



Bulletin

of the

Native Plant Society of Oregon

Dedicated to the enjoyment, conservation, and study of Oregon's native vegetation

VOLUME 34, No. 2

40TH ANNIVERSARY YEAR!

FEBRUARY 2001

Summer Intern Report

Moonworts, Moonworts!

by Rhiannon Thomas

The following is the third in a series of four articles written by last year's participants in the native plant conservation internship program, jointly sponsored by the Native Plant Society of Oregon and the Oregon Department of Agriculture (ODA).

What follows is an article by Rhiannon Thomas. Rhiannon is currently a sophomore at Oregon State University, with an anticipated major in botany. We are grateful to Rhiannon and the other interns for a successful field season, and thanks again to the NPSO for contributing to their botanical education and work experience.

Steven Gisler, Oregon Dept. of Agriculture, Native Plant Conservation Program

My first experiences with moonworts were when I was 15. That summer I worked for my dad, Duncan Thomas, performing rare plant surveys in the Willowa Mountains in north-eastern Oregon. We found a variety of rare and interesting plants there, including several different riparian moonworts. Because they are so small and only live above ground for a few months of the year, moonworts are hard to find. Duncan makes up moonwort songs to make them appear; he insists that you have to think the right kind of "moonworty" thoughts to see them at all. I was intrigued by the tiny ferns, so I started keeping an eye out for them. I found them myself while backpacking in the Willows later that year, though I don't know which species they were. Later I visited Duncan in Cameroon, where he does most of his work. Though we didn't see any moonworts there, I became more interested in plants, ecosystems and conservation.

The family Ophioglossaceae, which includes the genus *Botrychium* (moonworts, or grape-ferns), is a group of tiny, fluffy ferns with one sterile leaf

and one reproductive stalk with spore sacks that look like a bunch of grapes. I have enjoyed looking at them with my father, but until this summer, when I participated in the Native Plant Conservation Internship sponsored by the NPSO and Oregon Department of Agriculture (ODA), I knew nothing of their life-cycle, classification, or distribution.

During this internship I worked on a variety of conservation projects
continued on page 20

New Membership Directory To Be Published

The 2001 edition of the NPSO Membership Directory will be published in April. If you wish to receive a copy, add Two Dollars to your renewal payment.

If you wish to have your address or telephone number or both withheld from publication in the Directory, please make a prominent note on your renewal form. (See page 21.)

IT'S STILL RENEWAL TIME!

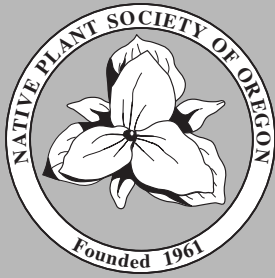
The NPSO membership year is January to December.

Check your address label on the *Bulletin*. If there's a 00 on the top line, we haven't received your renewal yet.

NPSO brings you field trips, programs, classes, and the monthly *Bulletin*. Your membership and donations make it possible to carry out more of the projects that are needed to pursue the goals of NPSO.

In This Issue

| | |
|--|----|
| Mailing Committee Chair Needed..... | 14 |
| Chapter Calendar..... | 15 |
| Oregon Flora Project..... | 17 |
| Other Events..... | 18 |
| Plant Talk Web Site..... | 18 |
| New Book About Corvallis Botanist..... | 19 |
| New Members..... | 19 |
| Sudden Oak Death Syndrome Threatens Oregon Oaks..... | 22 |



Native Plant Society of Oregon

World Wide Web

<http://www.NPSOregon.org>

Email Discussion List

To join send a message to majordomo@tardigrade.net, with the following in the body of the message: subscribe npsos

General Business Address

P.O. Box 902
Eugene, OR 97440

or correspond directly with Officers and Committee Chairs listed on the inside of the back page.

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The submission date is the 10th of each month for the following month's issue. Send submissions by e-mail to bulletin@NPSOregon.org.

Opinions expressed in this publication are those of the authors of the articles. They do not represent the opinions of the Native Plant Society of Oregon, unless so stated.

Mailing Committee Chair Needed

We want to thank our *Bulletin* mailing committee head, Rick Momsen, for doing a terrific job this past year taking over the *Bulletin* mailing after it moved to Eugene. Unfortunately Rick will be moving up to Portland so we need to find someone in the Eugene area to take over as soon as possible.

The job entails picking up the *Bulletins* from the printer, purchasing postage, and organizing a small, existing committee to meet one evening near the end of every month.

For more information about the particular duties please contact Rick at rickmomsen@hotmail.com or Bruce Newhouse at newhouse@efn.org or 541-343-2364.

If you don't want to be the head of the committee but still want to help get the *Bulletin* sent out please contact Bruce Newhouse.

Mushroom ID

From Jay Lunn of Hillsboro:

"A friend of mine who is a member of the Oregon Mycological Society identified the 'club mushroom' on page 4 of the January 2001 NPSO *Bulletin* (Vo. 34, No. 1) as *Helvella lacunosa* (Fluted Black Elfyn Saddle) that has been parasitized by *Hypomyces cervini-genus*."

And from Nancy S. Weber of Corvallis:

"The 'club mushroom' on p. 4 of the January NPSO *Bulletin* is a parasitized *Helvella*, a species of false morel or lorchel. The host is most likely *Helvella lacunosa*. I enjoyed seeing fungi included in the *Bulletin*."

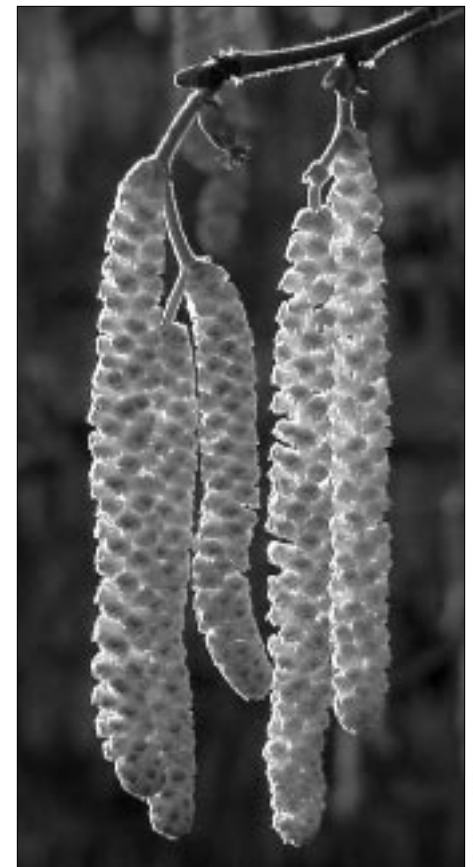
Thanks Jay and Nancy!

Errata

The lovely photo of *Silene douglasii* on page 2 of the January 2001 NPSO *Bulletin* (Vo. 34, No. 1) was taken by Aaron Liston.

Extra Field Guides Anyone?

Spring quarter botany courses are just around the corner. First day of spring classes at Lane Community College is 4/2/01. If you have field guides you no longer use perhaps you could sell them to some botany students this spring. Copies of both of the following are needed, *Flora of the Pacific Northwest* by Hitchcock and Cronquist and *Handbook of Northwestern Plants* by Gilkey & Dennis (a new edition of this won't be out until late spring according to OSU Press). Please contact Gail Baker at bakerg@lanec.edu, if you have a book to sell.



TANYA HARVEY

The Promise of Spring. The elegant, dangling male catkins of the Filbert (Corylus cornuta) are among the first flowers to appear each year, decorating the small trees well before the leaves appear. They are a classic example of wind pollination, blooming before most insect pollinators are active. The edible hazelnuts develop from tiny, inconspicuous, red female flowers, one of which can be seen facing downward at the top and center of the photo.

State

June 8-10, Friday-Sunday

Annual Meeting: in Corvallis. The basic schedule will be as follows. Friday: Evening Social. Saturday: Daytime field trips and Evening Banquet with special speaker. Sunday Morning: State Board Meeting and alternative half day field trip. More details will be announced later.

Blue Mountain

February 5, Monday

Meeting: Local Weeds. We will have a panel presentation and discussion of the identification and characteristics of weeds of particular concern in our area, including slides. Meeting starts at 7:00 pm, at the Small Business Development Center office, SE 2nd & Dorian St., Pendleton.

Cheahmill

February 15-17, Thurs. – Sat.

Event: Native Plant Sale. Thursday and Friday 9:00 am - 6:00 pm, Saturday 8:00 am - 3:00 pm, USDA Service Center, 2200 SW 2nd St., McMinnville. The Chapter will have plants for sale and will also assist the Yamhill Soil and Water Conservation District with their 10th annual native plant sale. 35 kinds of trees and shrubs and 8 herbaceous species native to the Willamette Valley will be available. For more information or an order form call Tim or Rhiannon at 503-472-6403.

February 22, Thursday

Meeting: Western Botanical Gardens Featuring Native Plants will be presented by Linda McMahan. Slides of gardens from British Columbia to southern California specializing in native plants will be shown as Linda introduces us to some of the best places to visit and learn about native plants of the various garden locations. Linda is

currently Staff Chair and Agent for Community Horticulture at the Yamhill County office of the OSU Extension Service. She also serves as an Associate Professor of Horticulture at OSU. From 1989 until last September she was the Executive Director of the Berry Botanic Garden in Portland. 7:00 pm, Carnegie Room, McMinnville Public Library, 225 N. Adams St. McMinnville. For more information contact Rob Tracey at 503-843-2702.

Corvallis

February 12, Monday

Meeting: Backyard Mushrooms – Mycological tales from a Corvallis yard. A talk and slide show by Dr.

IMPORTANT NOTE TO FIELD TRIP PARTICIPANTS

Field trips take place rain or shine, so proper dress and footwear are essential. Trips may be strenuous and/or hazardous. Participation is at your own risk. Please contact the trip leader or chapter representative about difficulty, distance, and terrain to be expected on field trips. Bring water and lunch. All NPSO field trips are open to the public at no charge (other than contribution to carpool driver) and newcomers and visitors are always welcome. National Forests require a Northwest Forest Pass for many field trip locations. Permits can be acquired at forest headquarters and ranger districts.

NOTICE TO FIELD TRIP CHAIRS AND LEADERS

The Forest Service and other agencies have set policies limiting group size in many wilderness areas to 12. The reason is to limit human impacts on these fragile areas. Groups using wilderness areas should be no larger than 12.

Nancy Weber who has now recorded over 250 kinds of fungi from a semi-wooded city lot. Meet at 7:30 pm at the Avery House, Avery Park, Corvallis. For more information please contact Esther McEvoy at 541-754-0893.

Emerald

February 10, Saturday

Workshop: Winter Twigs, led by Rhoda Love and Judith Manning from 9:30-2:30 pm at the Mt. Pisgah Arboretum. This workshop is cosponsored by NPSO and the Arboretum. Cost is \$30 for members, \$35 for non-members of these organizations. Participants are encouraged to purchase *Winter Twigs* by Gilkey and Packard. Limit 15 participants. For more information or to register, call the Mt. Pisgah Arboretum at 541-747-1504.

February 24, Saturday

Field Trip: Lichens at the Coast. This field trip to the Three Lakes area just south of Florence will be led by Ron Hamill, Eric Muench and Teman Erhart of Cryptogam Associates. Meet 8:30am South Eugene High School. Bring lunch, a plastic bag to sit on, hand lens, rain gear, and if you have it, *Plants of the Pacific Northwest* by Pojar and MacKinnon, and/or *Macrolichens of the Pacific Northwest* by Bruce McCune. For more information call Peggy at 541-744-0439.

February 26, Monday

Meeting: Botanizing in the Mountains of Mexico. Nick Otting will present a sun-drenched slide show on the diverse flora of southern Mexico. The tropical rain forests of Vera Cruz and Chiapas are among the regions we will explore. 7:30 pm, Room 117, Science Building, LCC main campus, Eugene. For more information contact Nick, 541-334-4499. Directions: Construction continues at LCC, so come a little early to find your way. Best place to park is on the east side of campus,

near the south end of Eldon Schafer Drive (turn at the stop light on 30th Ave.). Just south of that parking area is a lighted walkway along the north side of the Science trailers, which goes right to the Science building.

March 19, Monday

Meeting: Oak Savanna and Wetlands Restoration in Buford Park. 7:30 pm, Room 117, Science Building, LCC main campus. Jason Blazar, Stewardship and Restoration Coordinator of Friends of Buford Park and Mt. Pisgah, will give us a slide-illustrated talk on current progress and future plans for enhancement & restoration of these native Park habitats. He'll also tell us what species might benefit from the changes. For more information contact Nick Otting, 541-334-4499.

High Desert

Restoring Our Native Landscapes

Please join us the fourth Tuesday of each month listed below as we learn about the challenges we face as we try to restore the land. All meetings will be held at the Central Oregon Environmental Center, 16 NW Kansas, Bend at 7:30 pm. Call Stu Garrett 541-389-6981 for more information. All are welcome.

February 27, Tuesday

Meeting: Maret Pajutee, botanist/ecologist with the Forest Service talks on naturoscaping and native plant sources. She relandscaped the area around the Sisters Ranger District Office and has years of experience with revegetation.

March 27, Tuesday

Meeting: Kelly Walker of Sunriver will talk about his efforts with Sunriver Landowners to use native vegetation to plant in developments in Sunriver. He will emphasize soil amendments, preparation, and plant selection.

April 24, Tuesday

Meeting: Ecologist Bill Hopkins and Director Brad Chalfant of the Deschutes Basin Land Trust will discuss plans to restore and manage over 3,000 acres the Forest Service traded to Crown Pacific Lumber in 1999. This area will be managed under a conservation easement held by DBLT to enhance old growth ponderosa pine. Learn about the exciting things the Land Trust is doing locally.

Klamath Basin

For information on the Klamath Basin Chapter, call David Lebo at 541-883-8393.

Mid-Columbia

February 7, Wednesday

Meeting: Sagebrush Desert Ecology. Jonathan Sol, The Nature Conservancy preserve manager for the Portland area preserves, will give us a slide show and talk on the sagebrush desert area of Eastern Oregon and Washington, and also update us on projects at the Tom McCall Preserve. If you would like to learn more about the plant communities of our own area and the area just to our east, this talk is highly recommended. 7:30 pm at The Discovery Center in The Dalles; take exit 82 off I-84 and follow signs.

March 4, Sunday

Field Trip: Rock Fort is a major Lewis and Clark campsite, located in The Dalles. Mike Igo has been working on the botanical restoration of Rock Fort for the upcoming Lewis and Clark bicentennial, and will give us a tour and probably put us to work a little. Then we'll look for goldstars, prairie stars, grass widows, and other early bloomers at Dallesport, Catherine Creek, and Frog Creek. Meet at Columbia Gorge Discovery Center parking lot at 10:00 am. Take exit 82 off of I-84 and follow signs. For more info. call Barbara Robinson at 541-296-5334.

March 7, Wednesday

Meeting: Columbia Gorge Wildflowers and Where To Find Them.

7:30 pm, Columbia Gorge Discovery Center, exit 82 off I-84, and follow signs. Begin the wildflower season by learning or relearning some favorite spring wildflowers, and discover some of the best places to find them. Barbara Robinson, Gorge wildflower expert and frequent hike leader, will give a slide show and talk showing several favorite wildflower spots, the flowers you will find there, and the best times to go.

North Coast

February 17, Saturday

Work Party: Camas Transplanting. Meet at 10:00 am at PUD Building, Tillamook. For more information call Vivian Starbuck at 503-377-4141.

March 5, Monday

Meeting: Organization and planning. 7:00 pm at the Carl Rawe room, PUD Building, Tillamook. For more information call Vivian Starbuck at 503-377-4141.

Portland

February 13, Tuesday

Meeting: Bring your own slides. Darryl Lloyd will give a presentation on the flora, geology, and history of Mt. Adams. 7:00 pm, Fireside Room (#355) of the First United Methodist Church located at 1838 SW Jefferson St., in Portland. For more information contact Skip Haak, 503-460-3198.

March 4, Sunday

Field Trip: Photograph *Sisyrinchium douglasii* at their peak (we hope) at Catherine Creek. This is the first of a series of field trips designed around the priorities of wildflower photography. We'll try to be at the right place at the right time, when the light and the subject are at their best, and magic (if we're lucky) may happen. We will gather at the parking area at Catherine Creek at

6:00 am, just before first light (twilight begins at 6:09 am, sunrise at 6:38 am). Hopefully, the wind will have settled overnight, and the first few hours of daylight will be calm, and the light luscious. Contact Mike McKeag, 503-642-3965, mmckeag@teleport.com, for more information.

March 4, Sunday

Field Trip: Rock Fort. Dallesport. Leave Gateway/NE99th Ave. Park and Ride, southeast corner of parking lot, at 8:30 am. Second meeting place; Columbia Gorge Discovery Center parking lot, 10:00 am. See details in Mid-Columbia chapter.

March 10, Saturday

Field Trip: Catherine Creek. Always a great way to start the flower season as trip leaders Jan and Dave Dobak and I will look for *Sisyrinchium douglasii*, *Fritillaria pudica*, and many others. Leave 8:30 am Gateway/NE 99th Ave. Park and Ride, southeast corner of parking lot. Second meeting place at 9:45 am Bingen Winery parking lot on SR 14. Call Greg Stone, 503-233-4761 for more info.

March 25, Sunday

Field Trip: Three Bench Loop. Join trip leader Russ Jolley for a trip up the Gorge to see *Lomatium columbianum*, *L. grayi*, *Cardamine pulcherrima*, *Crocidium*, *Plagiobothrys*, and balsamroot. Steep climb at start (200 ft.) for some great views. Leave 8:30 am, Gateway/NE 99th Ave. Park and Ride, southeast corner of parking lot. Trailhead located on S.R. 14 at milepost 79, at the far end of Doug's Beach parking area, 10:00 am. For more information call Greg Stone at 503-233-4761.

Siskiyou

February 15, Thursday

(Please note this is the meeting rescheduled from January)

Meeting: Salt Marsh Restoration at the South Slough National Estuarine Research Reserve. Craig Cornu, the South Slough NERR Stewardship

Program Coordinator, will describe efforts over the last 4 years to restore the natural structure and function of estuarine wetlands at South Slough NERR (near Charleston), with emphasis on the recovery of emergent marsh vegetation. 7:30 pm in Room 171 of the SOU Science Building in Ashland. Info: Molly Sullivan, 541-512-1341.

Umpqua Valley

February 8, Thursday

Meeting: Southwest Desert Plants. Ed Dale, retired instructor of biology, will present slides and speak on southwest desert plants. Douglas County Courthouse Annex, Roseburg at 7:00 pm. Call Richard Sommer at 541-673-3709 for more information.

Willamette Valley

February 10, Monday

Meeting: Member Pictures. Please bring your pictures or slides to share with your friends. There will a slide projector and empty trays available, along with a table for snapshots or albums. We will share from 7:00 pm until 8:30 pm at the First United Methodist Church at 600 State St. in Salem. Please note that this is not on the 3rd Monday evening due to the Holiday closure of the Church.

William Cusick

for information on the William Cusick Chapter call Frazier Nichol at 541-963-7870.

Thank You NPSO for Making the Oregon Flora Project Challenge a Huge Success!

by Scott Sundberg

The Oregon Flora Project Challenge drive has just been completed, and I'm happy to say that it has been an enormous success. An anonymous donor exhibited overwhelming generosity by doubling new and increased gifts for the Challenge. We not only attained the initial \$10,000 Challenge goal and a \$10,000 extension, but we surpassed it with a grand total of \$26,879 in contributions. The donations have charged up the Flora Project with new energy and excitement.

I, and the entire Oregon Flora Project team, would like to thank NPSO members for your overwhelming and enthusiastic response to the Oregon Flora Project Challenge. Thanks to the Friends of the Oregon Flora Project Committee, and to Dave and Jan Dobak, who helped enormously. We thank the presidents of the 13 NPSO chapters for encouraging chapter and individual donations, and the NPSO Board, who has overwhelmingly supported the project since the very beginning. We also thank Maya Abels, of the Oregon State University Foundation, and Stella Coakley, Chair of OSU's Dept. of Botany and Plant Pathology for their invaluable help.

Above all, we would like to thank the anonymous donor, whose dedication to the Flora project and whose financial support has allowed us to stretch our imaginations on future directions of the Flora project, and will carry us forward to fulfill our dreams.

We'd like to welcome first-time donors to the Flora Project, who comprised roughly half of the respondents, and acknowledge our faithful supporters, who have sustained the project for the past six years. Their gifts, along with the Challenge matching funds, have launched the Oregon Flora Project into the new millennium with \$46,879! To each and every donor: thank you very much for your support and interest in the Flora Project! We appreciate your involvement in the biggest botanical project underway in Oregon.

OTHER EVENTS

Mount Pisgah Arboretum Events

Saturday, January 27
10 am - 3 pm

Pine Needle Basketry Workshop at Mt. Pisgah Arboretum. Led by Pam Roberts, U. of Oregon Craft Center Instructor. Learn the historical uses and techniques of pine needle basketry, plus take home a basket you've created! This is a popular favorite; sign up early. Materials provided. Pre-registration required; call 541-747-1504. Fee: \$30 (\$25 MPA members).

Saturday, February 3
10 am - noon

Mosses & Lichens Walk with Daphne Stone. Enter the miniature world of plants that flourish in the winter. Bring a hand lens if you have one. Suggested donation: \$3 (Arboretum members free). Meet at Arboretum visitor center.

Saturday, February 10
9:30 am - 2:30 pm

Winter Twig Identification Workshop. Instructors: Rhoda Love and Judith Manning. Co-sponsored by Native Plant Society of Oregon. Fee: \$35 (\$30 Arboretum/NPSO members). Pre-registration required; space is limited. Call 541-747-1504 to register.

Saturday, February 24
10 am - Noon

Build a Birdhouse! Instructor: Don Lown, Audubon Society. Bring your own hammer; all other materials (including pre-cut pieces) plus instructions provided. Fee: \$7 per birdhouse (\$5 Arboretum members); no charge for birdhouses donated to Arboretum. Pre-registration required; space is limited. Call 541-747-1504 to register.

Willamette Valley Butterfly Gardening

Bruce Newhouse and Eric Wold of the Eugene-Springfield Chapter of the North American Butterfly Association (and NPSO) will discuss the keys to successful butterfly gardening in the Willamette Valley. Handouts will be provided that describe the most commonly encountered butterflies in the Eugene-Springfield area, along with the plants that are most suitable for attracting them.

The meeting will take place Monday, February 5, 7:30 pm at the Jefferson Middle School, 1650 W. 22nd, Room 21. If you have any questions, contact Eric Wold at 541-431-7388.

This will be the newly-formed chapter's third meeting. Meetings take place the first Monday each month. For information on future meetings check out the chapter's website at <http://www.naba.org/chapters/nabaes>.

Native Plant Propagation and Restoration Strategies Conference

December 12-13, 2001, Eugene, OR

Contact

Richard Zabel
Western Forestry and
Conservation Association
503-226-4562
FAX: 503-226-2515
richard@westernforestry.org

Register on-line at www.westernforestry.org starting this fall. The conference is co-sponsored by The Nursery Technology Cooperative at Oregon State University and Western Forestry and Conservation Association. Call or e-mail the above addresses to get on our mailing list.

The conference topics will cover seed transfer guidelines, field establishment, riparian restoration, propagation techniques, plant quality criteria, project design, invasive species, and project monitoring.

The conference organizers are looking for speakers. If interested please contact: Diane Haase at 541-737-6576 or Diane.Haase@orst.edu

If you are interested in displaying a poster or being a commercial exhibitor, contact Richard Zabel (see above).

Plant Talk Web Site! www.plant-talk.org

by Gail A. Baker, Emerald Chapter

Plant Talk is an international plant conservation magazine; see my review in previous NPSO *Bulletin* (November 1997:30(11)). The web site offers a sample of about 40 outstanding articles selected from various issues of the magazine and an illustrated contents page for each of the back issues. The magazine was first published in 1995 and continues to bring an international perspective to plant conservation issues.

I have found the international scope of this magazine to be extremely valuable in extending my knowledge of plant diversity and conservation. Check out their list of "100 Plant Facts for Campaigning Conservationists" which begins with 10 facts about plant diversity and continues with 10 facts about the distribution of plants over the earth and 10 each in eight more categories including fungi, algae & lichens and plants on islands. The Lane Community College library has issues from the last two years.

NPSO Items for Sale

Oregon's Rare Wildflower Poster depicts Punchbowl Falls and three of the Columbia River Gorge's endemic wildflowers. Text on the back describes the natural history of the Gorge and the mission of the NPSO. Available from Stu Garrett, 21663 Paloma Drive, Bend, OR 97701, 541-389-6981. Individuals may order posters at \$12 each, plus \$3 per order for shipping. Posters are mailed in tubes. Chapter treasurers may contact Stu for wholesale prices to chapters.

The "Atlas of Oregon Carex" is NPSO's first occasional paper. The Atlas has 128 location maps, one for each Carex taxon in the state of Oregon. Also included are a synonymy, fun facts about sedges, a history of the project, and Oregon geography maps. Send a \$5 check (made payable to NPSO) to: "Atlas of Oregon Carex", c/o Keli Kuykendall, 4550 S.W. Nash Ave., Corvallis, OR 97333-9301.

WELCOME NEW MEMBERS

11/3/00 to 1/7/01

Corvallis

Phyllis Reasoner

Emerald

Carolyn Adams
Doug Barrett
Phacelia Cramer
Susan Johnson
Mike McDonald
Jeanne Ponzetti
Laura Ratti
Bitty Roy
David & Robin Tiedeman
Cristel Y. Weir
David Wilderman
Mark Williams

High Desert

Jean Battelle
Jean Drayer
Kathy Ann Wade
Kelly Walker

Mid-Columbia

Etta M. Myers
David Weiss

North Coast

Shannon Brosseau
Avis J. McHugh

Portland

Richard W. Bills
Jennifer Corio
Dave Frei
Trisha Hart-McArthur
Sage Jensen
Nancy McDonald
William & Sara Neill
J. J. Sweeney

Siskiyou

Kenneth R. Himes
Dennis Odion

Umpqua Valley

Clint Emerson

Willamette Valley

Kathy Patterson

New Book About Corvallis Botanist

Come Walk Through Spring with Bessie Gragg Murphy and her Willamette Valley Wildflowers, published in April 2000 by Frances Stilwell (Corvallis Chapter), is now in its second printing.

Twenty-six color plates of Willamette Valley native wildflowers in their native habitats are presented in order of the spring bloom. Plates are 4" x 6" hand-placed photos of Stilwell's pastel drawings.

Text accompanying the plates contains Bessie Murphy's taped comments about the habitats and natural history of the flowers she encountered growing up on an early Benton County farm. Stories of her life are presented in parallel with the spring bloom. The second edition now offers a forward by Dr. LaRea Dennis Johnston.

Bessie Gragg Murphy was born in Clatsop County in 1894 and moved to Corvallis in 1900, travelling by steam riverboats from Astoria. She died in 1991. She was a well-known amateur botanist who collected for Dr. Helen Gilkey and later worked seventeen years at the Oregon Agricultural College Seed Laboratory. At the age of 64 she discovered an un-named clover in Malheur County after climbing up a shale slope "to see what that cow was munching on."

The book is available at Grass Roots Bookstore, Oregon State University Bookstore, Illustrated Garden Art Gallery, all in Corvallis and from Frances Stilwell, 602 NW Ninth St #2, Corvallis OR 97330, 1-541-752-1720. Hardback. \$50 plus \$5 postage and handling.



Lady Slipper Orchid (Cypripedium montanum)

FRANCES STILWELL

Moonworts, Moonworts!

continued from page 13

with rare Oregon native plants, including wolf's evening primrose (*Oenothera wolffii*), Nelson's checkermallow (*Sidalcea nelsoniana*), red-root yampah (*Perideridia erythrorhiza*), hairy popcorn flower (*Plagiobothrys hirtus*), and the pumice grape-fern (*Botrychium pumicola*). During my third week of work, I joined the ODA Plant Conservation staff in travelling up to Portland for the annual meeting of the American Institute of Biological Sciences (AIBS), where, to my surprise, a whole day of the Pteridological Society meetings was devoted to the Ophioglossaceae. I attended many of the talks and was amazed by all that I hadn't known about these little plants.

I learned that the family Ophioglossaceae used to be divided into the genera *Ophioglossum* and

Botrychium, but now some keys include up to eight genera. Species of *Botrychium* occur all over the world and are thought to have evolved fairly early in plant history. What was most interesting to me was the reproductive cycle of moonworts, which sometimes grow for ten years or more before sending up any aerial shoots. In summer, reproductive adult plants produce and release millions of haploid spores, which germinate when conditions are right. After germination, spores spend a very long time growing into gametophytes and undergoing mitosis, producing eggs and sperm, which in turn unite and grow into adult plants. This is a typical fern alternation of generations, but unlike true ferns, everything happens underground where it is very difficult to observe. One presentation I enjoyed at the meeting was given by researchers who had sifted through soil along transects in a *Botrychium* population to see whether, as expected, there were many times more underground plants than aboveground ones. And indeed there were!

I worked on moonworts during my last week as an intern, at the end of August, when Kelly Amsberry, a botanist with ODA, took me and the other interns to areas near the town of Chemult, south of Bend, to conduct maintenance on *Botrychium pumicola* experimental plots. Kelly thought that all the *Botrychium* would be dried up and gone by late August, but we found some green ones in the shade, which was exciting.

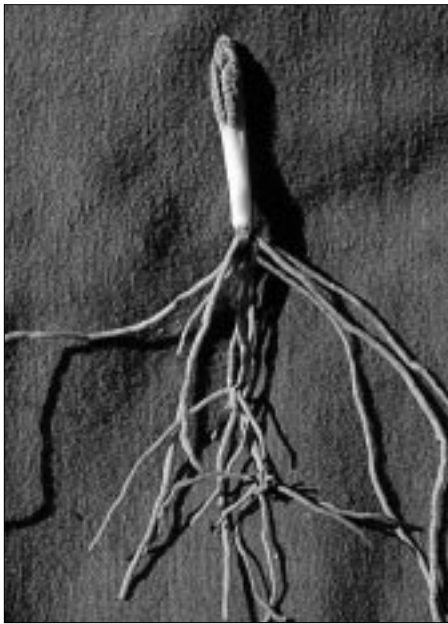
Botrychium pumicola, the pumice grape-fern, is listed by the State of Oregon as a threatened species, and only grows on a few mountain tops and in a few high elevation forests in Oregon. Mountain sites include Mt. Bachelor, Crater Lake, Three Sisters, and Newberry Crater, where the plants grow in open areas and on ridges. Forests habitats include the Deschutes and Fremont National Forests in Central Oregon, where the *Botrychium* grow in openings within stands of lodgepole pine. These openings are called "frost pockets," and are apparently formed as very cold and dry air repeatedly settles into minor topographic depressions.

The ODA *Botrychium pumicola* project is funded by the U.S. Forest Service and Bureau of Land Management. Because *B. pumicola* grows in forests, these land managing agencies want to know the effects of potential timber harvest disturbances on the plants. Kelly and her co-workers marked 96 individual plants in each of 7 sites and performed five different kinds of experimental disturbance treatments that were equally partitioned among the plants. Some plants at each site were left untreated and served as controls.

To simulate disturbance from road building or timber harvest activities, some plants were buried under soil while others were scraped with heavy cinderblocks. To simulate plant compaction by heavy logging equipment, or other types of soil compression, some plants were subjected to an artificial compaction treatment. These ground disturbance treatments were applied during the winter, when plants were underground. To simulate herbivory or above-ground disturbance, some plants had their aerial parts clipped off during the growing season. Other plants were covered with wire cages fitted with shade netting to simulate what happens when the forest canopy becomes closed by trees and branches and shades plants. This five year experiment still has two years to go before monitoring results can identify the effects of treatments on plants.

Because of their underground life cycle, little is known about how well *Botrychium* populations can withstand disturbances. I hope this ODA project will shed some light on the subject, and I hope all lower plants, as well as fungi, will receive more attention in the area of conservation in the future.

This internship was a great learning experience for me. I now know a lot more about moonworts and I have a better foundation for taking botany classes at OSU next year. I am grateful to the NPSO and the Oregon Department of Agriculture Native Plant Conservation Biology Program for this excellent experience.



KELLY ANSBERRY, Oregon Department of Agriculture

Botrychium pumicola, the pumice grape-fern, is listed as threatened by the State of Oregon. This species occurs on loose, pumice soils, and is the subject of ongoing studies designed to investigate the potential impacts of timber harvest activities and forest canopy closure on plant survival and population dynamics. The individual shown here was excavated for the purpose of examining its roots, which in this species exhibit a strong symbiotic relationship with mycorrhizal fungi present in the soil.

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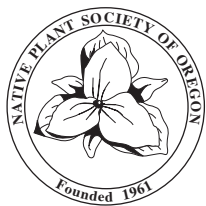
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Sudden Oak Death Syndrome Threatens Oregon Oaks

by Bruce Newhouse

Since 1995, tanoaks (*Lithocarpus densiflorus*), California black oaks (*Quercus kelloggii*) and coast live oaks (*Quercus agrifolia*) have experienced high mortality in California in areas near San Francisco Bay. In June of 2000, using DNA analysis and other techniques, researchers succeeded in identifying the pathogen as one that is "extremely likely" to be identical to an undescribed *Phytophthora* species identified in Europe in 1993 infecting rhododendrons. The species apparently is most closely related to *Phytophthora lateralis*, which is a potent pathogen of Port-Orford-cedar. The common name being used for this species is Sudden Oak Death syndrome (SOD).

In an attempt to thwart spread of this fungus to Oregon, the Oregon

Department of Agriculture (ODA) recently adopted an emergency quarantine on wood from the infected oak species and any nursery stock found to be susceptible to the disease, from infected counties in California.

In disturbing news last week, researchers also found the fungus in nursery stock of rhododendrons. It is unknown whether it may have originated in Europe, California or perhaps a third location. Wherever this fungus originated, if it were to spread to Oregon, our tanoak and California black oak populations of southwest Oregon would be at great risk. It is not yet known if our other native oaks would also be in jeopardy, nor if our native rhododendrons would be susceptible.

The UC Berkeley research web site (below) is the best way to stay abreast of new developments and discoveries. It also has links to related sites, including one that will take you to the ODA quarantine.

NPSO may be asking ODA for a temporary ban on importation of all rhododendrons into Oregon from any source until more can be learned about this new discovery. The risks are extremely high.

Visit this site for more on SOD:
<http://camfer.cnr.berkeley.edu/oaks/>