

THE BULLETIN OF THE
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. XV No. 6

JULY 1982

ENDANGERED SPECIES ACT:

WE WON!!

The House passed the Endangered Species Act by voice vote on 8 June; the Senate passed its similar bill, also by voice vote, on 9 June. The two bills be reconciled in a conference - not expected to be difficult since there are only a few substantive differences between them. Then both houses will pass the common version and it must be signed by the President. (So far, there are no indications that he will veto it.)

Passing the ESA turned out to be easier than we had feared just 6 months ago. Our vigorous campaign deserves much of the credit. The opponents' overconfidence is another explanation. But a crucial factor was the strong support of the House and Senate committee leaderships for the program. These people and their staffs worked very hard to develop compromises that would be supported by a broad range of interests. They deserve our thanks. By expressing our gratitude, of course, we also put them in a good frame of mind to hear our requests next time. So, please write to Senators John Chafee (R.I.), George Mitchell (Maine), Slade Gorton (WA), and co-sponsors Howard Baker (Tenn.), Jennings Randolph (WVA), Max Baucus (Mont.), Gary Hart (Colo.), Patrick Moynihan (NY), Quentin Burdick (ND), Robert Stafford (VT.), Frank Murkowski (AK), Charles Percy (IL), and Henry Jackson (WA); and to Congresspeople John Breaux (LA), and Edwin Forsythe (NJ), and co-sponsors Claudine Schneider (RI), David Bown (Miss.), James Oberstar (Minn.), Don Bonker (WA), Roy Dyson (md), Fofu Sunia (American Samoa), Earl Hutto (Fla.), Gerry Studts (MA), W. J. Tauzin (LA), Joel Pritchard (WA), David Emery (Maine), Jack Fields (TX), Norman Shumway (CA), Charles Dougherty (PA), and William Carney (NY).

Letters to Senators may be addressed to the Senate Office Building, Washington, D.C. 20510; to Congresspeople, to House Office Building, Washington, D.C. 20515.

Finally, I wish to thank you for all your invaluable help. I am convinced that your active support of the Act, and in particular its continued protection for plants and other "lower life forms", headed off the dangerous attacks that were being circulated last Fall.

We will continue to be active. After all, once the reauthorization is signed, we still must assure its proper implementation. Meanwhile, thank you once again.

[From: Faith Campell, Natural Resources
Defense Council, Inc.]

A NOTE FROM YOUR EDITOR

I would like to acknowledge all the positive feedback I have been receiving about the Bulletin. It is a labor of love, but nevertheless still a labor, and all the strokes help me make it through the chores. I must pass some of the compliments on to our past president, Dr. David Wagner, who continues to help with everything including sensitive policy issues, ideas, an additional proofread, or even an occasional trip to the printing shop. The NPSO gains incredibly from the participation of the state's professional botanists such as Dr. Wagner.

Those professionals and knowledgeable "amateurs" who submit to the Bulletin are also deserving of credit. So far the job of editing has been made simpler by the quality articles that are submitted. I encourage others to submit articles, or even ideas. I am sure our membership is hiding unused talent. Remember, the greater the variety of material I have to choose from for the Bulletin, the more enjoyable your reading will be! Copy deadline remains the 15th of each month. Be on time.

Request for office supplies. Does anyone have an empty file cabinet, or used file folders? Through the months of editing I have accumulated boxes of written matter. It is organized, but I need a place to put it all. Can you help?

Extra bulletins. We have many extra April, May, and June 1982 Bulletins. Let's use them for advertising at all the summer activities such as county fairs and the state fair. Write to request yours now. LAV.

ANNUAL MEETING OF THE NATURE CONSERVANCY
Oregon Chapter: July 10-11, 1982.

The Oregon Chapter of The Nature Conservancy will gather in the pinelands of the spring-fed Metolius River for its Annual Meeting and the dedication of two new preserves: The Metolius River Preserve, and the Wildhaven Preserve. For more information contact TNC, 1234 NW 25th AVE, Portland OR 97210, 228-9561.

NEEDED

SEEDS OF LOMATIUM NUDICAULE

- * Seeds of 5-10 individuals, packaged separately.
- * A voucher specimen.

Please send to:

Dr. Mark A. Schlessman
Vassar College
Poughkeepsie, New York 12601
Department of Biology

[Dr. Schlessman did his graduate work on the tuberous lomatioms at the University of Washington, Seattle.]

Western swamp laurel
Kalmia occidentalis



CHAPTER NEWS

PORTLAND CHAPTER

Meetings:

Wednesday, July 28, 7:00 p.m., Central Library, 801 SW 10th, Portland. Plant collections and herbaria. Dr. Kenton Chambers from Oregon State University will speak. Dr. Chambers is the curator of the Oregon State University Herbarium, and is a well respected systematic botanist.

August: NO MEETING SCHEDULED

Field Trips:

Weekend, July 3 and 4. Strawberry Mountain. George Lewis, leader. Call Shep Wilson or Joyce Beeman about arrangements.

Saturday, July 10. Mirror Lake. Esther Kennedy, leader. Carpool 8:30 a.m. at the Department of Motor Vehicles parking lot, N.E. 60th & Glison, or meet at the trailhead, one-half mile short of the Ski Bowl at 9:30.

Saturday, July 17. Grassy Knoll. Mary Jane Fredricks, leader. Carpool 8:30 a.m., at the DMV lot as above, or meet at the new Skyline Trail facility located directly south of Bridge of the Gods at 9:45.

Saturday, July 24. Lolo Pass Area. Dr. George Jeffcott, leader. Carpool at Tri-Met's Handyman Park & Ride lot, 15550 S.E. McLaughlin, at 9:00 a.m., or meet at Zig Zag Ranger Station 9:45.

Saturday, July 31. No field trip scheduled.

Saturday, August 7. Barlow Butte. Ann Whitmyer, leader. Carpool 8:30 a.m. at the DMV lot as above, or meet 10:00 a.m. at the rest stop in Government Camp.

HIGH DESERT CHAPTER

Field Trips:

16th July. Steens Mountain - We will carpool at 5:00 p.m., Friday, in MacDonald's parking lot. Probable camping site will be Fish Lake if road is open. For more information contact Stuart Garrett or Jack Schwartz.

31st July. Many Lakes. (Proposed Research Natural Area). Bill Hopkins, botanist and USFS ecologist will take us to this floristically interesting area near Cultus Mountain on the Deschutes National Forest. Carpool at MacDonald's parking lot at 8:30 a.m.

21st August. Rock Mesa in Three Sisters Wilderness. This area has been claimed for a possible open-pit pumice mine. We will make the short 6 mile round trip hike to botanize and search for several threatened/endangered plants which have been or should be found there. Meet at MacDonald's parking lot 8:30 a.m. for carpool.

SISKIYOU CHAPTER:

Meetings:

NO MEETINGS SCHEDULED UNTIL OCTOBER.

Field Trips:

CANCELLED: Black Bear Swamp trip, 10 July.

17 July. Mt Ashland Loop Trip. We'll head up to Mt Ashland to see sub-alpine meadows, serpentine outcrops, and talus slopes and return to the valley via Ruch. Meet at the Medford K-Mart at 8:30 and the Ashland Bi-Mart at 9:00 a.m. For more information, call Dave Garcia, the trip leader, at 899-9039.

7 August. Crater Lake Wildflower Path. This will be an easy stroll through the picturesque path near the park's administration headquarters. Meet at the Ashland Bi-Mart at 8:30 and the Medford K-Mart at 9:00 a.m. For more information, call Marylou Schnoes at 770-5519.

CORVALLIS CHAPTER

Meeting:

Thursday, July 15, 7:30 p.m. Oregon State University, Room 2082, Cordley Hall. The Nature Conservancy in Oregon will be the program presented by Cathy Macdonald, a graduate student of O.S.U., who has worked with the Nature Conservancy for several years.

Field Trip:

Saturday, July 24, Cascade Head, with Cathy Macdonald. Meet at the Otis Cafe at 10:00 a.m. The Otis Cafe is one-half mile east of Highway 101 on Highway 18. Bring lunch.

WILLAMETTE VALLEY CHAPTER

Field Trips:

July 3-4-5. Metolius River Area (Weekend camp-out). For details contact Wilbur Bluhm, leader. 393-2934.

July 10. Iron Mountain (in conjunction with Audubon). Irma Bunnell, leader, 393-6159. Carpool at south Salem K-Mart 8:00 a.m.

July 10. Half-day easy trip. Jackson/Frasier Creeks Wetland grasses and sedges with Kenton Chambers (752-3646). Carpool at Salem K-Mart, 8:00 a.m., or or in Corvallis at Payless parking lot, 9th and Circle Blvd., 9:00 a.m. Mariana Bornholdt, leader (585-2057).

July 17. Crown Lakes. Moderate effort trip. Meet at south Salem K-Mart, 7:30 a.m. Bill and Lois Egan, leaders (393-2131).

July 31. Mt. Beachie. Strenuous trip. Meet at south Salem K-Mart, 7:30 a.m. Contact Jack Bailey (394-2414) for details.

August 7. Woodpecker Ridge. Easy trip. Doris McDougall, leader (581-2885).

August 21. Papoose Lakes. Moderate effort trip. Wilbur Bluhm, leader (393-2934).

EMERALD CHAPTER

Meetings:

Monday, July 12, 7:15 p.m. NOTE:
 THIS IS THE SECOND MONDAY OF THE MONTH
 TO AVOID THE 4th OF JULY HOLIDAY.
Rainy Day Poppies and Other Delights.
 Malcom Manley, Emerald Chapter member
 and long time photographer, will share
 his three part slide show, consisting
 of Oregon scenics, mushrooms, and wild
 flowers. Malcolm utilizes two pro-
 jectors to accomplish the slow dissolve
 with background music for an outstand-
 ing show. Juanita Manley, Emerald
 Treasurer, assists. Opportunity to
 talk with Malcolm following. Meet at
 the American Red Cross Building, 150
 East 18th, Eugene.

Monday, August 2, 7:15 p.m. Sharing native
 plant literature, by Linda Johnson,

Emerald Chapter Vice President, and other chapter
 members to share individual's collections of native
 plant literature. In so doing we will be offer-
 ing many opportunities for the group to discuss
 openly their interest in the various literature.
 After the program, tables will be set up to
 display the literature discussed, or selections
 brought in by our members. Those interested in
 participating or contributing should contact
 Linda Johnson, 747-4048, evenings. Meet at the
 American Red Cross Building, address above.

Field Trips:

July 18 (a Sunday). Upper Elk Meadow,
 south of Cottage Grove up Big River
 Road. Alan Curtis, BLM botanist, will
 lead this repeat Emerald Chapter field
 trip to a wet meadow at 4,200 feet.
 Expect to see Frasera umpquaensis,
Sidalcea cusickii, Angelica genuflexa,
 and a host of other native plants.
 Wear boots that can take bog conditions.
 Bring lunch and beverage. Meet at the
 South Eugene High Parking Lot at 8:30
 a.m.

July 23, 24, 25. In seach of Penstemon
 glaucinus. Ken Lodewick leads this
 Obsidian trip to the Gearhart Mountains
 in Klamath and Lake Counties. Call Ken
 at 344-6533 for information on departure,
 transportation and camping plans. Pre-
 registration required.

July 31 - August 1. Tam McArthur Rim in
 the Three Sisters Wilderness and over-
 night at one of three campgrounds in the
 Three Creeks Campground area. Meet
 Harold Dunn, leader, Saturday July 31 at
 10:00 a.m. at the large parking lot of
 Three Creeks Campground. Call Harold,
 746-3063, or Charlene Simpson, 686-1094.

August 7. Lane County Coast/Siltcoos
 Outlet. Expect to see late summer native
 plants of wet places, deflation plains,
 foredunes, brush thickets and beach.
 Margaret Markley, Emerald Chapter member
 and resident of Florence, will lead us
 on an easy hike to some of her favorite
 places. Meet at South Eugene High School
 parking lot, 8:00 a.m., or in Florence at
 the Junction of Highways 126 and 101 at
 9:30 a.m. Call Margaret (Florence 997-
 8552) or Charlene (Eugene 686-1094).

The Emerald Chapter field trip notebook
 is now in operation. I have organized by
 county and field sites a collection of many
 plant checklists. It is extremely impor-
 tant throughout this season of "hiking
 about" that we make a conscientious effort
 to list the plants we are seeing, even
 if only by common name. Someone will
 surely help organize the list for you. In
 the continuing effort along with the
 Portland Chapter, and other chapters who
 are keeping checklists, we can communicate
 easily the whereabouts of sensitive, threatened &
 endangered plant sites, and first-time
 finds. I encourage all chapters to take
 seriously the need to have a chapter field
 checklist. If you need more information
 or examples of how a notebook can look,
 contact Charlene Holzworth, Portland
 Chapter, for her thoughtful suggestions.

Linda Johnson
 Emerald Chapter

ALPINA RESEARCH

ALPINA RESEARCH is a non-profit organiza-
 tion, founded in 1980, by a group of
 specialists devoted to the scientific
 knowledge and growing of alpine and native
 plants. Many worldwide known specialists
 and botanical gardens support these goals
 with the research approach of studying
 plants.

Some of the goals of ALPINA RESEARCH are:

- Maintain a year round service of a
 SEED BANK.
- Collect and exchange plant material
 and information:
 - a) plant, cutting, seed, pollen,
 etc.
 - b) comments, slides, prints,
 articles, etc.
 - c) herbarium specimens
- Experiment on their propagation and
 cultural requirements.
- Publish the results of research of the
 members in articles, monographs.
 Release scientific information on the
 taxonomy and the culture of these
 plants.

We believe that, by the exchange of seed
 and information between dedicated gardeners
 and botanical gardens, through ALPINA RE-
 SEARCH, and the growing of these plants, we
 will help to save the species that are not
 yet classified as endangered.

For more information, write to the follow-
 ing address:

Mr. Majella Larochelle, Director
 ALPINA RESEARCH
 630 S.E. Rene
 Gresham, OR 97030

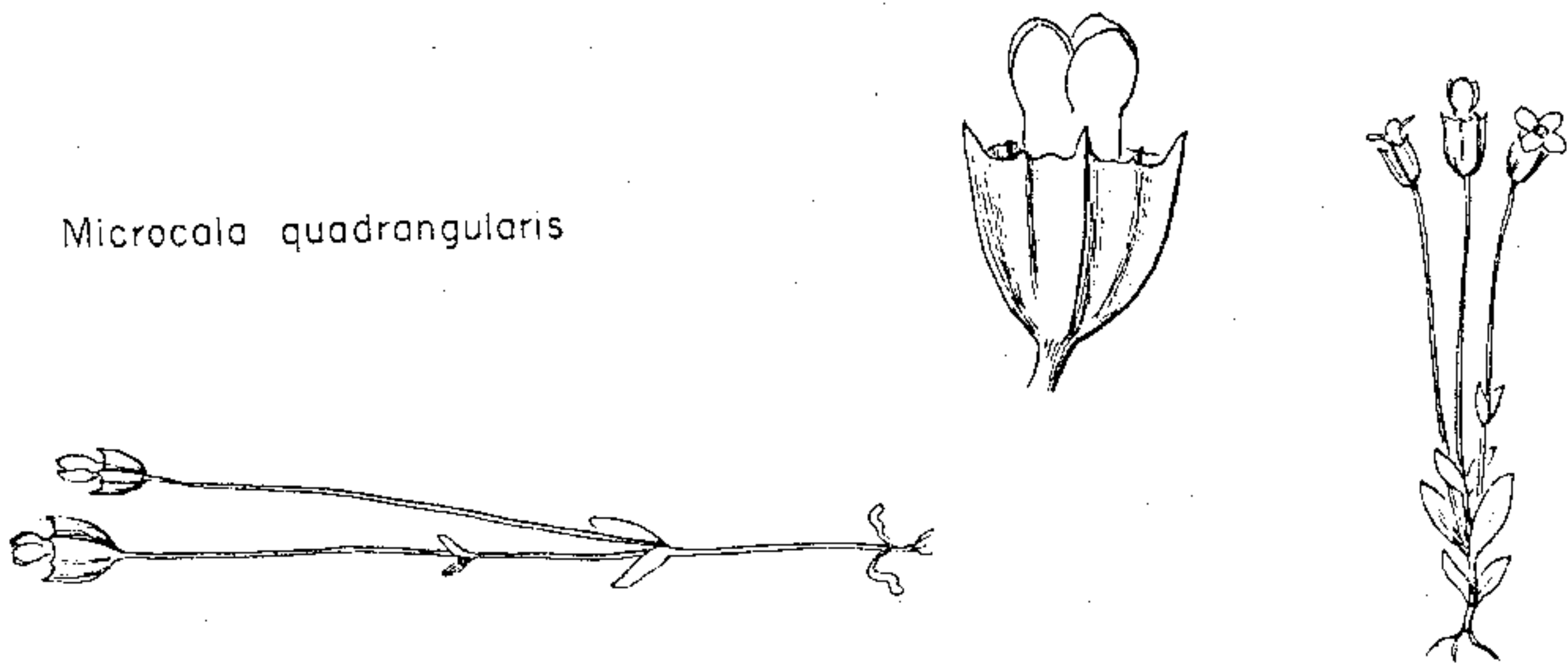
(Editor's note: We have inquired into Mr.
 Larochelle's intentions, and are assured that
 he fully supports the NPSO Code of Ethics as
 reprinted, for your convenience, on page 7. Seeds
 and cuttings are to be obtained from garden
 grown, nursery propagated stock.)

The Mt. Baldy field trip proved to be a very exciting, full day. Saturday, 22 May, the Eugene Natural History Society and the NPSO Emerald Chapter started out 38 strong and hiked through privately owned hillside meadow and pastures, where we viewed many common valley plants. We slowly climbed into stands of oak, Quercus garryana, douglas fir, Pseudotsuga menziesii, and grand fir, Abies grandis, many big leaf maples, Acer macrophyllum, and an occasional Oregon ash, Fraxinus latifolia. The shrubbery was mixed: snowberry, Symphoricarpos albus, both elderberry species, Sambucus spp., indian plum, Oemleria cerasiformis, blackberry, Rubus sp., scotch and french broom, Cytissus scoparius and C. monspessulanus. Along the way Dr. Fitz would stop to give us a helpful taxonomic lesson for the species encountered, including some of his "tricks of the trade."

By lunch time we had seen not only many plants but thanks to the watchful eyes and ears of the natural historians in the group we got to see a vesper sparrow nest with three eggs, and later on the singing black-headed grosbeak. "Now that's the way a bird ought to sound." As we continued our hike the day was graced with more sounds, western-wood peewee, sights of the small red and black cinnabar moths fluttering around, a fast moving red-bellied salamander, a small gold backed beetle (which enjoys eating the toxic locoweed), and an unusual sight, a hummingbird chasing a killdeer! Dr. Fitz delighted us with stories on the development of the oak gall and the cynipid wasp, the changing colors of Myosotis discolor, forget-me-not, due to pollination, and, the moveable T-parted stigma of monkey flower, Mimulus sp.

As we approached our last surge to reach the top of Baldy many in the group decided to explore around on their own while other participants went straight up the last stretch of hillside to reach the top. Here was a panoramic view of the Eugene-Springfield area, and Dr. Fitz outlined for us the entirety of the McKenzie River drainage. While on top we found lady slipper, Calypso bulbosa, shooting star, Dodecatheon hendersonii, larkspur, Delphinium sp., and Arenaria sp. within a stand of conifers. Once back with the group, Dr. Fitz showed us the location of the very tiny timwort, Microcala quadrangularis. Listed R&T in Oregon, this gentian had been seen only twice in 90 years, most recently in 1978 between Albany and Eugene. What an exciting sight for all of us, crawling on hands and knees to the clicking sounds of many cameras.

Microcala quadrangularis



We thank the pleasant weather, the NHS, and the NPSO members and most of all Dr. Fitz for sharing with us some of his botanical discoveries, his expertise, and his delightfully wonderful personality.

Botanically yours,
Linda Johnson, Emerald Chapter

[Dr. Fitz's McKenzie Drainage Checklist, 24pp., \$1.00 cost to offset printing, is still available. Write Herm Fitz, P.O. Box 272, Blue River OR, 97413. Please include something for return postage.]

OREGON'S FLORA - THE MEXICAN CONNECTION

By Frank Sesock

Ranging from mountain to desert environments exists a diverse range of plants having their limits of distribution in Oregon and northern Mexico. The mountain-foothill complexes of Baja California Norte contain the widest array of plants with like representatives in Oregon. While hiking in the Sierra San Pedro Martir, with Reid Moran, we both noticed the obvious similarities of flora in Oregon-California and Mexico. Perhaps the greatest representation of flora in the Mexican connection is trans-California. The following plants have a northernmost distribution in Oregon - range through California - terminating southern range extensions in northern Mexico. The knobcone pine Pinus attenuata, Sugar Pine P. lambertiana, Jeffrey Pine P. jeffreyi, Incense Cedar Calocedrus decurrens, and California White Fir (Abies concolor var. lewiana), form the arborifloral conifer connection. Shrubs - small trees of the chaparral complex includes: Cercocarpus betuloides, Hollyleaf buckthorn Rhamnus crocea ssp. ilicifolia and Coffeeberry Rhamnus californica. The Canyon Live Oak Quercus chrysolepis ranges into Baja California, but Quercus kelloggii has not, to date, been located in Mexico (I. Wiggins). In the arroyos and along the streams are scattered populations of California laurel Umbellularia californica and Bonpland Willow Salix bonplandiana - which ranges through Mexico into Guatemala, and Hinds willow Salix hindsiana.

Plants of the desert community include: Ephedra nevadensis and the Pickleweed Allenrolfea occidentalis.

At the higher levels of elevation in the Sierra San Pedro Martir, exists populations of Snow brush Ceanothus cordulatus and the Snow plant Sarcodes sanguinea.

Pacific Madrone Arbutus menziesii at nearly 9000' elevation, Pinus contorta var. murrayana Sierra lodgepole pine, Quaking aspen Populus tremuloides (the most widely distributed tree in N. America) are found in Baja California, but all said trees range north of Oregon.

The Mexican connection plays an important link to Oregon's flora. Many of the plants have penetrated Mexico from the north. On the other hand, the following plants of the Mexican connection ranging south of the Oregon State Line includes: Toyon Heteromeles arbutifolia along the Klamath River, Bush Poppy Dendromecon rigidum, and Mexican elder Sambucus mexicana. In time many other floral links will be discovered - in the complex relationship of the geologic and climatic similarities that have produced Oregon's Mexican Connection.

from Hitchcock et al, Vascular Plants of the Pacific Northwest

As we began to descend a different way (through a little more poison oak than we wanted) we watched carefully for sites where Dr. Fitz had reported finding R&T Silene hookeri, Hooker's silene, but to no avail. Something is left to discover on the next trip! The day's trip proved extremely successful, and I tallied nearly 100 plants, including trees and ferns (not including creatures).

ECOLOGICAL NOTES

Indian Plum is Probably Fly-Pollinated - Results of One Season's Research

In February I wrote about Indian Plum (*Oemleria cerasiformis*: Rosaceae), our earliest spring-blooming native shrub, and asked some tough questions:

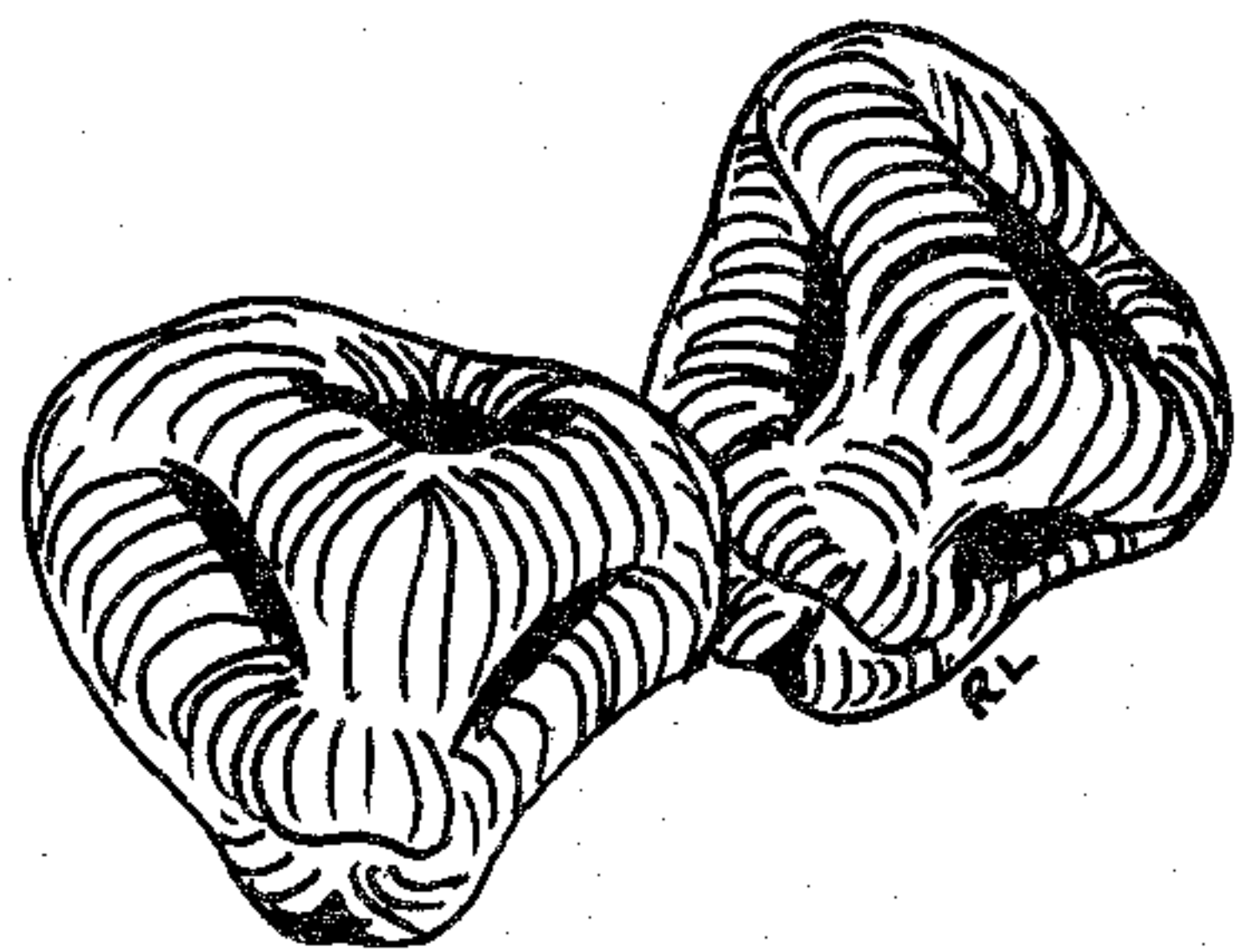
Why does it bloom so early and what pollinates it?

Why is it dioecious (male & female flowers on separate plants)?

I heard from several readers, including Dr. A. R. Kruckeberg of the University of Washington, whose former student M. Deardorff did research on Indian plum in 1973. Ms. Deardorff's results were inconclusive but she showed by bagging that Indian plum requires insect visitors for pollination and she observed insects from a number of orders on the flowers.

I bagged female flowers before the petals opened, then hand-pollinated some of these and verified Ms. Deardorff's conclusion that animal vectors are indeed required for fruit set in *Oemleria*.

To find what insects visit Indian plum I hung up sticky traps provided by Dr. Jack Lattin of Oregon State University. Some of the traps were baited with male blossoms, some with female, and some were left empty to act as controls. From these traps I collected insects from 8 orders, but the flies (order Diptera) far outnumbered all the others. (85 flies collected vs. 15 insects from the other 7 orders).



Indian plum pollen grains
as seen with the Scanning
Electron Microscope
~ 1500 X

Flies came equally to traps baited with male and female flowers, and were mostly absent from empty traps. So it seems reasonable to conclude that flies are attracted to the urine-like odor of Indian plum flowers and that they tend to visit male and female flowers equally -- important attributes for potential pollinators.

I did not, this season, capture flies carrying Indian plum pollen on their bodies. I hope to gather that necessary piece of evidence next year.

It has been suggested that Indian plum is pollinated by Staphylinid beetles. These were not found in my study and my populations set

abundant fruit. Ms. Deardorff found Staphylinids but primarily on male flowers. It seems likely that these beetles are pollen predators. Perhaps it was in order to protect the vulnerable superior ovaries from flower predators such as beetles that Indian plum made the evolutionary move to dioecy. This last is, of course, only an hypothesis and one that is not easy to test. As for the very early blooming time, Ms. Deardorff speculated that this enables Indian plum to avoid competition for pollinators but the question remains an open one.

Identification of the pollinator(s) of Indian plum now seems only to require capturing insects (presumably flies) carrying Indian plum pollen, and this, as I said above, I hope to accomplish next spring.

Rhoda Love

PLANT FAMILY PROFILES

By Herm Fitz

The Polemoniaceae - PHLOX FAMILY

The Phlox Family is not large, but is well distributed throughout both hemispheres from tropical regions to higher, cool temperate and arctic latitudes. The family is predominantly New World, however, and is best represented in western North America. Temperate members of this family are mostly herbs, both annual and perennial, but in the tropics some assume the habit of shrubs or small trees (*Cantua*, *Huthia*, *Bonplandia*, *Loeselia*) or even lianas (*Cobaea*). Of the 18 genera in the family, 11 are represented in Oregon; of the 300 species, nearly 70 can be found in our state.

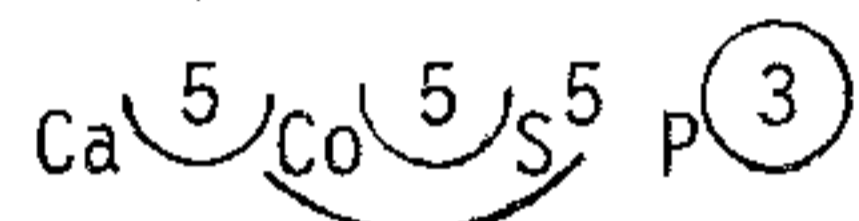
Fifteen species of Wild Sweet William (*Phlox*) occupy varied habitats from shaded woods to alpine slopes, including the rare *P. hendersonii* known in Oregon only on the north slope of Mt. Hood. Seven species of Polemonium (*Polemonium*) are found, with pinnate leaves and often a mephitic odor, the taller being known as "Jacob's Ladder" and the dwarf alpine species called "Sky Pilot." Skunk Polemonium (*P. viscosum*), on rocky slopes above timberline, is known only from a few widely separated peaks of eastern Oregon - in the Wallawas, the Strawberry Mountains, and on the Steens Mountain. Thirteen species of the genus *Gilia*, also including *Ipomopsis*, are found here in drier habitats; among them the Blue Field *Gilia* (*G. capitata*) and the striking Scarlet *Gilia* (*G. aggregata* - also referred to by some authors as *Ipomopsis aggregata*). Of nine species of *Collomia* (*Collomia*) occupying varied habitats, two are rare: Bristle-flower *Collomia* (*C. macrocalyx*), disjunct in eastern Oregon, and Mt. Mazama *Collomia* (*C. mazama*) of the South Cascades. Six species of *Linanthus* (*Linanthus*) occupy open places throughout the state. Twelve species of *Navarretia* (*Navarretia*) are found in diverse habitat, mostly in dry open sites; Tehama *Navarretia* (*N. heterandra*) is a California species known only in Jackson County, near Table Rock. Few-flowered *Eriastrum* (*E. sparsiflorum*) is native to dry, often sandy places at lower elevations east of the Cascades; Bristly *Langlosia* (*L. setosissima*) occupies dry, stony ground in northeastern Malheur County. Pink *Microsteris* (*Microsteris gracilis*) is represented by an eastern and a western variety on each side of the Cascade Crest in dry to moist, open places of the foothills and lowlands. Three species of *Leptodactylon* (*Leptodactylon*) may be found east of the Cascades in dry places, including Hazel's Prickly-phlox (*L. hazelae*), endemic to the Snake River Canyon of Wallawa County. Finally, two species of the small, leafless annual *Gymnosteris* (*Gymnosteris*) are found in dry, often sandy open places at low elevations - one of which, the Large-flowered *Gymnosteris* (*G. nudicaulis*) is rare in eastern Oregon.

In Oregon, members of this family are herbaceous, occasionally woody at the base. Leaves may be alternate or opposite, or a combination thereof, and vary from simple in most genera to compound, as in *Polemonium*. Flowers are bisexual, regular, and borne in leaf axils or terminal, either solitary or in cymose clusters of dense heads. The floral pattern is quite consistent. The calyx consists of five sepals joined into a tube. Five petals are fused to form a corolla, with a tube bearing five spreading lobes, or of a bell or funnel shape. The five stamens are fused to the inner wall of the corolla (said to be "epipetalous") and alternate with the lobes. Often these stamens are seen to arise from the corolla tube at various and unequal heights. The two pollen sacs of each anther open by longitudinal slits. The pistil is almost always of three fused carpels (rarely 2 or 4) with the same number of locules, with 1 to many ovules on axile placentation within each chamber. This superior ovary bears a simple style with stigmatic lobes equal to the number of carpels. The fruit is a dry "loculicidal" capsule splitting along the midrib of each carpel.

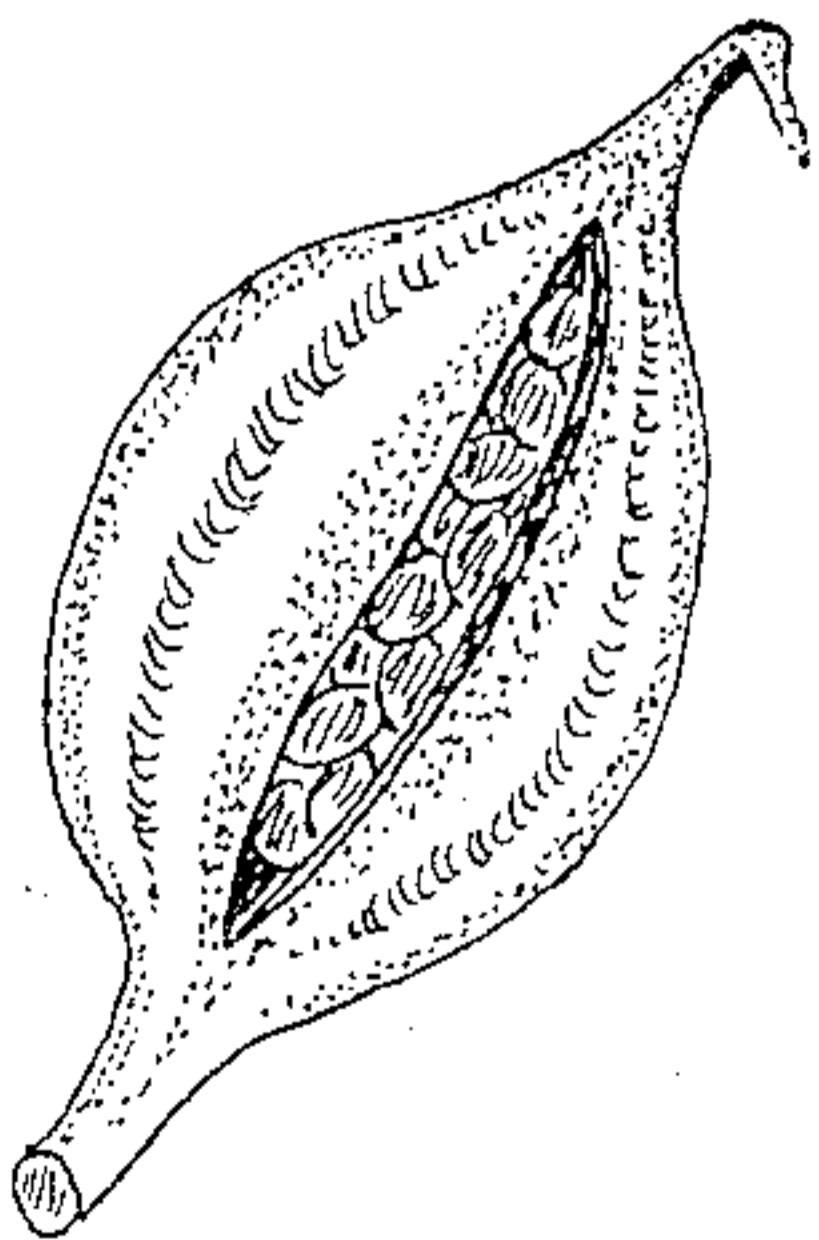
Pollination among Polemoniaceae is effected by bees in most North American members. A notable array of mechanisms has arisen from this primitive condition: The use of hummingbirds by various *Gilia*, *Ipomopsis*, and *Polemonium*, flies by other *Gilia*, *Linanthus* and *Polemonium*, or beetles in some *Ipomopsis* and *Linanthus*. Tropical genera are also pollinated by butterflies, hawkmoths and hummingbirds, while the lianas (*Cobaea*) are pollinated by bats.

The family is of some economic value in the cultivation of colorful flowers of some species of *Polemonium*, *Phlox*, *Gilia*, *Cobaea*, and *Linanthus*.

The generalized floral formula for the Polemoniaceae is:

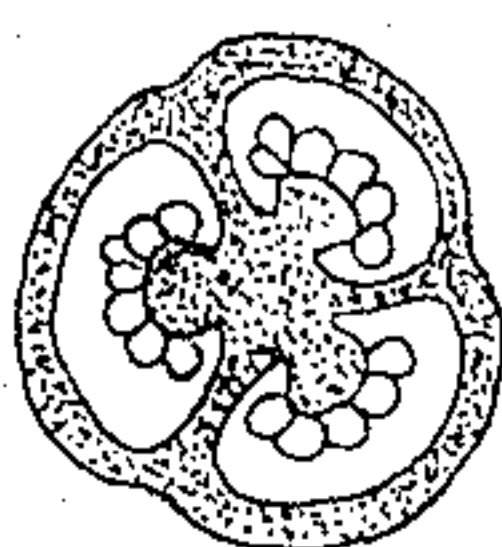


with a superior ovary. So next time you find an herb with this formula, the five stamens being epipetalous and perhaps of unequal insertion and length - and if the ovary is tri-locular with axile placentation, it is quite likely that you have found a member of the Polemoniaceae - the Phlox Family.

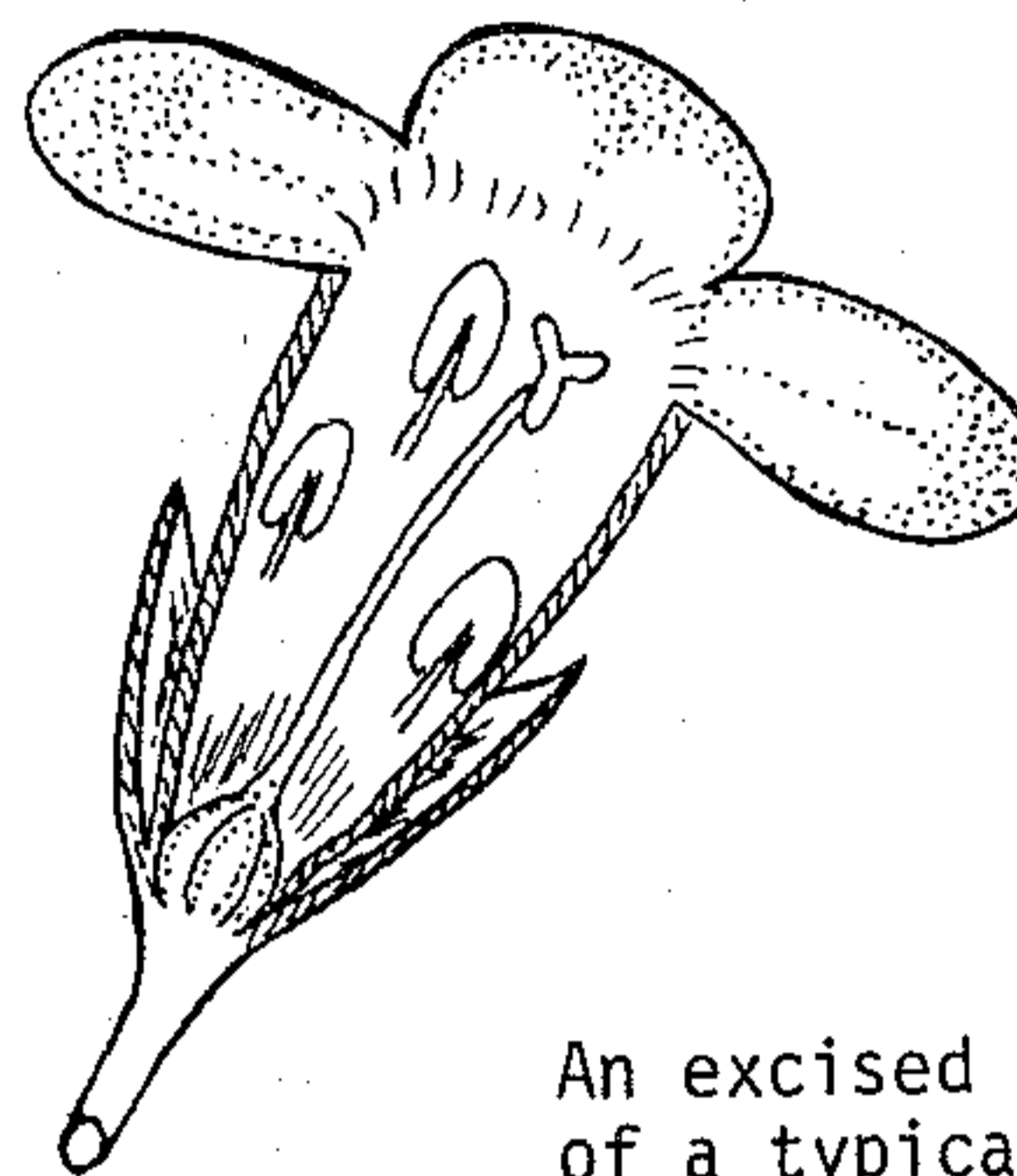
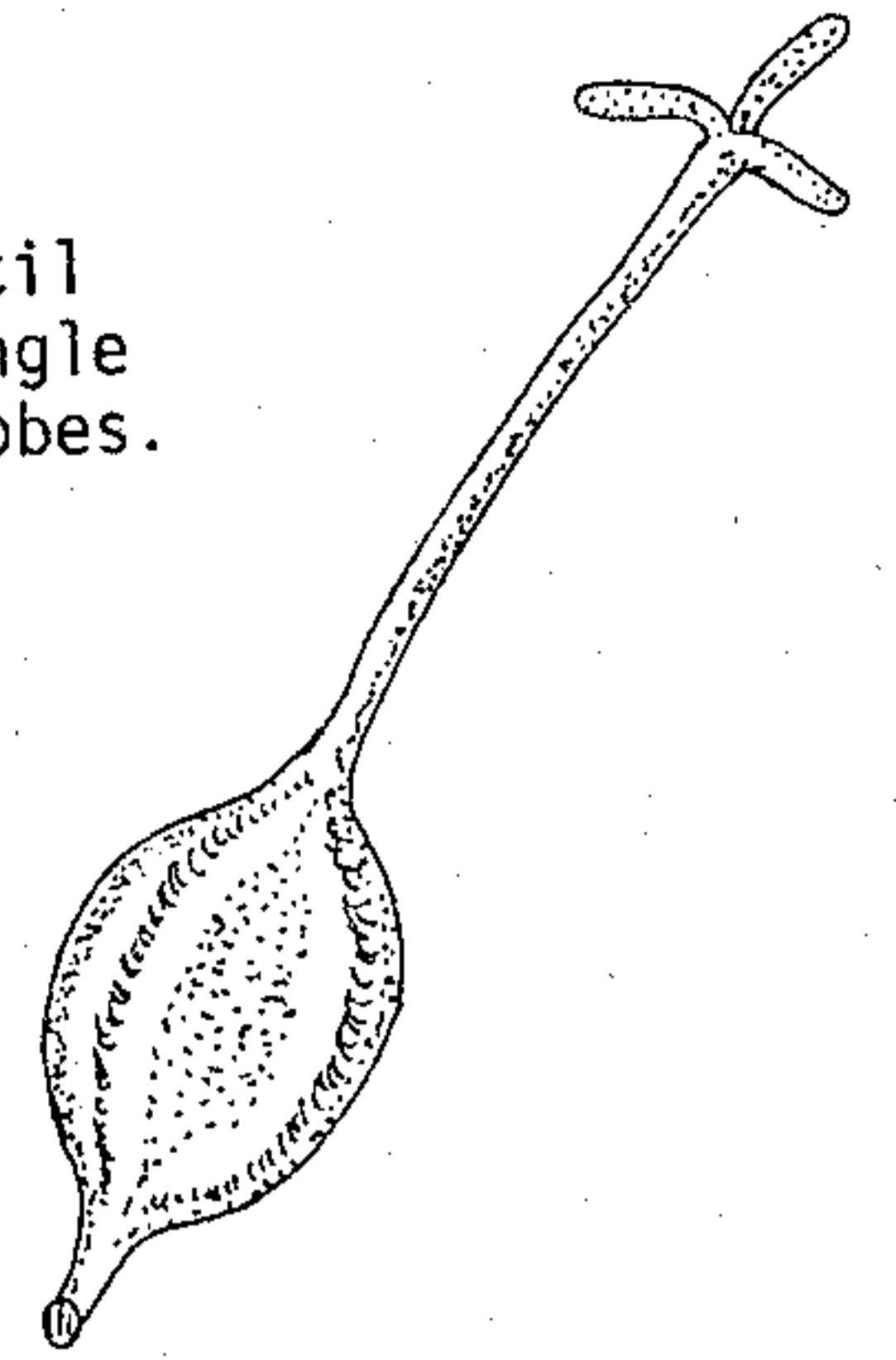


A loculicidal capsule. Note the dehiscence (splitting) along the midrib of each carpel.

A schematic view of a cross-section of a tri-carpellate ovary with three locules and numerous ovules with axile placentation.

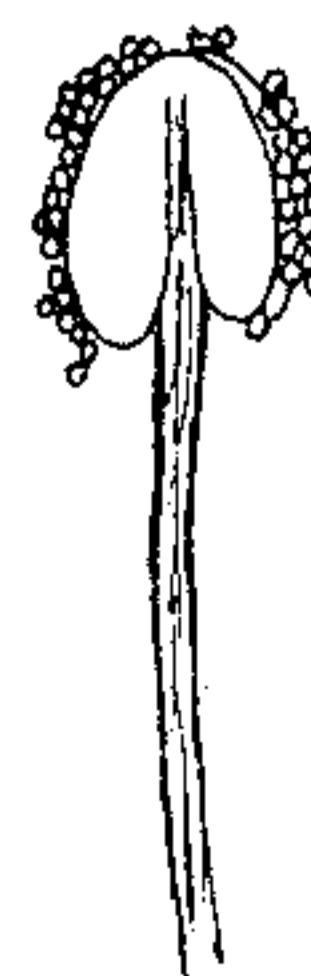


A diagrammatic view of a pistil of three fused carpels, a single style with three stigmatic lobes.



An excised corolla, partially cutaway, of a typical polemoniaceous flower, showing the united corolla, the spreading limbs, and the unequal, epipetalous stamens.

A leaf and inflorescence of Great Polemonium (*Polemonium carneum*). Note the pinnately-compound leaf and the typical cymose inflorescence.



A typical polemoniaceous stamen, showing longitudinally dehiscent pollen sacs.

GUIDELINES AND ETHICAL CODE,
NATIVE PLANT SOCIETY OF OREGON
(Adopted 1978)

GENERAL GUIDELINE: Think twice. Use discretion. A plant in place is worth two in the hand. Love thy flora.

I. Chapter Guidelines

1. Know your rare, threatened and endangered species. Know your fragile environments and unique biotic communities.
2. Be alert to threats to native plants and their habitats. Appoint watchdog committees to keep aware of these threats and inform the chapter.
3. Take action to protect native plants. Work with all groups and the general public to protect native plants and their habitats. Be prepared to salvage plants where they are threatened by outright destruction. Help eradicate particularly aggressive and successful exotic plants that threaten native plants. Take responsible outings.
4. Educate your members and the public about native plants, and encourage them to use good judgment in the study, enjoyment, and use of native plants.
5. Encourage your members to grow native plants only from seeds or cuttings.

II. Out There Among the Plants

1. Outings for whatever purpose must never endanger a plant population. Encourage non-destructive modes of learning and enjoyment: photography, artwork, scientific description, esthetic prose and poetry, and so on.
2. On group outings (field trips, conservation activities, class field studies), group leaders must take responsibility for protecting native plants from the activities of the group. All participants should understand the goal of plant protection, the purpose of the outing, and the means by which they can make the least impact on plants and the natural habitat.
3. Know where endangered species are growing and plan outings with this knowledge in mind.
4. Respect private and public property. Do not trespass. Know the regulations for use of the land and natural resources--public or private--your group is entering.
5. Respect the habitat as a whole. Avoid disturbing wildlife, such as nesting birds and nesting hornets.
6. Be sensitive to the human foot as a threat to plants. Visits to fragile environments should be carefully planned. Students should be given adequate direction by their instructor, and excessive collecting should be discouraged. Better one person enter a fragile area to identify a plant than the whole group.

7. Collecting should be considered only when identification cannot be made in the field or when it will contribute significantly to educational or scientific objectives. Collecting for whatever purpose should be done as inconspicuously as possible. Casual observers may not understand the reasons for collecting and may feel license to do likewise.
8. Collecting must never endanger a plant population. Collect seeds or cuttings in preference to whole plants. Do not collect underground plant parts except for identification purposes. Avoid excessive collecting; this calls for exercise of good judgment by the collector. Consider the use of rules of thumb for judging whether to pick or not to pick. Encourage group study of one specimen. Consider using weeds, garden species, or lab-grown specimens for educational purposes.

III. Using Native Plants

1. Use of native plants--in wildflower shows, plant sales, and horticulture--must never threaten their populations.
2. Native plant species for sale should be obtained by salvage, seeds, or cuttings--in that order of priority--and whole plants should never be dug up, except for salvage. Seeds should not be sold. Growers must exercise discretion in collecting seeds and cuttings to avoid endangering plant populations.
3. Native plants for sale should state on the label how obtained or grown. Chapters should consider certifying commercial growers who follow good ethical practice, and should urge the public not to buy unless plants were obtained or grown according to these guidelines.
4. The sale and use of particularly aggressive and successful exotic plant species, such as gorse, broom, and pampas grass, should be discouraged.
5. Salvage of native plants should be encouraged when their destruction is certain: at quarries, mines, dams, building construction sites, road construction sites. Salvage is not necessarily called for, however, on logging sites, some recreational areas, and rangeland. Salvaged plants should be kept potted long enough before sale to ensure that they will survive the shock of transplant.
6. Wildflower shows should make maximum use of their educational potential. Inform the public of the goals of NPSO; explain the guidelines your chapter follows in studying, enjoying, and using native plants--including guidelines followed in collecting for the show; consider using all other educational options (slides, artwork, publications, herbarium collections, news media, etc.); and continue the educational "life" of display materials after the show by donating them to schools, libraries, or other constructive uses.



Non Profit Org.
U.S. Postage
PAID
Eugene OR 97401
Permit No. 437

The Editor
Native Plant Society of Oregon
Department of Biology
University of Oregon
Eugene, Oregon 97403

The NPSO Bulletin is published monthly by the Native Plant Society of Oregon incorporated under the laws of the state of Oregon. You are invited to join. Membership includes Bulletin subscription. Use the form provided by local chapters for membership applications or change of address; chapter presidents with addresses and phone numbers are listed below. Send forms to: Mary Falconer; Membership Chair; 1920 Engel Ave. NW; Salem OR 97304.

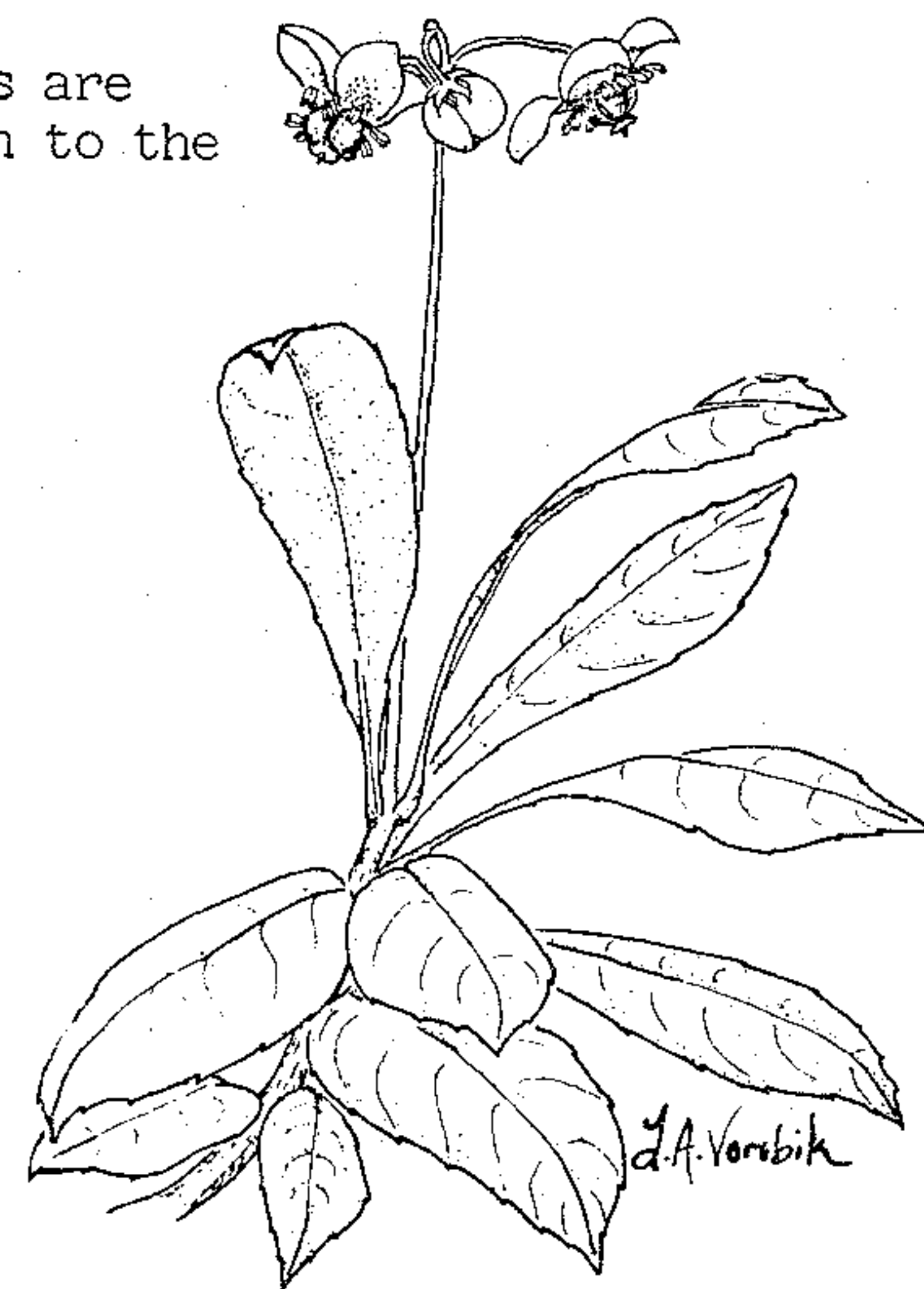
Contributions to the NPSO Bulletin or non-delivery notice should be sent to the editor. Others are welcome to use material from the NPSO Bulletin. Courtesy pleads, however, that credit be given to the author and to the Bulletin. Copy deadline is the 15th of each month.

NATIVE PLANT SOCIETY OF OREGON

President: Rhoda Love, 393 FulVue Dr., Eugene OR 97405, 345-6241.
Vice President: Anne E. Kowalishen, 4949 NE 34th, Portland OR 97212, 288-2736.
Secretary: Paula Vincent, 1836 Manzanita, Klamath Falls OR 97601, 882-9630.
Treasurer: Nadine Smith, 1128 Jackson, Eugene OR 97402, 344-6478.
Board of Directors: Wilbur Bluhm, Florence Ebeling, Marge Ettinger, Cynthia Roberts, Larry Scofield, and Veva Stansell.
NPSO Bulletin Editor: Linda Ann Vorobik, Department of Biology, University of Oregon, Eugene OR 97403, 686-3033.

CHAPTER PRESIDENTS

Blue Mountain: Harry Oswald, Box 459, Pendleton OR 97801, 276-2292.
Corvallis: Esther McEvoy, 3290 SW Willamette, Corvallis OR 97333, 754-0893.
Emerald: Charlene Simpson, 2455 Alder St., Eugene OR 97405, 686-1094.
High Desert: Stuart Garrett, 361 NE Franklin, Bend OR 97701, 389-6981.
Mid-Columbia: Keith Chamberlain, Box 151, Mosier OR 97040, 478-3314.
Portland: Virginia Diegel, 16415 NW Brugger Rd., Portland OR 97229, 645-1344.
Siskiyou: Darlene Southworth, 496 Beach St., Ashland OR 97520, 482-6341.
Willamette Valley: George Schoppert, 11265 Phantom Ln. SE, Stayton OR 97383, 859-2613.



Chimophila
menziesii

little prince's pine