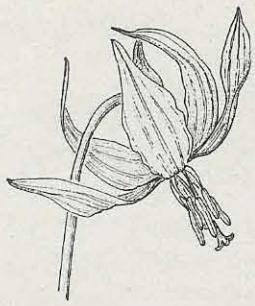


OREGON FLORA NEWSLETTER

Volume 4 Number 1 • Oregon State University • February 1998

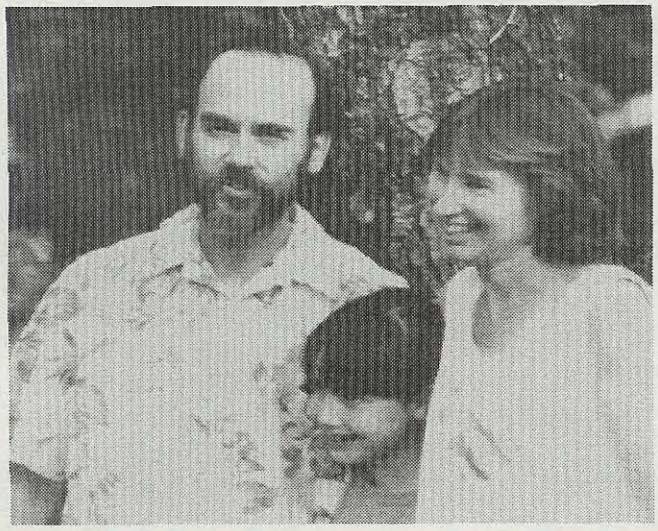
Clay Gautier

by Rhoda Love

Clay Gautier is the newest member of the Oregon Atlas Project Leaders group. He has volunteered with Scott Sundberg and others since 1996. "Clay has been instrumental in developing an electronic version of the Oregon Plant Atlas that will be fully interactive and accessible to the public via the Internet," says Scott. Clay, who commutes to OSU from Eugene, brings a special combination of skills to this task: undergraduate and graduate work in ecology and 12 years of experience as a professional software developer.

Clay was born in San Francisco in the mid-fifties and grew up in California and Nevada. He says, "My wife, Gail Baker, and I both went to Redwood High School in Marin County when I was a freshman, but we didn't actually meet until 11 years later in San Diego." In college, Clay majored in biology, receiving his BS from the University of Nevada at Reno. He moved on to graduate school at San Diego State University, earning his MS in 1981 with a thesis on the impact of post-fire seeding with ryegrass on soil erosion and regrowth of native vegetation.

See Gautier, page 4



Clay Gautier, Gail Baker and daughter Nicole

Checklist: Asteraceae

by Scott Sundberg and Kenton L. Chambers

We are pleased to announce the completion of the checklist of Oregon composites (Asteraceae) by the Oregon Vascular Plant Checklist Project. The Asteraceae checklist was written by Kenton Chambers and Scott Sundberg and is currently being reviewed by Checklist project members. It is a portion of the Oregon Vascular Plant Checklist, which is preparatory to a new Flora of Oregon. The Asteraceae Checklist includes accepted names of all Oregon taxa (species, subspecies and varieties) growing outside of cultivation, as well as common names, plant origin (native or introduced) and comments on taxonomic problems and hybridization. Each record is backed up by annotated herbarium specimens or by reference to a published monograph or revision. The accepted names will be cross-referenced to names appearing in ten standard floras and lists of Oregon species.

The Asteraceae, or Compositae, comprises one of the largest, most rapidly evolving, and most successful families of flowering plants. It is also the most diverse family in Oregon, with 574 taxa in 124 genera. Some Oregon Asteraceae are dominant members of their communities, for example sagebrush and rabbitbrush which are familiar components of arid landscapes east of the Cascade Mountains. The Asteraceae family also encompasses some of our worst non-native weeds, including dandelion, Canada thistle, tansy ragwort, and several species of knapweed. A surprising 22 percent of Oregon composites are non-native species.

The nomenclature (naming) of the Asteraceae has been especially dynamic over the past twenty years and this is reflected by a number of new and unfamiliar names for Oregon plants. Also, recent studies in biosystematics and molecular systematics have, in some cases, yielded results that necessitate name changes. Readers who are familiar with the Jepson Manual or the PLANTS database of North American plants will not be surprised by most of these changes. We have spent hundreds of hours examining thousands of specimens and reviewing taxonomic literature to produce the

See Checklist, page 5

Project News

by Scott Sundberg

In the past four months we have accomplished a great deal. The Atlas project is progressing rapidly, thanks to the efforts of Clay Gautier, ten student workers, and all of you who have sent in species lists. We have produced a mockup of the online Atlas to use for design purposes. A number of technical challenges with the electronic version of the Atlas have recently been addressed. The Atlas database now has over 82,500 records.

The Checklist continues to progress. The Asteraceae treatment is soon to be released and we plan to follow this with treatments of other families. We now list 4,432 plant taxa for Oregon.

The newsletter is now in its fourth year thanks to the hard work of Rhoda Love and Production assistants Alisa Anderson and Camille Tipton. Ken Chambers deserves special recognition for submitting articles on the taxonomy of a number of interesting groups.

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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A new name for *Chamaesaracha* in Oregon

by Kenton L. Chambers

The nightshade family Solanaceae is represented in Oregon's flora by approximately 28 taxa, but it seems likely that only five of these are native in the state. The rest are weedy, non-native species—some rare, some common—which have high dispersal capabilities and thrive in the disturbed soils of farms, rangelands, gardens, and roadsides. Various species of ground-cherry (*Physalis*), nightshade (*Solanum*), jimson-weed (*Datura*), and tobacco (*Nicotiana*) that are native elsewhere in North America have established themselves as weeds in Oregon, along with other introduced taxa of European and Asian origin such as henbane (*Hyoscyamus*) and matrimony-vine (*Lycium*).

Given the large number of undesirable weeds in this family, it is understandable that we prize the small group of innocuous native Solanaceae in our flora. One such species is called "dwarf chamaesaracha," an awkward common name which simply repeats the Latin name of the genus. The plants are perennial herbs with white or pinkish dish-shaped corollas about 1.5-2 cm across. The species is common along the east flank of the Cascade Range, in the ponderosa-pine/juniper zone, and extends south into California and Nevada. In nearly every reference manual for Oregon and California the scientific name is given as *Chamaesaracha nana* A. Gray. However, in Vol. 5 of *Intermountain Flora* (1984) the species is named *Leucophysalis nana* (A. Gray) Averett. Curious about this change of names, I looked into the taxonomic literature relating to this plant and its relatives and have concluded that there is indeed good reason to move this species from *Chamaesaracha* into *Leucophysalis*.

Typical chamaesarachas are arid-habitat plants ranging from the southern California deserts east to the southern Great Plains and northern Mexico. Their berry-like fruits, with seeds on a basal placenta, become dryish when ripe. In *Leucophysalis* the berries remain fleshy, and seeds are located all along the central axis of the fruit. Only one other species of *Leucophysalis* occurs in North America—*L. grandiflora* (Hook.) Rydb., of open woodlands in the northeastern United States and adjacent Canada. These distinctions in morphology and habitat were noted in publications by John E. Averett as early as 1970, but the taxonomic changes involved are only now becoming widely accepted. My question to you readers is: should we keep the common name "dwarf chamaesaracha" for *Leucophysalis nana*, or is it time to invent a new English name for the species? Your comments will be welcome.

Some Taxonomic Notes on Oregon Goldenrods, Part II

by Kenton L. Chambers

(Editor's note: Part I of Dr. Chambers' article on the genus Solidago *appeared in the October, 1997 issue of OFN.)*

Here I continue my review of taxonomic changes in the genus *Solidago* which arose during my treatment for the Oregon Vascular Plant Checklist.

In a major generic realignment, one Oregon goldenrod species has been moved to the genus *Euthamia*, namely *E. occidentalis* Nutt. (western goldenrod), which in Peck's *Manual* and Hitchcock's *Flora* is called *Solidago occidentalis* (Nutt.) Torr. & A. Gray. This change, based on leaf anatomy and overall growth form, is now widely accepted among experts on the two genera, and I chose to follow their advice for our Checklist. In Oregon this species grows along streams, mainly east of the Cascades, and is distinctive in having tall stems, linear, resinous-dotted leaves, and a much-branched, flat-topped inflorescence.

On bluffs and dunes of the immediate Oregon coast is a low-growing, densely-flowered species, sticky goldenrod. The new taxonomy places it in *Solidago simplex* Kunth, as var. *spathulata* (DC.) Cronquist. Away from the coast this gives way to var. *simplex* (which Hitchcock called *S. spathulata var. neomexicana*); the two varieties intergrade in Tillamook and Clatsop counties. In *The Jepson Manual*, the coastal race is made a separate species, *S. spathulata*, but in Oregon it behaves as a coastal ecotype of *S. simplex*. In its range from Mexico to Alaska and east to Maine, *S. simplex* also contains a dwarf alpine race, which in Oregon extends from Mt. Hood to the Three Sisters; this is now called *S. simplex var. nana* (A. Gray) G.S. Ringius (formerly it was *S. spathulata* var. *nana*).

In the high mountains of eastern Oregon a different goldenrod occurs—*Solidago multiradiata* Aiton (northern goldenrod). Its heads are larger than in *S. simplex*, are not sticky, and form a tight apical cluster. Also distinctive are ciliate hairs on both edges of the basal leaf petioles.

Solidago simplex *var.* simplex. *This taxon was formerly known as* S. spathulata *var.* neomexicana. *It intergrades with the coastal var.* spathulata *in Tillamook and Clatsop Counties. (See also map, page 6.) Illustration by John H. Rumely from Hitchcock et al. 1969,* Vascular Plants of the Northwest, *courtesy of University of Washington Press.*

Solidago missouriensis Nutt., Missouri goldenrod, is common throughout much of eastern Oregon, except alpine regions, and is recognized by its glabrous stems and widely spreading lower inflorescence branches, thus resembling *S. gigantea* and forms of *S. canadensis*. It has elongate, rather narrow leaves which decrease in size up the stem. In Hitchcock's *Flora*, the Oregon specimens are placed in var. *extraria* A. Gray, but in the more recent *Intermountain Flora*, Vol. 5, Cronquist changed his mind and said it was "no longer useful" to recognize this variety. *Solidago missouriensis* at one time occurred in prairies of the Puget Sound area of Washington, as var. *tolmieana* (A. Gray) Cronquist, but I did not find any old collections suggesting it was also in western Oregon in the early days. It would be interesting to know whether the relict prairies near Olympia still contain this goldenrod.

Another species of eastern Oregon, closely related to *Solidago missouriensis*, is *S. spectabilis* (D.C. Eaton) A. Gray, basin goldenrod. The only difference I could see between these two taxa is that *S. spectabilis* has short lateral inflorescence branches and thus a tall but narrow (not pyramidal) inflorescence shape. Its stems and leaves are glabrous, as in *S. missouriensis*, and most specimens were collected from alkaline meadows near relict Pleistocene lake basins. Perhaps this habitat preference allows it to remain genetically separate from Missouri goldenrod.

The final species in our Checklist also finds its northern limit in southern Oregon; this is California goldenrod, *Solidago californica* Nutt. In it, the stems and leaves are covered by a minute, harsh pubescence, and the inflorescence tends not to have widely spreading lower branches. The leaves decrease in size from stem base to apex, as in basin goldenrod. This taxon is related to other hairy-leaved goldenrods of the *Solidago velutina* DC. group, occurring south and east of Oregon, and in *Intermountain Flora*, Cronquist used the latter species name for what I call *S. californica*.

Rare Plants and the Oregon Flora Project

As the Oregon Checklist progresses and work on the Oregon Atlas gathers steam, we are beginning to turn our attention to the Oregon Flora. We plan a Flora which will be available in two versions: a hard copy in traditional book form and an updatable electronic version, to be fully accessible to the public. Both versions of the Flora will give users information about Oregon's rare plants.

Oregon was among the first to identify her rare species. Even before the passage of the 1973 Federal Endangered Species Act, Ken Chambers and Jean Siddall began to list our rare plants. In 1976 they began a series of statewide conferences to gather information on threatened species (see OFN 3(2):10). Today, both the Oregon Natural Heritage Program (housed at The Nature Conservancy in Portland) and the Oregon Department of Agriculture (housed in Salem and at OSU) maintain updated lists of Oregon rare plants. Readers may wonder how the two programs are similar, how they differ, and what categories and criteria of rarity are used.

Oregon Natural Heritage Program (ONHP) bases its extensive lists on rare plant sighting reports and information gathered at rare plant conferences organized by Chambers, Siddall, David Wagner, Jimmy Kagan and others, and continued every other year from 1982 to the present. At these conferences, information on a long list of species is provided by field botanists and land managers from federal and state agencies as well as academic botanists and members of such groups as the Native Plant Society of Oregon (NPSO). Based on information from these conferences, ONHP maintains four lists of rare plants (see box). Approximately 768 plant species are tracked in the ONHP lists. (To view information on ONHP lists, visit web site: www.abi.org/nhp/us/or).

Oregon Natural Heritage Program lists:
(Based on The Nature Conservancy global and state ranks)
List 1 Species endangered or threatened throughout range ~ 165 spp.
List 2 Species threatened, endangered or possibly extinct in Oregon, but more common elsewhere ~ 230 spp.
List 3 Species for which more information is needed ~ 238 spp.
List 4 Species of concern which need to be watched ~135 spp.

The Oregon Department of Agriculture (ODA) Plant Conservation Biology Program began after the 1987 passage of Oregon Senate Bill 533, commonly known as the Oregon Endangered Species Act. This legislation, which was initiated by NPSO, provides statutory protection for vulnerable plants on state land. The ODA rare plant program is currently overseen by Dr. Robert Meinke from offices in Salem and at OSU. Under state law, a plant may be listed as endangered or threatened if it is native and there is evidence of risk to populations or habitats. Generally, plants listed by ODA are threatened throughout their range. ODA staff have conducted field research on some species to determine elements of risk. At present, ODA lists include 30 Endangered and 31 Threatened species, as well as 78 Candidate species under review for possible listing.

In addition to the above, the U.S. Fish and Wildlife Service (USFWS) maintains a list of endangered species used by federal agencies; and the Lane County Chapter of NPSO maintains a list of rare plants that is used in that county.

The Oregon Flora Project will use information from the above lists to give users information about rarity. The printed version of the Flora will provide general indications of rarity. The electronic version however can be specific as to categories of rarity and will be able to provide constantly updated information from ONHP, ODA and USFWS.

Gautier, from front page

Following the completion of his degree, Clay moved to Oregon. Here is how he describes the move: "Research funding was becoming increasingly hard to find, and I was tired of living in a big city, so after finishing my MS I moved to Eugene and found a job as a computer programmer." This was no small feat considering that he had no formal training in computer science and very little experience as a programmer.

Life in Eugene in the early 80s was wonderful according to Clay. Important events took place in his life. He and Gail Baker were married and Gail began to teach biology part-time at Lane Community College. They bought a house, planted a beautiful garden and their daughter, Nicole, was born. Then, in 1988, while he was taking courses in the Department of Computer Sciences at OSU, Clay was contacted by Microsoft. "We didn't want to leave Oregon, but Microsoft made me an offer I couldn't refuse, so we sold our house, packed our things and moved to Redmond, Washington." However, Clay adds, "We knew that some day we would find a way to get back to Eugene and we did." They returned in 1994 when Gail was offered a teaching position at Lane Community College.

Clay first heard Scott Sundberg describe the Oregon Flora Project at a Eugene meeting of the Native Plant Society. He realized that his own background in biology and computer science might make him useful to the project and began to volunteer almost at once. Clay states, "Publishing an interactive web-based atlas is an interesting challenge, and I have really enjoyed researching and working with the new technologies that need to be woven together to make it a reality." He adds, "It has really been great working with Scott and everyone else at OSU."

Checklist, from front page

Asteraceae Checklist. The greatest number of nomenclatural differences are with older floras, such as Peck's *Manual of the Higher Plants of Oregon* (216 name changes in Asteraceae) and the Abrams' *Illustrated Flora of the Pacific States* (206 changes). In Hitchcock and Cronquist's *Flora of the Pacific Northwest*, which was published 25 years ago, 156 names have been changed. The genus name has been changed in about one fourth of these; varieties or subspecies are submerged in one third; and the rest consist of species name changes and changes in taxonomic rank (e.g. varieties changed to subspecies, or elevation of varieties to species).

The Asteraceae checklist is the first of many such lists of Oregon plants to be distributed by the Checklist group. Watch for announcements on our web site (http://www.orst.edu/dept/botany/herbarium) and in this newsletter.

How 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.
- Or you may receive a copy in return for a donation of any amount to the Oregon Flora Project. Please use the form below and enclose your check to the OSU Foundation. (The cost of printing and postage 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.

Thanks

Illustrations of *Erythronium oregonum* on the front and back covers by Linda Ann Vorobik.

Map on the back cover was produced with the assistance of A. Jon Kimerling.

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

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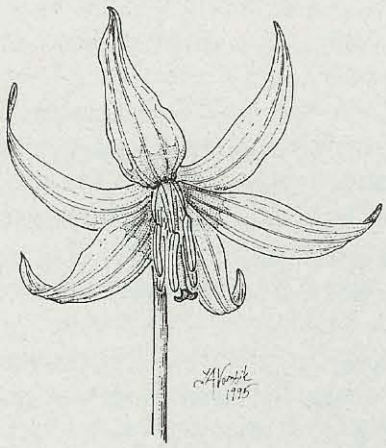


Did you know?
(Asteraceae Checklist Facts)

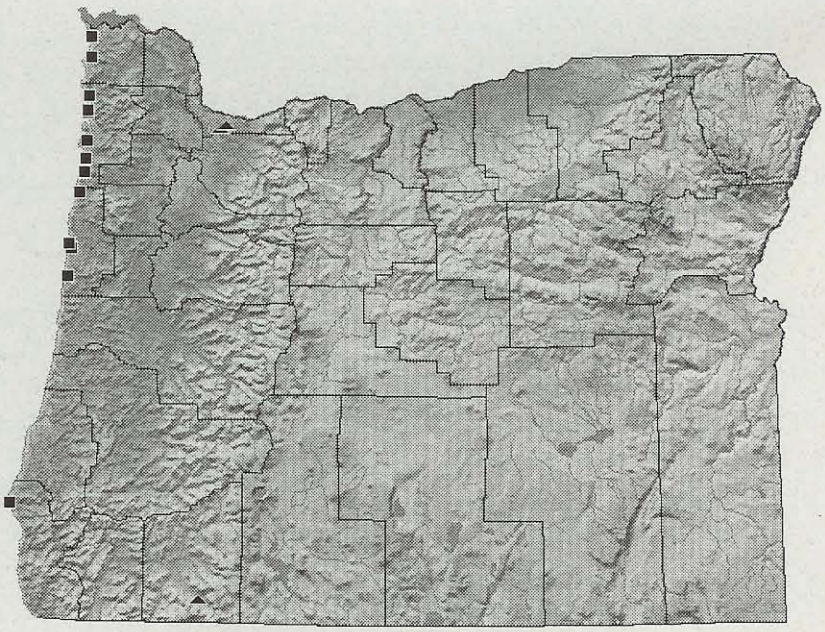
- Asteraceae is the largest family in Oregon with 574 taxa. (Second is Poaceae with 378).

- *Erigeron* is the largest Asteraceae genus in Oregon with 48 taxa; *Aster* is second with 33; *Artemisia* is third with 29.

- Oregon Asteraceae includes 448 native taxa, 125 introduced taxa and one, *Achillea millefolium,* which has both native and introduced populations.

- The genus *Haplopappus* has been split into six genera: *Columbiadoria*, *Ericameria*, *Hazardia*, *Pyrrocoma*, *Stenotus*, and *Tonestus*.

- However, in the Oregon Vascular Plant Checklist the genus *Aster* was not split into *Brachyactis*, *Canadanthus*, *Eucephalus*, *Eurybia*, *Ionactis*, *Oreostemma*, *Sericocarpus*, and *Symphyotrichum,* as proposed by some other authors.



Oregon distributions of *Solidago simplex* var. *simplex* (triangles) and *S. simplex* var. *spathulata* (squares) based on herbarium specimens at OSU. We would appreciate receiving additional specimens of var. *simplex.*