

• OBJECTIVE •

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

Vol. XV No. 2

FEBRUARY 1982

NPSO NEWS: 1. ENCLOSED ARE MEMBERSHIP FORMS, DON'T FORGET TO RENEW YOUR MEMBERSHIP! FOR THOSE WHO DO NOT RENEW, MEMBERSHIP LAPSES IN APRIL, AND YOU WILL RECEIVE UP THROUGH THE MARCH BULLETIN.

2. NPSO ELECTIONS OF OFFICERS IS COMING UP SOON, SEE P. 2 FOR MORE INFORMATION AND RESUMES OF NOMINEES.
3. AN ANNUAL BOARD MEETING OCCURRED 23 JANUARY 1982 IN EUGENE. A SUMMARY OF THE MEETING WILL OCCUR IN THE MARCH BULLETIN.

CHAPTER NEWS

SISKIYOU CHAPTER

Meetings:

For further information call Darlene Southworth 482-6341 or 488-1034. All meetings are at 7:30 p.m. in Room 275, Science Building, SOSC.

February 4. Rick Prusz, silviculturist with BLM: Wildflowers of the Steens Mountains.

February 11, Thursday, 7:30 p.m.
Conservation Committee Meeting. Discuss upcoming field trip, survey of Agate Desert.
Ron Kranz, 338 B St. Ashland. 482-9120

March 4. Ron Kranz: Vegetation Patterns of Agate Desert and the Table Rocks.

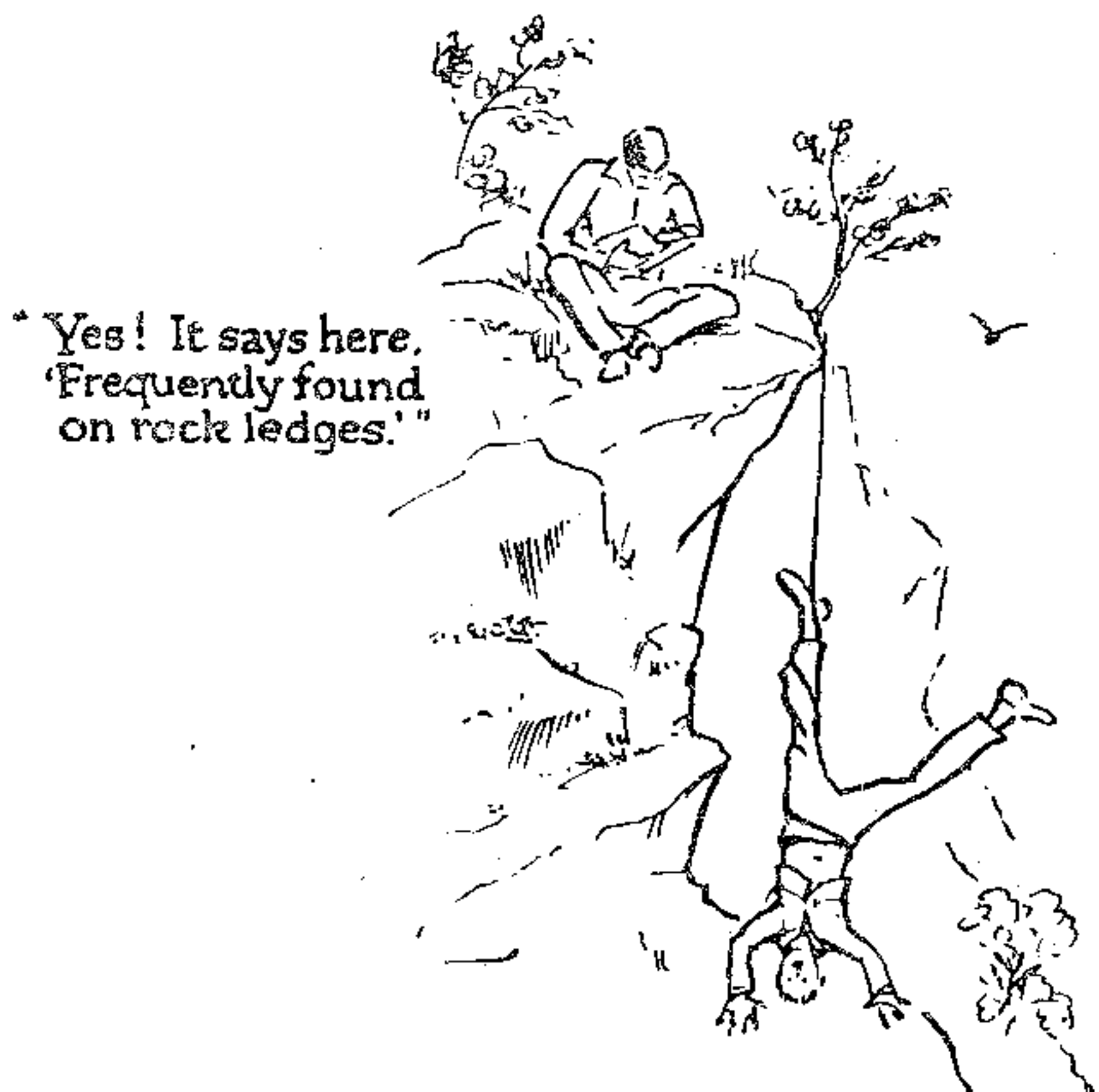
April 1. Joan Seevers, botanist with BLM: Threatened and Endangered Plants.

May 6. Dr. Stephen Cross, Department of Biology, SOSC: Riparian Habitat.

WILLAMETTE VALLEY CHAPTER

Meetings:

No February meeting. Next meeting March 15. See March BULLETIN.



(by Ed Paulton from the Fiddlehead Forum,
Bulletin of the American Fern Society)

HIGH DESERT CHAPTER

Meeting:

February 23, 7:30 p.m., at the Cascade Natural Gas Meeting Room. The Supervisor of the Bend Pine Nursery, Mr. Wojtowych, will speak to us on silviculture techniques, seed processing, and other aspects of tree production at the facility.

EMERALD CHAPTER

Meetings:

Monday, March 1, 7:15 p.m. Eugene's Native Plant Educational Garden. Bob Lacoss, of landscape architecture firm of Lacoss and Associates, and Carole Daly, Executive Director of Lane County Cooperative Museum Commission, will tell us of plans and progress in the development of the Native Plant Garden in Alton Baker Park. Meet at the Eugene City Library.

Monday, April 5, 7:15 p.m. Rare, Threatened and Endangered Native Plant Species, with a focus on the Willamette Valley. Anne Kowalashin, State NPSO Vice President and botanist for the Portland Park Bureau currently assigned to the Mt. Tabor Wildflower Project, will present a slide show and program. Anne will update us on efforts to gain recognition and protection for species of concern and suggest what we can do in support of the State NPSO's Endangered Plant Committee, which she chairs. Meet at the Eugene City Library.

VOLUNTEERS NEEDED FOR ARBORETUM EDUCATIONAL PROGRAM

The Mount Pisgah Arboretum in Eugene needs volunteers during the month of May to assist with its new Outdoor Education Program for area 5th graders. Guides are needed on Wednesday and Thursday mornings (for approximately 1½ hours) in May, to explain Arboretum natural history to classes of school children. A volunteer training program will be offered for those who wish it. If you can volunteer from one to eight Wednesday or Thursday mornings this coming May (when Arboretum wildflowers should be at their peak!), please call Arboretum President Dave Wagner at 686-3033, or Educational Chairperson Barbara Newton at 485-8066 (evenings). Please let us hear from you soon if you can help; our letter of invitation to the schools is going out this month.

The Mount Pisgah Arboretum
Eugene

PORTLAND CHAPTER

NPSO NOMINEES FOR 1982-1983. RESUMES

Meeting:

Wednesday, February 24, 7:00 p.m., Central Library, 801 S.W. 10th, Portland. Endangered Plants of Oregon. The program will be presented by three very knowledgeable members of the Portland Chapter, Janet Holm, Rare and Endangered Plants, U.S. Fish and Wildlife; Anne Kowalishen, Chairperson of the Association of Western Native Plant Societies; and Ann Whitmyer, heads up Endangered Plant Legislation. The groups will bring us up to date on endangered and rare plants in the state.

Saturday Workshops:

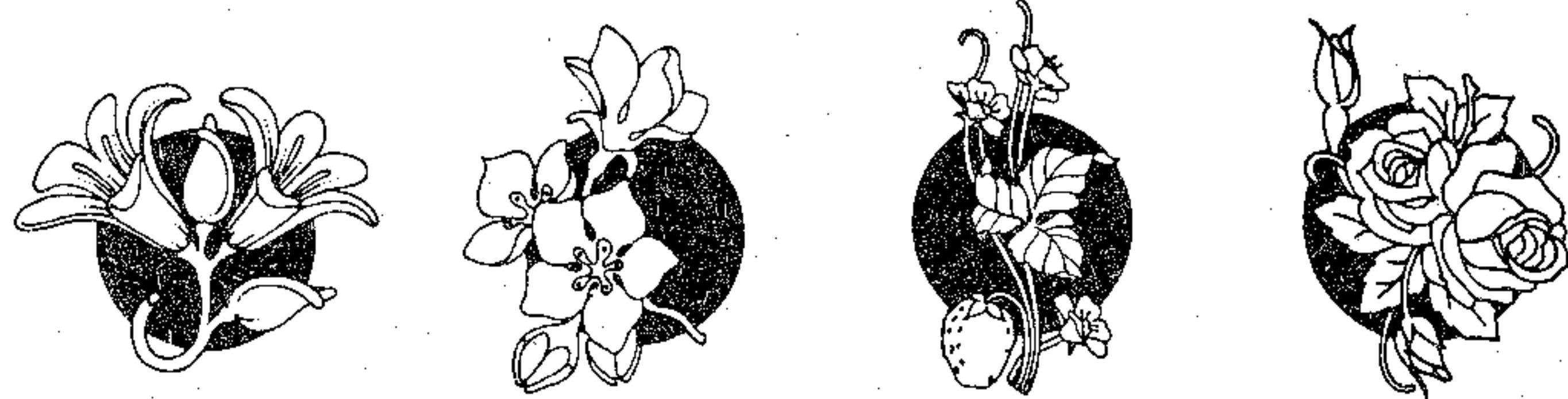
30 January, 1982. Threatened and Endangered Legislation in Oregon. Ann Whitmyer. 10:00 AM. Multnomah County Library, Room E. Ann will update us on recent political history and the current situation regarding her work in T & E legislation for Oregon plants.

6 February 1982. No workshop scheduled.

13 February 1982. Onions of the Pacific Northwest. Calvin Burt. Time and place as above. Calvin will discuss his work on keying over 30 native onions. His slides and comments will address habitat, time of bloom, and some of the taxonomic subtleties of key design.

20 February 1982. Some Rare Plants of Oregon. George Lewis. Time and place as above. George will show selections from the slide collection of the Threatened and Endangered Plant Subcommittee, and his own sitings of several rare plants. George has found previously undiscovered populations of Talinum spinescens, Collomia macrocalyx, and Claytonia umbellata.

27 February 1982. Notes on the History of Leach Garden. Marlene Salon. Time and place as above. Marlene will discuss the history of Leach Garden starting with the original landscape architectural design on through a collection of original slides which document its change over the years. If time and interest permit, Marlene will also discuss the work fo Beatrix Jones Ferrand, one of the first landscape architects to use native plants in design. Don't miss it!



DEATH VALLEY - GREAT BASIN DESERT ADAPTATIONS

March 20 to 27:

A tour to Death Valley explores the land of the Northern Paiute, the Great Basin Desert and the adaptations of prehistoric and present day residents. Participants will view unique plants, animals and geology of the area.

February 14, 2:00 to 4:00 p.m

A special slide-lecture program will be presented for persons who want to learn more about the Great Basin Desert.

For more information contact Continuing Education, Linfield College, toll-free in Oregon 1-800-452-4176 or 472-4121, ext. 269.

Judi D. Linder
Continuing Education
Coordinator

Last month the Bulletin listed the names for NPSO officers and at-large members of the Board of Directors which had been forwarded by the nominating committee (Ruth Hansen, Chair; Marge Ettinger; Ruth Rouse, Joan Seevers; Tony Sobolik). The printing of resumes was postponed to allow for any nominees to be presented from the general membership. There being no additions, the following are offered. Note that, since Dr. Stuart Garrett has been elected president of the High Desert Chapter and sits on the board by virtue of that chapter office, his at-large position on the board falls vacant. The By-Laws say that the remaining board members may elect to fill that vacancy. However, the last time such a vacancy occurred, it was filled by the general membership at annual election time. Presuming the board will go along with this at our January meeting, it is proposed to follow this tradition, since we are blessed with seven nominees for the three at-large board positions which are to be filled normally at this time. The person receiving the fourth highest tally of votes would then take up the remaining year of Dr. Garrett's post, and would be eligible for election for one succeeding term. (The By-Laws prohibit successive two-year terms.) The ballots for the election will be distributed in the March Bulletin. Votes will be tallied by a ballot committee consisting of myself, the editor (Linda Vorobik), and Charlene Simpson. Results will be announced in May at the annual meeting of NPSO* (tentatively set to be hosted by the Blue Mountain Chapter in Pendleton. Take note!) Those elected will take office at the end of the annual meeting. *and in May Bulletin!

Dave Wagner, President

Offices--Nominees--Resumes

President: Dr. Rhoda Love. Emerald Chapter member and NPSO member for years before the Emerald Chapter was formed. She studied at the U. of Washington, where she received B.S. and M.S. degrees, and at U. of Oregon, where she received a Ph.D. in Biology. Her graduate work was on hybridization between and insect predation on native and introduced species of Crataegus (hawthorn). She has taught botany at all levels from Junior High through University, most recently at Lane Community College for 7 years. Her special interest is to see state legislation passed to protect our R. & E. species.

Vice-President: Annie Kowalishen. Incumbent and Chairperson of NPSO Endangered Plant Committee, affiliated with the Portland Chapter.

Secretary: Paula Vincent. Incumbent, member of Siskiyou Chapter. She has worked as a professional botanist in the Klamath Falls area, where she lives.

Treasurer: Nadine Smith. Emerald Chapter member from its inception, she has a long time interest in native wildflowers.

Board of Directors, At-Large Members:

Florence Ebeling. Portland Chapter, having served as an officer, taken part in fieldtrips and workshops, helped produce the Native Plant Flower Show at OMSI (chairperson the last 2 years), and was editor of the Bulletin for three years.

Marge Ettinger. High Desert Chapter, an amateur botanist who became interested in wild flowers while hiking and camping. She took college botany to help learn to identify plants, now helps out at the herbarium in the local community college. Excited by the interaction with others interested in botanical studies.

Wilbur Bluhm. Willamette Valley Chapter, being one of the original organizers. He is Horticulturalist and staff chairman, Marion County office of OSU Extension Service. A frequent NPSO field trip leader, active in rare plant work, a photographer whose slides have been seen at both local and state NPSO meetings.

NOMINEES, continued

Wayne Rolle. Siskiyou Chapter, former chapter officer. He is an enthusiastic amateur botanist and horticulturalist, very active in chapter affairs for several years. He is especially concerned with awareness and protection of unique botanical habitats.

Larry Scofield. Willamette Chapter. A botanist working for the Salem District, Bureau of Land Management, he has been coordinator for rare plant work in that district. He is well known among rare plant workers for his superbly detailed reports on rare plants.

Dr. Darlene Southworth. Siskiyou Chapter, currently vice-president and program chairman. Assistant Professor of Biology at Southern Oregon State College, she teaches introductory botany and biology and developmental biology.

Arvey Waldron, Jr. High Desert Chapter. Assistant Professor of Biosciences at Central Oregon Community College in Bend, he teaches General Botany and Biology and Wildlife Conservation, and is curator of the herbarium there. Trained in Idaho (B.S. '60, B.S. '61 at U. of I.) and Washington (M.S. '69 at WSU), has been in Bend since 1968.

ENDANGERED SPECIES ACT REAUTHORIZATION

In the latter part of January hearings were to begin reviewing the Act. Then the committees will work to draft new bills. The bills must be approved before May 15, 1982. So now it is the time to begin to write to your Congressmen to let them know how you feel about protection of endangered plants. It is necessary to let these people know how you feel before it is time for them to vote. The closest thing to being able to vote on this yourself is to instruct your senators and representatives.

Senators:

Mark O. Hatfield Senate Office Bldg.
Robert W. Packwood Washington, D.C. 20510

Representatives:

1st. distr.- Les AuCoin House Office Bldg.
2nd. distr.- Denny Smith Washington, D.C. 20515
3rd. distr.- Ron Wyden
4th. distr.- Jim Weaver

It is worth noting that two native plants found in Oregon have been given protection under the Endangered Species Act: Arabis macdonaldiana and Mirabilis macfarlanei. Several other species whose existence has been clearly shown to be threatened, and are thus considered eligible for listing include: Aster curtus, Lomatium bradshawii, Stephanomeria malheurensis, and Darlingtonia californica. In Oregon, the Endangered Species Act may be the only thing standing between these species and extinction. It is reported that there is considerable pressure to weaken or abandon the ESA, that the Act is itself threatened.

from the NPSO Endangered Plant Committee
Annie Kowalishen, Chairperson

"WHY SAVE NATIVE PLANTS?"

This basic question was posed by Dr. Darlene Southworth at Siskiyou Chapter's January meeting. As the evening's speaker, Dr. Southworth first placed the topic of plant preservation in perspective. Then she invited the crowd to brainstorm her question, along with two others: "What are major causes for the loss of native plants?" and "What can we do about it?" Five groups of four people drew up separate lists of answers, and these were combined and analyzed with Dr. Southworth's assistance. The results were interesting.

1. "Why save native plants?" Human beings need native plants for genetic stock, food and shelter, biological knowledge, and biochemical resources. These species contribute to ecological diversity (and thus to ecological stability), and they sustain food chains and produce oxygen. Moreover, our ignorance prevents us from knowing the full consequence of their loss. In addition, native plants are part of our heritage, they provide us with beauty, and offer us greater personal meaning. Finally, plants are unique parts of this universe. Is it not arrogant to bring them to extinction?

2. "Why are we losing natives?" To this question there are many answers. Of course, some extinction probably occurs without human involvement. But this loss aside, extinction results from human activity. Part of this happens by accident or by ignorance, and part is caused by pursuit of short-term economic gain. Of course, destruction of habitat tops the list, including mismanagement, changing land use, and pollution. In some cases introduced weeds, pests and diseases are important. Encouraging all these factors is a continuing cultural bias--we think we are "above" nature and independent of it. Another side of this coin is lack of esthetic sensitivity to native plants; many people see them only as a "green blur."

3. "What can we do about it?" The hour was growing late, but in a few minutes we generated several ideas. Generally, we felt there is a need for increasing public awareness through environmental education in the schools, newspaper-TV-radio coverage (including economic values), artistic expression, and gardening and exchange of native plants. We see a need for much more scientific research. We see a need for more political action. "Gene banks" to preserve natural diversity and agricultural stock were mentioned. And it was also suggested that testimonials in favor of native plants by respected leaders and personalities could help mold public opinion.

Did Siskiyou Chapter write the final answer to these three basic questions? Certainly not! But we agreed on some of the answers--now we need the energy and courage to use them! Perhaps other chapters will want to brainstorm these questions as we did. Thanks to Dr. Southworth for helping us take stock.

Vern Crawford, Siskiyou Chapter

RARE, Inc. has produced a brochure about the Endangered Species Act reauthorization. These are available through your local chapters. Request yours, there are plenty for all. Act now, to save our threatened ENDANGERED SPECIES ACT.

Calendar Order Form (Please print clearly)

from: a Native Plant Society of Oregon Member.

ENDANGERED WILD FLOWER CALENDARS are still available. Use this order form or order through your local chapter. A rebate of proceeds has promised, so make sure NPSOregon member is on your order form.

Please send me ___ copies of the Endangered Wild Flower Calendar.

Name: _____
Street: _____
City, State, Zip: _____

Enclose \$5 per calendar, or \$15 for four calendars. Please add 50¢ for each calendar to cover mailing costs.

Total number ordered: _____
Amount enclosed: _____

Send to Rare and Endangered Native Plant Exchange, c/o New York Botanical Garden, Bronx, N.Y. 10458.

Please send gift calendars to:

Name: _____
Street: _____
City, State, Zip: _____

Name: _____
Street: _____
City, State, Zip: _____

Name: _____
Street: _____
City, State, Zip: _____

Your payment will assist local and national conservation efforts. Thanks for your help.

INDIAN PLUM

A FAMILIAR BUT POORLY UNDERSTOOD FRIEND

Winter snows are flying as I write this, but by mid-February, a bit over a month from now, the flowers of our earliest-blooming native flowering shrub should appear. I think most of us are cheered early each year by the appearance of the greenish white blossoms of the Indian Plum (*Oemleria cerasiformis*), a plant common along streams and roads and in open woods west of the Cascades.

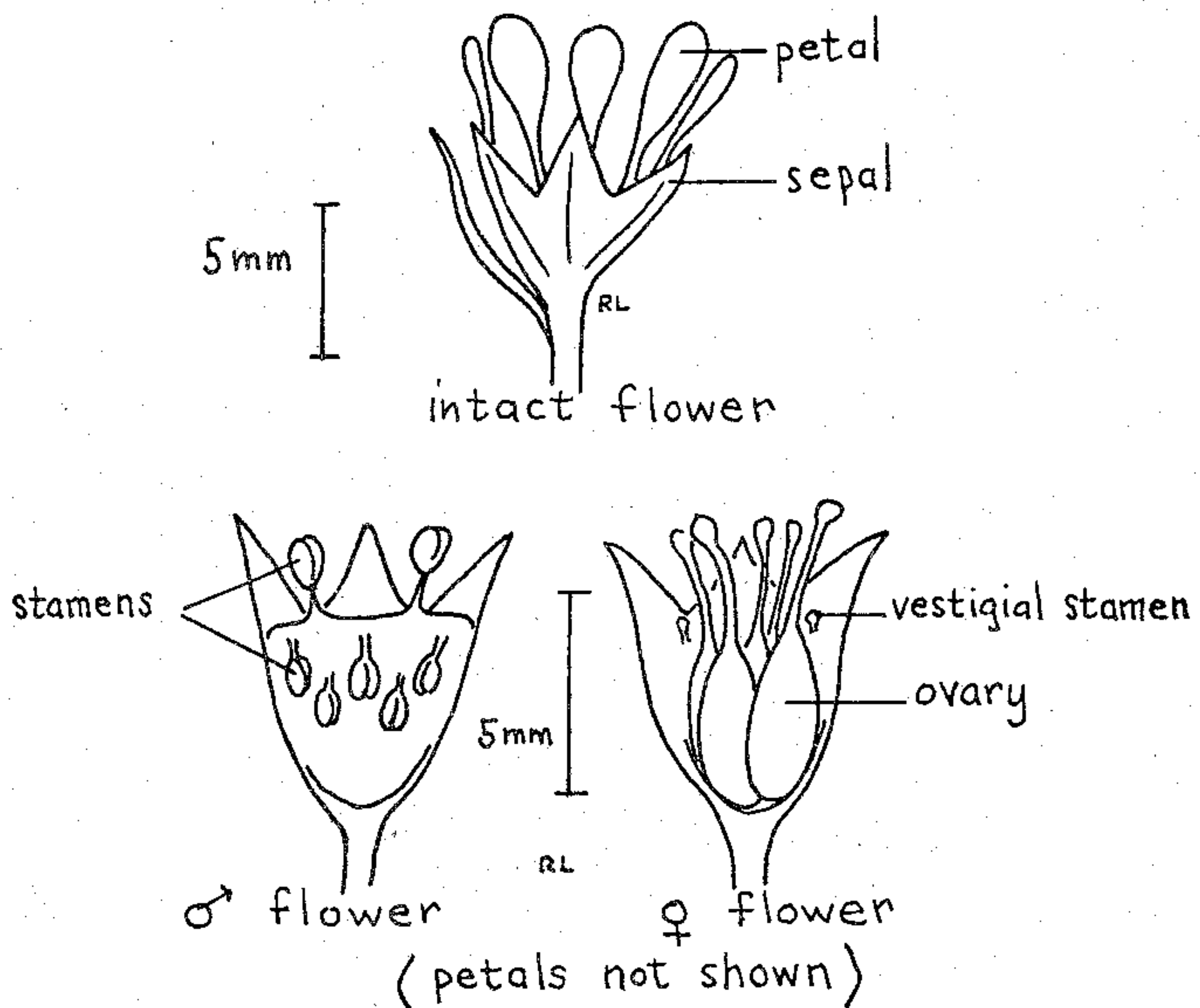
Besides being one of our earliest blooming native plants, Indian Plum is taxonomically and regionally unique. The genus contains but the single species and the plant is endemic to the coastal strip between the Pacific Ocean and the Cascades from B.C. to northern California. A truly Pacific Northwest genus.

A third unusual feature of Indian Plum is that it is dioecious. Male flowers -- with stamen and pollen, and female flowers -- with pistils and ovules (see illustration), are produced on different individuals. *Salix*, *Fraxinus*, and *Ilex* are dioecious genera from widely divergent families; Indian Plum is in the Rose Family (*Rosaceae*), a family in which dioecism is rare. Among our local flora, only in *Aruncus*, (goat's beard), some *Rubus*, and *Oemleria* is dioecism known in the *Rosaceae*.

Considering that it blooms very early and that pollen must be transported considerable distance (from one plant to another), how does this unique little shrub get pollinated? We can be reasonably certain that it does. Fruits on the female plants are noticeable later in the spring and seedlings seem abundant. The plant may be wind-pollinated, but my guess is that it is not. A strong scent is associated with the flowers at anthesis. The smell is pervasive and not altogether pleasant to humans. (My family finds it akin to cat urine!). I suspect that the smell attracts insects of some kind, however, February is early for bees and some other potential pollinators to appear.

I phoned my friend Jack Lattin of the Entomology Department at USO, who gave me some information and then referred me to Loren

Flowers of Indian Plum (*Oemleria cerasiformis*)



JEAN DAVIS MEMORIAL SCHOLARSHIP

The NPSO is offering two \$1,000 grants to students of native plants of Oregon. Rules for the scholarship awards will be printed in the March Bulletin, or ^{are} available from Mary Falconer (address on Bulletin cover, send self-addressed, stamped envelope). Applications must be received by 1 April 1982; the awards will be made 1 May 1982.

WELCOME TO NEW MEMBERS!

Emerald Chapter:

- Terri Lee Brown
- Anne Burke
- Mr. & Mrs. C.B.Gibson
- Jim Gordon
- Sydney Herbert
- Judith M. Kelly
- Robert L. Nelson

Willamette Valley:

- David R. Heil
- Jan La Rea Johnston
- Nell W. McDuffee
- B. D. Quimby
- Farrys Jean Peterson
- Wilma T. Rogers
- Earl and Edna Stevenson
- Kareen B. Sturgeon
- Burton & Betty Varcoe

High Desert:

- Craig Miller

Portland:

Siskiyou:

- John P. Hayes
- Robert Ornduff
- Ralph Presler
- Sylvia Schechter
- Martha L. Sells

- Terry Allawny
- Richard P. Andrews
- David & Marie Boucher
- Martha A. Brown
- Mr. & Mrs. Arthur K. McNett
- Nancy Miller
- Evelyn Pratt
- Erna M. Rose
- Susann Schwiesow
- Bette Streitmatter
- Nancy Summerill
- Margaret M. Willets
- Michele Zimmerman

Thank you

for joining

the NPSO

Russell, a Corvallis coleopterist. From them I learned the following: Small black beetles in the family Staphylinidae (the rove beetles), have been collected from Indian Plum blossoms. Pollen-eating rove beetles are active in February and some are known to be attracted to urine-like odors. Some of these beetles are hairy and all are efficient enough flyers to move from the male-flowered to the female-flowered shrubs, but no definitive research on pollination in Indian Plum is known.

Indian Plum deserves to be better understood. As Loren Russell said to me: its study is pretty much "a neglected area." I hope to bag some blossoms this February, but the larger question -- why is this unique little rose so narrow in range and so unusual in its reproductive adaptations? -- requires broader speculation.

If the reader's curiosity is piqued, or if you have made earlier observations, please write to me care of the NPSO Bulletin and let me know what insects are associated with Indian Plum in your area. Other profitable lines of inquiry might be: What is the male/female ratio in various populations? What are the average distances between plants of different sexes? Can it be demonstrated that insects (such as rove beetles) collected in female flowers are carrying *Oemleria* pollen?

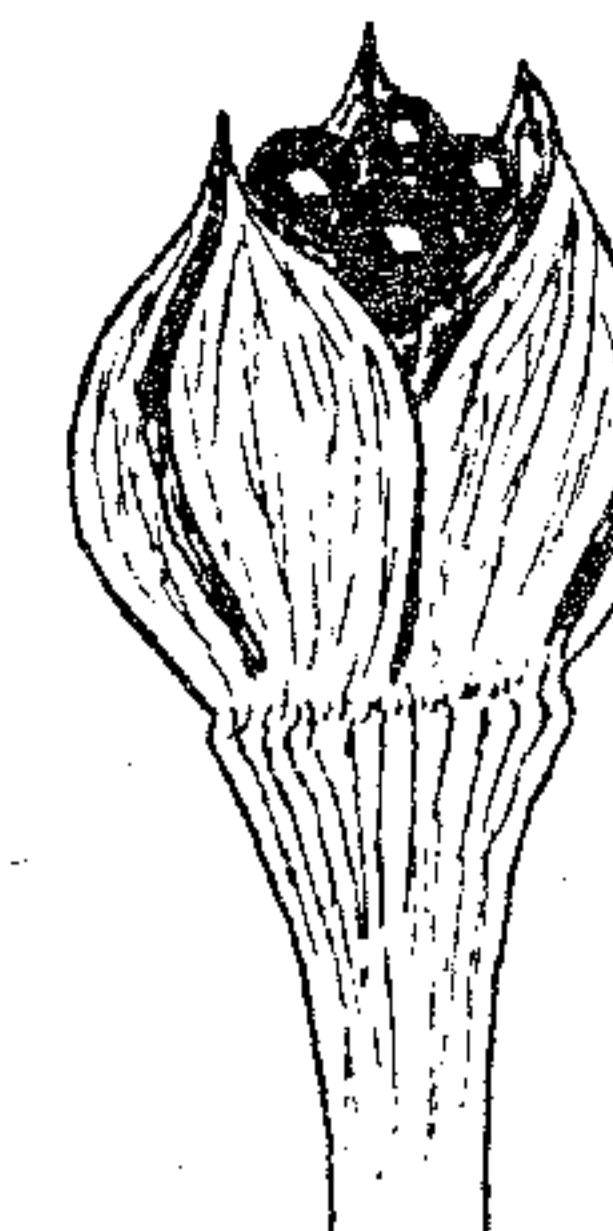
Indian Plum, our "cheerful harbinger of spring" (C.L. Hitchcock), may be a common and familiar friend, but it has apparently been rather a neglected one. Perhaps it's time to correct this oversight.

Rhoda Love
Emerald Chapter

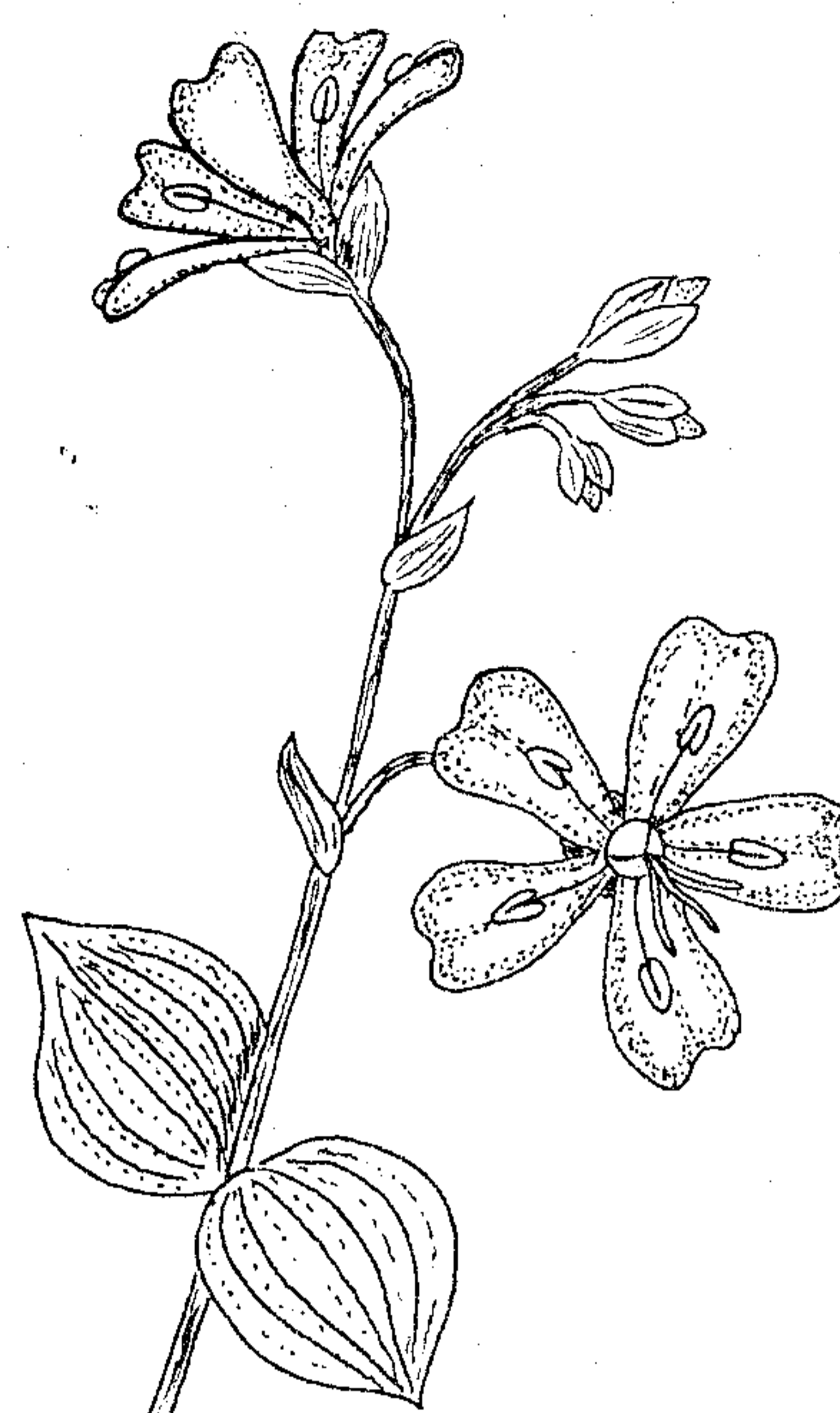
The Portulacaceae - PURSELANE FAMILY

The Purselane Family is a medium-sized family of herbs and subshrubs with 19 genera and about 500 species spread throughout the world, but best represented in South Africa and America, especially along the Pacific Coast of the United States. Eight of these genera are represented in Oregon. Most numerous are the species (about 20) of Spring Beauty, Montia and Miner's Lettuce (Montia and Claytonia - a pair that has had members assigned back and forth) generally on moist ground in varied habitats. Of these, the rare Nevada Spring Beauty (C. nevadensis) is known only from Steens Mountain; the Umbellate Spring Beauty (C. umbellata) has been found only in five widely disjunct sites. Eight species of Lewisia are found in the mountains from serpentine Siskiyou slopes to Saddle Mountain and the Columbia Gorge, four of which are listed as threatened. Rosy Calyptridium (Calyptridium roseum) may be found in arid sagebrush desert east of the Cascades. Red Maids (Calandrina ciliolata), with crimson petals, is common in spring on moist ground west of the Cascades. Pussypaws (Spraguea umbellata) hugs the sandy ground from pine woods to subalpine slopes and ridges in the mountains. The Spinescent Foamflower (Talinum spinescens) is rare (listed as endangered) in Wasco County on basaltic outcrops and scablands midst sagebrush desert. Finally, the Common Purselane (Portulaca oleracea), a native of Europe, is a well-established garden weed throughout the state.

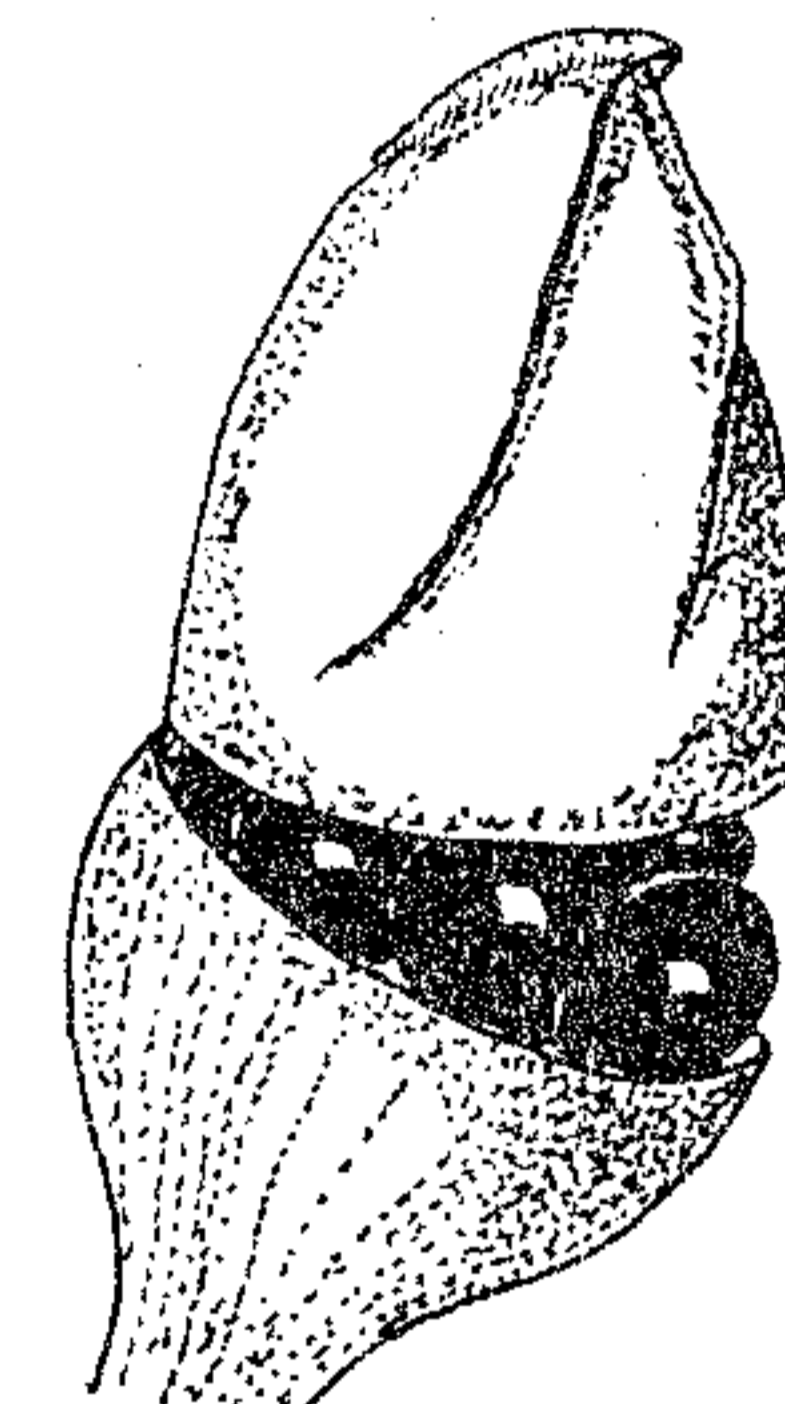
Plants in this family bear alternate or opposite, more-or-less succulent entire leaves and arise from fibrous, corm-like or tap roots. Insect pollinated, nectareous flowers are usually small (except some showy Lewisia and Portulaca species), regular and bisexual, borne solitary, or in racemes or cymes. Typically each has 2 green, persistent sepals* (up to several in some Lewisia) and four to six petals (only 2 in our Calyptridium, as few as 2 or 3 in some Montia, and up to 18 in Lewisia). The stamens are usually as many as and opposite the petals, or 2-4 times as many, or numerous (some Lewisia, and Talinum). Occasionally there are fewer stamens than petals: as few as 3 in Montia, 3 in Spraguea, and only 1 in Calyptridium! The pistil is single, mostly of 2-3 carpels (4-6 in Portulaca, and up to 8 in Lewisia), the superior ovary (half inferior in Portulaca) of a single locule containing from 2 to several ovules on a central basal placenta. The style is divided into as many divisions as carpels. The fruit is a capsule splitting by valves (loculicidal) or by a lid (circumscissile - in Portulaca and Lewisia) to release the typically shiny black seeds.



Loculicidal capsule of Water Chickweed (Montia fontana), showing dehiscence (splitting) by valves. Note the typical shiny black seeds.



Sprig of Western Spring Beauty (Montia siberica). Note the opposite, entire cauline leaves, the 2 sepals, the typical 5-parted corolla, stamens opposite the petals, and the 3 separate styles.



Circumscissile capsule of Common Purselane (Portulaca oleracea). Note the cap lifts off to release the several seeds.

Several ornamentals in this family are cultivated: the large-flowered Moss Rose (Portulaca grandiflora), several species of Lewisia, Talinum, and Calandrina, and in rock gardens, species of Claytonia. The starchy rootstocks of the Bitterroot or Resurrection Plant (Lewisia rediviva) were eaten by the American Indians, and the Common Purselane (Portulaca oleracea) has been cultivated to a limited extent since classical times as a salad and a tasty potherb.

The generalized floral formula, barring exceptions, for the Portulacaceae is:

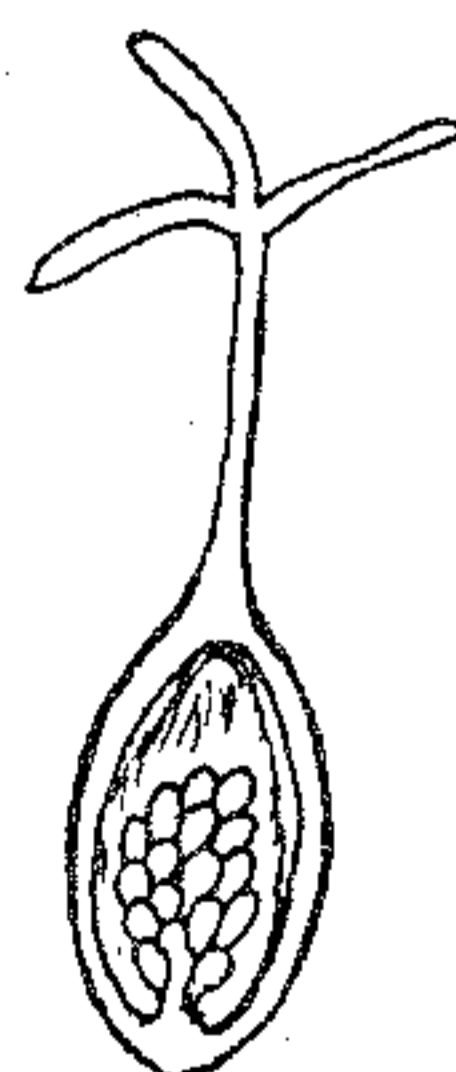
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with the ovary superior. Whenever you find an herbaceous plant with semi-succulent or fleshy entire leaves, flowers with 2 sepals, generally persistent (deciduous in Talinum), and a 2-3 styled unilocular ovary with basal placentation, you have found a member of the Portulacaceae - the Purselane Family.

*It should be pointed out that the two sepals in this family may be considered morphologically as bracts; the apparent corolla is actually a uniseriate perianth of petaloid sepals. While many systematists accept this view, most continue to use the traditional interpretation of the perianth as biseriate, composed of calyx and corolla.



Solitary flower of Bitterroot (Lewisia rediviva) showing several sepals, about 15 petals, numerous stamens, and several style branches.



Cutaway view of the pistil of Imperial Lewisia (Lewisia cotyledon) showing basal placentation of numerous ovules. Note also the 3-cleft style.

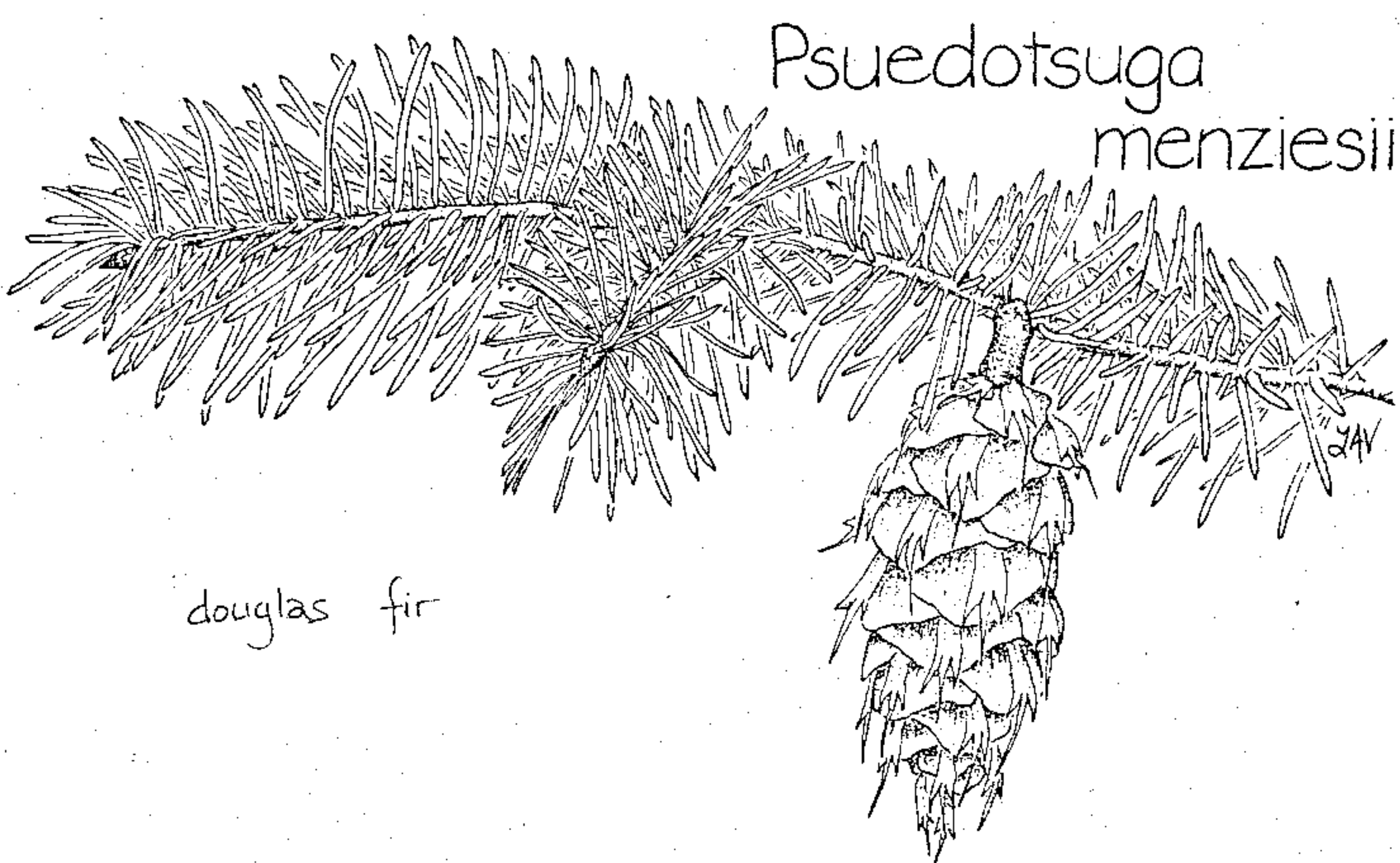
The failure of Baring Bros. in London is 1891 brought to a head the fast impending crash in the United States, especially on the Pacific Coast, and as business soon sank to the vanishing point, I accepted a position with the Chicago World's Fair Commission in Washington State. This filled most of my time in 1892 and 1893. I began by spending the first year collecting the flora of Washington for the Fair.

To my great surprise I found but one new species of plant while collecting in the state during 1892. This was obtained in Yakima County well up the Cowiche River, and was called Oryzopsis hendersoni by George Vasey. This paucity of new species can be understood when I say that my aim was to collect, press, mount and exhibit the more common plants of the State of Washington, paying especial attention to those that were in any way edible, could be used, or had been by the Indians used as medicine, good for forage purposes, and especially all the trees that had, or could have, any economic uses for building, fencing, etc. And I can remember the very day I collected this peculiar and rarely found little grass, for I was accompanied by that genial and modest minister of the gospel, Rev. Nevius of North Yakima, who was as ardent a student of botany as he was of the gospel. One of his favorite stories was how he one day collected a quantity of the roots of Carum gairdeneri, had them baked by his cook, and had them served during dinner to several curious guests.

In September I undertook a trip up to the snow-line of Mt. Rainier, which came near to proving the last of my trips on this earth. Many of the edible fruits of high mountain plants had never up to that time been collected, and these I was anxious to have for the economic part of my plant collection. So on September 20 I started for Rainier by train as far as logging operations were then conducted, and on the 21st hired a young man to take me up to the timber line on the southwest shoulder of the mountain. There he left me, and promised to return for me in 10 days. I have often wondered whether I was a little deranged mentally, when I had a man take me to the snow-line just at the time of the fall equinox and leave me in a camp 20 miles from the nearest person, and without even a pup-tent to protect me from possible rain or snow! The first two days were heavenly -- no wind, sky of an intense blue, and the air as exhilarating as fine wine! By the end of this time I had my botanical pack nearly full of rare plants or their fruits, but was hoping for still more! When I went to bed that night, rolled up in my blankets, it was to the sound of trees moaning in the wind, and a sky fast obscuring. "Probably a little rain tonight or tomorrow, and then more delightful sun-shiny days," I remarked to myself.

The next morning rain was falling and the wind had gone down. I built myself a huge bonfire, cooked and ate my breakfast, and then sat down to go over my plants and wait for good weather. By noon the wind was roaring through the trees and the rain was falling in torrents. Still I could not believe that I was in a perilous position. By three o'clock the rain had changed to snow, heavily falling and covering the limbs of the alpine firs with wet, heavy burdens. These limbs rarely break under snow, but bend more and more, 'till the snow cannot remain there longer, but comes thundering down to earth. The first big slide put out my fire under a two-foot avalanche, pretty nearly obliterated me under its pounding mass, and wet me to the skin. Then for the first time I realized what I was in for, and whether I could live through the night was very uncertain. Scraping away the snow which had buried my fire, no more fire or even wood being available, I rolled up in my blankets and canvas covering to get what warmth I could from the still warm ground and ashes. By that time it was a roaring blizzard and before I got any very irregular sleep I could feel that the blankets and my outer garments were frozen stiff. I think it was only through the heavy snow which covered me that I endured 'till morning. And how, it kept occurring to me, was I to know when morning came. I was completely covered in my blankets, even my head, that I might have the added warmth from my breath. The hours dragged as never before in my life, for I slept only at short intervals, to wake shivering from the cold. Finally I could stand it no longer, threw off the coverings from my head as they crackled with ice, and peered out. It was blessed day, but what a day! The snow was about two feet deep in my camp, but about four or five deep in the hollows, due to the roaring wind.

I had a time getting into my frozen coat, for I had taken it off and placed it over me as I lay down to add to the none too heavy blankets. At once I seized my match-box and hatchet, set my frozen hat astride my head, and began a retreat--the only available food being two ships biscuits which hadn't dissolved into a mess with the other food. Soon I came to a level spot where I nearly lost my head and idea of location from the snow beating in my face like bullets. "Steady," I cried to myself in order to hear human voice, "if you get over onto the headwaters of White River, you will soon be a dead man," as there wasn't then a house within 40 miles. If I could strike the headwaters of the Nisqually I knew I could get out alive, as up that I had come part way, and I knew it was not more than 10 miles in a straight line to a home. So veering off to the left somewhat, I finally heard tinkling water under snow, and this I followed 'till it appeared on the surface. As I descended, snow changed to rain, which was even worse, save underfoot. Soon I was stumbling and sliding down almost precipitous slopes to keep my little creek in sight. Then this became by additions a larger creek 'till about noon I struck the main Nisqually. There one of my legs utterly played out from the strain. However, I was fired by the thought of getting to a bed that night, so I would sieze that leg when I came to a big tree in the way, and slam it over the log with both hands, following slowly with the other. About 5:00 p.m. I came upon a good trail, and this I hung to, although it led me from knee- to waist-deep five times across the swift white waters of the Nisqually. At 9:30 p.m. that evening I stumbled up the steps of the house from which I had departed five days ago, and was soon in a comfortable bed piled over a foot deep with blankets and comfort. At 1:00 p.m. the next day, I woke, had a good meal, walked the five miles or less to the railroad, and was that evening back in the building of the World's Fair Commission in Tacoma.

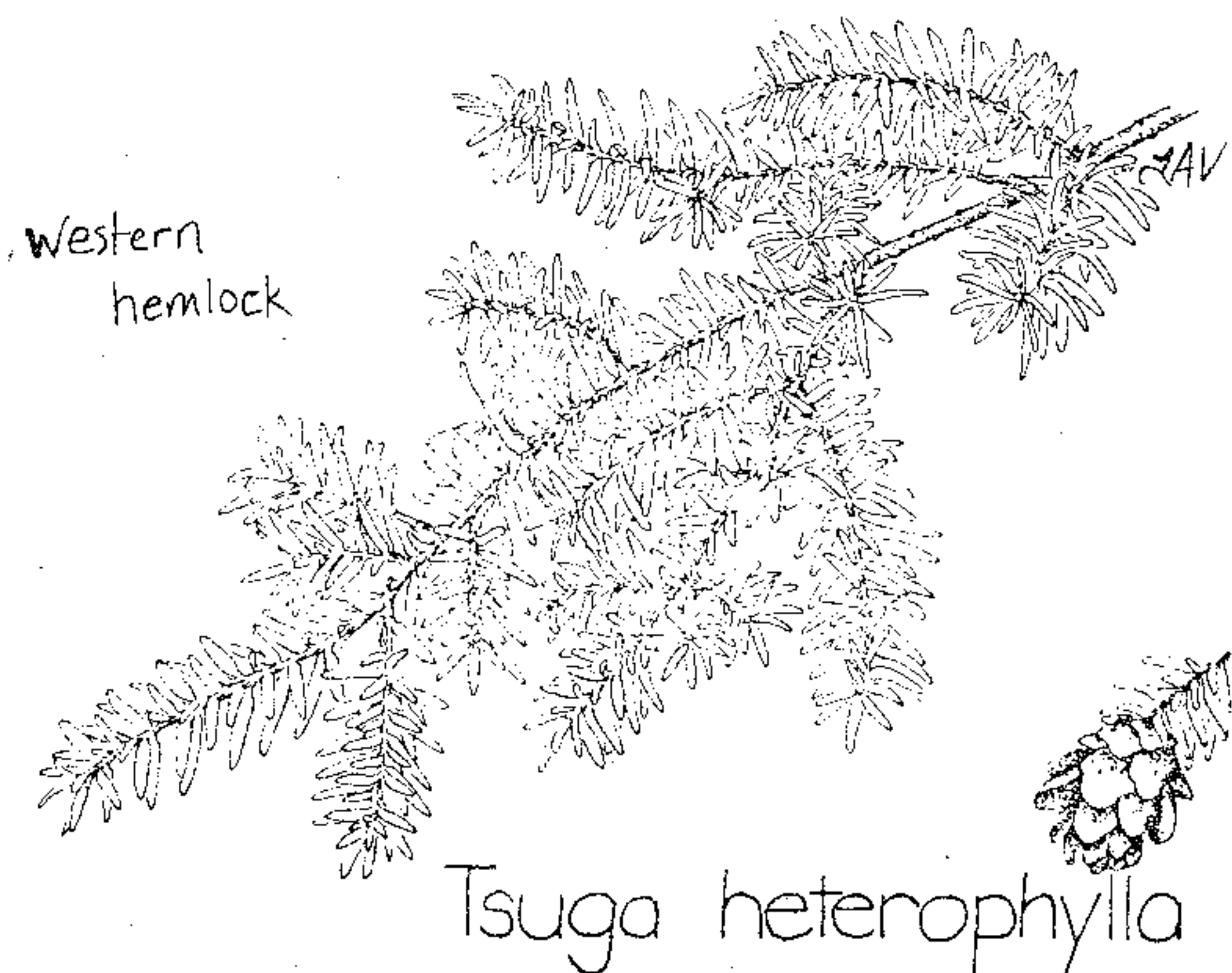


The winter of that year and spring of the next I collected the forest products and timbers, the man to whom this job had been given having made a dead failure of it. This was a new experience in my life, for though I had often cut or sawn up trees, they had never been of such gigantic proportions. Hiring a skilled logger named Chipman, we proceeded to gather every accessible timber or even wood in the state. We went first to the then almost untouched forests of Gray's Harbor, and there we cut a wood specimen from a cedar 18 feet in diameter, a spruce 12 feet, and a Douglas fir or Red fir, 10 feet. The cedar, the largest I had ever seen or even heard of, went all to pieces when it fell, to my extreme disappointment. So loading our other specimens on flat-boats, and carrying them out to Aberdeen by tug, we started for Snoqualmie Falls, where we heard were enormous cedars. Reaching this place, and having previously secured permission to cut any and all cedars we pleased in a certain district, as the company owning them was soon to begin logging operations in that large tract, we set to work immediately to secure the largest, perfect section of a cedar tree we could find.

To our disappointment, we found none to compare with our Gray's Harbor giant, though all of the seven we cut down here were from 10 to 15 feet in diameter. All were, however, "swell-butted," as the logger calls them, and every one hollow inside for many feet up the stem. This accounts for our falling seven instead of one. And now, my dear friends, let me ask you a question. I suppose most of you have seen timber operations, and trees felled, but did any of you ever try to fell one? With all huge trees the method is the same. Cut in, and put up a spring-board; cut in again and put in another board, while standing on the last, and then a third time if necessary. I may say that we were compelled to do this generally a third time, so hollow-butted did we find them. Then we stood on our last spring-board 6 to 10 feet in the air, chopped a foot or more into our tree, and then began to saw it down from the opposite side, facing one another and using a 16 foot saw. All went well, 'till the tree began to crack and fall. If a logger is only 4 to 6 feet up in the air, he jumps as soon as he sees the tree begin to fall; but if he is up 8 feet or more, he prefers to risk standing on his board while the tree crashes, than to jump that distance perhaps to break a leg and have the tree fall on him. The only real danger is when the tree sometimes splits up, and half of it rushes back upon the loggers, when it is nearly always certain death to one or both of them. As the first tree cracked and started, the first I had ever tried to fell from this position, shivers ran up my back, my hair seemed to crinkle in the skin, and I was afraid as I had never been afraid before in my life. We pulled out and dropped the saw, and then stood with both hands on the tree to steady ourselves, and gazed right up that enormous cylinder to watch for "splits," as they call them. Yet it was remarkable how little jar there was to the stump as the huge tree fell; while we did not have one split occur in the seven we felled. It was only when we had cut the seventh, that we found one trunk which yielded us a perfect block between 10 and 12 feet through.



Western red cedar



When we had got the last tree which the soon-to-be-opened fair would allow, we started, my wife, our two little daughters and myself, for Chicago. On reaching our destination, I spent every spare minute at the grounds, installing in the beautiful and unique Washington State Building my collection of woods, coal, and botanical specimens. On the first of June the Fair opened, and from then 'till the first of December there was a constant stream of sight-seers going through the building. However, I stayed only three months, and that was plenty! I suppose in that time alone I may have been asked one million questions about Washington, its soil, crops, flora, including trees. During that whole time one was expected to smile like a Cheshire cat, and answer all questions to the best of one's ability. And those questions! Twenty-five per cent, I should imagine, were germane to the subject, the other 75 per cent unnecessary or even ridiculous.

Asking to be allowed to resign and return to the West, especially as I had already accepted the position of professor of botany in the new University of Idaho, we left Chicago about the last of August, and hurried to Moscow, Idaho, entering this institution the 3rd year of its existence, September 1893, and there my family and I remained 'till we saw both our girls through the University, leaving there for Hood River in 1911. But how full were those 17 years of pleasure, and how Tacking in sorrow or pain of any kind, in spite of the fact that all instructors had almost unheard of schedules. I can still well remember that for the first 6 or 7 years of that period I had 8 forty-five minute classes every school day of the week! In fact, the University of those first 10 years was more an advanced high school than a college, since about 300 were preparatory students and less than 100 collegians. Of course, that has all changed since then, only students of college standing being there now.

With all my teaching I found many an hour to work up the flora near Moscow, even to some distance in other counties. During most of the longer trips in these counties I was accompanied by my very dear friend, J.M. Aldrich, at that time a fellow professor in the University, filling the chair of Entomology, and especially interested in flies. Like myself, he was carrying a very heavy load of class work, as in fact did all of our scanty force of seven professors at that time. It was one of these men, who, when a friend East asked him what chair at the University he occupied, wrote him that we didn't any of us occupy "chairs" -- we all occupied settees! Since the University of Idaho was also the agricultural college of the state, we had on the scientific staff men to teach, study scientific, and especially agricultural, subjects, hold farmers' institutes, and write bulletins on farm subjects.

This, of course, brought the work of Prof. Aldrich and myself more closely together than that of any two others of the faculty, especially along the economic side of our studies. From Idaho, Professor, now Doctor, Aldrich went to Washington, where he has been engaged in studying and writing about flies ever since our early days in Idaho.



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