

KALMIOPSIS

Journal of the Native Plant Society of Oregon



“... one morning found our progress suddenly arrested by a cañon 1,950 feet in depth...”
(J.S. Newberry describing the geology of central Oregon in 1855)

KALMIOPSIS

Journal of the Native Plant Society of Oregon, ©2019



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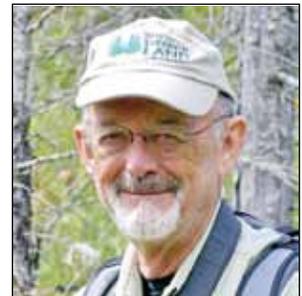


Cover Photo: Crooked River Canyon from Smith Rocks. Photo by Robert C. Korfhage, February 2017.

EDITORIAL

In re-reading my editorial from the 2015 issue of *Kalmiopsis*, I see that I resigned from the position of Editor in 2013, now six years ago. Those six years have seen many changes, some in my life, others in the Native Plant Society of Oregon. I have more time to edit the journal because I no longer have a big garden, vineyard, and chickens since my husband and I moved to central Oregon. In addition, after working on a *Field Guide to Grasses of Oregon and Washington* for 16 years with the Carex Working Group, we published it this year with OSU Press. In NPSO, the Bulletin is now digital, but we're still waiting for a website redesign, and the NPSO budget is no longer able to fund a print copy of *Kalmiopsis*. This past summer, Frank Lang, who was the first editor of *Kalmiopsis* and was at my side for most of the issues I edited, left us. The book that our other long-term editor Rhoda Love planned to publish at UW Press (with co-editor Art Kruckeberg), *Plant Hunters of the Pacific Northwest*, was dropped by the Press. In response, the Montana Native Plant Society published the stories of Montana botanists in a gorgeous full-color book, *Montana Pioneer Botanists*. While I would love to follow Montana's lead and create our own book for Oregon botanists, I have been unable to locate the manuscripts that Rhoda had. Instead, I plan to continue publishing historical botanist articles in *Kalmiopsis*. As of the 2015 issue of *Kalmiopsis*, we have already published 15 articles about Oregon botanists in the journal's Historical Botanists series. In the current issue, we present three more articles: LeRoy Detling, John Strong Newberry, and Marge and Dick Ettinger. The fourth article in this issue tells why, compared with much of the Pacific Northwest, botanical exploration arrived late in central Oregon.—*Cindy Roché, Editor*.

This issue is dedicated to Frank Lang, whose humor and wit I enjoyed for many years. Frank edited the first three issues of *Kalmiopsis* (1991-1993) and served on the editorial board from 2004 to 2015. He wrote (or co-wrote) five articles and reviewed eleven books for the journal. He helped solicit articles from potential authors and left red ink on each manuscript, showing needed improvements which was a big help in the final editing. Overall, the pleasure of working with Frank was a major perk in serving as editor of *Kalmiopsis*.



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Please consider that the readers of *Kalmiopsis* are people with varied educational backgrounds and all articles must be comprehensible to a broad, but relatively well educated, audience. The goals of *Kalmiopsis* are to disseminate correct information about and generate interest in native plants; thus each article is reviewed by the editorial board and selected technical reviewers before publication.

Contact the Publication Committee (publications@npsoregon.org) or the Kalmiopsis Editor (kalmiopsis@npsoregon.org) to request a copy of Instructions to Authors, or to inquire about the suitability of an idea for an article.

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~ **Native Plant Society of Oregon** ~
*Dedicated to the enjoyment, conservation, and study of
Oregon's native plants and habitats.*

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Why Central Oregon Remained Botanically Unexplored during the Early Exploration of the Trans-Mississippi West (1786-1900)

Susan E. Schneider
Bend, Oregon

“The first botanical problem to be solved in a new country is of necessity the exploration of its different parts and the description of the native species.” William Gilson Farlow, Smithsonian Institution, 1896 (McKelvey 1955).

The earliest European access to the Pacific coast of North America (now Washington, Oregon, and California) involved long, hazardous round-trip journeys by sea. From the nation's founding in 1776 until the creation of the Panama Canal in 1914, those who undertook the trip faced an extra 7,000 miles and months of arduous sea travel, including the perilous trip around South America, with the uncertainty of survival around Cape Horn. Only a few botanists came on European and Russian exploring expeditions looking for land to colonize or goods to trade, and even fewer ventured inland from the Columbia River and Oregon coast.

During the nearly sixty years between 1790-1850, all the lands west of the Mississippi River to the Pacific Ocean

became part of the US national domain. However, at the time of acquisition, the vast lands were mostly unknown. Indeed, a map from 1860, the year after Oregon became a state, carried the label of “UNEXPLORED” across the entire southeastern third of the new state (Mitchell 1860).

The most complete compilation of the early botanical work in the Trans-Mississippi West is found in the works of the Arnold Arboretum at Harvard University. Published in 1956, the 1184-page work preserves details of the trips and travails of these times in exquisite detail. This much-annotated compendium of references adds depth and breadth to the early botanical work in this remote and challenging landscape (McKelvey 1955).

Twelve collectors left valuable data on the botanical bounty within the current borders of Oregon during the period from 1790-1850. Most of the earliest collections were of coastal or Columbia River provenances. Of those, only two record having entered and botanized in central Oregon. In the following 50 years (1850-1900), only two more botanists explored the region and left records of their findings. A primary reason was that, for decades, central Oregon remained isolated by lack of a transportation infrastructure after most of the rest of Oregon was already botanically well known.

Exploratory Expeditions along the Pacific Coast of North America 1786-1806

The first recorded botanical specimen from western North America was seed collected from the coast of California in 1786 by French gardener-botanist Jean Nicolas Collignon traveling with a scientific expedition commanded by eminent navigator Lapérouse (Ertter 1995). After the sand verbena seeds were sent to France, the ship sank and all aboard perished. Identified in 1789 as pink sand verbena (*Abronia umbellata*), it remains the first plant from western North America to be identified and published. A scientific expedition headed by Spanish explorer



In 1860, the eastern half of Oregon was considered “UNEXPLORED.” Published by permission of Getty Images. Oregon, Washington and Idaho Map. 1860. Mitchell Plate. S Augustus Mitchell Co.



Pink sand verberna (*Abronia umbellata*) near Coos Bay. Photo by Lisa Schomaker.

Alessandro Malaspina reached California in 1791, carrying European botanists Thaddeus Haenke and Louis Née, who made the first collection of dried plants from California to reach Europe.

In 1792, American Robert Gray sailed his merchant vessel the *Columbia Rediviva* into the Columbia River entrance; his voyage was used to settle the boundary dispute of 1846 with Great Britain. In 1792, British navigator George Vancouver also sailed the Pacific coast of North America, including the shores of the current states of Oregon, Washington and California. The Scottish surgeon-naturalist Archibald Menzies, who was traveling with Vancouver, gathered many plants from the Washington coast and Puget Sound areas. Although he was unable to penetrate inland, when he returned to England his plant collection ignited an explosion of interest among British plant collectors (Dye 1906).

In 1803 *Flora Boreali-Americana* was published in Paris. Usually credited as the work of André Michaux, much of it was written by Louis Claude Marie Richard. Asa Gray was dismissive of the work, because it contained only 1,530 species in 528 genera. The same year this flora was published, the United States negotiated the Louisiana Purchase with France (April 30, 1803). At the time, this extensive territory was largely unknown. One of the assignments for Meriwether Lewis and William Clark during their 1804-1806 Voyage of Discovery was to collect plants in this botanically undocumented region. Their journey westward to the overwintering camp (Ft. Clatsop) on the northern Oregon coast followed the Columbia River, well north of central Oregon. Despite expedition

members taking different routes on their return eastward, neither Lewis nor Clark ever entered central Oregon.

The Fur Trade Era 1804-1843

Forts operated by fur companies provided critical sites for respite and re-supply for botanists and other explorers of this newly opened area of the continent. When Fort Astoria was established as the headquarters of the Pacific Fur Company in 1811 by the ambitious American financier John Jacob Astor, ownership of the region was being disputed by Spain, Great Britain, Russia and the new United States. It was the first non-indigenous “permanent” settlement site on the Oregon coast. From Fort Astoria, American fur traders worked their way up the Columbia River into the Rocky Mountains. Under the Pacific Fur Company, the fort was short-lived; diseases were problematic, and the onset of the War of 1812 caused it to fold. The North West Company bought Astor out in 1813 and renamed the post Fort George in honor of King George III of England. It was absorbed in 1821 by the Hudson’s Bay Company, which operated Fort Vancouver (located near the present city of Vancouver, Washington, nearly 110 miles upstream from the mouth of the Columbia River) that was completed in 1829 and staffed by Dr. John McLoughlin.

One of the earliest explorers through central Oregon was fur-trader Peter Skene Ogden. The son of Isaac Ogden of Montreal, Chief Justice of Canada, he might have pursued a career in law, except that he had a high falsetto voice. Instead, he headed west for a life of adventure. He passed through central Oregon heading south in 1813, as attested by a rock he inscribed that year near Tumalo. He returned again in December 1825 with Finian McDonald and Thomas McKay, trappers from the Hudson’s Bay Company out of Ft. Vancouver. However, botany was not one of his interests and he left no record of the plant life in winter.

In 1810-12 the young British printer-turned-botanist, Thomas Nuttall, collected in North America and returned to England before the War of 1812 made such travel impossible. He published his *Genera of North American Plants* in 1818, fueling the interest of Europeans in North American plants (McKelvey 1955). In 1819-20, he was the first to make plant collections in what are now known as Arkansas and Oklahoma and in 1834-36 he joined an expedition to the California coast organized by Nathaniel Wyeth, a Massachusetts ice merchant with visions of becoming a fur baron (Townsend 1999). Wyeth traversed northern Oregon during the 1834-35 expedition, and again in 1843, a winter journey with no significant botanical notations (McKelvey 1955). Neither Wyeth nor Nuttall reached central Oregon.

From 1820-1830, the botanist Karl Andreas Geyer collected nearly 600 plants in the Rocky Mountains and westward, but not in central Oregon. In 1820-40 John Scouler (1825) collected along the Lower Columbia River

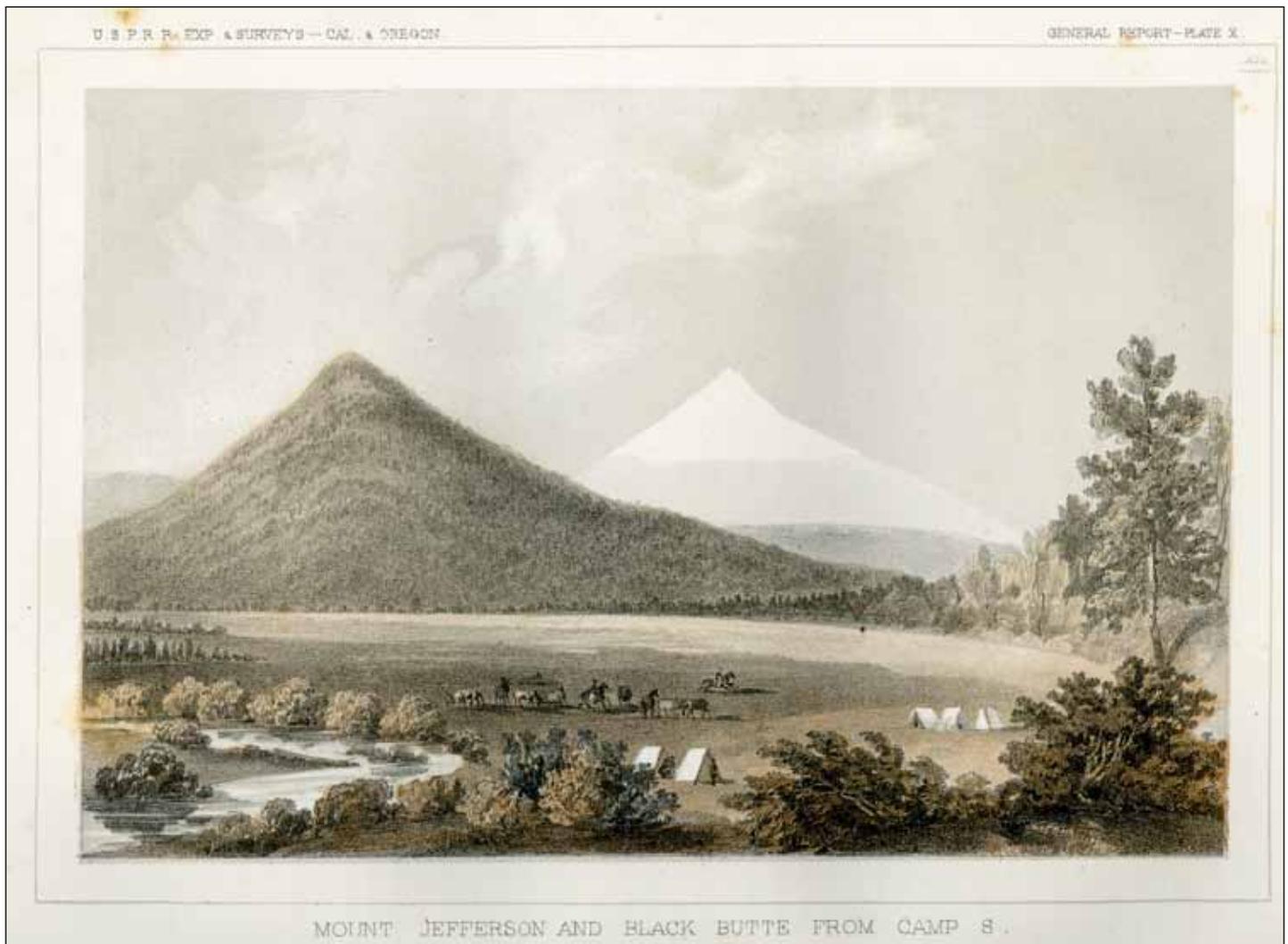
and the North Pacific Coast. Meredith Gairdner (1833-35) collected from the Columbia River to Ft. Walla Walla, Washington. Richard Brinsley Hinds (1839) collected along the Columbia River, and south down along the Oregon and California coasts to San Francisco.

Scottish botanist David Douglas was dispatched to the United States as a botanical collector in 1823 after a promising apprenticeship to the Botanical Gardens at Glasgow University where Sir H. J. Hooker was Professor of Botany (Carmany 1871). It was Hooker who named Douglas to the rank of Explorer for the Horticultural Society in London. Douglas' second trip took him to the Columbia River (1824-27). Using Fort Vancouver as a home base, he took three trips during the summers: one to Fort Dalles, another to Multnomah Falls, and a third to the grand rapids of the Columbia, now called Celilo Falls. Over a two-year period, he sent home hundreds of specimens. The closest he came to central Oregon was a trip south through the Willamette Valley to the Umpqua River, where he collected the sugar pine (*Pinus lambertiana*) cones that he sought (Harvey 1947).

Emigrants, Missionaries, and US Government-Sponsored Exploratory Expeditions (1843-1860)

“Although, over the years, the United States government had permitted plant collectors to accompany some of the expeditions which it has sent into the field, it had not approached the problem of scientific participation (botanical participation certainly) in what might be called a generous spirit.” (McKelvey 1955)

In 1843 American settlers started swarming to the Willamette Valley along routes shown on early maps as the Emigrant Trail. They diligently sought and claimed the fertile arable lands in the floodplains of western Oregon. The US Government responded to the westward flood of emigrants with a series of exploratory expeditions to determine potential routes for transcontinental railroads. The first was in 1843-45, led by John C. Frémont (son-in-law to Senator Thomas Hart Benton), who explored and mapped routes from Oregon into California. By joining an organized group of emigrants, his expedition traveled safely with a herd of cattle, 14 wagons of supplies, and



Mount Jefferson and Black Butte from Camp S. Here the Pacific Railroad Survey Expedition of 1855 is camped at Indian Ford Meadow. Lithograph by John J. Young, as Expedition artist. (Abbot 1857, between pages 90 and 91.)

one cast iron cannon, which he abandoned somewhere east of Fort Rock (Dye 1906). Though Frémont was not a trained botanist, he offered to collect plants during his western explorations. He was the first to traverse and map the passage from the Columbia River through the Great Basin, where knowledge of the location of water was critical. He was in eastern Oregon mostly in the late fall and early winter, as shown by places he named, such as Christmas Valley and Winter Ridge (Stewart 1999). During that trip, Frémont also named Abert Rim and Abert Lake on December 20, 1843, after Colonel John James Albert, his commanding officer (Preuss 1958). Frémont was faithfully accompanied by Charles Preuss, a German cartographer, and their efforts led to much more accurate mapping of the western lands. Preuss, however, spared nothing in his diaries, calling Frémont “moody and temperamental” (Preuss 1958).

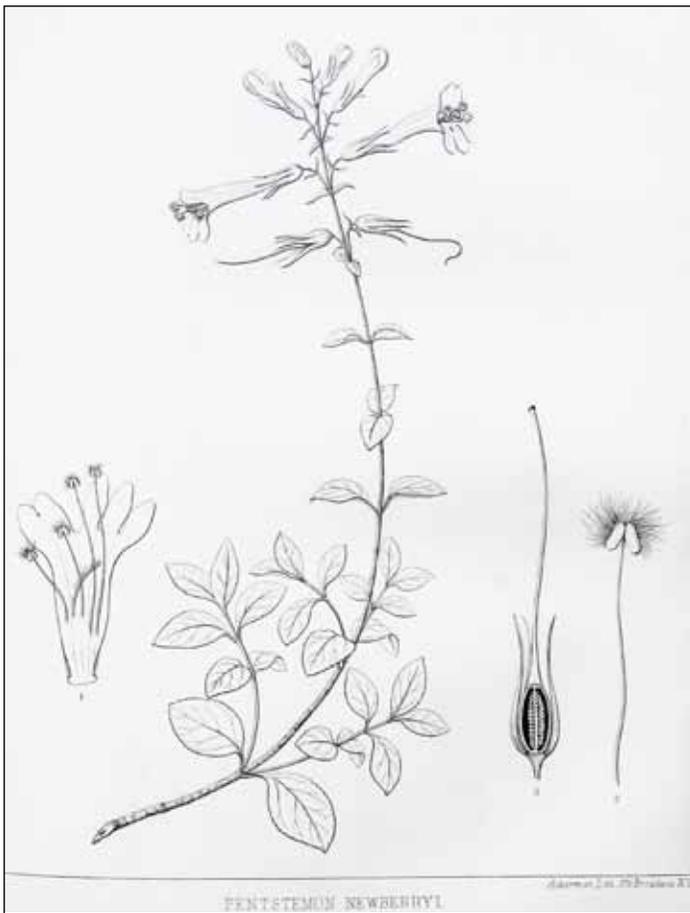
McKelvey’s voluminous work ends with 1850. If she had continued the history for another fifty years, she would have written about the early botanical exploration of central Oregon.

Newberry and Pacific Railroad Survey of 1855

After 1850, Congress authorized an appropriation into the War Department budget to allow Secretary of War Jefferson Davis to send out surveying parties into the pre-Civil War western frontier (Carmany 1871). These Pacific Railroad Surveys were launched to ascertain the best route westward (and one route northward) for railroad transportation between the Atlantic and Pacific Oceans. Published between 1853 and 1858, they produced twelve volumes of maps and reports on botany, paleontology, geology. From the perspective of central Oregon, the most important is Volume VI, printed in 1857, which covered an anticipated railroad route from Sacramento north along the east side of the Cascade mountains to the Columbia River. This exploration was led by U. S. Topographical Engineer, Lieut. R. S. Williamson, with Lieut. Henry L. Abbot as second Lieutenant. The report provided a rich compendium, including a complete plant list for all the specimens collected by Dr. John Strong Newberry, a physician with a strong background in geology and botany. He was a visionary of his time, as seen in his 1855 quote: “We



Cañon of Psuc-see-que Creek near Camp 41A. From Newberry’s geology report: “These tufaceous strata are, in many places, cut by the Des Chutes and its tributaries to the depth of more than a thousand feet without exposing the basis on which they rest.” Lithograph by John J. Young, Expedition artist. (Abbot 1857, between pages 84 and 85).



Newberry penstemon illustrated by John J. Young, Expedition artist. Lithograph appears between pages 94 and 97 in Abbot (1857).

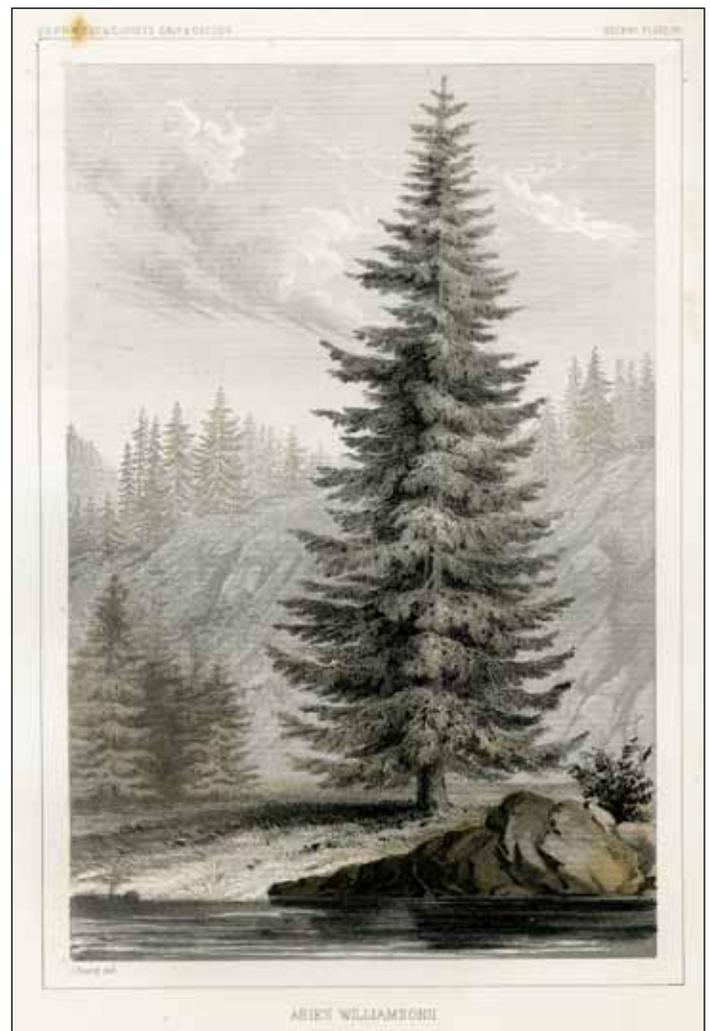
are charged with understanding... that which has controlled the radiation of species from their original centers of creation" (Abbot 1857).

Despite incredible hardships, the surveyors from the Railroad Survey entered Oregon Territory on August 9, 1854 following "the old Oregon [Indian] Trail which was very distinct." They reached Fort Dalles on September 10, where "in the foreground, our national flag was waving over the little town of the Dalles" (Abbot 1857). Mostly following John Frémont's 1842-44 route in reverse, the party frequently mentioned that the "regions of this route are unsettled...and the country is unfitted to support a civilized population" (Abbot 1857). They further noted that "The route down the Des Chutes valley to the Columbia River is considered utterly impracticable for a railroad" (Abbot 1857). Henry L. Abbot's personal journal from that trip describes the many side trails that the group examined to find a final route for the railroad to reach Fort Dalles. In doing so, they crossed the Cascades along what is now Willamette Pass, as well as both north and south of Mt. Jefferson, and also south of Mt. Hood. Food and water were scarce; they resorted to fishing, roasting snakes, and at times, feeding their hard bread to the mules when grass was unavailable (Sawyer 1932).

Newberry, even with his deep interest in geology, found the ubiquitous lavas boring, using the term

"exceedingly monotonous" numerous times to describe the volcanic landscape. O'Connor (2018) found it ironic that the Newberry Volcano and Newberry National Volcanic Monument in central Oregon were named for him, when Newberry himself appeared more interested in fossils and the effects of water carving the landscape than in lava flows and ashfalls.

Despite the lateness of the season, Newberry was relentless in his pursuit of botanical specimens, gathering from the lowest banks of the Deschutes River to the alpine regions of the Three Sisters and Mt. Jefferson. Finding yet a new specimen, Newberry named a tree for the group's leader *Abies Williamsonii* [*Tsuga mertensiana*], stating that it "rises in denser and more symmetrical cones than any other conifer" (Abbot 1857). His description is accompanied by one of the many lithographs created by expedition artist John J. Young, whose work in the botany section alone includes 16 full-page plates and 26 individual



Newberry encountered mountain hemlock, which he named *Abies Williamsonii*, near Mt. Hood: "I have given this beautiful tree the name of the commanding officer of the expedition, as a slight acknowledgment of the unremitting kindness which I received in my official capacity while connected with the party." Lithograph by John J. Young, Expedition artist. (Abbot 1857, between pages 54 and 55).

sketches. The index to the Botanical Report is particularly useful and lists over 600 individual species by the region where they were first or mostly found (Abbot 1857).

John Bernard Leiberg in the High Lava Plains

John Leiberg (1853-1913) was the first to come to central Oregon exclusively for botanical exploration. Unlike previous explorers, he wasn't tied to another project and having to meet someone else's schedule. Born in 1853 in Malmö, Sweden, Johan Bernhard Liberg was the son of a sea merchant. In 1868, when he was 15 years old, he emigrated to the United States and changed his name to John Bernard Leiberg. Despite having little formal education, he became an avid plant collector, publishing his first plant collections at age 17. He came west with his future wife, physician Carrie Marvin, and homesteaded at the south end of Lake Pend Oreille in the Idaho Panhandle.

There he labored as a prospector from 1885-92 while continuing his horticultural collections. He developed both a special interest in mosses and a connection with Elizabeth Britton at the nascent New York Botanic Garden that led to seasonal field work.

Following a successful US Department of Agriculture plant survey of eastern Washington's Columbia Basin over the summer of 1893, Leiberg was re-hired for a similar excursion in eastern Oregon. Leiberg differed from early botanists who focused on trees, shrubs with edible berries, and showy wildflowers, all of which would be of interest to horticulturists. Leiberg shared Newberry's interest in geology, but while Newberry's aim was to learn about the evolution of species over space and time, Leiberg had an eye for the productivity of forests and grazing lands. Thus, Leiberg collected a variety of grasses and sedges; he also was passionate about mosses. He collaborated with Frederick Coville, Chief Botanist for the US Department of Agriculture at the Smithsonian Institution, and helped lay the groundwork for a National Forest system. Following the Homestead Act of 1862, many Euro-Americans settled in central Oregon; the towns of Prineville and Heppner were founded in 1877. In his botanical surveys of eastern Oregon (1894 and 1896), Leiberg consulted frequently with local residents.

When Leiberg came to central Oregon in 1894, he traveled by train south to Heppner, Oregon, where the railroad ended. At that point he loaded the sturdy wagon he had ordered from Portland designed to cover rugged ground carrying a ton and a half of gear. Even so, he shipped half of his collecting supplies ahead to Prineville. As a solo explorer, he hired a local man as camp tender. His route south to Klamath Falls retraced parts of Newberry's route near Newberry Crater and Walker Rim.



Threadleaf fleabane (*Erigeron filifolius*). John Leiberg collected this species at Pine Creek in Wheeler County on 7 June 1894.



John Leiberg collected tall woolly buckwheat (*Eriogonum elatum*) on top of Grizzly Mountain between Prineville and Madras on September 2, 1894 on his return trip from exploring the High Lava Plains.

We can track Leiberg's route by his plant collections as well as a surviving plant catalog and extensive correspondence with Frederick Coville. The first week of May he collected near Lexington in Morrow County. The next specimens come from near Lone Rock in Gilliam County, then from Fossil, Crown Rock and Pine Creek in Wheeler County during the first week of June. He picked up some plants at Hay Creek in Jefferson County before setting up a camp in mid-June near Grizzly Butte between Madras and Prineville (Crook County), where he collected 61 specimens. He spent the rest of the summer exploring the high lava plains, starting at Farewell Bend where he collected 36 specimens, including *Antennaria geyeri* on July 13 and *Calamagrostis stricta* on July 16. He collected at Paulina Lake in Newberry Crater and followed the old wagon road south from Prineville through Button Springs to Silver Lake, where he collected 16 specimens. After collecting in the Klamath Basin as far north as Walker Ridge, he returned by the same route, collecting *Eriogonum elatum* at the top of Grizzly Butte on September 2, 1894.

In a letter back to Coville on June 22, 1894, Leiberg wrote: "We are now fairly upon the desert of E Oregon. It is most emphatically not a desert however. Except in the scarcity of surface water." He noted that while all the precipitation draining from the upper elevations sank into the ground, the coarse pumice soils held a vast volume of water. The spring of 1894 had been "uncommonly wet," and Leiberg commented that he "could dig down a few inches into the pumice and almost press the water out of the mass with his hand." His insight into the nature of the shrub steppe is in sharp contrast to that of the Newberry and the Railroad Survey party, who called the area "unsuited to support a civilized population," or emigrants in search of farmland, who called it "a desert." Appraisals of the terrain were necessarily biased, depending always on "the eye of the beholder."

Leiberg returned in 1896 to explore the Basin and Range habitats of southeastern Oregon, where he collected the type specimen of *Poa leibergii* in the Barren Valley on May 31. He passed through central Oregon again that fall as he returned home (to northern Idaho) from Crater Lake. His labors in Oregon left a legacy of nine new plant species bearing the name *leibergii*. As a bryologist, forester and botanical explorer, his travels brought him in touch with many of the important explorers of the West. He contributed many publications related to botany and geology, forestry. He died near Eugene, Oregon, at the age of 60 (Nisbet 2018).

The Perils of Being a "Botanist in the Wilderness"

Botanical work is highly seasonal, when plants are in flower or fruit. Few of the early collectors worked in ideal conditions or collected in a methodical manner. Asa Gray, writing to missionary Spaulding in the late 1830s, specified that collecting paper be "soft, bibulous" and "plants should be dried between numerous thicknesses." Finding



Leiberg collected Alaska oniongrass (*Melica subulata*) at Paulina Lake on July 27, 1894. Image courtesy of Oregon State University Herbarium.

or carrying blotter paper with which to press the plants and a sufficiently stiff cover for preserving the dried plants was fraught with difficulty (McKelvey 1955). In a land of plentiful rain, David Douglas found that the making of his herbarium necessitated much drying and changing of paper, not once but many times—preferably daily—until the plant was in proper condition for shipment. Newspapers, standard material for modern collectors, did not exist in the Pacific Northwest in Douglas' day, and great quantities of paper had to be brought from England and a certain amount carried wherever the collector went. On Douglas' trip into the interior in March 1826, he records that "By the kindness of Mr. McLoughlin I was enabled to pack up thirty quires of paper weighing 102 lbs., which, with the whole of my other articles, is far more than I could expect when the difficulty and labour of transportation is taken into consideration" (McKelvey 1955). Many times, after the effort of drying the specimens was successful, all



Newberry collected *Penstemon newberryi* A. Gray near Mt. St. Joseph's in California, where it formed broad tufts on rocks. Isotype specimen image courtesy of the New York Botanical Garden.

was lost in a subsequent accident. On a later trip north up to the Fraser River, Douglas' canoe overturned and was trashed, along with all 400 specimens he had collected. He walked back to Fort Vancouver and finally was able to board a boat home to Scotland. In a provisioning stop at the Sandwich Islands (now Hawai'i) he fell into a 'bullock trap' and died. Twenty years later, in 1857, John Strong Newberry, in his survey reports, was still bemoaning Douglas' premature death.

In the 1820s, botanist Thomas Drummond traveled to Canada and to eastern portions of Texas. He leaves a diary of the ardors of being a botanist in the wilderness, describing his daily collection schedule: "*The plan I pursued for collecting was as follows. When the boats stopped for breakfast, I immediately went on shore with my vasculum... taking care to join the boats at their encampment for the night. After supper, I commenced laying down the plants gathered in the day's excursion, changed and dried the papers of those collected previously. Which occupation generally occupied me until day-break.*" He did this daily until they reached Edmonton House in Canada, 400 miles distant (McKelvey 1955).

In his *Narrative of a Journey Across the Rocky Mountains to the Columbia River*, John Kirk Townsend related in his diary of 1834 the difficulties in collecting scientific

specimens while on the march. He and Thomas Nuttall often traveled ahead to gather plants before "they would be crushed by the hooves of the horses" as their caravan consisted of 70 men and 250 horses, followed by a band of missionaries and their herd of horned cattle (Townsend 1999).

Abbot related the trials of overland travel through the broken volcanic landscapes of central Oregon (both the arid and the heavily forested areas) in 1854; after a hard day's bushwhacking, he commented, "We were all fully convinced that wandering amid 'forest primeval' in poetry, and among the Cascade Mountains, are two essentially different things" (Abbot 1857). His comment gives us an 1800s version of contrasting virtual reality with actual conditions.

Even as late as the 1890s, botanical collection was arduous work, as evidenced by Leiberger's sturdy wagon built to carry a ton and a half of equipment over rugged ground. Rail service did not reach Bend until 1911; Hepner was the closest he could travel by train to Farewell Bend. (Even today, the closest passenger service by rail is 75 miles south of Bend in Chemult.) The condition of wagon roads at the time left much to be desired, and some places were treacherously steep, such as the Cow Canyon grade south from Shaniko. As always, wet weather confounded efforts to keep specimens dry. By chance, the year that Leiberger collected in the "desert" of central Oregon was one with above normal precipitation, in which he was "treated to rainstorms every other day during the month of June."

Summary

As demonstrated in central Oregon, botanical exploration in the West tended to occur with European exploration and settlement. Thus, because botanists relied on fur trading posts for supplies and support, they explored coastal areas and along the water transportation routes first. Next in line were locations near military forts, missions, and prime agricultural areas like the Willamette Valley, and adjacent to railroad transportation. Areas lacking these attributes, especially with rugged terrain, tended to remain unexplored by botanists until hardy emigrants built wagon roads and founded their ranches.

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Susan E. Schneider, daughter of Richard and Marjorie Ettinger, was born in Chicago; she moved to Bend with her parents 6 years later (in 1954). She enjoyed the life of an active central Oregon child of the time: horseback riding, skiing, birding, canoeing and traveling throughout the West on family trips. She attended college in Portland, Oregon, and spent her senior year abroad, studying in Austria. After college, she returned to Bend in 1977 with her young family. Shortly thereafter, she began volunteering at the new High Desert Museum. During her time at the Museum she earned her MScEd degree from an OSU program offered in Bend at the time. After fifteen years at the Museum, six of which she was the Curator of Exhibits, she took leave to write a book, *Native Arts of the Columbia Plateau*. Published by University of Washington Press in 1998, the book features donor Doris Bounds and her Native American collection. Schneider's other publications include an article with her mother in *Kalmiopsis* in 1995 and multiple articles about the Doris Bounds collection in local and international magazines. Next, Schneider led the funding for the remodel of Reid School and the Deschutes Historical Society. Once those projects were completed, she became COCC Foundation's Executive Director for its 50th anniversary campaign. Her last venture was to oversee the opening of the Bend office of the Oregon Community Foundation, where she was Charitable Gift Planner for nearly eleven years. She has served on the boards of the Deschutes Historical Society and the Museum at Warm Springs. Since retiring, she continues to research the historical context for scientific explorations of central Oregon during the past two centuries.

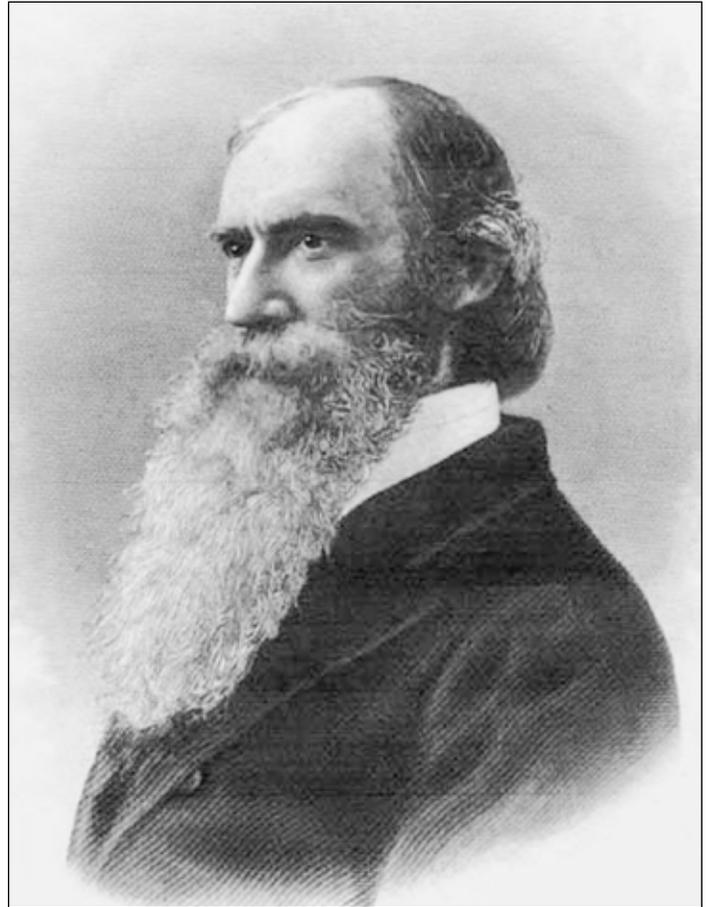
John Strong Newberry, MD (1822-1892)

Stuart G. Garrett, MD
Bend, Oregon

At the age of 33 John Strong Newberry became assistant surgeon and geologist on the 1855 War Department railroad survey. Led by Williamson and Abbot, the mission of the expedition was to find a location for a railroad link between the San Francisco Bay area and the Columbia River, tying together the western termini of the proposed Transcontinental Railroads between the San Francisco Bay area and the Columbia River. The connection was finally completed in 1927, crossing the Cascades just south of the current highway across Willamette Pass. At the time it was called Pengra Pass.

As one of the first well-trained scientists to travel through much of Oregon, Newberry made many discoveries in botany, paleontology and geology, especially in eastern Oregon. He was the first scientist to accurately interpret the drowned forests of the Columbia River as being due to landslides damming the river. (First noted by Lewis and Clark in 1807, these submerged snags are in the Columbia River between Cascade Locks and The Dalles.) Newberry was one of the first two geologists to recognize the power of water erosion in sculpting landscapes, then known as fluvialism (O’Conner 2018). He correctly observed and interpreted glacial activity in the Cascade Mountains: “All the projecting points and ridges of the older trap rock were worn down, smoothed off, and cut by deep furrows, which now pointed northeast toward the centre of the mountain mass formed by the Three Sisters ... there is little doubt that all this surface was once covered, not simply by lines of ice following the valleys, but by a continuous sheet.” He corresponded with Thomas Condon at the fledgling University of Oregon, and described many of Condon’s fossil plants in the paleontological literature, including the Bridge Creek Flora (McCornack 1928). Newberry also lent financial support for some of Condon’s collecting trips (Orr 1987).

Although this article emphasizes his time in Oregon, Newberry’s distinguished career spanned the width of North America, and encompassed a remarkable breadth of human knowledge: geology, paleontology, physiology, zoology, botany, and archaeology. For example, he conducted pioneering studies in the Grand Canyon; he was the first to propose a glacial causation for the Great Lakes. Conscientious and methodical, Newberry never published in haste simply to claim priority. He always searched diligently for previous work and compared his finds with those of other students in the field. He was clear and direct in his writing style and firm in his opinions.



Portrait of John Strong Newberry. Photo from Wikipedia Commons, cited as article by Fairchild 1893 as original source, Public Domain, photographer unknown.

Goetzmann (1979) noted that “Of Newberry it might be said that more than any other scientist since Fremont he had opened up new and unknown country to the civilized world.”

The Early Years

John Strong Newberry was born in Windsor, Connecticut on December 22, 1822. His father, Henry Newberry, came from early New England settlers. The founding ancestor of the Newberry clan in America was Thomas Newberry who settled near Dorchester, Massachusetts in 1630. Thomas’ widow moved to Windsor, Connecticut in 1636 and the family resided there for nearly 200 years and became locally prominent. Thomas’ son Benjamin

was one of seven men to whom the town of Windsor was patented in 1685. Benjamin's grandson, General Roger Newberry, was one of the proprietors of the Connecticut Land Company, which bought land from the State of Connecticut that eventually became the northern counties of Ohio. Known as the Western Reserve, coal deposits made this strip of land a valuable investment. Many of the early settlers in this area came from Connecticut. These rich coal deposits near the future city of Cleveland, Ohio, played an important role in John Newberry's life.

When John was an infant, his father moved the family, including John's mother (Elizabeth Strong) and nine older brothers and sisters, to the northern part of Ohio, where they settled at the falls of the Cuyahoga River. Four years later, in 1828, the coal mines opened near Talmadge, Ohio. Dr. Newberry often recalled with great pleasure that his father mined and transported the first load of stone (bituminous) coal for the commercial market in Cleveland.

Newberry's surroundings strongly influenced the future scientist. Young John Newberry spent many hours in his father's coal mines, exploring the fossil plants there. Prior to entering college, he made a collection of the living plants in the area, entitling it "A Catalogue of the Plants of Ohio." He filled a large room in his father's house with fossils from the surrounding area. In 1841 James Hall, a geology professor from New York, stayed at the Newberry home and studied the area around the Falls of the Cuyahoga. Nineteen-year-old John was his guide. Hall had a strong influence on John, showing him the importance not only of the ferns in the coal shales of his father's mines but



Newberry's gentian (*Gentiana newberryi*). Photo by Gerald Carr.

also of the mollusk remains in the local limestones. As the 19-year-old student showed the 30-year-old professor around, a friendship was kindled which would last for over 50 years. The two men remained lifelong colleagues and supporters. Hall's visit inspired Newberry to pursue naturalist studies.

Newberry graduated from the Western Reserve University at Hudson, Ohio, in 1846. In 1848 he took a medical degree at the Cleveland Medical School and married Sarah Brownell Gaylord. After his training in Cleveland he added to his medical skills by studying in Paris, France for two years. While in Paris he met many of the world's most famous geologists and became proficient in French. He studied as a botanical student under Brongniart. While abroad, he wrote his first paleontology paper, which was a description of a fossil fish locality at Monte Bolca, Italy, and was published in 1851.

In 1851 he returned to Cleveland and began the practice of medicine. His practice flourished as the community recognized him as a healer of uncommon skills. During this time, he continued his avocational interest in natural history. Indeed, after several years he found himself tiring of his medical practice and longing for a stronger connection to his first love, natural history. Using pressure from his academic contacts and some help from his previous mentor, Professor Hall, he obtained the coveted position of scientist and physician to the Pacific Railroad Survey.



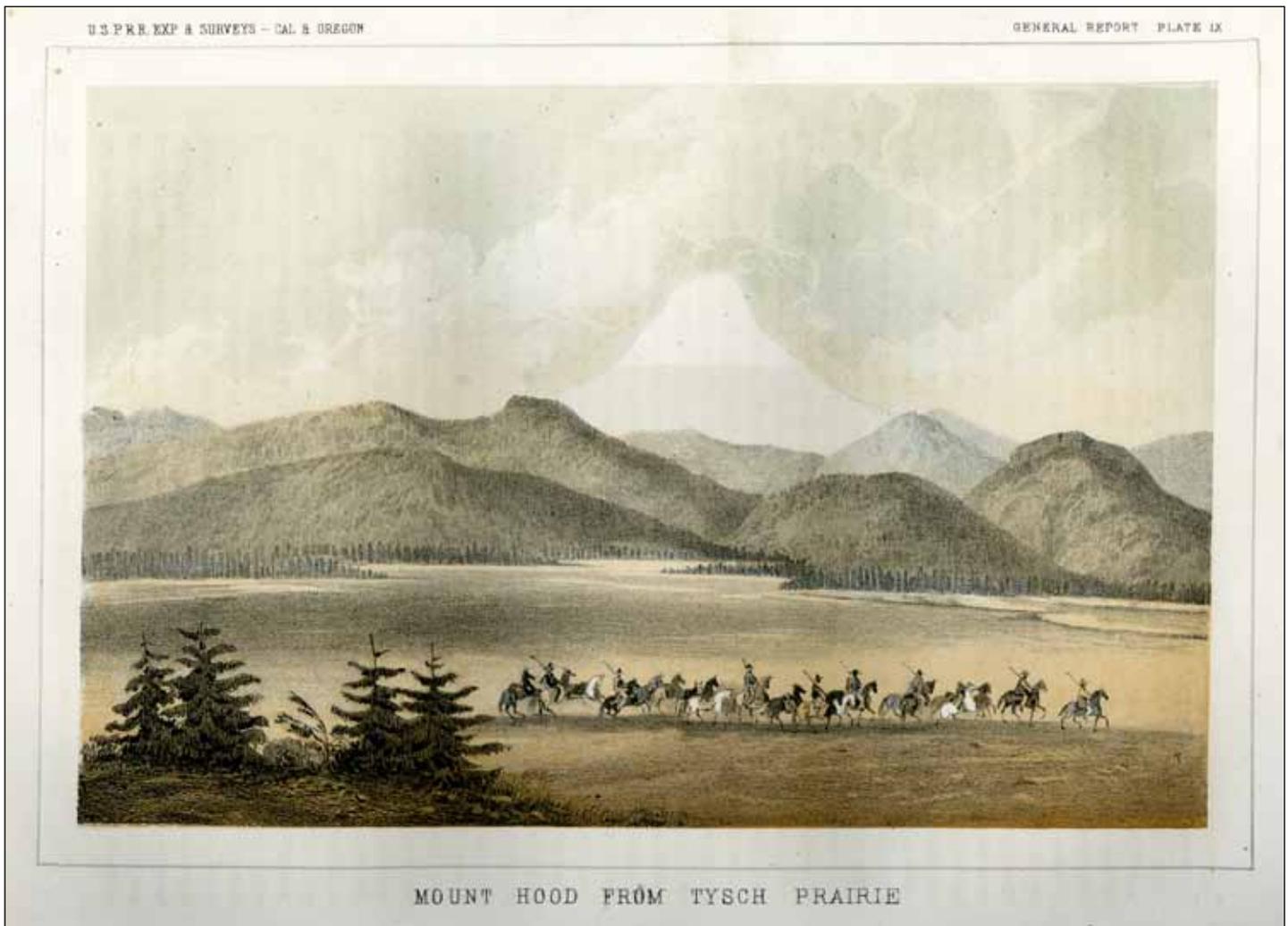
Newberry fleecflower (*Polygonum newberryi* Small, now *Aconogonon davisiae* var. *davisiae*). Photo by Paul Slichter.

The Railroad Surveys

The expedition was under the joint leadership of Lieutenant Robert Stockton Williamson and Lieutenant Henry Larcom Abbot. Leaving the San Francisco Bay area in May of 1855, the 28-man party traveled north through the Central Valley of California and arrived in the Klamath Basin of southern Oregon in August. They worked their way north along Klamath Lake and entered the drainage of the Little Deschutes River near the present town of Crescent. Along the way Newberry made geologic and botanic observations: *"In our travels, the general aspect of vegetation is made up of three distinct elements. Of these the first is presented by the grassy plains which border the streams flowing down from the mountains. On these surfaces grow a considerable variety of annual vegetation, some in its general character not unlike that of the Sacramento Valley. The second of these botanical phases is that of the sagebrush plains. These are surfaces on which little or nothing else except clumps of Artemisia will grow. The third is formed by forests of yellow pine which apparently finds on these arid surfaces its most congenial habitat. It sometimes happened to us that during a whole day's ride we were passing through a continuous forest*

of these yellow pine trees in which scarcely a dozen distinct species of plants can be found." (Newberry 1857)

Exploring for possible crossings of the central Oregon Cascades, the group passed near Black Butte and entered the Metolius River drainage. From there they traveled along the Deschutes River near Warm Springs. On September 6, Williamson left Camp 40 for a second exploration across the mountains; his party included Sheridan, Fillebrown, Newberry and mounted soldiers (dragoons). Abbot started with his small party for Fort Dalles, and the main body of the escort remained in Depot camp. Williamson's party crossed the Cascades between the Three Sisters and Mt. Jefferson, finding the ascent steep, impractical for a railroad. They reported that prospects appeared more favorable to the north and east, that by going northwest from Camp I on Whychus Creek, and skirting the northern base of Black Butte, the divide could be reached at a much lower point and the long sweep would decrease the grade. Later in September Williamson's party crossed the Cascades between the Three Sisters and Diamond Peak, arriving in the Willamette Valley. Abbot returned from The Dalles with supplies and his group crossed the Cascades between Jefferson and Hood during



Mount Hood from Tysch Prairie. Lithograph by John J. Young, Railroad Survey Report (Abbot 1857).



Newberry's cinquefoil (*Potentilla newberryi*). Photo by Gerald Carr.

a period of heightened hostilities with the Indians. In June of 1855 Joel Palmer, Superintendent of Indian Affairs for the Oregon Territory, had met in council with the Indian nations of the Mid-Columbia Region to establish an Indian reservation which would “get the Indians out of the way of American settlement.” In the Treaty, the Warm Springs and Wasco bands gave up ownership rights to a ten-million-acre area, which they had inhabited for over 10,000 years, obtaining exclusive rights to 640,000 acres. When a group of miners searching for minerals and a War Department Railroad Survey Expedition entered the treaty area, it appeared that the Americans intended to violate the agreement. Most likely the Expedition leaders did not see it that way and were just looking for a way across the mountains. A young Indian risked his life to guide the group safely across the mountains through a little-known pass. (This route is probably Abbot Road and Abbot Pass located on the Mt. Hood National Forest south of Highway 26.) From there, this party made its way to Fort Vancouver. Newberry travelled with Abbot's group northward to the Army outpost at

The Dalles, then on to Fort Vancouver. Despite the unrest in the Native American populations in Oregon, most of the group traveled south through the Willamette Valley to San Francisco. Newberry, however, went down the Columbia and met the rest of the party in the Bay Area in January of 1856.

The year after he returned from this expedition, Newberry was the geologist on the Colorado Exploring Expedition (Ives Expedition), which explored the lower Colorado River December 1857-58. He was the first trained geologist to visit the Grand Canyon and was the first person to recognize that this great tear in the earth was the result of erosion by running water. In 1859 he served as naturalist on the San Juan (Macomb) Expedition, which traveled to southwestern Colorado and the San Juan River

and adjacent parts of Utah, New Mexico, and Arizona (July-October). This report was finished in 1860 but the outbreak of the Civil War delayed publication until 1876.



Gnome plant (*Hemitomes congestum*). Photo by Paul Slichter.

Plants named for Newberry:

Abutilon newberryi S. Wats. (Malvaceae) Newberry's velvetmallow (syn. *Horsfordia newberryi* (S. Watson) A. Gray) California and Arizona.

Aconogonon davisiae (W.H. Brewer ex A. Gray) Soják (Polygonaceae) Newberry's fleecflower (syn. *Polygonum newberryi* Small) grows in the Cascade Mtns., Oregon and Washington. Williamson Expedition.

Astragalus newberryi A. Gray var. *newberryi* (Fabaceae) Newberry's milkvetch (syn. *Xylophacos newberryi* (A. Gray) Rydb.) The holotype was collected by Newberry at Camp 74, n. borders of Arizona in 1858. Macomb Expedition.

Astragalus newberryi var. *aquarii* and *escalantinus* A. Gray (Fabaceae)

Chrysothamnus newberryi Rydb. (Asteraceae) Newberry's rabbitbrush. Mexico.

Coreopsis californica (Nutt.) Sharsm. var. *newberryi* (A. Gray) E. Murray (Asteraceae) Newberry's tickseed (syn. *Leptosyne newberryi* A. Gray) California.

Cymopterus newberryi (S. Watson) M.E. Jones (Apiaceae) Newberry's springparsley (syn. *Coloptera newberryi* Coult.; *Peucedanum newberryi* S. Wats.; *Ferula newberryi* S. Wats.) Utah and Arizona.

Gentiana newberryi A. Gray (Gentianaceae) Newberry's gentian (syn. *Pneumonanthe newberryi* Greene; *Dasystephana newberryi* Arthur)

Gentiana newberryi A. Gray var. *newberryi* sensitive species in Oregon Cascades.

Gentiana newberryi var. *tiogana* (A. Heller) J.S. Pringle, Sierra Nevada, CA.

Hesperoyucca newberryi (McKelvey) Clary (Asparagaceae) (syn. *Yucca newberryi* McKelvey) now endemic to Arizona. Collected by Newberry 3 April 1858.

Hymenopappus newberryi (A. Gray) M. Johnston (Asteraceae) Newberry's hymenopappus. (syn. *Leucampyx newberryi* A. Gray) Gray named it in 1874. Colorado, New Mexico endemic.

Hemitomes congestum A. Gray (Ericaceae) Gnome plant. (syn. *Newberrya congesta* Torr. ex A. Gray; *Newberrya spicata* A. Gray; *Newberrya pumila* (Greene) Small; *Hemitomes pumilum* Greene; *Newberrya longiloba* Small). The type specimen was collected in 1878 by V. Rattan in Humboldt Co., California; taxon reference for *Newberrya spicata* A. Gray Proc. Amer. Acad. Arts 1880. 15:44. "Known from Dr. Newberry's advanced and imperfect specimens from Des Chutes valley in the Cascade Mountains, S. Oregon"

Penstemon newberryi A. Gray (Plantaginaceae) Mountain pride. In cultivation. Three

recognized varieties *P. n.* var. *newberryi*, A. Gray, *P. n.* var. *berryi* (Eastw.) N.H. Holmgren and *P. n.* var. *sonomensis* (Greene) Jeps. named by Dr. Asa Gray in 1857 in honor of Dr. J. S. Newberry, a member of Lt. Williamson's Pacific Railroad Survey party. An early synonym was *P. menziesii* var. *newberryi* A. Gray

Physaria newberryi A. Gray (Brassicaceae) Newberry twinpod. (syn. *Coulterina newberryi* Kuntze) Report on the Colorado River of the West, Ives 1861. Arizona, New Mexico, Nevada, Utah.

Potentilla newberryi A. Gray (Rosaceae) Newberry's cinquefoil. This remains an accepted name. Grows in northern California, Nevada, southeastern Oregon. Williamson Expedition.

Vesicaria newberryi A. Gray (Brassicaceae) Status of this taxon is currently unresolved; it is neither an accepted name nor a synonym. Ives Expedition Published in Colorado Expl. Surv. (1861) Bot. 6.



Type specimen for Newberry fleecflower, collected by Dr. Newberry on scoria, near the snowline (7000 ft.), Crater Pass of the Cascade Mts. Sept. 1, 1855. Image courtesy of the New York Botanical Garden.

Newberry's botanical observations in the Deschutes Basin and the Cascades

As botanist of the expedition, Newberry wrote the 102-page Botanical Report in the Railroad Survey (Abbot 1857), divided into two chapters: "Geographical Botany" and "General Catalogue of the Plants Collected on the Expedition." The Catalogue included Exogenous Plants by Asa Gray, John Torrey and J.S. Newberry, followed by Endogenous Plants (John Torrey), Mosses and Liverworts (W.S. Sullivan) and Lichens (Edward Tuckerman). The bulk of the collections were "exogenous," with only 44 species of monocots (endogenous plants), which included cattails, beargrass, trillium, mariposa lilies, veratrum, brodiaea, orchids, iris, sedges, rushes and grasses. Interestingly, some of the names are "new" to us: for example, *Dichelostemma*, *Melanthaceae*. Newberry sent his botanical specimens to Harvard University, where Dr. Asa Gray named *Gentiana newberryi*, *Newberrya spicata*, and *Penstemon newberryi* for the explorer. In addition to the geology and botany reports, Newberry

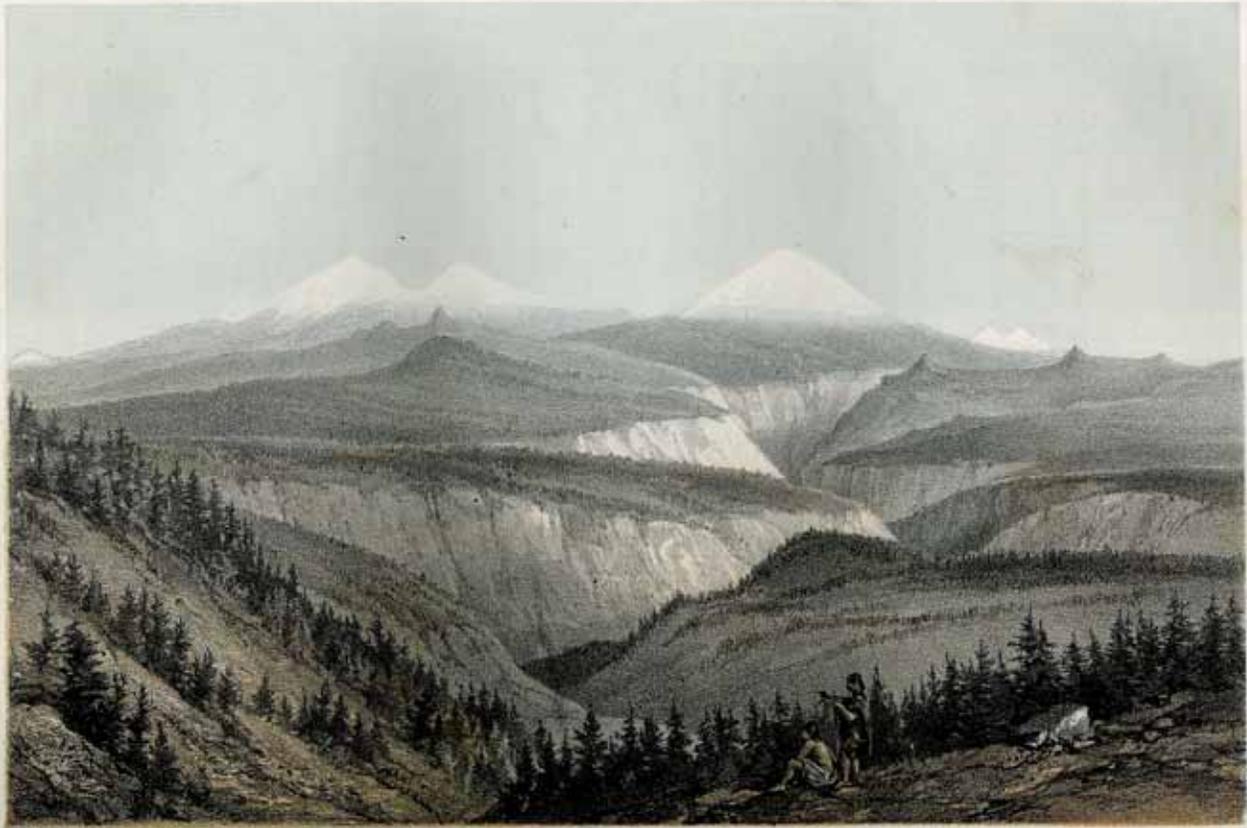
also reported on the birds and mammals. The impressive illustrations of landscapes and plants in Newberry's reports were created by Mr. Young, who suffered from "severe attacks of intermittent fever... while deprived of the services of a physician" (Abbot 1857). Done under the direction of the War Department, the Railroad Survey Expedition serves as an early example of botanical work accomplished under a "Defense Contract."

Looking for a potential route for the railroad, the exploratory party crossed and re-crossed the main crest of the Cascades in the vicinity of the Three Sisters, giving Newberry an opportunity to study the different belts of vegetation visible on the mountainsides. He was skilled at observing the botanical landscape, noting that the Deschutes Basin had the same general characteristics as the Klamath Basin, but as they traveled north towards the Columbia River, "the forest of yellow pines gives way to scattered trees of the western cedar [Juniperus occidentalis]. The plain bordering the Deschutes has an altitude of about 4,000 feet and is covered with a continuous forest of yellow pine. Along the streams coming down from the



Dwarf hulsea (*Hulsea nana*). Photo by Paul Slichter.

mountains are a few trees of the western larch. A few hundred feet up the mountain side the yellow pine is joined by the sugar pine [Pinus lambertiana] and Pinus contorta. At the height of 6000 feet the trees which I had mentioned gave place to white bark pine which then rises to the line of perpetual snow. The undershrubs in the forest consist mainly of chinquapin, rhododendron, and spirea. On the Alpine summits of the Cascades we collected about 50 minor flowering plants. Of these *Menziesia empetriformis* [pink mountainheath, *Phyllodoce empetriformis*], *Saxifraga tolmei* [Tolmie's saxifrage, *Micranthes tolmei*] and *Penstemon Menziesii* [*Penstemon davidsonii* var. *menziesii*] cover large surfaces with their flowers and with *Gentians* and *Heaths* and other alpine plants of the old world. In the Cascade Mountains in the vicinity of the Columbia River the largest number of trees are Douglas' Spruce [*Pseudotsuga menziesii*] and western balsam fir [*Abies lasiocarpa*]." (Newberry 1857).

THREE SISTERS AND CAÑON OF M^C KENZIE'S FORK OF WILLAMETTE RIVER FROM CAMP P.

Three Sisters, and Cañon of McKenzies Fork of Willamette River, from Camp P. Lithograph by John J. Young, Railroad Survey Report (Abbot 1857).

The Civil War

Shortly after Newberry completed his report for the San Juan Exploring Expedition, the Civil War broke out (April 12, 1861). Dr. Newberry reported to the War Department, in whose service he had been employed the past five years as assistant surgeon. Newberry was appointed to the newly organized civilian Sanitary Commission on June 14, 1861. In September he resigned from the War Department to become Secretary of the western branch of the Sanitary Commission with headquarters in Louisville, Kentucky. All operations in the Mississippi Valley were under his supervision. He traveled widely and was present at the battle of Chattanooga. He was recognized as providing outstanding service to the country and was proud of what he accomplished. He had a knack for organization and delegation.

Academic Years: Students and Friends

After the war ended Newberry moved to Washington, DC, where he worked at the Smithsonian Institution for almost two years. He also held a professorship at Columbia

University of Washington (later George Washington University). In 1866 Newberry accepted the position of chair of Geology and Paleontology in the School of Mines at Columbia College (later Columbia University) in New York City. During his 24 years in this position, he created a museum of over 100,000 specimens that he used to illustrate his lectures in paleontology and economic geology.

Newberry's students affectionately referred to him as "Uncle John." "Everybody loved him and there was not a student in his class that ever thought of taking advantage of him or playing tricks on him to get out of work, because the work of Dr. Newberry was a pleasure" (Orton 1896, p. 18). Newberry had a passion for music and was noted around the campfires of his earlier expeditions for his violin playing. Students at Columbia recalled his rich full voice as he sang to himself while working on his geologic collections. In the early hours of the night music could be heard coming from his apartment as he played his little cabinet organ. He was known to never pass a beggar in the streets without offering money to the less fortunate soul.

When the National Academy of Sciences was founded on March 3, 1863, Newberry was named as one of its

Oregon plants named or discovered by Newberry

- Abies Williamsonii* Newb. Mountain hemlock, now *Tsuga mertensiana* (Bong.) Carrière
- Chamaebatia foliolosa* Benth. Mountain misery. Collected by Newberry, California 1855. (Contributions from the New York Botanical Garden, Vol. 5: 398. Per Axel Rydberg 1909. Notes on Rosaceae). (*Spirea millefolium*) Newberry did not collect the type, Pl. Hartw. 308 (1839). Type locality "in montibus Sacramento." Valley of the Kaweah River (No. 1307). (Contributions of the United States National Herbarium, Vol. 4, 1893)
- Delphinium patens* Newb. Spreading or zigzag larkspur. Pac. Rail. Rep. vi. 65. (syn. *Delphinium patens* Benth.) California. Type named by Benth. From California
- Fragaria californica* Cham. & Schltld. California strawberry. now *F. vesca* ssp. *californica* (Cham. & Schltld.) Staudt collected by Newberry, cited as *F. chilensis* in the Pac. R. Rep. 6. 73. J. Gray Ann. Sci. Nat. 4. 8. 200. Also as *F. californica* same report. (Smithsonian Miscellaneous Collections 1878)

- Gentiana simplex* A. Gray oneflower fringed gentian. Now *Gentianopsis simplex* (A. Gray) H.H. Iltis Pac. R.R. Rep., vol. 6 p. 87, t. 16. 1857 Type locality: "Upper Klamath Lake," 2 August 1855, California. Range. Mountains of eastern Oregon south through the Mt. Shasta region and the Sierra Nevada to the mountains of southern California. Southern Idaho. Zone Canadian. (Smiley, Frank Jason. 1921. A Report upon the Boreal Flora of the Sierra Nevada of California. Vol. 9: 298.)
- Horkelia cuneata* Newb. Wedgeleaf horkelia. Pac. Rail. Rep. vi. 73. (syn. *Horkelia cuneata* Lindl.) California endemic.
- Hulsea nana* A. Gray Dwarf alpinegold. Type collected by Newberry at Crater Pass, Cascade Mtns. Pac. Rail. Rep. vi. 76. t. 13.
- Penstemon glaucifolius* A. Gray Azure penstemon. isotype collected by Newberry at Ft. Reading, California = *Penstemon azureus* Benth.
- Quercus kelloggii* Newb. California black oak

incorporators. In 1867 he was named as President of the American Association for the Advancement of Science. Likewise, in 1867 he was named as the president of the New York Academy of Sciences and remained president for 24 years. He was president of the Torrey Botanical Club from 1880 to 1890. He was one of the founders of the Cosmos Club in Washington, DC.

Newberry was still serving as chair at Columbia College when he suffered a paralyzing stroke on December 3, 1890. Partial recovery followed and he was able to complete some work in 1891. However, his paralysis progressed, and he passed away on December 7, 1892 in New Haven, Connecticut, at nearly 70 years of age. He is buried in Cleveland's Lake View Cemetery. Of his seven children, five sons and one daughter survived Dr. Newberry.

Acknowledgements

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Dr. Garrett is a family physician in Bend with strong interests in natural history, geology, and the native vegetation of central Oregon. He was co-founder of the High Desert Chapter in 1979 and has served as president of the state board of the Native Plant Society of Oregon (NPSO) in 1989 and 1990. He has served on the boards of The Oregon Chapter of The Nature Conservancy, the Oregon Environmental Council, the State

of Oregon Natural Heritage Commission, and the Native Plant Society of Oregon. He was chairman of the Citizen's Committee that successfully sought Congressional designation of the Newberry National Volcanic Monument and was the Governor's appointee to and chairman of the Newberry National Volcanic Monument Citizens Advisory Committee. He was named Oregon's Doctor-Citizen of the Year by the Oregon Medical Association (1991) and Bend's Citizen of the Year (1990) by the Bend Chamber of Commerce. He is the author of *The Newberry National Volcanic Monument: An Oregon Documentary* and has written on numerous other historical and natural topics including *Sisters Country* and *Oregon's Outback* with Dr. Ray Hatton. While working for the Monument, Dr. Garrett became fascinated with Dr. Newberry and decided to write an article about him. This article meshed perfectly with Rhoda Love's plan to publish a book about pioneer botanists, *Plant Hunters of the Pacific Northwest*. Dr. Garrett, who became an NPSO Fellow in 2010, has a long history with the journal *Kalmiopsis*. As NPSO president, he admired the California Native Plant Society's journal *Fremontia* and worked to create a journal for NPSO. The first issue of *Kalmiopsis* was published in 1991; this is Dr. Garrett's fourth article published in our journal.

Newberry National Volcanic Monument

The largest ice age volcano in Oregon and the National Monument located on its summit and flanks are named for Dr. Newberry. This came about as a result of interest in its potential for geothermal energy production. Beneath Newberry caldera there is a molten body of magma that produces large quantities of heat as evidenced by the caldera hot springs. It was this potential for energy production that led, in the 1980s, to a geothermal temperature well being drilled in the caldera that produced temperatures as high as 500 degrees Fahrenheit. In 1987 the Deschutes National Forest put out a notice for leasing of geothermal properties in and around the caldera. Because there was little concern for the non-commodity values of the volcano, a small group



The Newberry Caldera from Paulina Peak, showing East and Paulina Lakes and the Big Obsidian Flow. Photo by Stu Garrett.

of concerned citizens formed an exploratory group to look at a protective designation on the volcano. This led to the formation of a Newberry Volcanos Citizen Group to explore avenues for protection along with energy production. Second District Congressman Bob Smith agreed to carry a bill in the US House of Representatives designating the Newberry National Volcanic Monument. A consensus group of over 30 persons was formed which represented various interests such as conservation, fishing, hunting, geothermal energy production, snowmobiling, skiing, and others. Senator Mark Hatfield carried the bill through the US Senate and President George H. W. Bush signed it into law on November 5, 1990.

LeRoy Ellsworth Detling (1898-1967)

Eileen Flory
North Manchester, Indiana

LeRoy Detling was born on October 23, 1898 in Groton, South Dakota, the youngest of eight children. His grandparents came to the United States from Germany, settling in the Midwest, and his parents, like so many of their generation, emigrated west, where they were farmers and orchardists in Washington and California. Detling graduated from Gridley (California) Union High School in 1916. He attended Philomath (Oregon)

College and then went to the University of Oregon, where he received his BA in Romance languages in 1921.

In 1921-22 he taught high school Latin and French in Wallowa, Oregon. A love of languages that would stay with him all his life prompted him to go for an advanced degree, and Detling received his MA in French from Stanford University in 1923. He then returned to Oregon to teach Romance languages at Willamette University in Salem (1924-26) and at the University of Oregon (1927-1930). Study abroad at the Sorbonne in 1926 helped keep the French language alive for him.

Leap to Science

During those early teaching years at the University of Oregon, Detling met Louis F. Henderson, then curator of the plant collection in the herbarium. Henderson had a degree in Romance languages from Cornell and this mutual interest may have originally brought the two men together. Henderson served as Detling's mentor, training him in the techniques of collecting, identifying, and caring for herbarium specimens. Eventually Detling took the leap to science and returned to Stanford for more graduate study, completing his MA in botany in 1933 and his PhD in biology in 1936. His doctoral dissertation was "A taxonomic and distributional study of the Pacific coast species of *Cardamine* and *Dentaria*."

The year Detling returned to Eugene with his new PhD, the University of Oregon created the Museum of Natural History, with the herbarium as one of its four units (Wagner 1994). Louis Henderson formally became curator of the herbarium, but his health was poor and at the age of 83, he needed help. Detling was hired as his part time assistant, and when his old mentor finally retired in 1939, Detling succeeded him as full-time curator.

For nearly 30 years, Detling directed and developed the herbarium



LeRoy Detling in the University of Oregon herbarium, where he served for nearly 30 years. Photo by Old Oregon staff, 1957.



LeRoy Detling early in his career. Photographer unknown.

for public service, research, and instruction, also teaching for many years in the departments of botany, zoology, and biology. After 1957 he focused almost entirely on herbarium work, limiting his teaching to small classes of advanced students in plant taxonomy and species distribution, plus advising numerous graduate students in their theses and dissertations.

From Taxonomy to Biogeography

Like many of his contemporaries, Detling gathered thousands of herbarium specimens, primarily from the far west of North America. A search of the Oregon Flora Project database shows that 6,713 of his specimens from Oregon alone are currently housed at the Oregon State University herbarium (the collections of the University of Oregon herbarium now reside at Oregon State University in Corvallis.). Other collections went to herbaria outside the state, including his collection of *Botrychium pumicola* from a summit just east of

Paulina Peak near Newberry Crater in 1928 (WTU2387). This collection was the second record of this taxon, which was first discovered 32 years earlier (1896) and 60 miles south on the rim of Crater Lake by F.V. Coville (Rogers 1951).

Detling wrote monographs on three genera: *Cardamine* (*Dentaria*), *Descurainia*, and *Lupinus*. Thus, his most notable collections were in these genera in support of his research. He published a new species in northern Idaho, Constance's bittercress (*Cardamine constancei*), naming it in honor of Lincoln Constance, who collected it along the Middle Fork of the Clearwater River in 1935 (Detling 1935). This rare bittercress, endemic to Idaho, is listed as a sensitive species. In addition, he compiled a collection of the Willamette fossil flora, especially from a quarry east of Goshen. These collections have been a great asset to paleontologists (Chaney 1948).

Over the years, Detling became as much an ecologist as a taxonomist, focusing on biogeography, specifically plant migrations and the origins of current western flora. He shared an interest with W.H. Baker in relict islands of xeric flora west of the Cascade Mountains (Detling 1953) (See the article on William Baker by Rhoda Love (*Kalmiopsis* 16:31-36).). He noted *Cardamine pattersonii* as the only strictly endemic species on Saddle Mountain, "growing abundantly on the open, grassy, south slopes" (Detling 1954). This species was named by L.F. Henderson (1930) for his student John Rollo Patterson who discovered it in 1928 (Sayce 2010). It is currently considered threatened over its narrow distribution range in Tillamook and Clatsop counties.

His interest in plant migrations led him to visit Mexico five times and Costa Rica once. His most significant



Saddle Mountain bittercress (*Cardamine pattersonii*). Photo by Paul Slichter.

collecting trip in Mexico was a sabbatical leave for a year and a quarter in 1961-62. The Mexican collection comes largely from the western Sierra Madre in the states of Jalisco, Nayarit, Aguascalientes, and Colima. It was in hopes of completing his plant migration research that he stayed on the job past his official retirement date in 1963.

As it turned out, Detling never retired. He was still serving as curator of the herbarium when he died in September 1967. His wife, Mildred (also a scientist), finished and published his last biogeography research (Detling and Detling 1968) and cared for the herbarium until a successor could be found.

The Detling Family

After an unsuccessful first marriage, in 1944 Detling married Mildred Riechers, on whose master's degree committee he had served. Soon afterwards they built, plumbed, and wired a house among the walnut orchards just north of Eugene. At the time, Mildred was a zoologist studying foraminifera (a group of mostly marine protists); she later became a scientific illustrator for the University of Oregon's Museum of Natural History. A woman of many talents, she was also a mother, writer, editor, teacher, and an accomplished metalworker.



Cardamine constancei Detling from the Clearwater River in Idaho. Photo by Rich Old.



Detling's collection of pumice moonwort (*Botrychium pumicola*) in 1928. Courtesy of University of Washington herbarium.

Weekends, holiday breaks, and summers often found the Detlings camped out and botanizing (of course). Once their children arrived (Eileen in 1948 and Clifford in 1951), field work became a family affair. The children were introduced early into the routine of changing the plant press felts by laying the damp ones in tidy rows in the warm sun to dry and then inserting them between the sheets of newspaper with specimens folded carefully inside. On the occasions when he couldn't take the family out collecting, Detling at least came back with stories: of following a bear up the trail or of running across an ex-student in the field. On the herbarium front, the youngsters helped with setting dishes of fumigant on the shelves of the plant cabinets and keeping the counters clean. He always claimed that "*Pseudotsuga taxifolia*" were his first-born child's first words, followed closely by "xeric island" and "chaparral."

At home in Eugene, the back yard was a *Metasequoia* nursery for a time. The seedlings, of a genus previously thought to exist only in the fossil record (living *Metasequoia* were discovered in China in 1944), were lined up planted in



Mildred and LeRoy and Detling in September 1966. Photographer unknown.

tin cans awaiting adoption; placement always came with a warning that the trees would shed leaves and twigs in the wintertime and were not to be abandoned as dead. The Detlings planted a *Metasequoia* in the yard, and it had grown huge by the time of his death. The tree was subsequently moved onto the University of Oregon campus.

Botany in the Local Community

Detling's commitment to botany extended beyond the herbarium and the home. He served as an officer of the 4-H organization in Lane County and was on the staff at Camp Lane, a 4-H camp in Oregon's Coast Range. Once the family 4-H projects started, he led forestry and entomology clubs for many years. Many times, the purchasers of new homes brought in specimens of shrubs and asked to have them



The Detling family in Guadalajara, Mexico, in 1962. Photo by Jim Kezer, University of Oregon.

identified (Cressman 1957). And from time to time he was also called into court to identify plants, once to find that the contents of a suspicious cigarette were Scotch broom flowers!

The Mexico Adventures

The trips to Mexico were high points in Detling's career. Not only did they extend his study of plant migration far to the south of Oregon, they also allowed him to use his language skills and they gave him (and the rest of the family) a love of all things Mexican. These trips lasted anywhere from two or three weeks to a stay of over a year, when the Detling family packed itself into a 21-foot trailer and established "base camp" in a trailer park in Guadalajara.



The Detlings at their trailer in Guadalajara, Mexico, in 1962. Photo by Jim Kezer.

Any frustrations of work in Mexico (mechanical breakdowns, bureaucratic red tape, illness) were far outweighed by exciting new activities. Country people welcomed the strange botanist and his family into their homes and fields, explaining at length over fresh-squeezed limeade what each plant was used for. Scientific work was a perfect entrée into the local culture. Visiting and dining with the watchman at the university; chatting in German with Mennonites in the wilds of Chihuahua; stopping at a one-horse sugar mill, a bare-bones tequila factory, or an open-air brickworks—all contributed to a depth of experience that transformed collecting trips into full-fledged adventures. The Detlings briefly considered moving more or less permanently to Mexico, but gave up the dream as impractical. The equally impractical notion of bringing back a baby burro was also left unfulfilled.

Sharing an Affection for the Plant World

One of Detling's strengths as a collector was the meticulous ecological data he included with his specimens. He taught his students and his 4-H-ers the whys and hows of noting down such details as other plants in a specimen's vicinity, the altitude (from his old brass altimeter), soil characteristics, which direction a slope faced (aspect), weather conditions—any observation that might help future researchers understand the plant in question.

His affection for the plant world came through clearly, wherever he happened to be. He had a habit of cupping a specimen in his hand, smiling, and saying, "Pretty little thing, isn't it?" Bushwhacking, hiking along a trail, or

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LeRoy Detling examining cow parsnip (*Heracleum lanatum*) in the field. Photo from the Old Oregon article.

driving the roads of the West and of Mexico, his eyes would tend toward the flora, and he was always ready to expound on it all to anyone willing to take a few minutes to listen.

On September 19, 1967, LeRoy Detling died of a heart attack as he left his house to walk to an evening of work at "the herb." The minutes of the next University of Oregon faculty meeting recorded, "We will miss this quiet, patient man. Even those who were only casually acquainted with him will be saddened at the loss... The many thousands of plants he collected will serve botanists and students for many years to come. His memorial will be the simple statement on the label of each of these specimens, 'Collected by LeRoy E. Detling.'"

Acknowledgements

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Prairie lupine (*Lupinus lepidus*), the subject of LeRoy Detling's monograph on cespitose lupines in western North America. Photo by Robert Korfhage.

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Eileen Flory is the daughter of LeRoy and Mildred Detling. The acorn did not fall far from the tree: She has studied Spanish, music, ethnomusicology, and anthropology and has traveled to out-of-the-way places in Mexico in pursuit of those interests. Eileen's early days behind the scenes at the University of Oregon's Museum of Natural History led to a career in exhibit development at the Science Museum of Minnesota and the Oregon Coast Aquarium. She currently lives in a retirement community in Indiana.

**Marjorie Larsen Ettinger (1924-2019) and
Richard Howard Ettinger, M.D. (1924-2014)**
“Are the flowers smiling at you today?”

Susan Ettinger (Harless) Schneider
Bend, Oregon

One bright spring day in 1979 found Marjorie “Marge” (the botanist) and her husband, Richard “Dick” (the photographer), immersed in their botanical work, oblivious to their surroundings. Dick was lying on his stomach to photograph a plant under a tiny white umbrella that diffused the light to get the best details. Suddenly, they were faced with two serious-looking young Indian men. Botanizing in the “middle of nowhere” on the Warm Springs Indian Reservation, they had heard no



Marge and Dick Ettinger in 2003. Photo by Janine Robberson from a sailing trip to Prince William Sound in Alaska.

sound of the men’s approach. One of the men demanded, “What are you doing here?” Dick explained their unusual-looking actions. The men did not seem satisfied with their explanation. Dick and Marge were starting to worry, for they were in terrain that had been off-limits to “outsiders” (non-Indians) since the treaty of 1855. But Marge and Dick had earned the trust of the Tribal Council and had permission to be there. Once Dick presented the document from the Tribal Council, the young men relaxed and left soon after, as silently as they had approached. The word apparently circulated on the Reservation, because from then on, whenever they came across tribal members during their research, they were always greeted in a warm, friendly manner. The most memorable greeting they received was “Are the flowers smiling at you today?”

But now we need to go back in time and trace the history of the land that became the Reservation and describe how Marge and Dick became the botanist/photographer team exploring it.

**The Warm Springs
Reservation**

The protected tribal lands of the Confederated Tribes of the Warm Springs Indian Reservation encompass the deep canyons of the Deschutes and Metolius rivers and extend to the upper reaches of Mt. Jefferson and the foothills of Mt. Hood. Certain parts of this region had for millennia provided passage for many indigenous peoples for hunting, fishing, gathering and ceremonial trading. Their livelihood depended on native plants and animals, but the details of this knowledge

remained within their culture, passed from one generation to the next. Columbia River tribes, as well as Great Basin tribes, shared trade goods in many places. The busiest trade routes were close to the rivers flowing into the Columbia River, such as the north-flowing Deschutes River, which forms the eastern boundary of the Reservation. Shells, baskets, dried salmon and venison were some of the most frequently traded items.

In 1854-1855 the Superintendent of Indian Affairs for the Oregon Territory negotiated treaties with various tribes. Even though tribal members did not perceive their lands as “real estate,” a commodity to be bought and sold, in 1855 the Warm Springs and Wasco bands agreed to the terms in order to retain some of their ancestral lands. The Treaty of 1855 was not ratified by Congress until 1859, when the final agreements were signed for occupation by the Warm Springs and Wasco tribes. Members of the Paiute tribe were re-located there in 1879.

The early flow of over-landers (emigrants from the east) began in 1843 and headed west past this part of the Oregon Territory to claim prime lands in the Willamette



Mountain mahogany (*Cercocarpus ledifolius*) wood was hardened by heat as it was made into root digging sticks. Photo by Cameron Kerr at the High Desert Museum.

Valley. When those fertile lands were occupied, emigrants looked to settle in eastern Oregon. But by then the Reservation lands had been defined by treaty for several decades, making them off-limits to settlers' claims. From the time the treaty was ratified in 1859, non-Indians found it difficult to obtain any access to the Reservation.

While the native peoples knew the land and drew their livelihood from its resources for untold generations, the first botanical explorer to leave written records of his travels was Dr. John Strong Newberry, who traveled through the area in 1855 (before the treaties were ratified). That year was a time of much unrest between native people and explorers, prospectors and potential settlers, contributing to fear and mistrust on both sides. Despite this, Newberry, serving as physician, geologist and botanist for the U.S. Pacific Railroad Survey, documented more than 600 species of plants as part of his attempt to discern those phenomena "which have controlled the radiation of species from their original centers of creation." [see article on J.S. Newberry on pages 10-19.]

It was not until 1949 that the first road (Highway 26) was paved through the Reservation. The Confederate Tribes of the Warm Springs acquired the nearby hot springs in the 1960s and in the following decade opened



Mountain mahogany flowers. Photo by R.H. Ettinger on May 1, 1976 near Smith Rocks.

a resort (Kah-Nee-Ta), with a golf course, food, and lodging. In 1967, the Tribe built a plywood plant and lumber mill which, along with logging, provided jobs for tribal members (and others). However, as a whole, the Reservation lands were not subjected to the disturbance and destruction of native habitats that occurred in the surrounding areas open to widespread development.

Botanical Exploration on Reservation Lands

It was nearly 100 years after Newberry passed through the area in 1855 that the first scientific investigation connected to botany was conducted. In the early 1950s, Dr. David French and his wife, Dr. Kathrine French, were allowed to begin research on the Reservation. The Frenches studied cultural elements, linguistics, and ethnobotany of the three cultures of the Reservation: the Wasco (Warm Springs), Sahaptin, and Paiute tribes. Beginning in the mid-1980s, the Bureau of Indian Affairs (BIA) funded botanical/ecological studies on the commercial forest lands (see Richard Helliwell sidebar). Madras resident Melvin Ashwill found fossils in some of the ash exposed by the road cuts of the Warm Springs Canyon road through the Reservation. He began working on exposed paleoflora specimens, documenting a rich fossil plant history that spanned from 35 to 5.3 million years ago. His important work demonstrated that oak (*Quercus* sp.) "is one of the most persistent fossil species found on the Reservation" (Ashwill 1983).

The Biscuitroots

Many of the important sources of sustenance for Native Americans in the arid West are plants with roots, bulbs, or corms. Most are members of the Apiaceae (celery or carrot family) with common names of biscuitroot, desert parsley, Indian cous or yampah. Widely distributed, they are nutritious and can be easily dried for winter use. Helliwell listed 21 additional edible plant species on the Reservation (Helliwell 1988).

Each year tribal women celebrated the "first foods" of the season by ceremonially digging roots with sticks made of mountain mahogany (*Cercocarpus ledifolius*) hardened by slow heat for strength. The best digging sticks were gifted to new young women joining the task. The women dug up the long, tuberous root from the soil and cleaned off the dirt before putting it into their baskets. During the digging, pieces of viable root were placed back into the



Digging tools and skills for extracting edible roots were passed down from experienced older women to tribal girls. Photo by Cameron Kerr at the High Desert Museum.

ground to maintain the population for future harvests. This practice, which botanists call intensification, increased the yields of certain plants in areas where they grew best: “We give back a portion of what we’re given” (French 1952-58).

As one enters the plains north of the town of Warm Springs, one *Lomatium* of particular interest filled the fields with its thick, mustard-colored blossoms. French tried to key it out, but felt that it differed from already-described taxa. He turned to the resources of his former student at Reed, Dr. Robert Ornduff at Berkeley, to study it. The closest fit appeared to be *Lomatium cous*. He determined that the “thickened, but elongate root is within the range of variation of both *L. watsonii* and *L. cous* but is more readily included with the former” (Ornduff and French 1958). The following year

Mathias and Constance (1959) published it as a new species, *Lomatium frenchii* Math. & Const. Since then, other botanists determined that it fits within the range of variation of *L. watsonii*, and subsumed it into that species. In other locations, Native Americans recognize differences between *Lomatium* populations that are not currently recognized by taxonomists; perhaps more detailed DNA studies can determine whether *L. frenchii* is a variant of *L. watsonii* or a separate taxon.

In the mid-1950s when French first found this *Lomatium* on the open fields north of the Warm Springs Canyon, their bright flowers formed waves over the fields in the spring. Sadly, the intervening sixty years have taken their toll on the plants at Warm Springs. The fields that once were abundant sources of traditional foods have succumbed to the tragic fate of overgrazing by the wild horse overpopulation on the Reservation. Denuded fields are now full of cheatgrass (*Bromus tectorum*) and spotted knapweed (*Centaurea stoebe*).

The Ettingers’ Path to Central Oregon

Both Marge Larsen and Dick Ettinger were born in Aurora, Illinois, in 1924. They attended the same grade school and met when they were in the third grade, going on to attend East Aurora High School together. Both of their fathers were working for the Burlington railroad in different capacities throughout the Great Depression. As a girl Marge had malaria and was often afflicted with swimmer’s ear which left her hearing severely impaired.

During their early years, Dick was placed a year ahead in school, graduating from East Aurora High School in



Lomatium watsonii is described as “much like a small form of *L. cous*, with yellow flowers and a thickened elongate taproot.” Photo by Paul Slichter.

Dr. David Heath French (1918-1994)

Anthropologist, linguist, and ethnobotanist

**Dr. Kathrine “Kay” McCulloch Story French
(1922-2006)**

Cultural anthropologist

During World War II the Warm Springs Tribal Council began to extend Reservation privileges to students. The first was Thelma Drake Cliff at the University of Oregon who wrote her PhD thesis in 1942 on the historical formation and governance of the nearly 652,160-acre Reservation.

The next student was ethnobotanist David French who was born in Bend, Oregon, and attended Reed College for three years (1935-1939). When Morris Opler, his mentor at Reed, moved to Pomona College and Claremont Graduate School in 1938, French followed him and completed his BA at Pomona in 1939 and his MA at Claremont in 1940. French also did archeological field work directed by Dr. Luther S. Cressman, Professor at University of Oregon in Eugene. Cressman is best known for discovering the 10,000-year-old sagebrush sandals in a cave near Fort Rock, Oregon.

David French earned his PhD at Columbia University, where he was heavily influenced by the work of Franz Boaz, who directed that research be characterized by meticulous and thorough anthropological recovery ethnography, conducting linguistic and ethnographic research in tandem. French's dissertation fieldwork was

done at Isleta Pueblo in the Southwest in 1941-42. He defended his dissertation in 1943 but because of World War II, he did not receive his PhD until 1949. David married fellow student Kay Story in 1943. World War II interrupted their studies, and they worked for the War Relocation Authority, monitoring conditions at relocation centers for interned Japanese-Americans until 1946.

Kay Story also studied at Pomona College, where she received her BA in philosophy and anthropology in 1942. In addition, she was concurrently pursuing a PhD at Columbia University. Her thesis was on the “Cultural Segments and Variation in Contemporary Social Ceremonialism on the Warm Springs Reservation, Oregon” (French 1995). After completing her degree in 1955, she and her husband embarked on learning more about the reservation's botanical resources. Ethnobotanical studies (how indigenous people use the plants that grow around them) had not been done at Warm Springs. Starting in 1949 they spent more than twenty years compiling that knowledge.

David joined the faculty at Reed College (1947-88) and Kay began working at the University of Oregon Medical School (later Oregon Health Sciences University). Their work on linguistics, ethnobotany, and multi-cultural communities became widely recognized by their peers. Living in a lovely home on Woodstock Blvd. in Portland, Oregon, across from the campus, they hosted many late-night discussions with groups of students. (They were also known for not answering a phone call before noon.)

During their Warm Springs visits they recognized a species in the parsley family (Apiaceae), which had unusually long tubers, providing more food per plant than other species (Ornduff and French 1960). Mathias and Constance (1959) named it *Lomatium frenchii*, but it was subsumed into *Lomatium watsonii* because it differed in only minor characteristics (Hitchcock *et al.* 1977).

The Frenches' most significant publications were ethnobotanical surveys of which plants were not used or eaten, and



From left, Kay French, student Jane Shell Raymond, and David French in 1964. Photo courtesy of Reed College special collections.

a long 1961 monograph-length article on cultural change at Warm Springs (French 1961). David and Kay wrote several definitive articles for the Smithsonian Institution's *Handbook of North American Indians* featuring Plateau linguistics, subsistence, naming practices, and the Wasco-Wishram-Cascades peoples (French and French 1998). In addition to their own publications, David French's students at Reed published six significant works on the Warm Springs and Burns Paiute tribes. In 1988 the American Anthropological Association honored him with their prestigious Distinguished Service Award.

The Frenches supported the Ettingers' botanical exploration of the entire Warm Springs Reservation, encouraging them to expand the survey beyond their own collections around the occupied areas, by promoting the full botanical survey to the Warm Springs Tribal Council. After David's sudden death in 1994, Kay arranged for Marge to curate David's ethnobotanical collection. She remounted all of his plants, and along with Kay's help, established an herbarium at the Museum of Warm Springs. Kay died in 2006. Much of their ethnobotanical research was never published, including three huge volumes of hand-written notes, which have been electronically transcribed and placed in the archives of the Museum of Warm Springs (French 1952-58). Dr. Robert E. Moore (a former student) was hired in 2008 to curate a full basement of collected works, which now reside, meticulously noted and labeled, in 110 boxes at the University of Washington Special Collections Library.



The type location for *Lomatium frenchii*, collected by David French a mile northwest of Mill Creek on the Warm Springs Reservation, is peripheral to both the ranges of *L. watsonii* and *L. cous*, the two species it resembles. French's lomatium keys to *L. watsonii* because of its connate bractlets below the flowers and fruits. Photo by Paul Slichter.

1940, at the age of 16. He entered a 5-year combined college/medical school program as an Army private at Northwestern University Medical School in Chicago as World War II was brewing in Europe. In 1942, Marge entered Milliken College in Decatur, Illinois, where she studied science and dietetics for three years in a college bereft of the men who had gone to war. Each was the first college student in his/her family.

Dick and Marge married on June 9, 1945, a month after the end of World War II. After the war, Dick entered an internship at Cook County Hospital in Chicago, and a year later, he joined a private medical practice in Chicago. Their first child was born in 1947. When the Korean War began in June 1950, Dick re-enlisted in the Army and was assigned to Walter Reed Hospital in Washington, DC, for three years of additional training in internal medicine and research. When they returned to Chicago after his discharge in 1953, they soon found themselves longing for a different life. Thus, in snowy January 1954, Dick, now pushing 30 years old, began a tour of western cities, seeking a place to re-establish his practice. He traveled alone, driving through Montana, Wyoming, Idaho, Washington, and western Oregon.

While he was visiting in Portland, Oregon, he was told that the medical group in a town named Bend was seeking another internist. He drove southeast from Portland over the mountain pass at Mt. Hood, then headed south on US Highway 26, through the Warm Springs Indian Reservation. This road cuts through dense forests for over a half hour before breaking out onto the open sky of the High Desert. Mt. Jefferson burst into the skyline, framing the open shrubland shining in the sun. Down the Warm Springs Canyon, he traveled past the small reservation town of Warm Springs where he crossed the new bridge over the Deschutes River and ascended again to greet the open sky filled with even more volcanic mountains along the western skyline. The tiny farming towns of Madras and Redmond passed quickly, and he entered Bend from the north.

It was a cold, bright snowy day. He was looking for the hospital he had heard about on what was then known as Hospital Hill. He ascended the small cinder cone hill to a parking lot. And a view! What a view! From that hill, he could count at least seven mountains peaks over 9,000 feet high. It wasn't that the mountains were higher or closer there than in places he'd already visited. Seattle and Tacoma certainly had Mt. Rainier, and even nearby Bellingham, where his in-laws had moved, had Mt. Baker.

Richard D. Helliwell

Richard Helliwell came to the Warm Springs Reservation in 1985 as a botanist/plant ecologist for the Confederated Tribes of the Warm Springs Forestry Department. He had a BA in anthropology (University of Maryland, 1979) and BS in biology (Southern Oregon College, 1985), and later pursued further botanical study at Oregon State University, 1987. Over the next two years, Helliwell worked with forester Frank Marsh to develop a plant association guide for the commercial forest lands of the reservation, including the work of Jean Rodgers, who had left by the time Helliwell arrived (Marsh *et al.* 1987). After that, he spent two years conducting ethnobotanical studies through the tribe's Culture and Heritage department.

Using previous collections in the reservation's forestry department and his own field work, Helliwell compiled a list of economic forest plants. For each species, he reported its distribution range, fire sensitivity, value for livestock and wildlife, and cultural significance (Helliwell 1988). The latter was derived from his work with David French to include the Native American names for culturally significant plants used by each of the three tribes on the reservation. The other principal outputs were two reports: "Ecology and management of piaksi (*Lewisia rediviva*), xauš (*Lomatium cous*), and lukš (*Lomatium canbyi*)" and "Ecology and management of sawitk (*Perideridia gairdneri*) and camas (*Camassia* spp.)."

In addition to the two publications, he recognized the need for a well-organized study herbarium for the Reservation, for which he carefully identified and labeled 600 specimens. This collection is available for study by contacting the tribal Department of Forestry offices in Warm Springs. Helliwell left the Warm Springs Reservation in 1989 and has since worked as a botanist for the Mt. Hood, Ochoco and Umpqua National Forests.



Cascade Peaks. Photo by Robert Korfhage.

It seemed that stunningly high volcanic peaks were everywhere, but none had the impact on him like the view from Bend.

The first view of the central Oregon Cascades is likely to catch a person such as Dick or Marge off-guard, especially if you are from a place that is flat, such as most of Illinois. Approaching from any direction, whether the two-lane road winds through thick, ancient coniferous forests or creeps across treeless lake beds filled with sagebrush, you are unprepared for the sheer magnificence of the view. This view of the mountains against the western sky immediately captivated Dick.

To top it all off, the town had charm as well. While looking for a parking space, he'd passed a gorgeous chestnut horse harnessed to a red one-horse open sleigh, tied to a parking meter. It turned out that one of the doctor's cars was not able to navigate the snow, so he had borrowed the rig from a neighbor in order to make his rounds for patients. Dick found a community of extremely well-trained, compatible physicians who welcomed him warmly. Within two weeks of settling on practice arrangements, he arrived back in Bend with Marge and their three children.

In stark contrast to Dick's arrival, Marge entered Bend during a temperature inversion that maintained a dense fog that didn't disperse for several days. But when the inversion lifted, she was just as amazed as he had been with the view of the glorious mountain peaks on the western horizon. Bend was nearly the same size as Aurora, Illinois, the town Dick and Marge had grown up in: both had about 10,000 residents, healthy downtowns, and good schools. It was exactly the fit they were looking for. He promised her then, that by the time they were old, they would know every plant, every bird, every peak, every animal that they encountered between the city and the mountain tops.

The city of Bend was also young, just going on 50 years old, having been chartered in 1904. It could have been called "just a logging town," as many western logging towns were. A map from 1904 in timberman Samuel Johnson's Redmond office showed Oregon with penciled-in roads and logging areas in the area between Bend and California. The area held billions of board feet of ponderosa pine, spruce, and Douglas-fir. Most of the families who helped to build Bend were from third generation lumbermen, many from the upper Midwest where timber stands had been depleted. Much of the lumber was shipped elsewhere in response to the post-war housing boom.

As Dick began to build his medical practice, Marge was busy shepherding their five children (whose ages spanned 11 years) and creating community through volunteer activities. Offerings by the locally-funded Central Oregon Community College (COCC) enticed them to attend evening classes, including geology, US history, and botany. Most of the instructors became life-long friends, as they filled in the gaps of their lean education during

the war years. Dick once registered as a graduate student in order to take a geology class from his favorite professor, Dr. Bruce Nolf.

Dick already had many photographic skills when he was introduced to Swedish botanical photographer Torkel Korling in 1965. An avid and world-recognized botanical print specialist, Korling was spending a few days in the Bend area with friends from Illinois, and he enthusiastically shared his methods with Dick (Boylan 1998). Thereafter, Dick used a 12-inch opaque white umbrella to diffuse the light on plants, with lovely results.

Central Oregon Community College: learning, teaching, and the herbarium

In 1965 Marge took a biology/botany class from Associate Professor Harvey Waldron and learned to key out plants with the new *Manual of the Higher Plants of Oregon* (Peck 1961) she had received as a birthday gift. Over 50 years later, she still had the book, where the inscription on the front page read: "August 10, 1965. With all of our amazement, admiration and love, Dick." Dick and Marge also began to take botany trips together, gathering plants they expected to find and relishing the ones new to their studies. Marge collected the plants after Dick photographed them. As Marge began bringing in plants to key out, Waldron offered to mentor her further by showing her how to curate an herbarium. He had a small personal collection, and many of his students left their important botanical collections in his care. She volunteered to mount the specimens in the small collection stored in an old file cabinet. However, no space for an herbarium had been allocated on the COCC campus (which opened in 1964).

Early in the spring of 1965, the first plant was entered into the herbarium accession card catalogue: *Viola adunca* var. *bellifolia*. Space for an official herbarium was finally dedicated in 1970 in the newly constructed Ochoco Hall. Marge eagerly began curating the plants and recording the data. The first 153 plants were collected by Waldron, his wife Genevieve, or his botany students. Marge's first entry in the accession book was dated August 6, 1976: *Mimulus moschatus* Dougl. By 1996 the accession books included 2,835 specimens, each recorded in her careful handwriting. Since then the collection has grown to over 6,000 specimens, now housed in COCC's new Science Center, and the data are compiled on a computer. In 1998, Marge and Dick decided to create an endowment fund for curation of the Herbarium. In 2000, at the 50th anniversary of COCC, the herbarium was named for its founder, Harvey Waldron. By that time, donations to the Etingers' endowment fund were adequate to assure the safekeeping of its botanical collections. The herbarium's current curator is Christine Ott-Hopkins, professor emerita at COCC, who taught botany and biology courses from 1993 to 2013. She started working with Marge in 1993 to identify which plants should remain in the Waldron Herbarium and which should be transferred to the Museum at Warm

COCC Herbarium named

In honor of its founder, the Harvey M. Waldron, Jr. Herbarium was formally named in a recent presentation. Waldron taught Botany and Biology at the College for more than 25 years, retiring in 1985. The Herbarium began with fewer than 200 dried and labeled plant specimens, and now houses more than 4,000. After Waldron retired, it was curated by Marge Etinger for many years, and is now managed by Dr. Christine Ott-Hopkins. An endowment established by Dick and Marge Etinger will fund the ongoing preservation of this important floral heritage of Central Oregon well into the future.

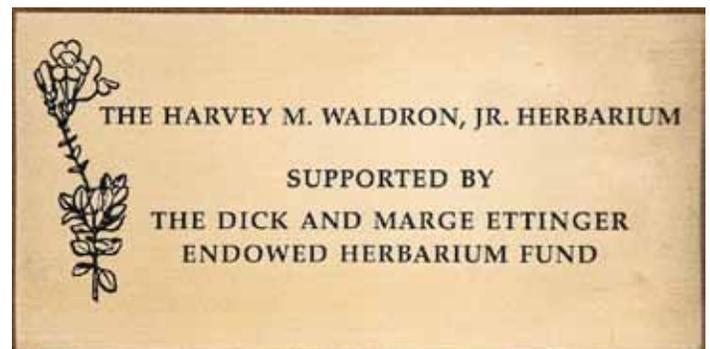


Harvey and Genevieve Waldron and Dick and Marge Etinger at Herbarium naming.

The COCC Herbarium became the Harvey Waldron Herbarium in 2000. Article from COCC Foundation Legacies, Summer 2000.

Springs, the newly created museum on the Reservation. Marge and Christine spent many hours together repairing, identifying, and cataloging the nearly 3,500 specimens they curated. They treasured their friendship and collegiality, and deep love of botany. When the herbarium at the University of Oregon closed and sent a load of central Oregon specimens to COCC, they worked together to accession them. The next step for this herbarium will be to add it to the Consortium for Pacific Northwest Herbaria, so its information will be available online.

In 1984, Marge had an opportunity to teach Taxonomy of Plants, and Waldron had carefully prepared



Plaque outside the COCC Herbarium. Photo by Robert Korfhage.



Margie Ettinger with Penstemon on the Warm Springs Reservation, mid-1990s
Photo by Christine Ott-Hopkins.

her for her first classroom experience. Unfortunately, her hearing deficit impeded her, and she never tried teaching again. Instead, students sought her out in the herbarium for private coaching and mentoring, at which she excelled.

In 1983 OSU offered a Bachelor's of Liberal Studies (BLS) degree program through COCC, so she and other students who hadn't finished their degrees signed up. The classes were filmed in Corvallis, and a telephone connection allowed the Bend students to ask questions as the class was being taught. She finished her BLS at age 63, the oldest graduate of OSU in 1987.

As she gained proficiency in keying out plants, the youngest of her three sons, Bill, began to share her enthusiasm. He later went on to earn a PhD and is now a professor at Gonzaga University in Spokane, Washington. He recalls the following story:

"My mother had been a fan of flowers since before I can remember. She always wanted to know what a certain flower was. She had field guides on regional wildflowers and took them everywhere. But she really became actively involved in botany in the late 1960s or early 1970s. She took some botany courses from COCC, and then began to seriously key out wildflowers. The act of keying a flower is intensive. It often requires samples

of the root, stem, flowers and often seed as well. The root needs to be examined to see if the plant is a perennial, biennial, or annual. The stem is examined closely to note if the plant is prostrate or erect, as is the arrangement and shape of leaves, and if there are any short hairs or pubescence. The flowers are picked apart to see how many petals there are, the petal arrangement, if they are fused together or separate, the number of pollen-producing stamens, their arrangement, and the type of ovary and pollen-receptive stigmatic surface. It takes time to learn the skills and vocabulary necessary to key a flower out, it takes years to be able to discern the fine differences in the plant keys and to become adept at it, and it can take hours of time on an individual flower. She was particularly cautious in her identifications. She sent several recalcitrant plants off to others to double check her identification.

I was particularly excited to take my first plant systematics course in college. I could finally appreciate the high level of her training, her patience, and her skill. For several seasons I took a summer job as a fire guard for the Malheur National Forest in eastern Oregon. I took a dissecting scope, flower book, plant press, and note pads out with me during these summers. When I found plants that I didn't know I would sit down after work and try to figure them out. One time I had a particularly difficult plant to key out. I spent several evenings fretting over the plant without any progress. Finally, I called mom on the phone. While I chatted with her, she had me describe where I found the plant, how it grew, and what the roots, stems, leaves and flowers looked like. Next, she had me sit down with the flower under a dissecting scope. She led me through a dissection of the flower. We began the process of keying it out. She was going through her copy of the book (Hitchcock and Cronquist 1973), while I went through mine. It was obvious at an early stage that I had misidentified the type of ovary in the flower. From that point on I could have spent the rest of my life on the flower and book, and never reached a correct identification. We had a good laugh over that. Once she had me on the correct track, I identified my first globe mallow. I am pretty sure she knew what the flower was an hour earlier, but she made me work for it and learn from the process."
—Bill Ettinger

The High Desert Museum

In 1978 Marge began attending Native Plant Society (NPSO) meetings, where she met Dr. Stu Garrett and others who shared her interest in plants. At a High Desert Chapter meeting, Caryn Talbot Throop presented a slide show about a proposed museum focusing on the natural history of the lava plains. Caryn lingered to meet the

attendees, including Marge and Dick who subsequently attended more meetings held to develop the High Desert Museum. At the meetings, Caryn outlined future needs for the museum, one of which was “to create the appropriate native plant communities as context, settings, and subjects for the exhibitions on the Intermountain West that they had envisioned.” She sent her new botanist friends to collect plant materials: “Marge was one of the most active in gathering seeds from the specified locales and elevations. She was meticulous and prolific over a couple of seasons.” Later, Marge assisted with some transplanting and tending of the native plants (always from public lands, by permit).

Botanical Exploration of the Warm Springs Reservation

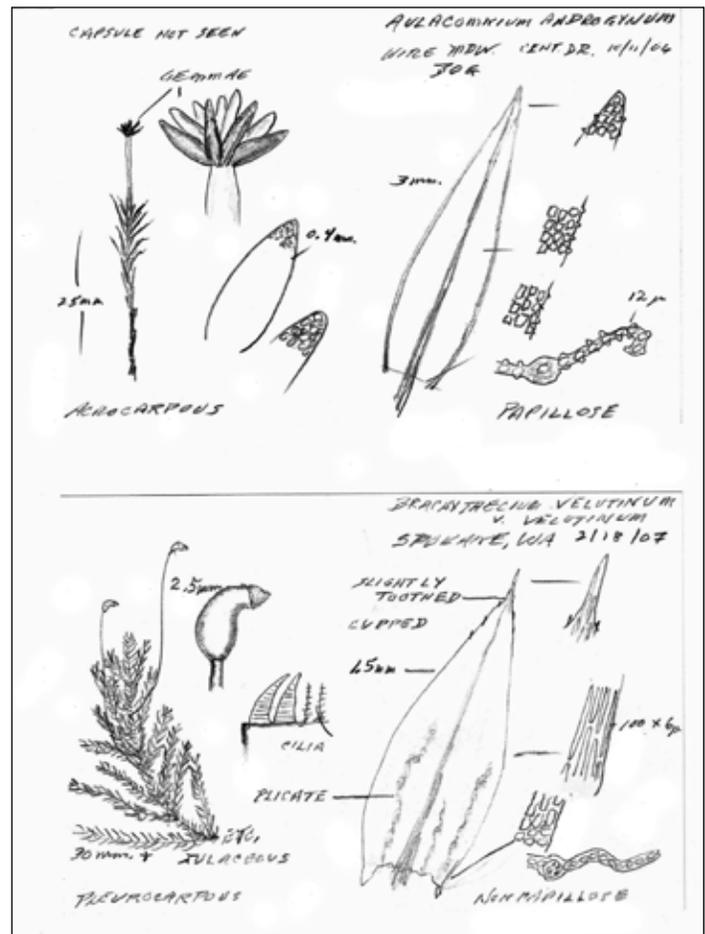
As they gained botanical expertise, the Ettingers increased their efforts to reach parts of Oregon they had not previously explored. In 1979 another opportunity presented itself, opening the doors to an area that had never been fully explored by botanists, the Warm Springs Reservation. The Tribal Council approved the Ettingers’ research proposal, thanks to the help of their neighbor and friend, Owen Panner, who, as the Tribal Council’s lawyer, vouched for their integrity.

Thus, from 1979 through 1996, the Ettingers explored and documented the area’s botanical diversity. Marge’s collection of 1,784 specimens are stored in the COCC Herbarium, with an additional 436 specimens at the Museum of Warm Springs. Their botanical collection provided a more complete botanical assessment of the Reservation, building on earlier studies by the Frenches and Helliwell. For more than fifteen years they were allowed full access to the Reservation, often traveling by horseback or on gravel roads with their trusty Jeep Wagoneer. It was a rare and wonderful opportunity. George Schneiter, who lived on the Reservation after retiring from Oregon State University Extension Service, often accompanied them.

The Ettingers published the results of their investigation in an Oregon Plants, Oregon Places article in *Kalmiopsis*: “Warm Springs Reservation of Oregon: Botanical Description and Floral Checklist” (Ettinger and Harless 1995). Dick took the cover photo for the journal of a statue at the Warm Springs Tribal Council Building. The statue, created by Richard Breyer of Seattle, depicts a Warm Springs woman elder digging food plants.

Mosses

Following their years working on the Warm Springs Reservation, Dick became interested in understanding bryophytes. His accumulated specimens and associated data began in 2004 and ran through 2008. Christine Ott-Hopkins, biology professor at COCC, shared her find of the moss *Buxbaumia* near the McKenzie River with Dick and Marge. The next weekend, the three of them went



Moss drawing by Dick Ettinger.

back to re-locate specimens so Dick could photograph it. Although Dick’s moss collections are focused in central Oregon, they span from Arizona to Alaska. The complete list includes 503 specimens, drawings and photographs. They are now housed at Gonzaga University in Spokane, Washington.

The Ettinger Legacy

In 2014 Dick passed suddenly at age 90; Marge followed him five years later in 2019 at the age of 94. Her final botanical determination, when she was 94, was of a lovely chocolate lily, collected by her 8-year old great-granddaughter, Abbie Mollat, on James Island, Washington. Always an eager teacher, she passed on her love of botany to her children, grandchildren, and six great-grandchildren. The Ettinger descendants, along with the students she mentored and those who continue to use the COCC herbarium, all benefit from Marge and Dick’s enthusiasm for botany, photography, and the natural world around them. As a final gift, the family requested that donations in Marge’s honor go to the Waldron Herbarium Endowment Fund at COCC. This is a legacy that truly keeps on giving, because, without a curator, small herbaria are often abandoned and cease to exist.

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Checked lily or chocolate lily (*Fritillaria lanceolata*) collected on April 23, 2018 by Abbie Mollat (age 8) at West Cove, James Island, Washington and keyed out by Marge Ettinger (age 94). Photo by Wendy H. Mollat.

Frank Alexander Lang
May 14, 1937 - June 26, 2019

Frank was born in Olympia, Washington, and spent his childhood roaming the surrounding woods and fields as well as the shores of Puget Sound. From these experiences, he decided that his life's ambition was to be a biologist. He was fortunate that his Boy Scout merit badge counselor was naturalist Margaret McKenny, author of *The Savory Wild Mushroom*. He spent a good part of his high school years on field trips with Margaret and her friends, a highlight of which was meeting Roger Tory Peterson.

He majored in botany at Oregon State College and there met his wife, Suzanne. He worked filing specimens and drawing plants for his systematic botany instructor, Dr. Albert N. Steward, director of the herbarium. Frank planned to pursue his interest in ferns in graduate school at the University of Washington, but was diverted by Dr.



Arthur Kruckeberg whose project was to determine why Douglas-fir was invading the gravelly prairies of western Washington. After concluding that the cause was lack of regular fires since European settlement, Frank decided it was time to seek a PhD. He met T.M.C. Taylor at the University of British Columbia, who suggested a taxonomic treatment of the *Polypodium vulgare* complex. Frank's thesis, completed in 1965, worked out the evolutionary relationship and taxonomy of three taxa using comparative morphology, cytology, and geographical-ecological criteria. This work was later confirmed by DNA and isozyme analyses.



Frank taught botany, ecology, and botanical illustration at Southern Oregon College for 31 years, from 1966 to 1996. He also served as department chair and chairman of the Faculty Senate. He taught biological illustration at the Malheur Field Station for eight summers. After he retired from teaching, he worked for the Medford District of the BLM, concentrating on the Ashland Resource Area. One of his passions was the Cascade/Siskiyou Ecological Emphasis Area, which later became the Cascade-Siskiyou National Monument. Starting in 1989 he became Mr. Nature Notes. With his signature wit and humor, he commented on topics related to the flora and fauna of Southern Oregon and Northern California. He produced over 300 radio scripts broadcast weekly on Jefferson Public Radio, and a selected script was published in each issue of the Jefferson Monthly. Many of these pieces are in his books, *A Nature Notes Sampler Vols. 1 & 2*.

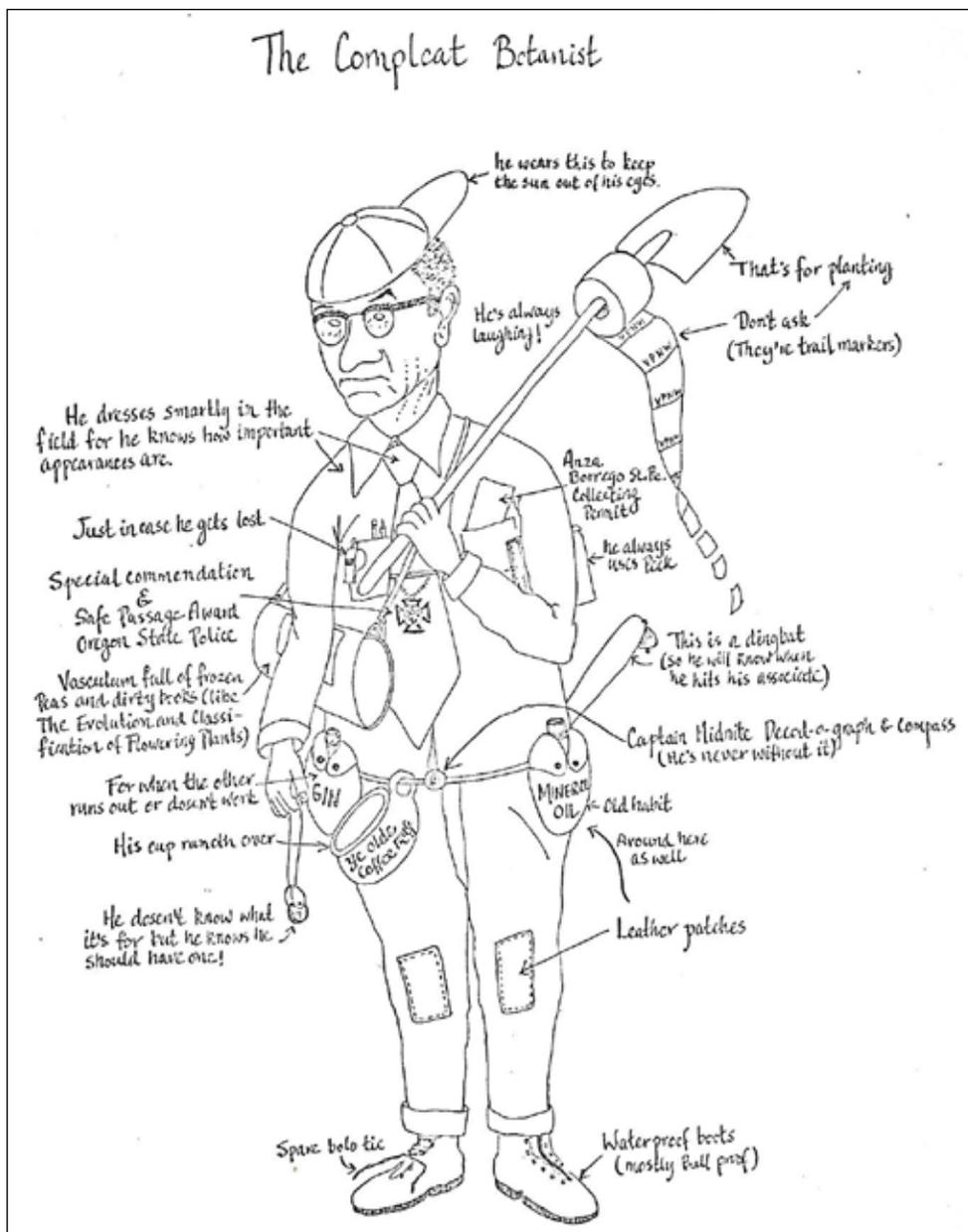
Frank served three terms as president of NPSO (1985/1986, 1979/1980, 1980/1981), was a "Founding Father" of the Siskiyou Chapter (1977), and co-edited the Bulletin from 1979-1981. He was the first editor of the annual journal, *Kalmiopsis* (1991-1994), and served on the journal's editorial board from 2004 through 2015. He was author or co-author of four articles in *Kalmiopsis*, including "John Jeffrey in the Wild West: Speculations on His Life and Times (1828-1854?)," "Green-flowered Wild Ginger (*Asarum wagneri*)," and "Botanizers in the Land of Conifers," and numerous book reviews.

Frank was honored as NPSO Fellow in 2000. He has also won many awards for his research, publications and volunteer work, including 1990 Volunteer of the Year for

The Nature Conservancy of Oregon. His interests included history of botanical exploration of the Pacific Northwest, fern evolution, threatened and endangered plants, and Charles Darwin in the Southern Hemisphere, Patagonia and Tasmania. He also contributed a large number of online entries for the Oregon Encyclopedia; as he said, "he is computer literate" (and he has a sense of humor).

In his role as teacher and advocate for the natural world, Frank touched many lives. He will be remembered for his dry wit, irreverent sense of humor, and terribly wonderful puns.

After his memorial was published in Botanical Electronic News (BEN) by Adolf Ceska in British Columbia, an old classmate of Frank's from his University of Washington days contacted me. Jack Maze sent me some stories and samples of Frank's caricatures of botanists, shared here. These feature C. Leo Hitchcock and Clarence Muhlick, his



assistant in the Botany Department. Hitchy's birthday was a big deal in the Botany Dept. and one year, Frank drew a caricature of him on the chalk board and wrote, "Happy Birthday Hitchy, you S.O.B." Then in much smaller letters added "silly old botanist." Frank often drew a little mouse in the corner, making comments. I have to assume that it was his animal persona in his artwork. —Cindy Roché, Editor, with thanks to Joan Seevers who wrote Frank's story for his Fellows award.

NPSO FELLOWS AWARDS

Barbara Mumblo - 2018

Barb Mumblo's family lived in five different states (never more than five years at any location) during her father's US Air Force career. In 1975 she found her forever home in Oregon when she and her 6-year-old daughter visited Oregon. She was inspired to go back to school after participating in a plant hike on the Pacific Crest Trail at Mt. Ashland led by Dr. Frank Lang, a botany professor at Southern Oregon State College (SOSC, now Southern Oregon University). Barb finished her BS in Biology at SOSC in 1980 with enough classes in botany to qualify for botanist positions with the federal government. Her first job was a biological technician gathering field data and monitoring rare plants for the Medford District Bureau of Land Management (BLM) from 1981-87. She then took a forestry technician position with the Rogue River National Forest which led to the District Botanist position on the Applegate Ranger District within a couple of years. There she was responsible for "all things botanical," including managing the programs for rare plants, invasive species, fire rehabilitation, and restoration projects for bitterbrush and in oak woodland communities. On New Year's Eve 2015 she retired as District Botanist from the Siskiyou Mountains Ranger District (formerly the Applegate Ranger District), where she had served as botanist for 28 years, with occasional work on the Coast and the High Cascades. She is best known as an advocate for the region's rare and endemic plants and for her work on noxious weeds both as a professional botanist and as a volunteer.

For decades, Barb tirelessly tabled and presented community talks on identifying and controlling noxious weeds. She led or joined innumerable weed-pulling work parties and helped coordinate the annual Let's Pull Together educational noxious weed event with the Jackson County Weed Management Area. She took the lead in manually controlling a new threat, yellow floating-heart (*Nymphoides peltata*), in Little Squaw Lake, a project that involved removing plants and, with the help of scuba divers and volunteers in kayaks, covering the lake bottom with landscaping barrier fabric to prevent re-establishment by seed germination and rooting of fragments. Barb was

recognized for her incredible service and received the 2002 Special Recognition Award from the Oregon Department of Agriculture and the 2012 US Forest Service Region 6 award for Invasive Plant Manager of the Year for outstanding dedication, professionalism, and effectiveness in combating weeds in the Pacific Northwest Region.

She joined NPSO in 1988, so has been a member of the Siskiyou Chapter for 30 years. She has volunteered in so many capacities that the following listing may not include all of them. At the State level, she served as NPSO Director-at-Large in 1989-91. At the Chapter level, she was President twice (1991-92 and 1996-97), Secretary/Treasurer (1988-89), and Field Trip Coordinator for four years (1991-95). Barb has also helped coordinate annual meetings, led numerous plant walks, collected and identified plants for the Siskiyou Chapter 4th of July Wildflower Show for over 30 years and identified plants for the Shady Cove Wildflower Show for 20 years. She led wildflower walks for over 20 years on the Table Rocks as part of The Nature Conservancy/BLM guided hike series. She currently oversees the enormous task of coordinating

the Irene Hollenbeck Memorial July 4th Wildflower Show in Ashland. She has also volunteered to help plan the 2019 annual meeting hosted by the Siskiyou Chapter.

From her home in a forest in the Applegate Valley, Barb continues to volunteer in many ways to safeguard our beautiful natural plant communities. It is not unusual to hear that someone spotted Barb along a roadside pulling invasive weeds. Barb is an incredible asset to the Native Plant Society of Oregon and skillfully and humbly makes a difference in the community. —*Kristi Mergenthaler, Siskiyou Chapter.*

Linda Ann Vorobik - 2019

When Linda was just a baby, her parents bought 34 acres on Lopez Island, the perfect setting to learn about the natural world around her. She started by helping her mother in the garden, then expanded to surrounding natural areas. Her parents taught her the names of the native plants and gave her art supplies for birthday and holiday gifts, encouraging her natural artistic talents as well. She took every class that her favorite



high school teacher, Coleman Leuthy, taught: botany, chemistry, photography, and more. Based on her love of animals, she started college with the intention of becoming a veterinarian. She soon realized that ecology, botany and geology were more exciting and involved studying outdoors, and the labs smelled wonderful, not like the preservatives used for animal specimens. At Western Washington University in Bellingham, she acquired two mentors: Dr. Ron Taylor (author of *Sagebrush Country*) and Dr. Rich Fonda (vegetation of the San Juan Islands and the Olympic Peninsular river terraces). She completed a BA in biology with a minor in math in 1977. In 1978 she worked for The Nature Conservancy Natural Heritage Program and spent a year with Jean Siddall assembling the first rare plant list for Oregon. One weekend during that year she visited the Siskiyou Mountains and fell permanently under their spell. The summer of 1979 she went to Ketchikan, Alaska, to work as the sole field botanist for the Tongass National Forest. This was during the first year of her Fellowship with Dr. David Wagner, where she worked in the herbarium and assisted with the spring Systematic Botany class. Wagner encouraged both her artistic and botanical interests with his “zen-like approach to academics.” Linda went on to earn a PhD in Biology in 1985 with fieldwork in the Siskiyou Mountains. Her dissertation was *Hybridization and Reproductive Isolation between Sympatric Arabis (Cruciferae) in Southwestern Oregon*.

Linda took five art classes while in college. She tells us that, while she learned from wonderful art teachers in junior high and in high school, her experience in college was a different story. When she presented her first plant drawing to her college art teacher, he told her, “That’s not art.” But when she saw the botanical illustrations by Jeanne Janish in *Vascular Plants of the Pacific Northwest* Linda realized, “I want to learn how to do this.” She showed Janish’s illustrations to Dr. Taylor in her systematic botany class and shared her interest in learning how to create illustrations like Janish. A couple weeks later, Dr. Taylor proposed that she create illustrations for his lab manual. Many drawings and a few months later, Linda had earned 9 credit hours creating botanical illustrations, and Washington Native Plant Society members are still using these illustrations in a botany primer. After graduation Dr. Taylor paid her \$100 to draw four new plates for the glossary of his lab manual. Later, Linda had the opportunity to learn from Janish in person at a one-day workshop at Southern Oregon University (sponsored by Dr. Frank Lang). Janish was kind enough to correspond with her afterwards and provided continual feedback about her work. Almost all of Linda’s professional botanical illustration is based on herbarium specimens, but you

wouldn’t know it by looking at them. She has developed the ability to transform dry flattened plants into illustrations that appear three-dimensional.

Thus, Linda juggles two specializations: plant systematics and botanical illustration. She is a Visiting Scholar at the University Herbarium at UC Berkeley and at the University of Washington in Seattle. (We are fortunate that her commute takes her through Oregon; her enthusiasm and generosity have enriched our knowledge of its flora.) She served as principal illustrator for *The Jepson Manual, Flora of North America* Vol. 25, and numerous other floras, and has illustrated many new species for a variety of authors. Since 1993 she has earned her living as a freelance botanist/botanical illustrator, and continues to conduct field research as well, no small feat in this world. She teaches botany and botanical illustration workshops in California, Oregon, and Washington, as well as an orchid-painting workshop in Hawai’i. In addition to scientific illustration, she creates fine art in the form of botanical watercolors, prints, cards, and silk scarves.



Linda has been an active member of the Native Plant Society of Oregon since her botanical interests shifted to Oregon.

As a graduate student at UO (1981-82), she edited the NPSO monthly Bulletin, when “cutting and pasting” was literally cutting and pasting paper for the layout. She was awarded the Jean Davis Memorial Award in 1983 by NPSO. She took over the editorship of our journal, *Kalmiopsis*, after David Kennedy’s last issue in 1996, and served in that position until 2002. During her tenure, she created artwork and gave the journal a classy new style. (She also edited the quarterly journal of the California Native Plant Society, *Fremontia*, from 2000 to 2006.) She has presented programs and led field trips for various NPSO chapters and state meetings. Her booth of artwork graces each annual meeting and she donates a percentage of the sales to the hosting chapter. Linda was among those who presented at the first conference on the ecology of the Siskiyou Mountains in 1997. This conference led to environmental educational and advocacy actions that eventually become KS Wild and the Siskiyou Field Institute (SFI). Linda has been teaching summer classes at SFI for over 20 years: Botanical Illustration, Crash Course in Flowering Plant Families, Advanced Plant ID (with individual courses for composites and grasses). Linda credits NPSO Fellows Rhoda Love, Charlene Simpson, and Veva Stansell for encouraging her growth as a botanist; they shared their passion for and knowledge of plants on many wonderful botanical outings. —Cindy Roché, *High Desert Chapter*.