually have nectar, scent and tongue guides.

Bees - Most important agents. Flowers usually in vivid colors - blues, purples, yellows and often with contrasting nectar-guides. Nectar often in spurs of petals. Landing platform - sometimes a triggered keel.

Examples: Lupine, milk-vetch, aster, mustard, roses, mints, snapdragons, columbine, larkspur, buttercup, violet and clovers.

Flies - Flowers with open, flat surfaces, yellow, white or greenish in color. Sometimes the flowers also have an unpleasant odor.

Examples: Plants in the carrot and aster families.

Butterflies - Flowers have long floral tubes that are often brightly colored. Flowers may be very small, but a landing platform is essential.

Examples: Hawksbeard and Gilia spp.

Moths - Flowers are pale (white, cream, pale yellow); often opening at night. They also have long floral tubes without landing platforms (some moths have tongues 25 cm in length!).

Examples: Evening primrose, tobaccos and honeysuckle.

Beetles - Large, many petaled flowers (depends on size of beetle). Often flowers have carrion smell.

Examples: wild ginger

Wind (Anemophily) - The most ancient type of agent that has influenced plants since the Carboniferous and Mesozoic periods such as ferns, clubmosses, horsetail and the gymnosperms (cone-bearing) plants. Today some of the most "advanced" wind pollinated flowers have evolved (by reduction) from insect pollinated flowers.

General Flower characteristics: Simplicity - only the essential organs present. No complex attractants. Flowers are exposed, very small and have little or no perianth (sepals and petals), and no nectaries.

Examples: Grasses, conifers, birch, popular, oak and sedges.

Water (Hydrophily) - Flowers are very reduced. Many aquatic plants have a thalloid body and float like algal mats. Flowers may be floating (emergent) or completely submerged.

General flower characteristics: As with wind-pollinated species, no attributes of scent, color, or nectar. Some plants have long needle-like pollen grains which coil around the stigma of a female flower if they drift against it (*Zostera* spp. eelgrass). The water weed *Elodea* spp. sheds its pollen on the water surfaces and the spiny pollen coat traps air bubbles to keep it dry and floating. Other species similarly have oil droplets in the pollen for added buoyancy.

Rain Pollination - A relatively recent discovery; employed by some buttercups!

……..Anne Halford

Conservation

Beaver vs. Great-Blue Heron Along The Owens River

Being the largest rodent in North America, beaver have more impacts on riparian environments than their smaller cousins. They are not native to the Owens Valley having been introduced from Idaho in the 1940's. Beaver girdle and kill trees in the thin populations of cottonwood and willow along the lower Owens River as they seek food and materials with which to build their dams. In addition, the water backed up behind the many dams built by the beaver cover the roots of willows and drowns them within one to two seasons.

The winds that follow blow down these trees in another two to three years. This results in a slow conversion of stretches of the river into solid cattails and tules. Limited amounts of this type of conversion might possibly benefit the riparian habitat by creating a mosaic of plant species. However, a large scale change of habitat could lead to the loss of much of the sparse tree corridor and the disappearance of certain bird species in those reaches of the river.

Of great concern is the loss of trees that provide roosting for great-blue heron for nesting rookeries. Two of the sites are in the Lone Pine area and others may exist elsewhere along the river. If these tress that are used for nesting currently have their roots covered with water then they will drown and will blow down in two to three years. What impacts will this have on the nesting success of great blue heron in the valley? Will they easily find replacement trees or will they be stressed to find new suitable sites? We know for sure that the herons have been using one of these sites for decades.

With more attention now being focused on the Lower Owens River with the court acceptance of the Long Term Groundwater Agreement between Inyo County and Los Angeles, this is an issue that appears to need immediate attention. The Los Angeles Department of Water and Power actively controls beaver in the northern portions of the valley, but there apparently is no current control in the southern valley.

One of the technical reports written as part of the consultant study on the Lower Owens River Project (LORP) specifically deals with beaver. The technical report fails to mention great blue heron rookeries, but it clearly defines the need to limit the numbers of beaver on the river and recommends numbers of one or two individuals in the areas of the great blue heron rookeries, namely the areas south of the Alabama Gates spillway to Lone Pine Ponds from Lone Pine Ponds to the Keeler Bridge.

The problem that presents itself is that if Inyo and Los Angeles wait to control the beaver in the Lone Pine area and elsewhere that means waiting until the year 2003 or 2004 when the project (the Lower Owens River Project) is slated to be finished. It is important that the Los Angeles Department of Water and Power and the California Department of Fish and Game address this critical issue sooner and not later.

Bristlecone chapter members are urged to contact the Inyo County Board of Supervisors, the California Department of Fish and Game in Bishop and the Los Angeles Department of Water and Power in Bishop to urge them to begin controlling beaver numbers along the lower Owens River in the Lone Pine area (and elsewhere in the southern valley?). The threat to the great blue herons due to girdling or drowning of nesting trees is real and will worsen.

……..Michael Prather

Help Needed to Salvage Stands of Clustered Barrel Cactus (*Echinocactus polycephalus* var. *polycephalus)*

Thanks to Tom Dyak from CalTrans, CNPS members were alerted that many barrel cactus that are currently within the U.S. Hwy. 395 expansion south of Lone Pine face destruction. Even though *Echinocactus polycephalus var. polycephalus* is not afforded any legal protection, Tom voiced concern about these beautiful specimens and asked if members would be interested in assisting in the salvage of these cacti. We'll have to move quickly on this so if you are interested in helping with this effort please contact Tom Dyak at 872-0601.

……..Anne Halford

New Books

Flora of North America, Volume 3, by FNA Editorial Committee, Nancy R. Morin, Convening Editor, Oxford University Press, New Your, 1997. Hard cover, $75.00. ISBN # 0-19-5112466 (v. 3), 590 pages, maps, drawings. Order from: Oxford University Press, 200 Madison Avenue, NY, NY 10016.

For those of you who are on-line, the FNA project leaders have made their database available on the web. Data contained in the printed volumes, additional supporting data, authority files, more precise maps and other useful information are available on-line at **http://www.fna.org**

New Members

The Bristlecone Chapter Warmly Welcomes the
Following New Members

Joan Lubeck
Big Pine, CA

Paul P. Thompson
Bishop, CA

John W. Walter
Mammoth Lakes, CA

James Wilson
Bishop, CA

Next Newsletter Deadline: February 25th

THE 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 the understanding of California's native flora and to preserve this rich resource for future generations. Varied interests are represented.

Name_____ P.O. Box or Street_____
City_____ State_____ Zip Code_____ Phone_____
I wish to be affiliated with the Bristlecone Chapter_____. Other_____.

Membership Category

___ Student/Retired/Limited Income	$20.00
___ Individual or Library	$35.00
___ International	$35.00
___ Family or Group	$45.00
___ Supporting	$75.00
___ Plant Lover	$100.00
___ Patron	$250.00
___ Life	$500.00
___ Benefactor	$1,000.00
___ Corporate	$1,000.00

Please make check payable to: The California Native Plant Society. **Mail to:** Bristlecone Chapter, CNPS. HCR 67 Box 35, Independence, CA 93526.

Gift Contribution: Where most needed_____. Conservation_____.

THE BRISTLECONE CHAPTER 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: Anne Halford.

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