# OREGON FLORA NEWSLETTER

Volume 8 Number 1 • Oregon State University • February 2002

## Thea Cook and Ann Willyard: east meets west

*by Rhoda Love*

Kipling wrote "East is East and West is West and never the twain shall meet," but of course that was in another country. Here at the Herbarium in Corvallis, we have a happy conjunction of east and west in our first two full-time Flora Project employees. Thea Cook and Ann Willyard began work this fall as Faculty Research Assistants in the OSU Botany Department. Their jobs will emphasize training and supervision of student data base entry personnel and data base development. Support for the new positions comes from a recent Bureau of Land Management grant as well as Flora Project funds. There are several very interesting parallels in the lives of these two young women.

Ann Willyard comes to us from Redding California where she recently completed a Masters in Botany at California State University, Chico. Her Bachelors in Biology was earned at the University of California, Santa Cruz in 1974. During the intervening years, she worked as a

*See Ann and Thea, page 2*

*Ann Willyard (left) and Thea Cook, new Oregon Flora Project staff members.*

## Project news

*by Scott Sundberg*

The Flora project has seen a flurry of activity over the past few months, with progress in many areas. For the first time we have full-time project staff and it is making a difference!

We are making important advances in the Atlas project. Students are searching through the OSU Herbarium for Oregon county records and databasing specimen label information for one plant collection per county. These records, along with those from species lists we have recently received, are adding thousands of dots to our plant distribution maps. While adding new data, we are also checking previous records for accuracy. Clay Gautier has recently tested the online Atlas by adding tens of thousands of records from the database of species lists. Happily we can report that the Java program he wrote is up to the task.

We recently mailed species lists for each Atlas block to the Regional Coordinators and are distributing lists for various county-level projects. Over the next few months we will be contacting curators of small herbaria throughout the state in search of records not represented in the OSU Herbarium.

Work on the Photo Gallery is moving forward. With the help of Don Roberts, who has been volunteering on a regular basis, we have entered data on most Oregon slides in the OSU Herbarium slide collection. Several people have offered the use of their photographs. We have been working out some of the technical aspects of the project, such as scanning resolution, documenting database parameters, and copyrights. In the next few weeks we will concentrate on other details of the project.

The rare plant guide prototype is in preparation. We have settled on the list of species to feature. A preliminary design for fact sheets has been completed and we are looking into producing them from database output.

The Checklist is steadily progressing. We have received advanced draft treatments for 59 percent of the taxa. Several species of escaped cultivated plants have recently been added. Approximately 19.6 percent of Oregon's 4460 taxa are exotic.

A prime focus will now be online multiple-entry identification keys, including designs of the morphology database and the user interface. In short, progress is being made toward meeting long-term goals of the Flora project.

*Ann and Thea, continued from front page*

programmer/analyst for both business and scientific applications, and pursued botany as a side interest while raising a family. Developing and implementing computer systems and databases to manage many different types of information have been her focus for about 25 years, and she considers botany to be the most interesting database subject imaginable.

For her Master's research, Ann returned to the laboratory to learn modern molecular techniques to address a genetics question in western white pine and sugar pine. The topic involved trying to locate the genes that confer major resistance to white pine blister rust (WPBR) in these two closely related species of pine. The research was conducted at the Institute of Forest Genetics (IFG), a research branch of the USDA Forest Service, where much of the work concerning this devastating introduced fungal disease has been done. The presence of similar disease resistance genes to introduced pathogens in related pine species is of great interest in the study of conifer evolution as well as for planning for the development of resistant tree lineages. Although the pine genome is extremely large, molecular markers are known in sugar pine near the resistance gene, and Ann's results do not support the resistance gene being located near homologous markers in western white pine. This leaves open the possibility that the gene in western white pine is not homologous to the similar gene in sugar pine (i.e., they may have arisen separately). Other researchers at IFG are pursuing this subject and Ann hopes to publish joint results next year.

Thea Cook, a native of New York State, graduated from the University of New Hampshire in 1990 with a B.A. in Botany and Plant Pathology. Her primary interests are in taxonomy, ecology and conservation, which she has pursued through her career and coursework ever since. Upon graduation, Thea worked on projects researching control of *Myriophyllum spicatum* (Eurasian water milfoil) an invasive aquatic in the Northeastern U.S., and also on a long term ecological research project to understand forest nitrogen cycling as it is affected by additional nitrogen deposited by acid rain. She then moved to Paraguay where she spent two years working with farmers in the buffer zone of a national park to introduce agroforestry techniques and to develop and teach an environmental education curriculum.

Soon after returning from South America, Thea began working with the Latin America Division of The Nature Conservancy on the botany team, where she developed skills in plant taxonomy and database management. There, her primary project was to gather information on distribution, abundance and commercial importance of timber species. Since the network of protected areas in Latin America provides a viable gene bank for future commercial productivity of these timbers, this information would be used to find gaps in the network to hone future conservation efforts.

It is clear from her background that Ann Willyard, too, has a strong interest in conservation of forest ecosystems. During her five years working in the forestry department of Sierra Pacific Industries, a major California timber company, she developed a program to address the effects of timber management activities on a number of species. Program components included developing field guide pages for targeted species, training foresters to identify species, beginning a species richness study in a before-and-after disturbance framework in the Sierra Nevada, and writing a proposal to study the soil and disturbance patterns of a suite of species that grow in serpentine soils in the Klamath Mountains. Lots of days spent surveying and collecting in this fascinating setting were a wonderful opportunity.

After almost five years at The Nature Conservancy in the Washington, DC area, Thea and her husband relocated to Eugene last April. One of her first weekends in Oregon was spent taking a native plant identification workshop given by Rhoda Love, who then introduced her to the Oregon Flora Project with a day at the herbarium in Corvallis. Thea's 2001 field season was spent in the Fremont National Forest (in south central Oregon) surveying flora of riparian areas, mapping ecological types, and testing a new key to determine ecological condition. Depending on the

*See Ann and Thea, page 5*

The Oregon Flora Newsletter is published three times a year by the Oregon Flora Project and the Oregon State University Herbarium. The Editor is Rhoda Love and the Production Assistant is Miko Nadel.



**Address correspondence to:**
Scott Sundberg
Department of Botany & Plant Pathology
Oregon State University Cordley Hall 2082
Corvallis, OR 97331-2902
E-mail: sundbers@bcc.orst.edu
(541) 737-4338; FAX (541) 737-3573
http://www.oregonflora.org

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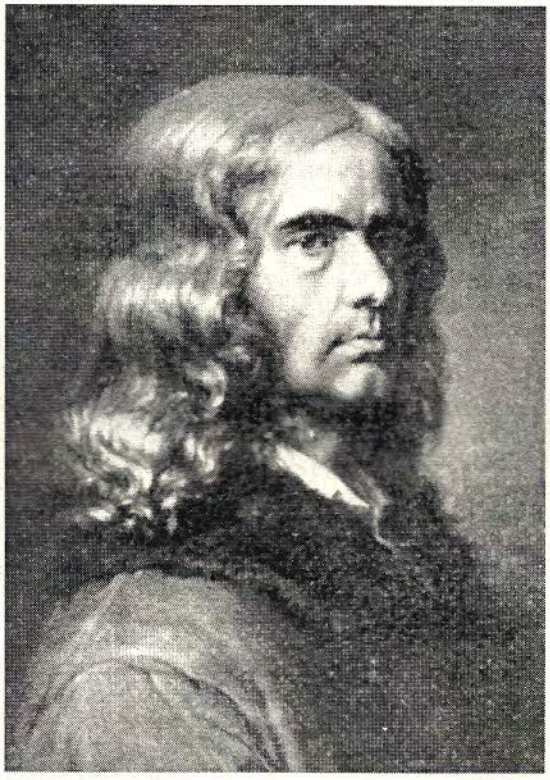
## Adelbert von Chamisso and botanical orthography

*by Kenton L. Chambers*

The term *orthography*, as used in botanical nomenclature, refers to the spelling and grammatical form of the Latin scientific names of plants. In keeping with the principle that each taxonomically defined group (a family, genus, species, etc.) ought to have only one "correct" Latin name, it is logical that each name ought to have only one "correct" spelling. In fact, however, the botanical literature contains a multiplicity of variant or alternative spellings, even for some of our most common plants. Examples are the genus of California poppy, spelled *Eschscholtzia* or *Eschscholzia;* skunk-cabbage, spelled *Lysichitum* or *Lysichiton*; false-dandelion, spelled *Hypochoeris* or *Hypochaeris;* death camas, spelled *Zygadenus* or *Zigadenus*, and wild-hollyhock, spelled *Sidalcea malvaeflora* or *malviflora.* In all these cases, the latter spelling is correct, according to the 2000 edition of the *International Code of Botanical Nomenclature (ICBN),* which devotes fully nine pages to its rules and recommendations dealing with orthography.

The nomenclatural rules given by *ICBN* are retroactive to 1753 (the date of Linnaeus' *Species Plantarum*) and provide that "(t)he original spelling of a name or epithet is to be retained, *except for the correction of typographical or orthographical errors...*" (emphasis added). This apparently straightforward rule (to retain the spelling used by the original publishing author) is unfortunately open to disagreement on what constitutes a "typographical or orthographical error." I will illustrate this problem with an example from the genus *Montia* (Portulacaceae), involving an important but seldom mentioned historical figure in northwest American botanical exploration.



*Portrait of Adelbert von Chamisso (from* Flora Malesiana, *Ser. 1, Vol. 1, 1950)*

Adelbert von Chamisso (1781-1838) was the naturalist aboard the Russian exploring ship "Rurick," which visited Alaska and California in 1816 under the command of Lieut. Otto von Kotzebue. Chamisso is best known for his discovery of the California poppy, *Eschscholzia californica*, which he named in honor of J. F. Eschscholtz, the ship's surgeon and entomologist. In publishing this genus, Chamisso omitted the "t" from Eschscholtz's name, but as there is no evidence this was a "typographical error" (he used the same spelling in later publications), we must retain his original name *Eschscholzia*! This illustrates the minute details and ambiguities of orthography, which can be highly annoying to taxonomists who try to follow the rules and stabilize the Latin names of plants. Another spelling oddity involving Chamisso is the name *Camissonia*, a large genus of western North American Onagraceae. It was published in his honor by J. H. F. Link in 1818, but spelled without an "h" (perhaps to preserve the soft Italianate pronunciation of "C" rather than the hard K-sound of the Latin "Ch"). Chamisso also named several other western American genera to commemorate his botanical contemporaries, including *Lessingia* (Asteraceae), *Horkelia* (Rosaceae), and *Romanzoffia* (Hydrophyllaceae)—although the latter name honors Count Nikolai Romanzoff, the wealthy Russian sponsor of the "Rurick" expedition, rather than a botanist.

The problem of orthography in *Montia* that caught my attention involves the species *M. chamissoi* (Ledeb. ex Spreng.) Greene (familiarly known as toad-lily), which was first published in 1825 as *Claytonia chamissoi* by Sprengel. In 1831, Chamisso himself (who had collected the plant at Unalaska in 1816) ignored "*chamissoi*" and published the spelling as *Claytonia chamissonis.* This latter species epithet is almost always used in plant names honoring Chamisso; examples include *Stachys chamissonis* (hedge-nettle) of coastal California, *Ambrosia chamissonis* (silver burweed) of West Coast beaches, and *Arnica chamissonis* (leafy arnica), widespread in western North America. My reaction was: "If Chamisso himself disapproved of the spelling *chamissoi*, there must be something wrong with it." I wondered whether *chamissoi* might be an orthographic error based on an incorrect latinization of Chamisso's name. If so, it would be permissible to correct the spelling to *chamissonis*, as Chamisso and other 19th century authors (including John Torrey, Asa Gray, Sereno Watson, and Edward Lee Greene) had done.

How personal names can be latinized into scientific names is explained in an excellent article by Dan H. Nicolson (*Taxon* 23:549-561. 1974). Names ending in the letter –o have been treated in several different ways by past botanical authors. According to *ICBN*, it is correct to form the possessive case simply by adding the letter *–i* after the terminal *–o* as Sprengel had done ("*chamissoi*"). However, it was common in the early days of taxonomy to treat personal names ending in *–o* as being Latin nouns in the Third Declension, taking the

*See Chamisso, page 6*

## Meadow Knapweed (*Centaurea ×pratensis* Thuill.)

*by Cindy Roché*

Ten years ago, if you mentioned "Hood River" to me, I answered, "meadow knapweed." Since then I moved from the mid-Columbia region to southwestern Oregon and learned that Hood River is not the meadow knapweed capital after all.

In his classic work on the distribution of weedy thistles, J.T. Howell (*Leafl. West. Bot.* 9:17-32) reported in 1959 that meadow knapweed was cultivated for winter forage near Roseburg, where it remains abundant today. It is leafier and more palatable to livestock than other knapweeds, but as plants mature, both palatability and nutritional value decline. Even though defoliated plants regrow and produce seeds, it does not tolerate continuous, excessive grazing. As with other knapweeds, it is undesirable because of its low palatability to grazing animals and its invasion and persistence in native plant communities.

Meadow knapweed (*Centaurea ×pratensis)* is a fully fertile hybrid between black knapweed (*Centaurea nigra* L.) and brown knapweed (*C. jacea* L.). Hybrids can be produced easily with either species as the female parent since both parents and the hybrid offspring are tetraploid, 2n=44. For the same reason, the hybrids backcross with either parent and form populations whose phyllaries range from brown knapweed's papery bracts to black knapweed's comb-like fringe (see illustration).

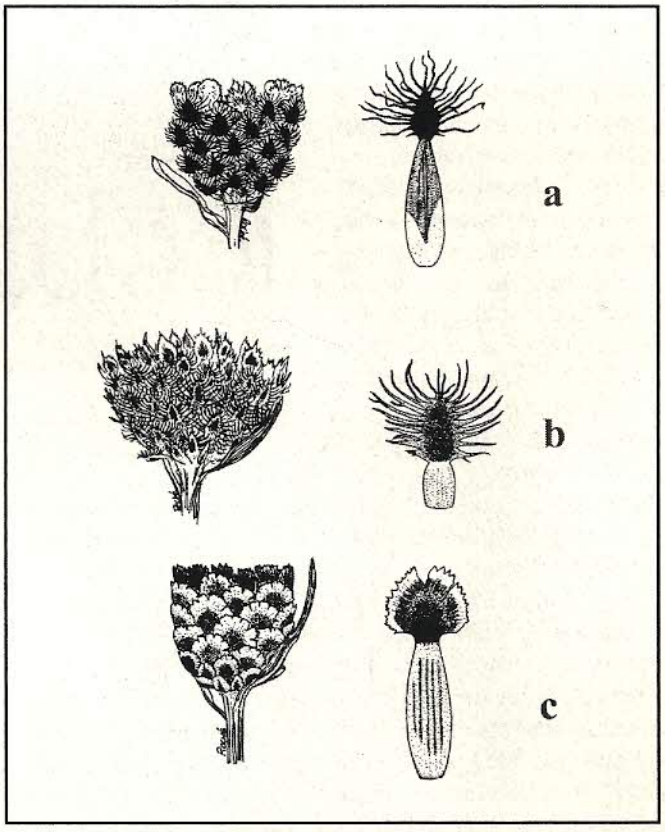
Brown and black knapweed are native to Europe, where hybrids also occur. Both have been grown as ornamental garden plants and introduced in ballast at seaports. Brown knapweed was grown as a hay/forage crop (known in Quebec in the 1850s as "bull clover") and also as a pollen source for honeybees. Black knapweed was collected in Pullman, Washington, in 1895, and on ballast ground near Portland from 1902 to 1916. By the second half of the 19th Century, black knapweed was showing its true colors in eastern Canada: "...by perennial root spread it becomes a most tenacious weed, and is spread rapidly by seed. From the original location it is now traceable for a mile or more." Oregon boasts the earliest Pacific Northwest record of meadow knapweed, from Bridal Veil, Multnomah County, in 1911. Subsequent collections by R.V. Bradshaw in 1918 were from Eugene. (Prior to the Oregon Flora Project, a quick reference to *Centaurea* herbarium records was Roché and Talbott 1986, "The collection history of *Centaureas* found in Washington State," WSU Res. Bull. XB0978).

Meadow knapweed is perennial from a woody crown. Straplike leaves have entire, lobed or toothed margins. The rose-purple flowers (occasionally white, from the brown knapweed parent) are borne in heads about the size of a marble, spherical rather than the urn shape common for *Centaurea*. Flowering peaks in July and August, but occasional flowers can be found west of the Cascade Mountains into November and December, particularly on damaged plants. Phyllary bracts are light to dark brown, with a papery fringed margin. At the time of flowering, the bracts reflect a metallic golden sheen. Achenes are about 1/8-inch long, ivory-white to light brown, sometimes bearing a row of short hairs (pappus) opposite the point of attachment. Seedlings are tap-rooted; mature plants develop a cluster of somewhat fleshy roots below the woody crown.

Meadow knapweed prefers moist sites, including pastures and meadows along rivers, streams, and irrigation ditches, and in openings in forested areas — sites suitable for oxeye daisy. It primarily reproduces by seed, but root and crown fragments resprout when disturbed by heavy equipment or cultivation. Seeds are carried in rivers, streams or irrigation water, in hay or by vehicles along roadsides. Meadow knapweed is expanding in western Oregon and more sites are appearing in eastern Oregon. The Oregon Flora Project is mapping its distribution and tracking its expansion.

Two additional references that may interest readers are Roché and Roché 1991, "Meadow knapweed invasion in the Pacific Northwest USA and British Columbia, Canada", *Northw. Sci.* 65:53-61; and PNW Extension Bulletin 432, *Identification of Knapweeds and Starthistles in the Pacific Northwest,* available at OSU.

*Cindy Roché of Medford is an expert on knapweeds. She wrote Masters and PhD theses on the genera* Centaurea *and* Crupina *and edited the* Knapweed Newsletter. *NPSO members know her as co-editor of their journal,* Kalmiopsis.

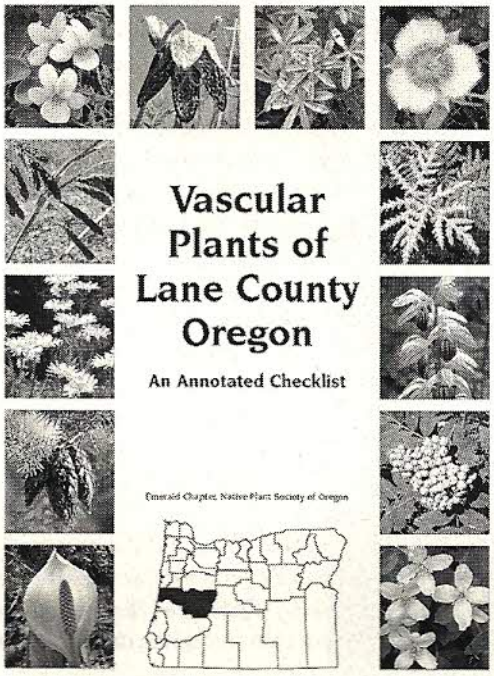



*Involucre and detail of middle phyllary bract of a) black, b) meadow, and c) brown knapweed. Drawing by Cindy Roché.*

## Lane County Checklist to appear this spring

*by Charlene Simpson*

Vascular Plants of Lane County, Oregon: An Annotated Checklist. *By C. Simpson, J. Koenig, J. Lippert, R. Love, B. Newhouse, N. Otting, S. Sundberg, D. Wagner, and P. Warner. Emerald Chapter, Native Plant Society of Oregon. Eugene, Oregon. 2002. Approximately 90 pages. Paper, spiral binding. $15.*




The long-awaited Checklist of Lane County's native and naturalized vascular plants will be available this spring. It is authored by Emerald Chapter NPSO members and encompasses over 1,740 plant taxa which represent approximately 39 percent of the 4,460 plants currently recognized by the Oregon Vascular Plant Checklist Project. Species are listed alphabetically by family and genus within four major groups: Pteridophytes, Gymnosperms, Dicots and Monocots. Data have been derived from herbarium labels, regional floras, published articles, academic theses, surveys, field trip lists, and credible observations.

The publication represents a cooperative effort between the Oregon Flora Project and Emerald Chapter, NPSO. The Flora project provided information on accepted names, synonyms, and plant origin (native vs. non-native) from the draft *Oregon Vascular Plant Checklist*, along with over 30,000 Lane County records from Oregon Plant Atlas Project databases. The OSU Herbarium provided access to the facility and data from plant specimen labels. Says Scott Sundberg, "Efforts of the Lane County Checklist group, along with similar projects in other counties, contribute enormously to characterizing our state's rich botanical diversity. The Lane County group has been especially helpful by providing valuable feedback on drafts of the Oregon Checklist."

The Lane Checklist is far more than simply a list of species, as it also contains a wealth of annotated information. Each taxon has been scored for expected Lane County habitat, ecoregion, and frequency of occurrence. A full color map of Lane County's five major ecoregions is also included. A notes field contains miscellaneous information; comments here might note rarity or perceived threat, noxious weed designation, invasive habit, historical occurrence, or other interesting information to stimulate interest. Rare and endangered species, as well as Oregon Department of Agriculture listed noxious weeds and Emerald Chapter's designated invasive ornamentals, are flagged. Native or non-native origin is indicated by typeface.

The Checklist is written for a wide variety of users: professional and amateur botanists, landscapers, students, land managers and others interested in Oregon's vegetation. Some background knowledge of botanical nomenclature will be useful, but it is assumed that readers will have no trouble locating scientific and/or common plant names in the comprehensive index. Also included is helpful introductory material as well as an extensive bibliography. Lane County artist and Native Plant Society *Bulletin* editor, Tanya Harvey, provided a cover design composed of her beautiful digital images depicting the diversity of Lane County's native flora.

A goal of the authors has been to keep the publication affordable. Loans from Emerald Chapter, NPSO, and the Eugene Natural History Society helped defray publication expenses. All proceeds after expenses will be donated to the Oregon Flora Project.

Advance orders will be accepted beginning April 1, 2002. To receive one or more copies of the new Checklist, please send your check for $15 (made payable to Emerald Chapter NPSO) for each copy to: Lane Checklist, Emerald Chapter, Native Plant Society of Oregon, PO Box 902, Eugene, Oregon 97440-0902.

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*Ann and Thea, continued from page two*

patchwork of floras and plant guides necessary to identify plants in this part of the state, she began to appreciate the critical need for a new Flora for Oregon.

Ann commented recently that she looks forward to working with the dynamic team of Oregon Flora Project contributors, and is especially excited about helping develop the morphological database in support of a multiple-entry key. Thea recently told OFN that she is very excited to participate in the creation of a new flora and to assist in the development of the electronic tools that will catalyze interest in and availability of this invaluable information source to all nature enthusiasts.

The Flora Project enthusiastically welcomes two talented women to OSU, convinced that this particular meeting of east and west will benefit all involved.

*Chamisso, continued from page three*

possessive ending *–nis* (hence "*chamissonis*"). A third form of Latinization also was used, which involved combining the Third Declension stem, ending in *–n—*, with regular Second Declension endings such as *–ii* and *–ia*. This seems to be how the generic name *Camissonia* was derived. I wrote to Dr. Nicolson and asked him whether the modern *ICBN* rules dictate that any name containing the epithet *chamissonis* is an "orthographic error," which must be corrected to *chamissoi*. He replied that, luckily, the stem-augmenting letter *–n—* represents an "intentional latinization," producing the exceptional but permissible genitive form *chamissonis*. Given the intricate legalisms of *ICBN*, it is fortunate that its rules do allow us to use these three alternative latinizations of Chamisso's name.

In a later article I will discuss further the scientific contributions of Adelbert von Chamisso, hoping to give a glimpse, as well, into the personality of this energetic and talented botanist.

## Flora project volunteers welcome every Tuesday!

We need **YOU**! This is your opportunity to actively participate in and to learn about the Oregon Flora Project. Each Tuesday, starting April 9, you are welcome to help with projects at the OSU Herbarium in Corvallis.

**Sample activities**: Pasting barcode labels on specimens; proofreading databases; preparing mailings; researching species locations in the literature; entering data; researching literature; sorting specimens prior to filing.

**When**: between 9am and 4 pm on Tuesdays, beginning April 9.
**Where**: OSU Herbarium on the Oregon State University campus in Corvallis, Cordley Hall room 1046. Parking is available with a free campus day pass.
**Bring**: Bag lunch (or plan to eat out; many local restaurants are just a few blocks away).

Please contact Thea Cook in advance, at (541) 737-2445, cookthe@bcc.orst.edu, so we can plan for your visit.

## *In Memoriam*: Bonnie C. Templeton

We were saddened to learn of the death on January 29, 2002 of Dr. Bonnie C. Templeton. Dr. Bonnie, as she was affectionately known, who died in Los Angeles of complications of a heart attack, was one of the OSU Botany Department's major benefactors. Her very kind and generous gift provided funds for the construction and furnishing of the Bonnie C. Templeton Conference Room and Preparation Room in Cordley Hall across from the Herbarium. The rooms, which were dedicated in 1999, are much used and appreciated by Oregon Flora Project and Herbarium staff.

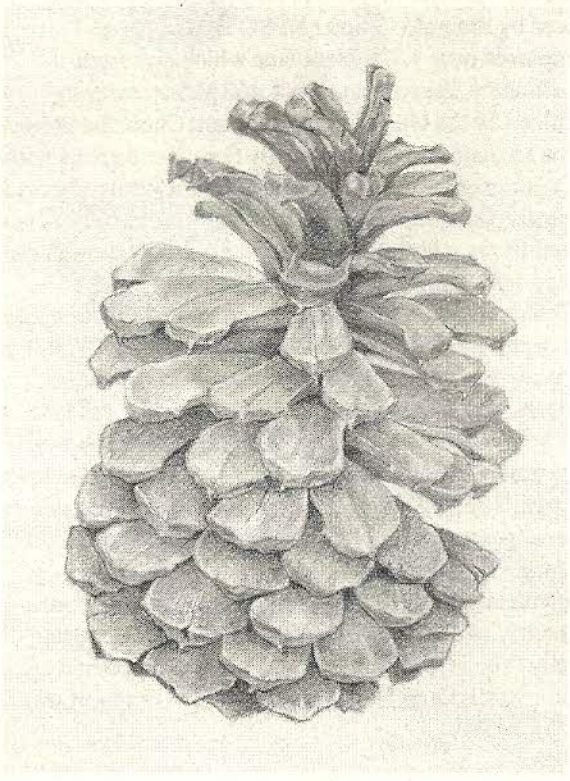
## Botanical illustration workshop May 3-5 to benefit the Oregon Flora Project

*by Linda Hardison*

The Friends of the Oregon Flora Project presents an exceptional opportunity to appreciate the intricacies some of our state's most beautiful wildflowers. An introductory botanical illustration workshop by New York artist Anne Jaster will be held May 3-5 at Lane Community College in Eugene. The weekend will begin with a Friday evening reception and presentation on the history of botanical illustration; Saturday and Sunday will follow a format of morning classroom instruction with afternoons of field drawing.

Anne Jaster is a botanical artist and teacher whose classes are offered by the Landis Arboretum in Esperance, NY; her paintings of Chilean plants have been exhibited at the New York State Museum. At our workshop, she will share her skills in pencil and colored pencil illustration of plants. Her philosophy is reflected in the writings of Martha Cain, which emphasize "close observation of nature ...singling out common and not so common objects and presenting them in a formal way, thus giving viewers a heightened awareness...and stimulating them to observe the richness in their own surroundings." The workshop will be tailored for amateurs, artists, scientists, and nature enthusiasts of all skill levels.

**Registration information**. Cost: $90 for members of Friends of the Oregon Flora Project; $100 for non-members. Friday evening only: $8/$10. Class size: 15 participants. Preregistration and pre-payment required; deadline April 12. To register or for more information contact Thea Cook at cookthe@bcc.orst.edu or (541) 737-2445. For additional information, see www.oregonflora.org.



*Pencil drawing* of Pinus jeffreyi *cone by Anne Jaster*

## New Records for Oregon

*by Scott Sundberg*

A primary goal of the Oregon Flora Project is to document the presence of plant species, subspecies and varieties (taxa) growing outside of cultivation in Oregon. The results of this effort will be summarized in the Oregon Vascular Plant Checklist. For the past seven years we have been seeking documentation on Oregon taxa that have not previously been reported for the state in our major floras, and we have found many! Beginning with this issue, we will periodically report on plants that are "new" to the state. The names will be listed as they appear in the current draft of the Oregon checklist. The final draft of the checklist may differ.

***Vicia lutea*** L.
yellow vetch (exotic)
**General distribution:** Native to the Mediterranean region; sporadically occurring in the US, reported from Oregon, Alabama, Texas, Louisiana, and North Carolina (Neill, A.K. 1999 *Sida* 18:1265-1266; http://plants.usda.gov).
**Oregon localities**: central Lane Co. in and west of Eugene; weed in disturbed areas in a city park and along roadsides.
**Comments:** Yellow vetch is a sprawling annual herb with yellow flowers. It was discovered by John Koenig in 1998 and later found several miles away by him and Charlene Simpson. Since disturbed habitats are abundant, it is probably established in other areas of Oregon.

***Scirpus californicus*** (C.A. Mey.) Steud.
*Schoenoplectus californicus* (C.A. Mey.) Palla
California bulrush (native)
**General distribution:** Oregon to California, southern U.S., South America, and oceanic islands.
**Oregon locality**: Douglas Co., north of Reedsport along Highway 101, elev. 100 feet; emergent wetland at edge of pond.
**Comments:** California bulrush is a tall perennial herb that looks similar to tule (or hardstem bulrush, *Scirpus acutus*) except that California bulrush has stems that are triangular in cross section. It was discovered by Alex Atkins in 2000 and identified by Scott Sundberg. Sundberg and Linda Hardison later visited the site and found a healthy population there, but did not find it at several other ponds and lakes in the vicinity. Although it is probably native, it is possible that it was unintentionally introduced by people using the pond and may be exotic.

## Thanks

The following donors have recently contributed via the OSU foundation, Friends of the Flora, and NPSO membership pledges: Anonymous (2), NPSO Corvallis

Thanks to the following who have helped by volunteering or sending in species lists or specimens: George W. Argus, Connie Battaile, Julian Battaile, Lynda Boyer, Dick Brainerd, Thea Cook, Elizabeth Crowe, Marcia Cutler, Jim Duncan, Aryana Ferguson, Doug Johnson, Russ Jolley, John Katzmaier, John Koenig, Rhoda Love, Danna Lytjen, Ruth McFarlane, Susan Morré, Nick Otting, Elaine Plaisance, Dave Predeek, James Reveal, Don Roberts, Cindy Roché, Ann Willyard, Barbara Wilson.

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Mail to:

Scott Sundberg
Oregon Flora Project
Dept. of Botany & Plant Pathology
Oregon State University
2082 Cordley Hall
Corvallis, OR 97331-2902

### Would you like to make a donation?

Tax-deductible donations can be made to the Oregon Flora Project by sending a check made out to the Oregon State University Foundation to Scott Sundberg at the address on this page. Please note on the check that it is for the Oregon Flora Project. Many thanks.

☐ Please check here if you do not wish to have your name listed in our "Thanks" column or on our Internet web site.

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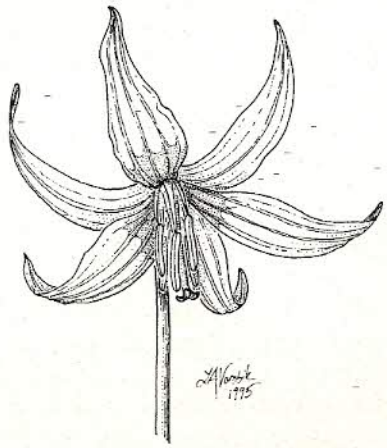
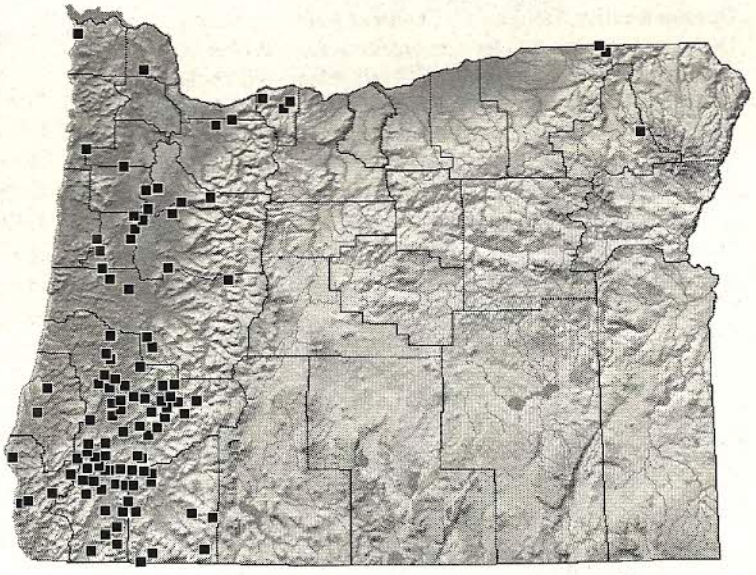


### Did you know?

• James Carlton Nelson, a Salem high school principal and botanist, published an article in the journal *Torreya* in 1917 on the introduction of foreign weeds as ballast plants at Linnton, Oregon on the Columbia River. Meadow knapweed was one of the species listed in this paper.

• Biological control agents have thus far not been successful in controlling meadow knapweed. The Oregon Department of Agriculture has managed to establish three seed-feeding insects on the weed — a moth, a fly, and a weevil. The weevil, *Larinus minutus*, shows possible promise if its numbers increase as they do on spotted and diffuse knapweed. No root feeders have yet been established on meadow knapweed.



**Oregon distribution of meadow knapweed (*Centaurea ×pratensis*).**

*Current and historical localities of meadow knapweed in Oregon. Data from federal and state agencies, the Oregon Flora Project, and Cindy Roché.*