

# OREGON FLORA NEWSLETTER

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## Scott Sundberg: Coordinator of the Oregon Flora Project

Scott Sundberg is currently a Faculty Research Associate in the Department of Botany and Plant Pathology at Oregon State University. His present support comes from a National Science Foundation grant to integrate the University of Oregon Herbarium into the Oregon State University Herbarium. He reports that his experience at OSU is proving to be very rewarding, both in seeing the two herbaria merged into an important regional resource, and in interacting with dozens of professional and lay botanists in his role of Coordinator of the Oregon Flora Project.

Scott was born in Eugene where his father is a member of the University of Oregon Department of Psychology. He tells us that his interest in plant systematics began when he took an undergraduate botany course at the University of Oregon taught by Dr. George Carroll, who was assisted by the late Dr. Leighton Ho and Dr. Rhoda Love. The course, which he found to be rigorous, but one of the best he has

*See Sundberg, page 12*



Photo: R. Love

Scott Sundberg

## Introducing the Oregon Plant Atlas Project! Scott Sundberg

The Oregon Plant Atlas Project, a partnership between the Oregon Flora Project and the Native Plant Society of Oregon (NPSO), was launched at Oregon State University on April 11. The goal of the project is to produce an atlas of Oregon vascular plants in conjunction with a new Flora of Oregon. The atlas will include dot maps for each species, a series of map overlays (e.g., ecoregions, actual vegetation, potential vegetation, climate zones), and an introductory chapter on factors that influence plant distributions. The Atlas will be available in both printed and computerized forms.

The Atlas project is led by a diverse group of professional and lay botanists, a cartographer and Geographical Information System specialist, a database specialist, and two ecologists (see list on page 12). It is coordinated by Scott Sundberg. At its June 18 state board meeting, the NPSO enthusiastically supported involvement in the Atlas project by agreeing to be a partner in coordinating field data collection. Bruce Newhouse, the Emerald Chapter President and member of the central committee of the Atlas project, was appointed to fill the new position of NPSO Statewide Atlas Field Coordinator / Rare and Endangered Plant Chair.

Information for the Atlas is kept in a Paradox 5.0 database, the structure of which has recently been finalized. Sources of records include lists prepared for academic studies, herbarium specimen label data, the Oregon Natural Heritage Program database of rare plant records, and various checklists. We roughly estimate that 167,000 records are available from herbarium specimens and 70,000 from other existing sources.

We are currently gathering species lists and establishing procedures for interpreting them. A test round of data entry has been completed. We have written portions of a draft *Handbook for Field*

*See Atlas Project, page 12*

*Participants in the Oregon Plant Atlas Project* and plan to finalize it over the next few weeks.

In order to collect plant locality information from throughout Oregon, the state has been divided into 174 "blocks" of 12-20 townships. Most blocks are squares 24 miles on a side containing approximately 576 square miles, but they vary in size, especially along the state's borders. The initial goal will be to secure a list that includes one specific locality for each plant species, subspecies, and variety in each block.

People can become involved in the Atlas project by adopting a block and listing its plant localities, compiling species lists for specific sites, reporting unusual plant sightings, or collecting voucher specimens to document the presence of species in particular ecoregions (see also 1 in 20 Rule, page 13). If you would like to participate in field work for the project, please write Bruce Newhouse at 2525 Potter St., Eugene, Oregon, 97405 (e-mail: newhouse@efn.org). To help with other aspects of the project, contact Scott Sundberg at the address below. ☺

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**Checklist Project Leaders:**

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taken, introduced him to what he refers to as "the splendid diversity of flowering plants throughout the world." Early influences in systematics also came from Georgia Mason and later, Dr. David Wagner, both of the University of Oregon herbarium.

After receiving his B.S. in Biology at the U of O, Scott worked as a botanist at the Coos Bay District of the Bureau of Land Management for three years. He then moved to the University of Texas at Austin, where he pursued a Ph.D. on the systematics of a subgenus of *Aster* under the supervision of Dr. Billie Turner. Following receipt of the Ph.D., he spent a year at Ohio State University, where he was awarded a postdoctoral fellowship to work with Dr. Tod Stuessy on mechanisms for maintaining species integrity in sunflowers and on the *Flora de Nicaragua*.

Scott subsequently moved to Seattle, Washington, where he was a member of the research faculty in the University of Washington Botany Department, and later a consultant working on wetland and rare plant studies. Scott is now back in his home state, close to his parents, and hoping soon to be reunited with his wife, Linda Hardison, who is finishing a Ph.D. in botany at the University of Washington. ☺

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**Columbia Hawthorn: Readers Help Wanted**

J.B. Phipps of the University of Western Ontario, who is contributing the western red-fruited hawthorns (*genus Crataegus*) to the Flora of North America, has written to ask how far south we find the taxon we know as *Crataegus columbiana*. Peck and Hitchcock both say east of the Cascades in northern Oregon. But the Jepson Manual hints that *C. columbiana* may get as far south as California's Modoc Plateau region.

*Crataegus columbiana* is distinguished from the more common *C. douglasii* by its mature fruits which are red and somewhat hairy rather than black and shiny, styles usually 2-4 rather than 5, and longer thorns (4-7 cm).

Does this taxon get south of the Columbia River drainage? Can our eastside botanists in Oregon, Idaho and northern California help us with this? Please send siting reports and vouchers to the Oregon State University Herbarium c/o Scott Sundberg at the address on this page. Many thanks. ☺

## A Rule of Thumb for Botanists: the 1 in 20 Rule

David H. Wagner

There have apparently been instances in the past where well-meaning botanists have destroyed plant populations through over zealous collecting. The case most familiar to me concerns one of the world's rarest ferns, the pumice grape-fern, *Botrychium pumicola*. A student searching for new sites found two individuals of this species on Oregon's Tumalo Mountain in 1954 which he collected to make herbarium specimens. In the late 1970s I searched the top of Tumalo Mountain with friends. We were experienced fern hunters, but we found no *Botrychium*. I strongly suspect that the two plants removed in 1954 eliminated the population at this location. Today we would hope that botanists finding only one or two plants at a site would document their discovery with photographs and notes. Good photographs and careful field notes are increasingly acceptable for recording plant discoveries.

Nevertheless, from time to time, a field worker may encounter a small population of a plant and feel it is necessary to collect a bit of it for positive identification and documentation. The Native Plant Society of Oregon's Guidelines and Ethical Codes for botanists urges that a collector use good judgement and rules of thumb when deciding whether or not to collect. But in this case, what is a good rule of thumb? During the past 10 years, I have been using what I call the "1-in-20 Rule."

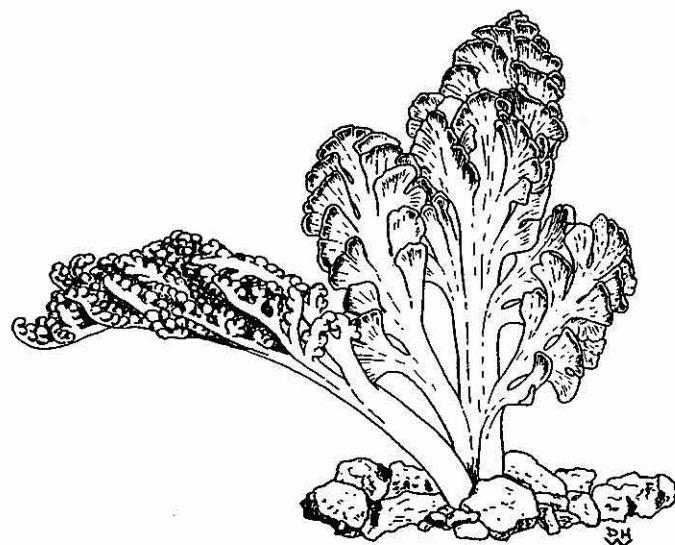
The 1-in-20 Rule dictates that a botanist never collect more than one out of twenty plants. It means NOT collecting ONE plant UNTIL you have found at least TWENTY. Only if twenty are found should you consider collecting one plant. And forty should be present before two are taken, and so on. The rule applies to parts of plants, also: remove no more than five percent (one-twentieth) of a shrub, one fern frond from a clump of twenty, 5% of a patch of moss, 5% of seeds from a plant. I use the 1-in-20 Rule whether I am collecting voucher specimens for the herbarium, doing rare plant work, or gathering common species for classroom use.

The 1-in-20 Rule does not obviate the need for good judgement. Only when a botanist has the knowledge to assess whether collecting is both ecologically justified and legally permitted should a specimen be taken. Any pertinent factor relating to the survival of a population needs to be superimposed on the 1-in-20 Rule. The main value of this rule of thumb is to provide a clear point of reference from which to begin

assessing a situation. It helps a botanist determine how much time should be spent inventorying before sampling is appropriate. I suggest the 1-in-20 Rule as a minimal criterion to be met before any taking of a plant be considered.

There is at least a modicum of scientific logic behind this rule. Statistically, a population sample of nineteen is not significantly different from a sample of twenty. One population geneticist I consulted advised me that contemporary statistical theory would support the 1-in-20 Rule. Another pointed out, however, that repeated collecting would tend to reduce every population to nineteen individuals. This caution serves to emphasize that the 1-in-20 Rule is a rule of thumb, not a license to ravage.

An interesting line of argument in support of the 1-in-20 rule has developed since I first published the idea in the Bulletin of the Native Plant Society of Oregon in 1991. First, I received a letter from James Grimes of the New York Botanical Garden querying whether or not I had picked up the idea from a similar article he and others had published in the newsletter of the Idaho Native Plant Society a few years before. I honestly cannot recall seeing their note. Then, last year, four botanists from Australia and New Zealand published an article in the international journal, *Taxon*, which made essentially the same recommendation. Thus, three botanists or groups of botanists, deliberating independently, have arrived at the same standard. I submit that this concurrence from three separate sources speaks strongly for the sensibility of the 1-in-20 Rule. 



*Botrychium pumicola*

## Omnia Brodiaea est Divisa in Partes Tres

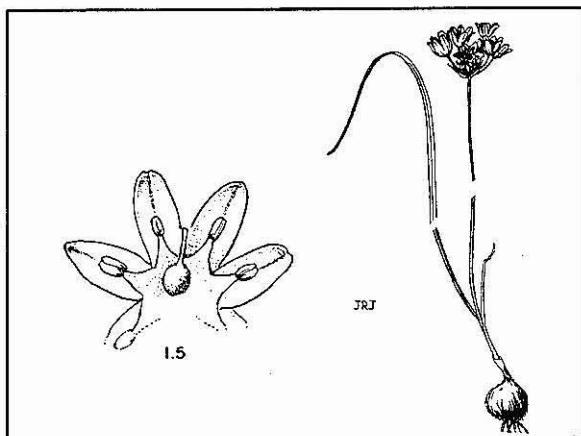
Kenton L. Chambers

Julius Caesar's famous quote about Gaul now applies to the lily genus *Brodiaea*--it is "divided into three parts." At Rhoda Love's suggestion I will briefly review the status of Oregon's species of *Brodiaea*, *Triteleia*, and *Dichelostemma*, the "three parts" of *Brodiaea* as treated in the new *Jepson Manual* (1993) and *Intermountain Flora* (vol 6, 1977). In Peck's *Manual* (1961, PM below) *Brodiaea* has 16 species in Oregon, but with corrections and additions we now recognize 15 species distributed in three genera:

***Brodiaea coronaria*** (Salisb.) Engl. ssp. ***coronaria*** [*B. coronaria*, PM]; ***B. elegans*** Hoover ssp. ***elegans*** [*B. elegans*, PM]; ***B. elegans*** Hoover ssp. ***hooveri*** T. F. Niehaus [not in PM]; ***B. terrestris*** Kellogg ssp. ***terrestris*** [*B. coronaria* var. *macropoda*, PM]. ***Triteleia bridgesii*** (S. Watson) Greene [*B. bridgesii*, PM]; ***T. crocea*** (A. W. Wood) Greene [*B. crocea*, PM]; ***T. grandiflora*** Lindl. [*B. douglasii*, PM]; ***T. howellii*** (S. Watson) Greene [*B. douglasii* var. *howellii*, PM]; ***T. hyacinthina*** (Lindl.) Greene [*B. hyacinthina*, PM]; ***T. ixoides*** (Aiton) Greene ssp. ***anilina*** (Greene) L. W. Lenz [*B. scabra* var. "anilina" PM]; ***T. hendersonii*** Greene var. ***hendersonii*** [*B. hendersonii*, PM]; ***T. hendersonii*** var. ***leachiae*** (M. Peck) Hoover [*B. leachiae*, PM]; ***T. laxa*** Benth. [*B. laxa*, PM]. ***Dichelostemma capitatum*** A. W. Wood ssp. ***capitatum*** [*B. capitata*, PM]; ***D. congestum*** (Sm.) Kunth [*B. pulchella*, PM]; ***D. ida-maia*** (A. W. Wood) Greene [*B. ida-maia*, PM]; ***D. multiflorum*** (Benth.) A. A. Heller [*B. multiflora*, PM].

Not verified for Oregon is *Brodiaea californica* Lindl. [PM p. 216]; taxa not now recognized are *B. dissimilata* [PM p. 214, a synonym of *T. hyacinthina*] and *Dichelostemma venustum* (Greene) Hoover [sporadic hybrids involving *D. ida-maia*, says the *Jepson Manual*]. Unfortunately, *D. capitatum* is renamed *D. pulchellum* (Salisb.) A. A. Heller in the *Intermountain Flora*, a controversy yet to be resolved.

*Triteleia* has 6 fertile stamens, all the anthers alike, and no staminodes; *Brodiaea* has 3 stamens alternating with 3 staminodes; *Dichelostemma* (except *D. capitatum*) has 3 stamens, no staminodes (in Oregon species), and broad filament-appendages forming a crown outside the anthers [*D. capitatum* has 3 large and 3 small anthers plus a crown].



*Triteleia hyacinthina*

## A New Ecoregion Map for Oregon Jimmy Kagan, Oregon Natural Heritage Program

Oregon has a new ecoregion map for use by the Oregon Natural Heritage Program (ONHP), the Oregon Flora Project and the Oregon Biodiversity Project. The older Physiographic Province (or Ecoregion) Map in the Natural Heritage Plan was used in the past. The original map was a direct descendant of the Physiographic Province Map in the *Natural Vegetation of the Pacific Northwest*, by Franklin and Dyrness, modified by Jerry Franklin for the first Natural Heritage Plan. More recent information, on which the new ONHP map is based, comes primarily from two sources: 1) the recently updated Oregon portion of the Ecoregions of the United States Map, by James Omernik and his staff at the Environmental Protection Agency lab in Corvallis (with input from state and federal soil scientists, ecologists and geologists); and 2) a revision of another national ecoregion scheme, developed by Robert Bailey, the U.S. Forest Service and the BLM, as part of the Columbia River Basin assessment.

The revised Oregon Ecoregion Map on the back page supersedes earlier maps. The new modifications maintain the ten ecoregions of earlier ONHP physiographic province maps, but shift boundaries to match Omernik's new ecoregions for much of the state or Bailey's new boundaries in parts of eastern Oregon. The most significant difference is in southwestern Oregon, where the former Siskiyou Mountains province and the southern outliers of the Western Oregon Interior Valleys province have been combined into a Klamath Mountains province, and pulled away from the ocean. Now, the Coast Range province continues south to the Bay Area in California, although it gets quite narrow in southern Oregon. The Umpqua Valley was included in the Klamath Mountains province, after extensive debate.

Specific information about the new boundaries will be available in computerized form (ARC/INFO) at the Oregon State Service Center in Salem, the ONHP, and at the Oregon Department of Fish and Wildlife's Corvallis Laboratory at Adair. Since this updated Ecoregion Map will be used for the 1998 update of the Oregon Natural Heritage Plan, the Oregon Biodiversity planning effort, and the Oregon Flora Project, it is anticipated that it will remain unchanged for at least five years. 

## Thanks!

The following people have helped the Oregon Flora Project over the past year. Many have given us advice, sent in checklists or information on Oregon herbaria, alerted us to new state records, or sent us other types of information. Our volunteers are noted with an asterisk. Together they have donated 362 hours over the past year. Members of the central groups for the Flora and Atlas projects are listed on page 12. We also thank our hard-working undergraduate students, Ann Marie Badeau, Shannon Clery, Sue Gagner, Sami Gray, Lareina Holkenbrink, Cathy Murphy, and Eric Peterson. Thanks to everyone who has been involved with the Project!

## Oregon Flora Project News

Scott Sundberg

The Atlas project is now underway! (see Atlas project, front page). We have made progress in other areas as well. For example, we have officially adopted the Oregon Ecoregion Map (see article, page 14) and, of course, work on the Checklist continues.

The Checklist now lists 4378 accepted names and 1001 synonyms. A large number of the 133 synonyms added since the last newsletter came from Morton Peck's *A Manual of the Higher Plants of Oregon, 2nd Edition*. Checklist treatments of several more Asteraceae genera, several small families, and the sedge genus (*Carex*) have been submitted.

We have recently applied to the National Science Foundation for a grant to fund the Flora project for three years. We have also submitted a grant proposal to the National Biological Survey and will soon be seeking funding from charitable foundations. Private donations and Native Plant Society of Oregon funding continue to provide needed basic support. 

## Your Donations Help!

Thanks to each of you who has donated to the Oregon Flora Project. Your continued contributions, from \$10 up, help keep the Flora project running. Matching donations, which are available from many Oregon employers, typically double the amount. The following people have recently donated to the Oregon Flora Project:

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Illustrations of *Erythronium oreganum* (cover) and *Triteleia hyacinthina* (page 14) by Jeanne Janish, taken from Hitchcock et al. 1969, *Vascular Plants of the Pacific Northwest*, courtesy of the University of Washington Press.

To be added to our mailing list (if not already on it):

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone \_\_\_\_\_

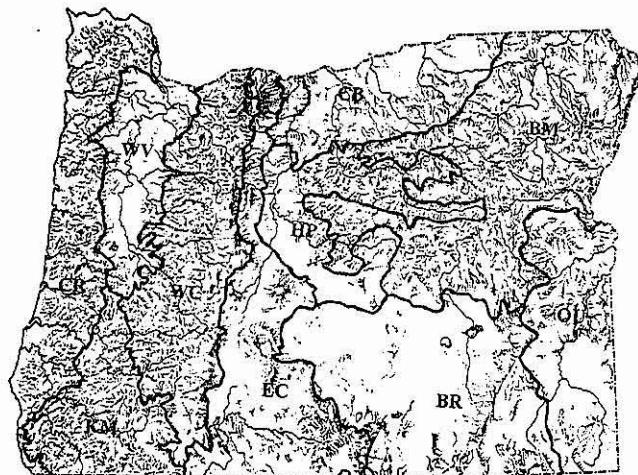
E-Mail \_\_\_\_\_

## Would you like to make a donation?

Tax-deductable 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 page 12. Please note on the check that it is for the Oregon Flora Project. Your donations mostly go toward newsletter expenses and student wages.

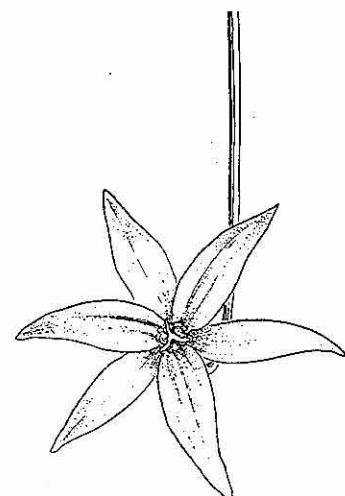
### Did you know?

- Ironically, species names derived from "California" (*californicus*, *californica*, *californicum*) occur more frequently in the current draft of the Oregon Checklist than any other. There are 62 accepted names and 15 synonyms derived from this state name (Tom McCall, roll over in your grave!). Latin words referring to the west (*occidentalis*, *occidentale*) are second, with 50 accepted names and 15 synonyms. Species names referring to Oregon are farther down the list, with only 30 accepted names and 7 synonyms.
- According to *Maples of the World* (Van Gelderen et al. 1994, Timber Press), our native bigleaf maple (*Acer macrophyllum*) has the largest leaves of any maple in the world.
- White meadowfoam (*Limnanthes alba*), which is a relatively new oilseed crop in the Willamette Valley, occasionally escapes as a roadside weed.



### Ecoregions of Oregon

BM	= Blue Mountains	HP	= High Plains
BR	= Basin & Range	KM	= Klamath Mountains
CB	= Columbia Basin	OU	= Owyhee Uplands
CR	= Coast Range	WC	= West Cascades
EC	= East Cascades	WV	= Willamette Valley



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