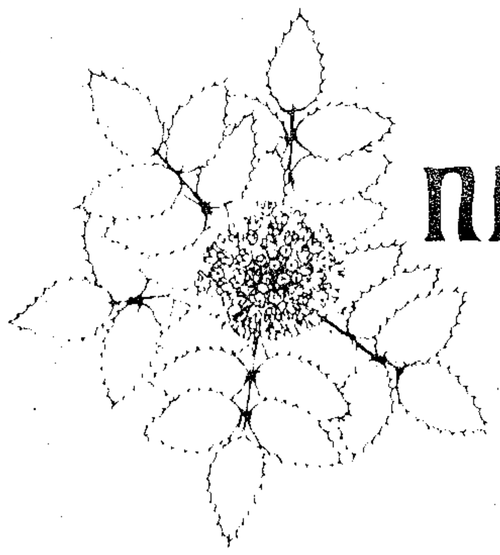


NATIVE PLANT SOCIETY of OREGON

•OBJECTIVE•
To increase the knowledge of members and public in identification and conservation of the native plants of the Pacific Northwest.

Vol. XII No. 10 October 1979

*SATURDAY MARKET BANS DARLINGTONIA SALES. The Portland Saturday Market Board of Directors ended controversy this summer by its decision August 30 to discontinue sales of Darlingtonia californica, the California pitcher-plant. Numerous complaints had been made by citizens, and testimony was heard, both in favor of the sale of Darlingtonia and opposed to it.

D. californica is presently a candidate for Threatened status on the National list of Threatened and Endangered Species. A recent study by NPSO member, Veva Stansell, indicates that habitat loss is increasing and that commercial collecting is as widespread as Japan and Europe. This species and all members of the Sarraceniaceae have been recommended for inclusion on the International Trade List of Wild Fauna and Flora. The species is short-lived in cultivation and nearly impossible to grow from seed; it is always dug from its native habitat for commercial purposes.

Dr. Janet Hohn,
Fish and Wildlife Service
Portland

SPRING IN NEPAL FOR NPSO!

Don't forget, the Folkways International Nepal Natural History Trek is a great way to see Nepal's floral beauty and at the same time help out NPSO. Naturalist will be Ruth Hansen, NPSO Past President. And $100 of the cost goes to NPSO.

Dates: April 5-26, 1980 -- 22 days total,
12 days trekking
Naturalist leader: Ruth Hansen
Trek leader: David Christopher
Land Cost: $1150 ($100 goes to NPSO)
Airfare: $1367 (from San Francisco and subject to change).

Description -- Spring in Nepal: the forests of rhododendron cover the hillsides with hues of red, pink, and white blossoms. Our trekking route will abound in Primula, orchids, and Berberis as well as the cultivated terraced fields of the Nepalese. Our trail follows the Bhote Kosi River which happens to be along the migration route for many species of birds. Our foreground will be the fir, hemlock and bamboo as we move toward the 12,500 foot pass and the view of the Lagtang, Gasainkund and Ganesh ranges. Our trek naturalist will be fielding questions and pointing out many of the natural wonders of the area.

For information and to reserve your place on the trek, contact: Folkways International Trekking, Inc., 14903 S.E. Linden Lane, Milwaukie, OR 97222. Phone: (503) 653-5882.

T/E ALERT

*A Word to the Wise. This past summer, after learning that a population of the endangered Lomatium bradshawii had been located on his property, a private landowner used a tractor and a disc harrow to disc random swaths through what he suspected to be the Lomatium habitat. The thickest population of the plants -- estimated at more than 200 individuals -- happened to fall in the path of the discs and was destroyed. Circumstances suggest that the discing at this time was more than just a coincidence.

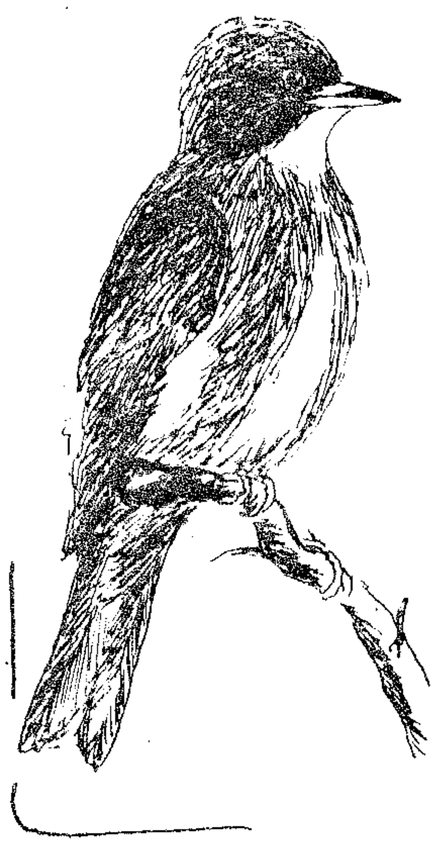
Regardless of the motives, this significant occurrence should serve as a warning to all of us concerned with endangered plants and habitat preservation. The fear of the Snail Darter and the Endangered Species Act has come home to roost in Oregon. This behavior is nothing new to conservationists in the Midwest: landowners have been known to have bulldozers and chain saws at work the very next day after learning about outside interest in a small piece of relict prairie or "oak opening" on their property. The Nature Conservancy and other groups have learned to work very discreetly in acquisition matters.

We in Oregon should likewise be discreet. We should not broadcast our rare plant finds, even to landowners, until some contingency plans can be formulated to protect the habitat. This is a very difficult question, especially when one wishes to act in good faith. Good faith did not work in the favor of Lomatium bradshawii!

There are no legal restaints on the private landowner concerning rare, threatened or endangered plants; he can do with them exactly as he pleases. The current economic climate induces landowners to develop every avilable piece of land, and endangered plants rate as very low priorities. An accountant cannot fix a price on them.

There are no easy answers here -- only a warning.

John Christy



*THOSE DARLING TONIES: THE FLYCATCHERS. (The following report from Veva Stansell of God Beach only hints at the great amount of work she has done on Darlingtonia. ---JVC)

The U.S. Fish and Wildlife Service has initiated a survey in order to establish the status of Darlingtonia californica. The survey seeks to answer questions about this species relating to distribution, ecological needs, average population size, extent of trade, and impacts of mining, logging, collecting, housing developments, road building, and other threats.

In the process of collecting this information, I almost found out more than I cared to know about Darlingtonia. I was even accused of meeting someone named Tony -- Darling Tony! -- out in the woods somewhere. I became moldy about the toenails from wearing wet tennis shoes, after losing a barnyard boot to the bottomless sphagnum. Gradually, as the information took shape, I became quite fond of the bald-headed plant with the handle bar mustache. These plants seemed to exhibit real class, standing straight and proud as they waited to be counted. Therefore, for the title of "Plant with the Most Personality" I nominate Darlingtonia californica. It does generate response, often friendly, sometimes otherwise.

It goes by a whole slew of common names, some misleading and inaccurate. It is most often presented as "Cobra Orchid" or "Cobra Lily" for commercial purposes. Now, the cobra part is apt if you use a little imagination, for the hood-shaped leaf even includes a forked tongue. But it is neither orchid nor lily, as it belongs to the Sarraceniaceae, or Pitcher-Plant family. Another common name is "California Pitcher-Plant," but whoever heard of a pitcher you must turn bottoms-up to fill? Pitcher-plant better describes some of its eastern relatives of the genus Sarracenia. Besides, though the specific epithet is californica, a healthy portion of its range is in Oregon, the most northerly location on record being in Tillamook County, not too far south of the Columbia River. "Fly-catcher" is possibly the best of the common names, as the plant is just that, with a fascinating combination of tricks and traps. The hollow, tube-like leaf enlarges upward, with one side curving over to form a hood. The only opening into this tube is on the under side of the hood, where two appendages, sometimes described as a forked tongue, are attached. Insects are attracted to the plant by nectar glands which are present on the appendages and also on the main part of the leaf.

When an insect enters the opening, it tends to fly upward toward the light which shines in through the top of the hood. There certain areas lack coloring, forming a checkered pattern of translucent and green (or red in sunny sites), sometimes referred to as fenestrations, or little windows. Inside the hood the insect will waste some energy flying around toward the light. Then, when it finally lands on the slippery interior of the tube, it is discouraged from climbing out by downward-slanting hairs. Eventually the poor tired bug slips down the tube into a reservoir of secreted liquid lying in the base of the tube. There it joins the carcasses of other creatures which are being broken down by bacterial action. The Flycatcher is not picky about who gets caught; I have seen moths, grasshoppers, flies and gnats, and it is said that even mice may enter a leaning leaf. (Thus the plant is termed carnivorous, rather than strictly insectivorous).

The leaves can be as tall as 3 feet, or as short as 1 inch (perfectly formed). They grow in a crown or rosette, with the hoods twisting to face outward, away from the center. This can be construed as another trick to cover more territory and intercept more prey. The crowns seem to come mainly from stolons rather than being individual seeded plants, though seed germination is not difficult. The nodding flowers have five greenish-yellow sepals, 1¼ to 3 inches long, that shade the shorter petals. These five petals, maroon or purple in color, touch their tips together. Near the tips, the edges of the petals are inrolled, so that the adjoining petals form five symmetrical openings into the stamens and pistil. In seed the bracteate scape straightens and the obovoid capsule, 1 to 2 inches long, stands erect.

Darlingtonia plants sold commerically seem to be difficult subjects to grow. It appears that obstacles to their survival may be manmade rather than evolutionary or genetic. Very few horticulturists report keeping them alive longer than 2 years. Yet given the conditions they require, in their natural setting they seem to regenerate fairly well. It's not unusual to see them follow a water supply down an old cat road.

Seed is easily obtained and not difficult to sprout. The catch must be in meeting the conditions required for growth. A grower in 1978 started seed in 2 pots, one with chopped sphagnum and sand, the other with live sphagnum. The seeds in the pot of living sphagnum started first, but by March 1979 each pot had approximately 20 seeds sprouted. They were kept on gentle bottom heat and set in pans of water so they would be constantly moist. By May several were growing the true leaves, each with a tiny point which would later develop into the hood.

J.A. Mazrimas, in Carnivorous Plant Newsletter, says this species has a limiting factor, a maximum temperature of about 65°F, above which the roots will die. Summer air temperatures at many Darlingtonia sites would undoubtedly be higher, but the moving water at the roots probably remains below 65°.

In a small artificial bog, a Darlingtonia plant appeared unbidden. After 2 years, the original crown died, but new ones had appeared about a foot away. One offset flowered in the third year after the first plant was seen. Might this indicate a clue to some of the difficulties of pot culture -- if the individual crowns have a limited life span, and the stolons have nowhere to go?

Flycatchers are found in coastal areas in sphagnum bogs, and in the interior ranges to elevations of 7200 feet. In the Siskiyou Mountains they generally prefer a seepage or small stream with a serpentine or peridotite soil base. They can also be found as far south as the Sierras, across a large gap in distribution.

In the Siskiyous, common associated plants include Ledum glandulosum spp. columbianum, Chamaecyparis lawsoniana, and Rhododendron occidentale, especially at the steeper streamhead sites. The highest upslope Chamaecyparis lawsoniana, indicating a moist site, also marks the upper limits of the Darlingtonia stands. Sensitive species associated with Darlingtonia californica include Cypripedium californicum, Gentiana bisetaea, Lilium pardalinum, Rudbeckia californica var. glauca, and Viola lanceolata spp. occidentalis. Drosera rotundifolia and Pinguicula vulgaris both carnivorous plants, also occur with Darlingtonia.

A large percentage of the specialized sites containing this interesting assortment of plants is on public lands. It would seem to be a simple task to assure that examples of the habitat are protected. However, present mining laws allow exploration and claims on public land unless it has been specifically withdrawn from entry. Pressures are heavy to develop domestic mineral resources and it appears that Darlingtonia sites are just naturally rich in certain minerals.

Certain retail chains such as Montgomery Ward occasionally advertise Darlingtonia californica ("Cobra Lily") as a special. It would be interesting to know the quantities involved, and if these plants are nursery-grown or collected.

Chetco Ranger District in the Siskiyou National Forest a few years ago received (and refused) a request to collect 10,000 plants.

Logging seems not too serious a threat, as many of the mountain sites are in areas which do not produce much good timber. Darlingtonia populations seem able to recover from disturbances as long as water supply is not changed or silted badly. Logging or road building which alters drainage will surely be detrimental.

Housing developments and road construction could pose a threat to Darlingtonia sites in private ownership.

For the future, Darlingtonia sites should be watched for mining and collecting activities. Known sites which have not been visited recently should be checked. More detailed vegetational and ecological surveys should be completed. We need to know more about the harvesting of private bogs, and its long-term effects. Perhaps careful harvesting would not damage the populations; it may even enhance them. Maybe, by increasing our knowledge about the Flycatchers and their soggy hideaways, we can prevent these cleverly adapted "Darling Tonies" from becoming Endangered, Threatened, or Rare. Wouldn't that be great!

Veva Stansell

BEGINNER'S BOTANY

Adapted from U.S. Forest Service

WHY LEAVES CHANGE COLOR

It requires no vivid imagination to picture Mother Nature going about on autumn days with a liberal supply of paint, with which she colors the leaves of the trees and other plants and thereby produces a riot of red, purple, orange, and yellow. Every year at this time we revel in the beauty of the trees, knowing well that it is only a fleeting pleasure. Before long the leaves will flutter away from their summer home and become a part of the rich carpet that covers the forest floor.

Many people suppose that Jack Frost is responsible for the color change, but he is not. Some of the leaves begin to turn before we have any frosts. According to an Indian legend, celestial hunters slew the Great Bear in the autumn, and his blood, dripping on the forests, changed many leaves to red. Other trees were turned to yellow by the fat that splattered out of the kettle as the hunters cooked the meat. Other peoples had other legends, but we now know that change in coloring is the result of chemical processes which take place in the tree as the season changes from summer to winter.

All during spring and summer the leaves have served as factories where most of the foods necessary for the trees' growth are manufactured. This food-making process takes place in the leaf in numerous cells containing the pigment chlorophyll, which gives the leaf its green color. This chlorophyll absorbs energy from sunlight and uses it in transforming carbon dioxide and water to carbohydrates, such as sugars and starch. Along with the green pigment, leaves also contain yellow or orange carotenoids--which, for example, give the carrot its familiar color. Most of the year these yellowish colors are masked by the greater amount of green coloring. But in the fall, partly because of changes in the period of daylight and changes in temperature, the leaves stop their food-making process. The chlorophyll breaks down, the green color disappears, and the yellowish colors become visible and give the leaves part of their fall splendor.

At the same time other chemical changes may occur and cause the formation of additonal pigments that vary from yellow to red to blue. Some of them give rise to the reddish and purplish fall colors of leaves of trees such as dogwoods and sumacs. Others give the vine maple its brilliant orange or fiery red and yellow. The autumn foliage of some trees, such as quaking aspen and bigleaf maple, shows mostly yellow colors. Many oaks and others are mostly brownish. These colors are due to the mixing of varying amounts of the chlorophyll and other pigments in the leaf during the fall season.

Fall weather conditions favoring formation of brilliant red autumn color are warm sunny days followed by cool nights with temperatures below 45°F. Much sugar is made in the leaves during the daytime, but cool nights prevent movement of sugar from the leaves. From the sugars trapped in the leaves the red pigment called anthocyanin is formed. The degree of color may vary from tree to tree. For example, leaves directly exposed to the sun may turn red, while those on the shady side of the same tree or on other trees in the shade may be yellow. The foliage of some tree species just turns dull brown from death and decay and never shows bright colors.

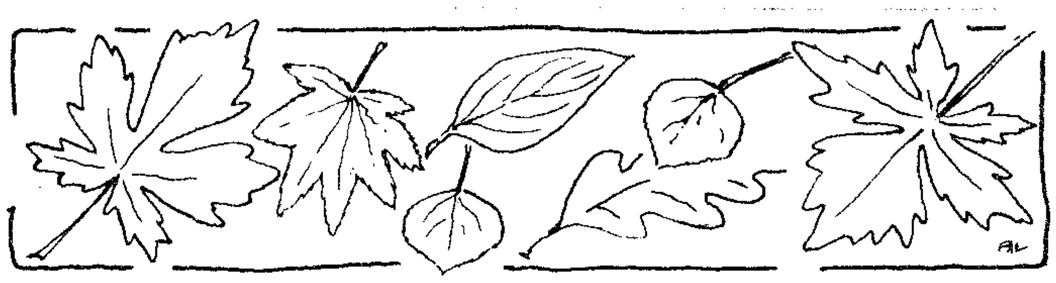
Also, the colors on the same tree may vary from year to year, depending upon the combination of weather conditions. When there is much warm, cloudy, rainy weather in the fall, the leaves may have less red coloration. The smaller amount of sugar made in the reduced sunlight moves out of the leaves during the warm nights. Thus, no excess sugar remains in the leaves to form the pigments.

Only a few regions of the world are fortunate in having these showy displays. Eastern United States and southeastern Canada possess large areas of deciduous forests with broad-leaved trees and favorable weather conditions, including ample rainfall, for vivid fall colors. Some western areas, especially in mountains, have bright coloration too. Eastern Asia and southwestern Europe are others. The broad-leaved evergreen trees in the tropical rain forests shed their leaves very gradually, one at a time turning yellow and falling. In the seasonal tropical forests the foliage becomes parched and brown with the coming dry season.

As the fall colors appear, other changes are taking place. At the base of the leafstalk where it is attached to the twig, a special layer of cells develops and gradually severs the tissues that support the leaf. At the same time Nature heals the break, so that after the leaf is finally blown off by the wind or has fallen from its own weight, the place where it grew on the twig is marked by a leaf scar.

Most broad-leaved trees in the North shed their leaves in the fall. However, the dead brown leaves of the oaks and a few other species may stay on the tree until growth starts again in the spring. In the South, where the winters are mild, some broad-leaved trees are evergreen; that is, the leaves stay on the trees during winter and keep their green color. Most conifers -- pines, spruces, firs, hemlocks, cedars, etc. -- are evergreen in both the North and South. The needlelike or scalelike leaves remain green or greenish the year round, though often becoming brownish green where winters are cold. Individual leaves may stay on the tree for 2 or 4 or more years.

Through fallen leaves, Nature has provided for a fertile forest floor. Fallen leaves contain relatively large amounts of valuable elements, particularly calcium and potassium, which were originally a part of the soil. Decomposition of the leaves enriches the top layers of the soil by returning part of the elements borrowed by the tree, and at the same time provides for more water-absorbing humus.



CHAPTER CALENDARS

PORTLAND CHAPTER

Meeting:

Mon. Oct. 8 -- Propagating Native Plants. With Stan Jewett. This short presentation will be followed by a period for discussion among the membership: future programs, desired field trips, showing of slides for plant identifications, and any other subjects members wish to discuss briefly.

Field Trips:

Sat. Oct. 6 -- Tillamook Bay Area. Dr. Janet Hohn, leader. Meet 8:15 in the OMSI parking lot; or 10:00 in front of Pioneer Museum, Second St. and Pacific Ave., Tillamook. Bring waterproof boots as well as something to hike in. Distance from Portland 85 miles.

Sat. Oct. 13 -- Sister Rocks Natural Area in the Gifford Pinchot N.F. David Magin, guest leader. Arrangements by Elizabeth Handler. 244-5320. Meet Lewis and Clark S.P. 8:30; or north end Bridge-of-the-Gods 9:15. Distance from Portland 82 miles.

Sat. Oct. 20 -- Open. No formal trip scheduled but an outing may be improvised depending on weather and expressed interest. Call Shep Wilson 228-7823 or Joyce Beeman 639-3353 for information.

Sat. Oct. 27 -- Columbian White-tailed Deer NWR, Cathlamet, Wash. 75 miles from Portland. Elizabeth Handler, leader. Meet 8:30 the Red Leion Motor Inn parking lot. Take Jantzen Beach exit off I-5, assemble near the big sign; or meet 10:00 at the refuge headquarters.

Sat. Nov. 3 -- Mushrooms on Salmon River Trail. Keith Warren, leader. Meet 8:30 State Motor Vehicle Dept. parking lot, N.E. 60th and Glisan; or Zig Zag Ranger Station 9:30.

SISKIYOU CHAPTER

Meetings: 7:30 p.m. Rm. 171, Science Bldg., SOSC, Ashland.

Thurs. Oct. 4 -- NPSO State President, Dr. Frank Lang, speaker.

Thurs. Nov. 1 -- Forest Diseases and Their Wildflower Hosts, Andy Kier, speaker.

Field Trips:

Sat. Oct. 6 -- Mare's Eggs Spring and Collier State Park. Frank Lang, leader. Meet at Medford K-Mart 8:00; or Ashland Bi-Mart 8:30. Bring lunch and water for all day.

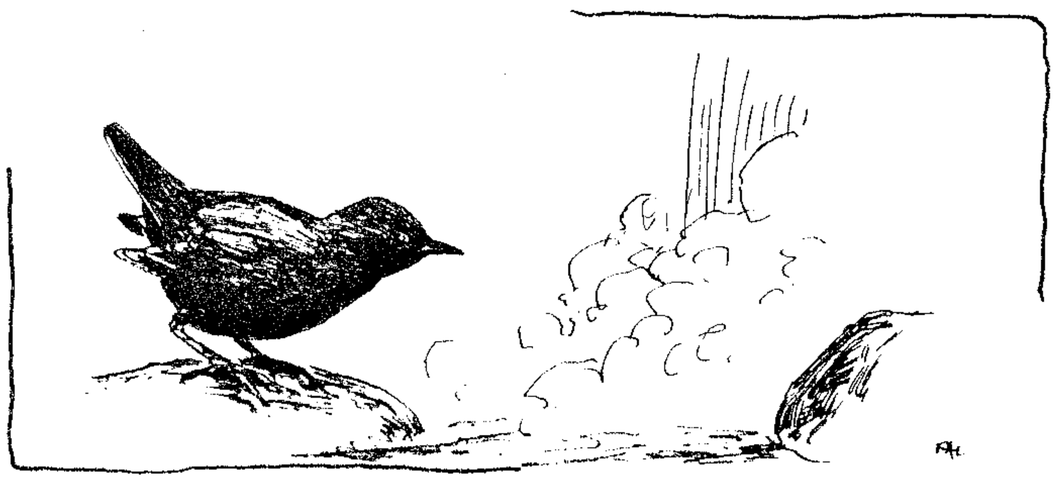
Sat. Nov. 3 -- Fall Colors, Upper Rogue River, Gil Plunkett, leader. Meet Ashland Bi-Mart 8:00; or Medford K-Mart 8:30. Bring lunch and water for all day.

FIELD TRIP REPORTS

WILLAMETTE VALLEY CHAPTER

Sun. Sept. 9. Chapter members and guests (11 hikers in all) enjoyed a jaunt up the middle reaches of the Little Luckiamute River above Black Rock, Oregon. The rain forest was beautiful along the river. Our study included the ecology of trees along the riparian zone, which included Grand Fir (Abies grandis), Douglas-Fir (Pseudotsuga meziesii), Western Hemlock (Tsuga heterophylla), Red Alder (Alnus rubra), and Hazel (Corylus cornuta). The term "Lowland White Fir" as used by Gilkey was the subject of much discussion. The practical uses by Northwest Indians of several of the plants we saw along the trail made the trip even more interesting. The sighting of water ouzels along the river topped off a very interesting day.

Larry R. Scofield,
Trip Leader



SISKIYOU CHAPTER

Sat. Sept. 13. Fifteen adults and a few kids enjoyed a pleasant picnic in Lithia Park, Ashland. No one paid any attention to the native plants, their attention firmly centered on the pot luck and good fellowship. Thanks to Chapter Hospitality Person, Rosalie Oates, for organizing this very enjoyable afternoon.

Sat. Sept. 8 -- Siskiyou Chapter mustered 14 people for its trip to Hershberger Mountain. Here on the upper Rogue-upper divide in the Cascades, the group explored an area at 6,000 feet and higher. Outstanding were the Rabbit Ears, a cleft volcanic plug several hundred feet high. Undaunted by a hard rain in the morning, the group enjoyed good weather for the rest of the day. Notable species included: Mountain Maple (Acer glabrum), Mountain Ash (Sorbus sitchensis) with its beautiful orange-red berries, a stand of Alaska-Cedar (Chamaecyparis nootkatensis), Subalpine Fir (Abies lasiocarpa), Bleeding Heart (Dicentra formosa), Suksdorf's Paintbrush (Castilleja suksdorfii), Cascade Aster (Aster ledophyllus), Mountain Aster (Aster modestus), and California Cone Flower (Rudbeckia californica). Leader for this trip was Cindy Cripps, Information Officer with the U.S. Forest Service, Rogue River National Forest.

WELCOME TO NEW MEMBERS

Portland Chapter
- Mr. & Mrs. Miles Eaton, Sherwood
- Jon C. Vessely, M.D., Portland

Siskiyou Chapter
- Guy C. Davis, Medford
- Mr. & Mrs. Ted Loftus, Ashland
- Sylvia Moss, Ashland
- Mr. & Mrs. Richard Stanek, Talent
- Rosemary Young, Palo Alto, CA

Blue Mountain Chapter
- Mr. & Mrs. Chuck Anderson, Stanfield
- Joan Soderstrom, Hermiston

Emerald Chapter
- Arthur W. Lamons, Eugene
- Margaret Carlson, Eugene
- Mrs. R. Wilson Hutchinson, Eugene
- Kenneth Jones, Springfield
- Kathleen Shelman, Springfield
- Robert A. Wearne, Eugene

State-At-Large
- Alice Howard, Oakland, CA
- Mr. & Mrs. Robert E. Frenkel, Corvallis
- Mr. & Mrs. David Burnett, Battle Ground Wash.

Joy Heath Terrall, a member of Portland Chapter, died August 9. Joy was the wife of Dr. Vance Terrall, current President of Portland Chapter.

The Editors
Native Plant Society of Oregon
Department of Biology
Southern Oregon State College
Ashland, Oregon 97520

NATIVE PLANT SOCIETY OF OREGON

CHAPTER PRESIDENTS

For change of address or information on membership, contact your nearest chapter or Mary Falconer, 1920 Engel Ave., N.W., Salem, 97304.
Contributions to the NPSO Bulletin or non-delivery notice should be sent to: the Editors, Native Plant Society of Oregon, Department of Biology, Southern Oregon State College, Ashland, 97520.

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