

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. XIII No. 6

JUNE 1980

ANNUAL MEETING AND OTHER GOOD NEWS

The Annual Meeting was a real success; excellent facilities, a fine program (the slides of Wilber Bluhm) and the beautiful and interesting environs of Silver Creek Falls. The Society owes a debt of gratitude and thanks to Mary Falconer and the members of the Willamette chapter for the effort they put into this years program.

The reports of the Standing Committees and from the Chapters indicate that your society is in good health with an active membership interested in the goals and objectives of the Society. The report of the Treasurer is shown below.

Treasurer's Report Native Plant Society of Oregon

INCOME:

Beginning Balance 12/31/79	\$1,375.58
Jan.-May memberships 1,891.50	
Interest 11.72	1,903.22
Total Income	\$3,224.50

EXPENSES:

Beginning Balance 12/31/79	(\$1,571.82)
Jan.-May Expenses . . . (700.87)	(700.87)
Ending balance May 16, 1980	\$ 951.81

The NPSO Bulletin is now officially The Bulletin of the Native Plant Society of Oregon and we will continue to use the Trillium Logo. If we should go to a fancy quarterly magazine similar to Freemontia (California Native Plant Society) then we will select a new name for that publication.

I reported that our fund raising relationship with Folkways International Trekking netted the Society \$300 from NPSO members who went on the Nepal trip. You will be hearing about a new effort in the next issue--The Himachal Pradesh / Kashmir Botanical Expedition 05-29 May 1981.

A new chapter is being formed in Bend! Our thanks to Joyce Bork (a former student of mine) and Dr. Stuart Garrett for getting the High Desert Chapter of the NPSO organized and underway.

The Board of Directors has decided to join with other native plant societies in the west to form an Association of Western Native Plant Societies. The main purpose of the association is the exchange of information and cooperative action among Native Plant Societies in the west. We selected Anne Kowalashin as our representative.

Frank A. Lang
Pres. NPSO

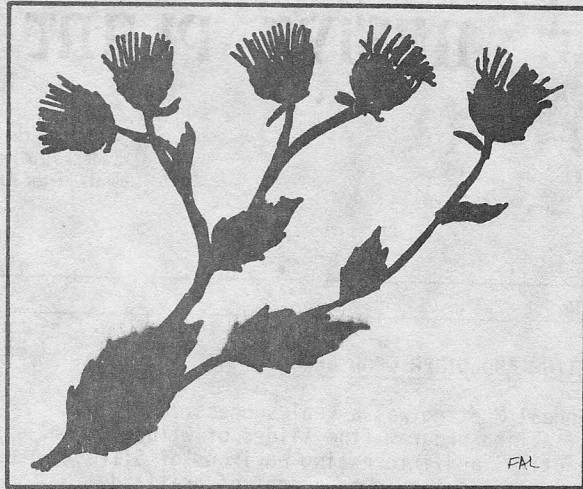


THE ENDANGERED SPECIES HAPLOPAPPUS RADIATUS IN EASTERN OREGON: WAGING A LOSING BATTLE AGAINST GRAZING AND GRASSHOPPERS.

The Snake River area of Eastern Oregon has long been known for its peculiar endemic flora. Many of these unusual taxa have developed or were stranded as relics in or near the deeper portions of the gorge popularly referred to as Hell's Canyon. The high cliffs and largely impenetrable terrain are responsible for mild climatic conditions and a natural protection for native plants from domestic grazing and other anthropogenic impacts which have effectively reduced to shambles much of the indigenous rangeland adjoining the river not far to the south. Here, at its southern end, the canyon widens and flattens to form a low rim of droughty, rolling hills with easily accessible grasslands. Those endemics whose center of distribution lies within Hell's Canyon are, for the most part, not threatened or endangered despite their limited geographic range. Those few which occur primarily to the north or especially the south of the canyon proper evolved as components of an arid bunchgrass habitat which is today mostly replaced with annual rangeland dominated by introduced species. Some of these "peripheral" endemics are in real trouble, legitimately endangered with extinction.

Perhaps the best example of a Snake River area species which is truly endangered is Haplopappus radiatus (Snake River Goldenweed). The type collection of H. radiatus was originally reported as taken near Walla Walla, but this is now widely believed to be erroneous, with Huntington, Oregon, thought to be the correct location. Recent work indicates only a few scattered populations are extant, occurring at low elevations on dry slopes just north of Huntington in southeast Baker County and perhaps just down river near Weiser, Idaho. The maximum range of H. radiatus was probably not much more than what we see today, perhaps extending a bit farther to the southeast towards Boise on the Snake River Plain.

Haplopappus radiatus is a robust perennial herb in the Sunflower or Composite Family, from about 3 dm to as high as 10 dm tall. It possesses many large, thick leaves and bracts which in some plants are conspicuously toothed. The plants arise from stout taproots each season, not uncommonly in clumps of several individuals. They flower from late June to early August, producing numerous heads with many conspicuous yellow rays. Seed set is generally not high. Achenes which do ripen are bulky and possess a pappus which, unlike some of their close relatives, is totally ineffectual in wind dispersal. The large proportions of the flowers and fruit are generally considered primitive traits. Flowering as late as it does, in the heat of summer when most other plants have bloomed and withered, H. radiatus provides an oasis of sorts for various insects. It is not rare to observe as many as ten species of bees, beetles, larvae, etc. on the plants during the height of blooming. Whether any of these species may depend to any extent on H. radiatus for their own survival is unclear.



Haplopappus radiatus was surely never what could have been termed a common species. It was probably just holding its own and not expanding its range, this suggested by the seemingly inadequate mechanisms of reproduction and seed distribution. With the initiation of heavy grazing in the mid to late 1800s, the tenuous ecologic balance which had maintained H. radiatus was drastically upset. The threat from grazing was not direct since the plants are unpalatable and ill-tasting. The slow but continuous denuding of the bunchgrass cover, however, allowed the introduction and continual increase of noxious range weeds, most notably the winter annual cheatgrass (Bromus tectorum). Observations over the past few years have revealed that cheatgrass, which has now completely taken over the sites where H. radiatus still occurs, successfully outcompetes Goldenweed seedlings for the available soil moisture through earlier germination and development. Over time, far fewer H. radiatus seedlings reached maturity under this competitive pressure, even though the percent of actual germination is not particularly low. Subsequently, populations have dwindled to the present precariously low level. As fewer and fewer plants survive to reproduce, the likelihood of extirpation of the species continually increases.

The severe depletion of a species by a long-term steady process often leaves it susceptible to final eradication by sudden catastrophic phenomenon, which it otherwise could have probably withstood if its populations were still at full strength. Such a catastrophe may have materialized in 1978 and 79, with the hatching of extraordinarily high concentrations of grasshoppers in Eastern Oregon. In May and June of typical years, when H. radiatus is one of the only available green forbs in its low elevation range, many plants are partially or totally consumed by these insects which seem to actually congregate here. This was especially evident in the last two years. Interesting preliminary research by Canadian range scientists in Alberta which may apply here has indicated that an increase in grasshopper densities is a corollary of heavy grazing and a subsequent reduction in perennial cover. It would seem then that the grasshopper threat cannot be considered solely an act of nature and independent of man, as might be assumed. The habitat of H. radiatus had grasshopper counts of over 500/m square in 1979, an exceptionally bad year. By early June, every mature plant found had been stripped to the ground, and in some cases the insects had bored

through the crown and into the taproots of the plants.

The grasshopper swarms of 1979 may very well have dealt the final crippling blow to H. radiatus. Not only were many of the remaining older plants killed outright, but absolutely no seed crop was produced. On top of this, 1978 produced little seed due to a peculiar fungus in the flowers which appeared after persisting late rains. Being a wet year, 1978 induced heavy germination of H. radiatus. Even though it was considered a poor cheatgrass year, only a scarcely higher percentage of seedlings than normal survived the summer. Those which did were eaten by grasshoppers in 1979. The recent heavy germination rates coupled with low or absent replacement seed crops will probably result in few if any new plants in 1980. If the majority of established plants have been killed (1980 field work will have to ascertain if any crown-sprouting is occurring) then the source for future seed is seriously impaired.

The prognosis for H. radiatus does not look good. Since annual rangeland relinquishes ground grudgingly to native species and associations, and only long after grazing is discontinued, the chance of intervening and perpetuating H. radiatus in the field seems remote. Additionally, Federal recovery programs may run into difficulty because of the mosaic of private and government holdings encompassing its geographic range. Extinction of any organism through man's interference is always a pity, especially so if we do little but stand by and watch the process run its course unabated. In the case of Haplopappus radiatus, unfortunately, we may not have an option.

Robert J. Meinke
BLM District Botanist
Baker, Oregon



PRESERVING A WONDER - *Mirabilis macfarlanei*

by Bonnie Heidel, U.S. Fish & Wildlife Service,
Endangered Species Office, Portland, Oregon.

Mirabilis (Latin = wondrous) is an appropriate name for the one and only plant species of the Pacific Northwest that has been carried through the listing process to be federally recognized as Endangered to date. The listing of *Mirabilis macfarlanei* is in itself a wonder, not to mention its discoveries, survival, and mere occurrence in Oregon and Idaho.

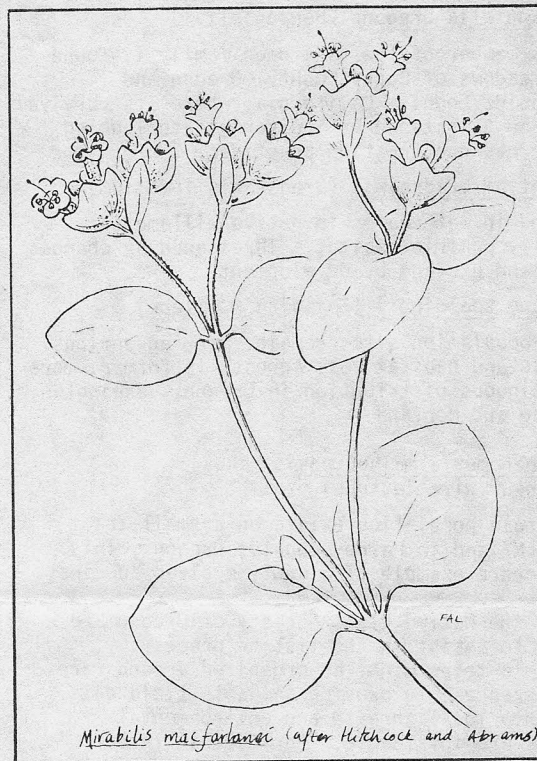
A striking member of the Four o'clock genus, its species name brings to mind pictures of an admirable boatsman riding the highwater torrents of the Snake River and spotting the Four o'clock in May. It is named after Ed Macfarlane, the boatsman who pointed it out to Rollins and Constance in 1937 on the Oregon side of the Snake River. (The possibility remains that it was pointed out to Macfarlane by St. John, SE Washington botanist). In 1947, Davis (Idaho botanist) discovered it on the Salmon River in Idaho.

Since that time, dams and highways had been built in the Salmon and Snake River regions without knowing their impact on *Mirabilis macfarlanei*. Fruitless searches in the early 1970's led botanists in the area to consider it possibly extinct. Then in 1978, a small population was noted in the Hell's Canyon Recreation Area in Oregon. An early May raft trip in 1979 led to another Snake River discovery, believed to be a relocation of the type locality. Shortly afterward, I relocated the Salmon River site while working for the Coeur D'Alene District of the Idaho BLM. The three known populations may represent fewer than 20 plants total -- rare indeed!

Each of the known populations has its own set of threats, including fungi, voracious caterpillars, collectors, and other problems which probably reduced its numbers.

Biotic problems notwithstanding, its survival so far north is most incredible. Its taxonomically closest relative gets no further north than central Nevada. A couple of adventitious species of *Mirabilis* reach higher latitudes, but the genus is mainly restricted to the southwest United States. For the genus to have reached such northerly sites, it is conjectured that its distribution expanded in a period of warmer climates. With climatic cooling, the species or its predecessor was, in essence, trapped. The Salmon and Snake River canyonland across NE Oregon and W. central Idaho provided some of the longest growing seasons and mildest winter conditions of these two States. If the species originated in the north, then its path of retreat with cooling climate was cut off by less favorable conditions, and this would explain its restricted distribution.

As a plant of warm and dry climate, *Mirabilis macfarlanei* has classic architecture, designed for optimal photosynthetic energy conversion early in the growing season. Its horizontal leaves absorb higher percentages of radiation than any angle of inclination. The broad, entire leaves also contribute to high net uptake. The thickened leaves have a low water loss per leaf volume. Since its flowering peak is in May, it makes use of a long photoperiod, without the heat stress and drought of later months. By mid-July, the seeds have developed and dispersed, and the plant becomes brown and brittle.



At present, *Mirabilis macfarlanei* is federally recognized as Endangered. The U.S. Forest Service has initiated a management plan for the species. After surviving geological eras, its most crucial test of survival may yet be ahead.

T/E ALERT

The Endangered Species Office of the U.S. Fish and Wildlife in Portland is developing listing packages for nine Pacific Northwest plants. These high priority species include:

1. *Allium aseae* (Aase's onion)
On Boise River terraces in Ada and Gem Counties, Idaho; 10-12 populations are extant. Housing developments and gravel pits could destroy them.
2. *Allium dictyon* (Blue Mountain onion)
Known only from the type locality on the Umatilla National Forest in Washington.
3. *Aster curtus* (Rigid white-topped aster)
Present distribution is from the vicinity of Eugene, Oregon, north to Vancouver Island. Four known populations in the U.S.; one near Eugene, Oregon and three in Thurston County, Washington. Populations are also localized on Vancouver Island.
4. *Astragalus columbianus* (Columbia River milk-vetch)
Known only from rocky ledges above Priest Rapids on the Columbia River in Washington.
5. *Astragalus purshii* var. *ophiogenes* (Woolly pod milk-vetch)
Nine areas along the narrow Snake River corridor in SW Idaho, plus two in Malheur County along the Owyhee River, represent the known distribution. Two dams threaten its survival.

6. Bensoniella oregona (Bensoniella)

This member of the Saxifrage family is found in meadows of Curry County, Oregon and Humboldt County, California, where its survival may be threatened by indiscriminate logging and road construction practices.

7. Lomatium bradshawii (Bradshaw's Lomatium)

Found in wet swales in native Willamette Valley prairie habitat. Threatened by changes in land use and by development.

8. Silene spaldingii (Spalding's silene)

Six population sites remain, marking serious grassland habitat loss across its former, more continuous distribution in Oregon, Washington, Idaho and Montana.

9. Stephanomeria malheurensis
(Malheur wire lettuce)

A single population exists on a small tract of BLM land in Harney County, Oregon. This is a rare example of a newly evolved species.

Members of the Native Plant Society of Oregon are encouraged to assist in the listing process. Chapter field trips might be organized around rare plant occurrences, to provide valuable field data. Insights into local threats and environmental constraints are invaluable. For further information, contact Dr. Janet Hohn, Endangered Species Office of the U.S. Fish and Wildlife Service, Lloyd 500 Building, Suite 1692, 500 NE Multnomah, Portland, OR 97232 or (503) 231-6131.

NOTES FROM W.M. FINLEY WILDLIFE REFUGE

On May 3rd, while on a field trip to Wm. Finley Wildlife Refuge with my class from Portland Community College looking specifically for Lomatium bradshawii, my group experienced a large emergence of the Cinnabar Moth. I know Dave Wagner at the University of Oregon has been interested in any other plants (especially Senecio genus) that the Cinnabar Moth larvae may be using as a food source. But the Cinnabar was laying its eggs only on Senecio jacobaea (Tansy Ragwort) and a few of the Senecio vulgaris (Groundsel, or Garden Tansy).

On the Poison Oak Trail (now the "Trail of Discovery") we found 6 plants of Lomatium bradshawii. Dave Wagner has also been interested in this plant, a few specimens of which have been found at Fern Ridge. The habitat range is very narrow in the Willamette Valley, occurring only between Salem and Eugene.

Of special interest to the supporters of biological control: the Hypericum Chrysolina beetle (Chrysolina hypericii) has nearly eliminated Hypericum perforatum (Weedy St. John's Wort) from the Wm. Finley Refuge. This beetle was introduced in 28 counties in Washington State in 1957 and is now successfully established in Oregon, Idaho, and northern California.

Glenn E. Walthall
NPSO Naturalist

CHAPTER CALENDARS

PORTLAND CHAPTER

Meeting: Rare Plants of Northeastern Oregon, by Bob Mienke. June 9, 7:00 p.m., Central Library, 801 SW 10th.

From 1977 to the present, Mr. Mienke worked as botanist for the Bureau of Land Management in Baker County researching rare plants of the area. He is now under contract to Fish and Wildlife doing a similar investigation of rare plants of the Willamette Valley. Members and friends are welcome.

Field Trips:

Sat., June 7 -- Triangulation Peak. Helen Moehne, leader. Meet 9:15 a.m. at the junction of Rts. 6 and 8, two miles north of Gales Creek. Best approach via Highway 26. Carpool in the OMSI parking lot 8:30 a.m.

Sat., June 14 -- Table Rock, Molalla. Dr. George Jeffcott, leader. Meet 9:30 a.m. at the Union High School building (now the Junior High) south of the 4-way stop in the center of Molalla. Carpool 8:30 a.m. at Tri-Met's Handyman park and ride lot 15550 S.E. McLoughlin Blvd. and Risley Ave. in Oak Grove.

Sat., June 21 -- Castle Canyon. Esther Kennedy, leader. Meet 9:30 a.m. at Zig Zag Ranger Station. Or carpool 8:30 a.m. State M.V. Dept. parking lot N.E. 60th and Glisan. The trail climbs steeply among rock spires gaining 850 ft. in less than one mile.

Sat., June 28 -- Iron Mountain. Glenn Walthall, leader. Meet 8:30 a.m. at the Brooks exit number 263 off I-5 north of Salem. The trail climbs 1,335 ft. in 1.5 miles. Driving distance from Portland 145 miles.

Fri. and Sat. July 4 and 5 -- Century Drive and Alder Springs. Shep Wilson, leader. Meet in Meadow Forest Camp picnic area two miles west of Deschutes N.F. boundary on Cascade Lakes highway out of Bend, 11:45 a.m., Friday. On Saturday, meet at the Emporium restaurant, Tumalo, 9:30 a.m. Consult Shep or Joyce Beeman about arrangements. Driving distance from Portland 175 miles.

BLUE MOUNTAIN CHAPTER

Field Trip

Fri.-Sun., July 4-6. Mount Emily Rare Lomatium Hunt. Karl Urban and Billy Snow will help us identify plants. This will be a dry campout 12 miles northeasterly of Kamela. Take I-84 to Exit 243, turn left and follow NPSO signs. Our search will begin after noon Friday. All chapters are invited to attend. For information, contact Harry Oswald, 276-1241.

SISKIYOU CHAPTER

Meeting: Pollination, Dr. Darlene Southworth, speaker. Meet 7:30 p.m., Rm 171, Science, Southern Oregon State College, Ashland.

Field Trips:

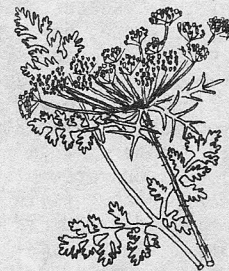
Sat., June 7 -- Neil Creek Nature Walk and Potluck at the Joy's. Once again, the Joy's are pleased to host this event at their beautiful place on Neil Creek. We will walk first and share our food and drink in mid-afternoon. Meet 12:00 noon K-Mart, Medford, 12:30 Bi-Mart, Ashland. For information, call 733-2524.

Sun., June 15 -- Silver Falls in the Illinois River Backcountry, led by Wayne Rolle. Spectacular place. Short but steep and strenuous hike. Be prepared for stream hiking. Swimming. Meet 8:00 Bi-Mart, Ashland, 8:30 K-Mart, Medford. 773-2524.

Fri-Sun, June 27-29 -- Hart Mtn. Antelope Refuge, led by Virginia Crosby, BLM Lakeview botanist. Great Basin and high desert flora, birds, possibly antelope and bighorn sheep. Camp at hot springs. Meet 2:30 p.m. on Friday at K-Mart, Medford, 3:00 Bi-Mart, Ashland. Information: 773-2524.

Sun., July 6 -- Miller Lake and Whisky Peak, led by Andy Kier. High Applegate flora and unique tree species. Meet 8:00 Bi-Mart, Ashland, 8:30, Medford. For information call 482-9403.

Wild Carrot or Queen Anne's Lace (*Daucus carota*). Note the dissected leaves, common in Umbelliferae. Involucral bracts beneath the compound umbel are pinnately divided.



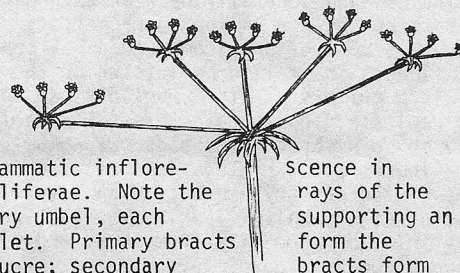
PLANT FAMILY PROFILES

By Herm Fitz

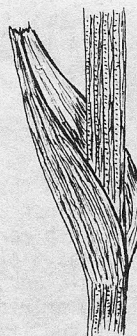
The Umbelliferae - CARROT FAMILY

The Carrot Family is one of the best known of all flowering plant families. Representatives occur in most parts of the world; however, species are most abundant in temperate uplands and noticeably rare at tropical latitudes. Some 2,500-3,000 species in 300 genera are found worldwide, and Oregon has 1 or more species in each of 32 of these genera. Some are aliens, having been introduced from Europe and Asia: The Knotted Hedge-Parsley (*Torilis nodosa*) of the Curry County coast; Wild Carrot or Queen Anne's Lace (*Daucus carota*), the ancestral carrot, Fennel (*Foeniculum vulgare*), and Parsnip (*Pastinaca sativa*) of roadsides, ditchbanks and waste places; the Poison Hemlock (*Conium maculatum* - of classical antiquity) along roadside ditches especially west of the Cascades; Venus' Comb (*Scandix pecten-veneris*) weedy in fields; and Bur Chervil (*Anthriscus scandicina*) along streambanks or moist open places.

The natives (26 genera) are quite varied in appearance and habitat: A species of Eryngo or Coyote Thistle (*Eryngium*) occurs on low ground in the valleys both east and west of the Cascades; Snakeroot (*Sanicula*) may be found from coastal bluffs to wooded slopes and mountain meadows; and Western Hedge Parsley (*Caucalis microcarpa*) grows along streams and on vernal moist slopes on both sides of the Cascades. Beach Silver Top (*Glehnia leiocarpa*) is strictly of the coastal dunes and sandy beaches, and Pacific Hemlock-Parsley (*Conioselenium pacificum*) may occur on bluffs or both rocky and sandy beaches along the seashore. Also along and near the coast, in salt marshes and flats and sandy or muddy beaches grows the Western Lilaopsis (*Lilaopsis occidentalis*). In the mountain springs and bogs from southern Jackson and Lake Counties and southward is found the Western Oxypolis (*Oxypolis occidentalis*), and in woods of southwestern Oregon are species of Tauschia (*Tauschia*). The large genus of Desert Parsley (*Lomatium*) boasts species in nearly every sort of habitat from moist ground, prairies or meadows to dry, rocky open areas and scablands of eastern parts of the state. Many umbellifers thrive in moist areas and in such habitats as wet meadows, marshes, streambanks, lakeshores, slow-moving streams, bottomlands, ponds, swamps, bogs and sloughs grow species of Angelica (*Angelica*), Water Pennywort (*Hydrocotyle*), Swamp Whiteheads (*Sphenosciadium capitellum*), Heart-Leaved Alexanders (*Zizia aptera*), Hemlock Water Parsnip (*Sium suave*), Water Hemlock (*Cicuta*), Water Parsley (*Oenanthe sarmentosa*), or Cut-Leaved Water Parsnip (*Berula erecta*).



Diagrammatic inflorescence in Umbelliferae. Note the primary umbel, each supporting an umbellet. Primary bracts form the involucre; secondary bracts form the involucre.

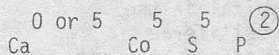


Petiole of leaf sheathing the stem, typical in the Umbelliferae (Blade of leaf not shown). Note also the furrows of the stem.

Sweet Cicily (*Osmorrhiza*) is often encountered in woodlands or meadows; Lovage (*Ligusticum*) may be found on slopes or mountain ridges or in meadows and marshes; and the robust Cow Parsley (*Heracleum lanatum*) occurs along streambanks and in low, moist ground. A species of Turkey Peas (*Orogenia*) occurs on each side of the Cascades on open slopes and ridges, and in the loose, dry ground of Malheur, Harney and Lake Counties occurs the Dwarf Cork Seed (*Rhysopterus pleurijugis*). Species of Pteryxia (*Pteryxia*) are found in the dry slopes and rocky cliff and canyon walls of the Steens Mountain and Alvord Desert; *Cymopterus* (*Cymopterus*) grows in dry flats and hillsides or rocky places; and False Caraway (*Perideridia*) occurs in varied habitats from dry open hillsides and ridges to wet meadows in the mountains. Last, a small native cousin of Wild Carrot (*Daucus pusillus*) is often found in dry open places around rocky outcrops.

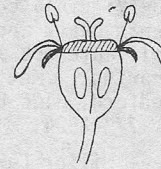
Perhaps the Carrot Family (also called Apiaceae) is best known for its aromatic odor, its flavor, and its toxicity. Many herbs and condiments, in addition to some root crops, are widely used: anise, cumin, coriander, dill, fennel, celery, parsley, parsnip, and carrot. Most are highly aromatic, and a few are poisonous (*Conium*, *Cicuta*). All are herbaceous, though they may be annual, biennial or perennial. Furrowed stems are hollow or soft-pithy between the nodes; leaves are often finely dissected, or at least compound (simple in *Hydrocotyle*), and are alternate, without stipules, and generally bear an expanded petiole sheathing the stem. The characteristic inflorescence is most often a compound umbel consisting of flowers in small umbellets which themselves are in a primary umbel. Umbellets may be reduced to capitate globular clusters (*Sphenosciadium*) or dense spiny-bracteate heads (*Eryngium*). Rarely are flowers solitary (*Hydrocotyle*). Bracts at the base of the primary umbel form an involucre; at the base of each umbellet, an involucl. These bracts vary in number and size from showy and colorful to inconspicuous or obsolete.

The pattern of flowering is sequentially from the outer whorls to the center, with stamens usually maturing first. A few genera (*Heracleum*, *Daucus*) bear irregular outer flowers with enlarged outer petals that seem to be analogous to the ray flowers of a composite in the attraction of a wide variety of insect pollinators: flies, mosquitoes, gnats, non-specific bees, butterflies and moths (the flowers are said to be "promiscuous."). Individual flowers may have five sepals or none, 5 petals, 5 stamens, and a bicarpellate inferior ovary. A fleshy disc-like "stylopodium" supports the two styles that lead to the single ovule in each locule below. This formula may be expressed:

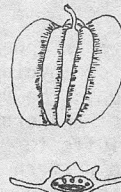
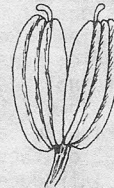


The fruit is a dry "schizocarp" splitting down the middle along a "commissure" into two "mericarps" with a common forked stalk, the "carpophore." Each mericarp contains a single seed, and normally has 5 primary ridges - a single dorsal, 2 commissural, and, in between, 2 lateral. Four secondary vallecular ridges lie alternate with the primary ridges; all run longitudinally down the fruit and may be expanded in various ways. Fruit surfaces may also bear spines, hooks, hairs or tubercles of many sorts related to seed dispersal. A cross-section of the mericarp often shows oil cavities and resin canals ("vittae"). These fruit characters become important in keying a given plant to genus and species since it is extremely difficult to base a key on floral and vegetative characters.

Diagrammatic longitudinal section of a typical flower in Umbelliferae. Note the stylopodium supporting 2 styles, and the inferior ovary with 2 ovules.



Diagrammatic fruit in Umbelliferae: a schizocarp. Note the carpophore supporting the two mericarps, in this case partly split along the commissure.



Sketch and cross-section of mericarp of *Angelica arguta*. Note the five primary ridges and resin ducts.

Should you then encounter an aromatic herbaceous plant with hollow internodes, divided leaves, sheathing petioles, small five-parted flowers in compound umbels, each with an inferior ovary that matures into a schizocarp of two ridged mericarps - no doubt at all you have found a member of the well-known Umbelliferae - the Carrot Family.





WELCOME TO NEW MEMBERS

Portland Chapter:

Irma Anderson, Nehalem
 Eleanor I. Newburg, Nehalem
 Lynne Lawhorn, Washougal
 Dennis Brosten, Boring
 Gordon S. Whitehead, Portland

Mid-Columbia Chapter:

Jeane Bailey, Mosier

Blue Mountain Chapter:

Richard and Judy Davis, Hermiston

Siskiyou Chapter:

Wendy Frey, Ashland

State at Large:

Joyce L. Bork, Bend

Emerald Chapter:

Deborah Jo Bird, Eugene
 Kimberly St. Hilaire, Eugene
 Matthew Shelley, Eugene
 Virginia Conley, Springfield
 Evelyn Hess, Eugene
 Mrs. Lee Everett, Eugene
 Teresa Ann Maurer, Eugene
 Dorothy Leland, Eugene
 Donna White, Eugene
 William Eaton, Eugene
 Alice Dotterer, Springfield
 Rhoda Love, Eugene

CATHERINE JULIE DUNLOP

Catherine Dunlop, member of the Portland Chapter, died May 8 in Portland. She had retired from teaching biology in Oregon and Washington high schools and assisting research projects at Portland State University. She will be remembered by many for wild edible creations from her herb garden.





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

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NATIVE PLANT SOCIETY OF OREGON

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Secretary: Mary Jane Fredricks, 4436 NW Barnes Road, Portland 97210. Phone 228-4891.
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Board of Directors: Ingeborg Day, Joan Fosback, Veva Stansell, Dave Garcia, Dave Wagner, George Lewis.
NPSO Bulletin Editors: Vern Crawford and Dr. Frank Lang

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Mid-Columbia: Keith Chamberlain, Box 151, Mosier, 97040. Phone 478-3314.
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