

OREGON FLORA NEWSLETTER

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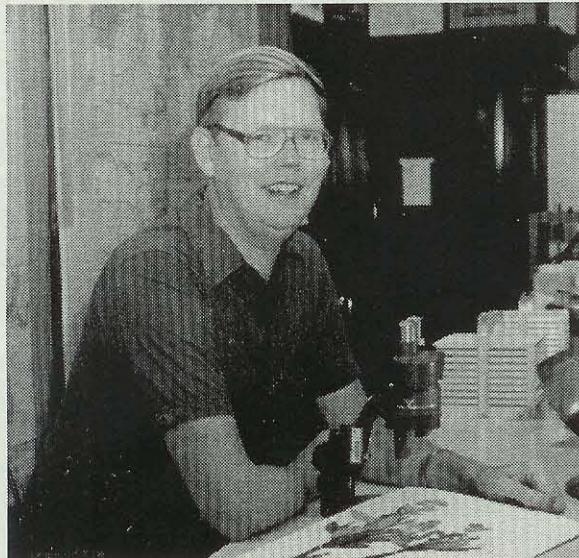
Richard Halse, Curator of the OSU Herbarium

Richard Halse was rescued from a life of mathematics teaching by a pair of superb botany teachers at Northern State College in Aberdeen, South Dakota.

Richard was born and raised in Clear Lake, South Dakota where his family owned a store. He is the second botanist associated with Oregon from Clear Lake. Ethel I. Sanborn, from the same home town, was at the University of Oregon from 1914 to 1917 and at OSU from 1928 to 1948.

Richard entered college expecting to get a degree in mathematics. However, during his second semester he fell under the spell of Mrs. Evelyn Roberts, a botanist with an interest in plant taxonomy, who convinced him to change his major to biology. Later he took his first plant taxonomy class from Dr. Gertude Miller and that, in his words, "... convinced me to stay in the field. It was a great class and a lot of fun." Richard graduated from Northern State with a BS in secondary education in 1970.

See Halse, page 10



Richard Halse hard at work in the taxonomy lab

Amelasorbus: An intergeneric hybrid and a new taxon for the Oregon Checklist

by Rhoda Love

Last spring I worked on treatments of the Rose Family genera *Amelanchier* and *Sorbus* for the Oregon Checklist. Both groups have pome fruits, but the leaves are quite different. While species of *Amelanchier*, the serviceberries, have simple leaves which are often toothed near the apex, our members of *Sorbus*, the mountain ashes, have pinnately compound leaves. As I began the project, Aaron Liston walked into the Herbarium with the latest volume of the *Intermountain Flora* (See OFN 3(3):16,1997).

Reading the introduction to *Amelanchier* in the new volume, I noted the existence of a named intergeneric hybrid between serviceberry and mountain ash from Idaho. The *Intermountain Flora* reported that the taxon had been named *×Amelasorbus jackii* by Alfred Rehder in 1925, based on a 1918 collection by J. G. Jack from Clearwater County, Idaho. Intrigued, I checked Hitchcock's 1961 *Vascular Plants of the Pacific Northwest* to see if the hybrid was known from Oregon. Hitchcock noted the existence of the hybrid in his introduction to *Sorbus*, but mentioned only the Idaho collection.

I turned next to a 1939 monograph of *Sorbus*, by G. N. Jones in the *Journal of the Arnold Arboretum*, and was excited by his report that pioneer Oregon collector, William Conklin Cusick, had collected the hybrid in the Wallowa Mountains of northeastern Oregon near the mining settlement of Cornucopia, Baker County. Cusick called the entity *Pyrus sambucifolia*, a name used in Howell's 1898 *Flora of Northwest America* for *Sorbus scopulina*. Jones reported that a Cusick sheet had been seen at the University of Minnesota and commented on in 1927 by P. A. Rydberg in the *Journal of the New York Botanical Garden*. Rydberg recognized the specimen as an *Amelanchier*×*Sorbus* hybrid, but was apparently unaware that Rehder had named the hybrid two years earlier. Rydberg's note includes the illustration reproduced here.

Despite Rydberg's note and Jones' monograph, it had apparently been overlooked for years that the hybrid had been collected in Oregon and I wondered if the OSU Herbarium had any specimens. I started in the Peck Herbarium where the last sheet in Peck's *Amelanchier* folder was *×Amelasorbus*. The specimen was annotated

See Amelasorbus, page 8

Amelasorbus, continued from front page

Amelasorbus jackii Rehder by an unknown person with the initials E. L. N. in 1936. It is Peck's number 4169, collected 2 miles northeast of Cornucopia in 1915 (three years before the Jack type collection from Idaho). Although the Peck specimen is sterile, the foliage is much like the illustration in the Rydberg article, with the general appearance of *Amelanchier* — leaves and leaflets toothed near the tips — but with most of the leaves pinnately compound as in *Sorbus*. Peck did not mention the entity in his *Manual of the Higher Plants of Oregon*.

At this point I began to suspect that the OSU Herbarium might also own a Cusick collection of the hybrid, as I was aware that the University of Oregon had purchased approximately 10,000 sheets from Cusick around the year 1913. Indeed we do have a Cusick specimen, which I located filed with *Sorbus*. It was a duplicate of the one seen by Rydberg at Minnesota, Cusick's number 1380.

Illustrations of *Erythronium oregonum* on the front and back covers by Linda Ann Vorobik. Drawing of *Azolla* from *Vascular Plants of the Pacific Northwest* courtesy of University of Washington Press.

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

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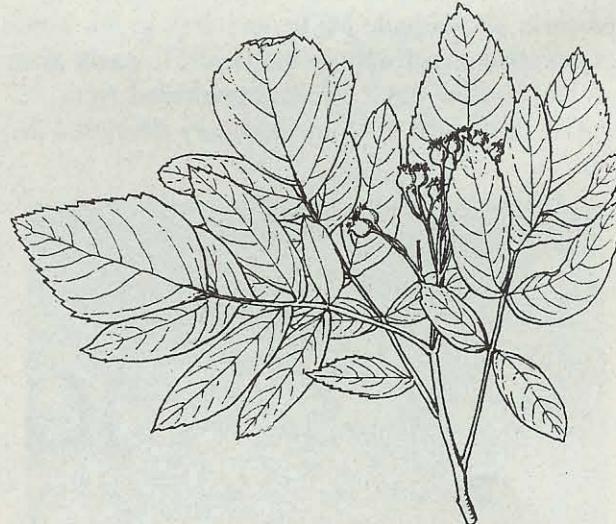
He collected the specimen bearing immature fruits "in mountains west of Cornucopia." The sheet was not specifically dated, however Cusick's label suggests it was collected in the 1880s. Like the specimen seen by Rydberg, it bears the name *Pyrus sambucifolia*. It seems likely that Cusick collected the hybrid at least 25 years before Peck.

Taxonomists agree that *XAmelasorbus jackii* is most likely a hybrid between *Amelanchier alnifolia* and *Sorbus scopulina*, both of which are found in the Wallowa and Clearwater Mountains. The hybrid could thus be expected to occur wherever the parent species come in contact. Rehder based his 1925 description in part on plants then growing at the Arnold Arboretum, which he reported had been raised from seeds from Jack's original Idaho collection. It is unusual for an intergeneric hybrid to produce fertile seed, but apparently nothing is yet known about the ploidy level or breeding system of the hybrids.

Thus the very interesting intergeneric hybrid, *XAmelasorbus jackii* (common name amelasorbus), although collected in Oregon at least as early as 1915, and probably in the 1880s, named in 1925, and noted in print in 1927 and 1939 to have been collected in Oregon, will now, after over 100 years, be recognized as part of the Oregon flora.

I wonder if *XAmelasorbus* can still be found in the Wallowas near Cornucopia?

[Note: After *XAmelasorbus jackii* Rehder was added to the Oregon Checklist on the basis of this investigation, it was discovered that the taxon is noted to occur in Oregon in the PLANTS database.]



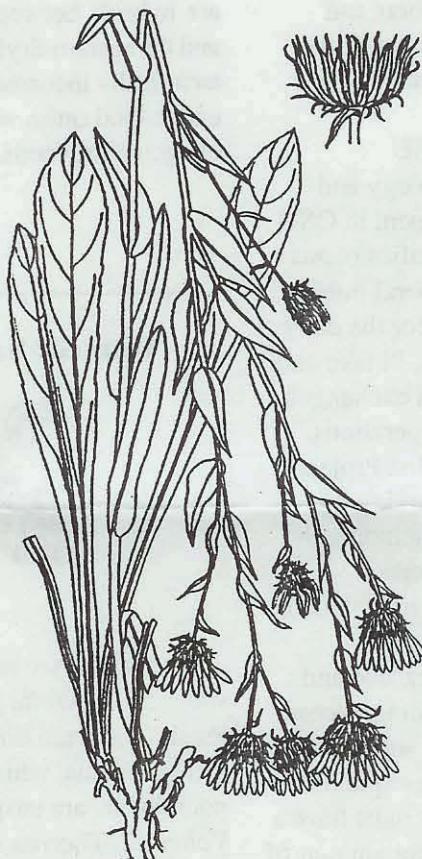
XAmelasorbus jackii, Rehder is intermediate between its putative parents, *Sorbus sitchensis* and *Amelanchier alnifolia*. Drawing from an article by P.A. Rydberg reprinted with permission from the Journal of the New York Botanical Garden, (28)333 copyright 1927. It is based on a William C. Cusick collection from northeastern Oregon, at the University of Minnesota. A duplicate specimen is filed in the OSU Herbarium.

Beware the hybrid gumplant!
by Kenton L. Chambers

I thought of subtitling this article, "How Morton Peck was right even when he was wrong." This would help me combine two themes: first, that much of the difficulty in assigning names to specimens of the genus *Grindelia* (gumplants of family Asteraceae) in western Oregon is due to rampant hybridization between two common species there, and second, that Peck's *Manual of the Higher Plants of Oregon* does not have the correct name for one of these species, namely *Grindelia integrifolia* DC. Both of these themes became apparent to me recently during the preparation of a treatment of *Grindelia* for the Oregon Vascular Plant Checklist.

I have known for many years that the genus exhibits both hybridization and polyploidy, and that in fact nearly every species is able to form hybrids with related ones where there is geographical contact and disturbed habitat available for their interspecific offspring. But that this could be happening in the Willamette Valley did not sink in until I read the comments which Dr. Meredith Lane attached to herbarium specimens at Oregon State University when she prepared the treatment of the genus for *The Jepson Manual*.

Only six species of *Grindelia* are recognized by Dr. Lane for California, although nearly twice that number had been listed in the earlier reference manual *A California Flora*, by Philip Munz and David Keck. Lane reduced some of Munz & Keck's "extra" species to varieties, and others she explicitly called interspecific hybrids. Some of the varieties are themselves intermediates which blend one species into another. Earlier botanists in California had simply named too many species of gumplants; they were misled by the



Grindelia integrifolia, Willamette gumweed, ranges from Lane County northward to Puget Sound. Hybrids between this species and *G. nana* var. *nana* can be found along roadsides and in pastures in the Willamette Valley. Illustration by John H. Rumely from Hitchcock et al. 1969, *Vascular Plants of the Pacific Northwest*, courtesy of University of Washington Press.

abundance of hybrid populations.

In Oregon we can recognize just five species, one of which (*Grindelia squarrosa* (Pursh) Dunal, curlycup gumweed) may be an adventive weed from farther east in North America, not an original Oregon native. Natural wetlands in the Willamette Valley are home to the very distinctive species, *G. integrifolia* (Willamette gumweed), which ranges from Lane County northward to the Puget Sound region. In the latter area it hybridizes abundantly with the coastal species *G. stricta* DC. (Oregon gumplant), but the Willamette Valley populations are isolated from the coastal ones in Oregon and there is no intergradation possible.

Nonetheless, outside of the valley's marshlands, often in pastures and on disturbed roadsides, are many gumplants which somewhat resemble *G. integrifolia* but clearly do not fit comfortably into that species. It turns out, according to Dr. Lane, that these are hybrids whose other parent is a weedy species, *G. nana* Nutt. var. *nana* (Idaho gumweed), which may have entered the valley from east of the Cascades or from the southwestern parts of the state. *Grindelia nana* differs from *G. integrifolia* in many morphological traits, but the hybrids recombine all their differences and blur one species into the other.

For the Oregon Flora Checklist I have created a hybrid category for the intermediates, using a formula with an "x" between the names of the parents: *Grindelia integrifolia* x *G. nana* var. *nana*. This will greatly simplify the naming of many specimens and perhaps will satisfy those readers who have been uncomfortable trying to fit the various hybrid forms into either of the parental species.

See Gumplant, page 10

With the encouragement of Roberts and Miller, Richard entered graduate school in botany at the University of Arizona in Tucson. Working under Dr. Charles Mason, he earned his MS in 1973 with a thesis on the flora of Canyon de Chelly National Monument.

Richard came to Oregon in the 70s to work with Kenton Chambers at OSU. He completed his PhD here in 1980 with a thesis on the systematics of genus *Phacelia* Section *Miltitzia*.

Asked to name the botanists who have most inspired him, Richard named Ken Chambers and LaRea Johnston at OSU, Dr. Charles Mason, at the University of Arizona, and his original mentors in South Dakota.

Richard is currently Curator of the OSU Herbarium as well as an Instructor in biology and botany. In addition he holds an appointment in OSU Extension. In the latter capacity he identifies plants for the Extension Service and for the general public. As Herbarium Curator he is responsible for the daily operation of the Herbarium. He explains, "I take care of the loans, borrowing of specimens and exchanges. A lot of paperwork is involved in these operations."

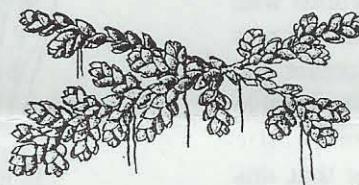
For the Oregon Vascular Plant Checklist Project, Richard has completed or is currently working on treatments of a large number of groups including the Hydrocharitaceae, Sparganiaceae, Typhaceae, Lythraceae, Zosteraceae, Capparidaceae and parts or all of the Malvaceae, Hydrophyllaceae, Ranunculaceae, Chenopodiaceae, Brassicaceae and others. He is currently working on the Boraginaceae.

Richard was asked what rules govern submission of pressed material to the Herbarium. He explained, "If a person wishes to submit plants, they must have a properly pressed specimen with a sufficient amount of material – a scrap is unacceptable. A label must accompany the specimen and it must be detailed enough so one may relocate the site." Minimal information is location, collector's name and date.

Richard emphasizes that visitors are welcome at the Herbarium. He asks however that they check with him at the time of their visit so that the rules governing the examination of specimens can be explained. The herbarium is located on the ground floor of Cordley Hall (Room 1045) on the OSU campus, and is generally open from 9:00 am to 5:00 pm Monday through Friday. Richard's phone number is (541) 737-5297. ☺

Serendipity means discovering the truth through accident. In his *Manual of the Higher Plants of Oregon*, Morton Peck accidentally confused two different gumplants bearing the name "*integrifolia*." He should have used the name *G. integrifolia* (proposed by the botanist DeCandolle) as a specific epithet for the Willamette gumweed; instead he used a varietal name *G. nana* var. *integrifolia* (proposed by the botanist Nuttall for a completely different plant!). Yet, in using the name of a variety of *G. nana*—by mistake—for plants of the Willamette Valley, Dr. Peck was actually expressing a truth, namely that many gumplants in the valley are hybrids between the wetlands species *G. integrifolia* and the eastern drylands species *G. nana*. Although he was technically incorrect in his choice of a name, Morton Peck understood quite well the mixed-up nature of our western Oregon gumweeds. ☺

Wanted: floating ferns and duckweeds



Azolla

In Oregon we have two species of floating ferns, or water ferns: *Azolla filiculoides* Lam. and *A. mexicana* Presl. These are difficult to identify and previous identifications, which were based on characters that are not reliable, are suspect. In the *Flora of North America Volume 2*, Thomas Lumpkin uses characters of the spores and leaf hairs to distinguish the two species. The leaf hairs are best observed in fresh material. The floating ferns are small (usually one to two centimeters in diameter) branching plants that float on the surface of ponds. They are typically green but often turn red, when they are most visible from a distance.

We still have very few records of duckweeds (Family Lemnaceae) from Oregon. If you see floating ferns or duckweeds (they often grow together) please send material to me in a moist paper towel inside a sealed plastic bag. A mixed collection is perfectly acceptable. I will provide an identification and you will be helping us unravel some of the mysteries of our smallest vascular plants! - Scott Sundberg

Project news:
Asteraceae Checklist now available
by Scott Sundberg

Thanks

The *Oregon Vascular Plant Checklist: Asteraceae* by Kenton L. Chambers and Scott Sundberg is now available. This 54-page booklet lists all known native and naturalized species, subspecies and varieties of Oregon's largest family.

The full *Checklist* database now lists 4,438 taxa for Oregon and 2,308 synonyms. Draft treatments of a number of small families have been submitted recently and we are selecting a group of families to publish next.

We continue to gather data for the Atlas project, but data entry is slow during the summer when most student workers are away. In the Fall, a new Graduate Research Assistant and a returning undergraduate student will help manage the database.

To Get Your Copy of the Asteraceae Checklist

- For those of you who have participated in or donated to the Oregon Flora Project, the Asteraceae Checklist is available free of charge upon request. Please use the form below if not on our mailing list.
- Or you may receive a copy in return for a donation of any amount to the Oregon Flora Project. Please enclose your check to the OSU Foundation. (The cost of printing, postage and handling is approximately \$4.00.)
- Bonus: When we mail your Asteraceae checklist, we will include a list of name changes and their page numbers in the *Flora of the Pacific Northwest* by Hitchcock and Cronquist.

Name _____

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Mail to:

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Please send the Asteraceae Checklist
(include check if appropriate).

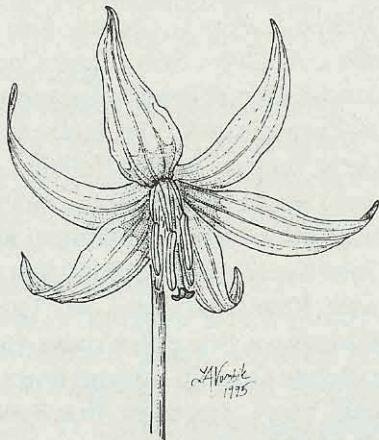


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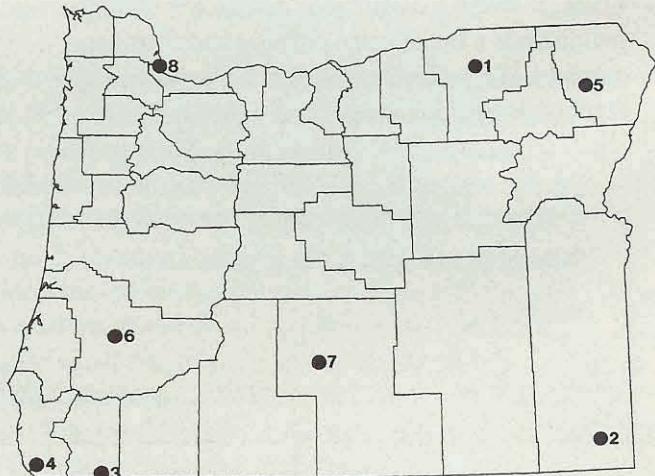
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Did you know?

(Submitted by the Carex Working Group)

- There are 126 *Carex* taxa in Oregon; 16 of these taxa are introduced.
- The oldest record in the Carex Working Group database is *Carex laeviculmus* collected on Sauvie Island in 1880 by Thomas Jefferson Howell.
- In the database, Lane County has the greatest recorded *Carex* diversity with 69 taxa; Gilliam and Sherman counties have the least with four taxa each.
- Barbara Wilson has made approximately 700 *Carex* collections; L.F. Henderson collected 386, Peter Zika collected 350 and Georgia Mason 207.
- There is only a single collection for each of the following: *Carex diandra*, *C. pluriflora*, *C. saxatilis*, and *C. parryana*.



Only one collection at OSU

Please let us know if you have seen any of these:

- | | |
|-------------------------------|------------------------------------|
| 1. <i>Artemisia abrotanum</i> | 5. <i>Filago arvensis</i> |
| 2. <i>Artemisia papposa</i> | 6. <i>Filago vulgaris</i> |
| 3. <i>Aster breweri</i> | 7. <i>Helianthus petiolaris</i> |
| 4. <i>Baccharis douglasii</i> | 8. <i>Lapsanastrum apogonoides</i> |