OREGON FLORA NEWSLETTER

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Lilla Irvin Leach (1886 - 1980)

by Jessica L. Wade

Lilla Irvin Leach was a field botanist who specialized in Oregon flora. She collected plants all over the Northwest, increasing her private collection and furnishing specimens to many colleagues. Her main area of interest was the Siskiyou Mountains. Between 1928 and 1938 she and her husband, John Roy Leach, spent nine summers there. Most often they walked with their two burros, Pansy and Violet, carrying the gear. The local residents called them the "Mule People" and considered them a bit odd.

Lilla was born on March 13, 1886, on a stock farm in Barlow, Oregon, a 640-acre donation land claim settled by her pioneer grandparents. It is said Lilla made her first botany expedition at the age of 6 with the family dog in tow. Throughout her childhood, she wandered the surrounding acreage, both on horseback and on foot, nurturing her interest in plants. She attended grade school in Barlow and Aurora before entering Tualatin Academy, a preparatory school in Forest Grove. At the Academy she took her first formal botany class and met John Leach. She received a B.A. from the University of Oregon in 1908 where she studied under Professor A. R. Sweetser who considered her his ". . . most distinguished student."

For the next 5 years, she taught science and botany at Eugene High School, and was responsible for establishing a botany department in the Eugene public school system. Lilla and John were married in a meadow, on the Irvin

See Leach, page 2

Lilla Leach collecting Damasonium californicum *near Burns, June, 1927. Courtesy of Oregon Historical Society. Lot 370-523.*

Challenge drive boosts Flora project!

by Scott Sundberg

The Oregon Flora Project Challenge donation drive was a huge success! From mid-October to the end of December, we solicited donations to match an anonymous donor's generous offer to match, dollar for dollar, up to $10,000 in new donations received by the Flora project [see OFN 6(3)]. Response to the Challenge was overwhelming, and by mid-November the goal had been met. The donor, who was

Photo: Aaron Liston

Ken Chambers and Wilbur Bluhm at the Challenge celebration, January 31, 2001

impressed by the public's support of the project, responded by doubling the offer to $20,000! Momentum of the drive continued and by its end $26,879 in donations were received, bringing total support to $46,879!

Thank you, anonymous donor, for your substantial donation and for making the Challenge possible! We are also extremely grateful to 231 individuals and couples, and a variety of clubs and organizations, including several Native Plant Society of Oregon chapters, for their support. Friends of the Oregon Flora Project members Linda Hardison, Michael Hartman, Keli Kuykendall, Rhoda Love and Esther Gruber McEvoy worked hard on the Challenge. Maya Abels (OSU Foundation) and Stella Coakley (Dept. of Botany and Plant Pathology) provided invaluable advice.

Funds received during the Challenge drive are already paying salaries for three part time staff members. The Flora project is charged up with renewed energy and enthusiasm, thanks in part to the success of the Challenge drive. Thanks!

Leach, continued from front page

property, September 13, 1913. The alter was a moss-covered tree stump. John said he finally convinced Lilla to marry him by promising to take her places the "cake-eating botanists" could never go. Lilla was not directly affiliated with a university nor did she receive monetary compensation for any of her botanical work. She and John worked as a team, organizing and paying for their own expeditions. Louis F. Henderson, Curator of the University of Oregon Herbarium, and Morton E. Peck of Willamette University described and named most of her discoveries.

On their first trip to the Siskiyous, they started down the Rogue River Trail, then struck off into the wilderness. There Lilla discovered *Cotyledon glandulifera*, *Cryptantha fragilis*, *Iris innominata*, and *Bensonia oregana*, her first new genus. She also picked up what she described as a very interesting pea vine, but was unable to find its seed pods. They returned to this area the following year to look for pods without results. Ten years later, June 16, 1938, they again returned and this time succeeded. The plant was named *Sophora leachiana*, the only member of its genus found on the Pacific coast.

Lilla did not keep a journal, but made personal notes in the margins of her pressing papers that reveal a woman with unshakable fortitude, a deep love of natural beauty, and a wry wit: "August 11, 1928. Pansy went over a grade and rolled about 40 feet over and over landing at the brink of a 60-foot creek bank against a log and small log on top of her. I was a few minutes getting her unpacked as her heels were up and all knots down. She began to eat as soon as she was on her feet." And: "June 25, 1930. A few nights ago we slept on a grave. Last night at the home of a crazy man. We liked the dead man better."

Lilla discovered *Kalmiopsis leachiana*, on June 14, 1930. She describes the incident this way, "I was in the lead where I usually walk in order to get the first chance over the burros to anything of interest that might be growing when suddenly I beheld a small patch of beautiful low-growing deep rose colored plants and because of its beauty I started running toward it and dropped to my knees . . . I had never seen anything so beautiful before." She sent a specimen to Louis Henderson who published it as a new species, *Rhododendron leachianum*, in 1931. He also sent a specimen to Alfred Rehder at the Arnold Arboretum of Harvard University. Rehder recognized it as a new genus and, in 1932, the plant was republished as *Kalmiopsis leachiana*. Lilla considered it her best find, "the thrill of a botanists lifetime."

The Leaches bought a piece of land along Johnson Creek in southeast Portland in 1931 and built a home. They named the property Sleepy Hollow, and turned the surrounding hillside into a botanical garden where they welcomed anyone interested in plants. The property was willed to the City of Portland and is now known as Leach Botanical Garden. Lilla's herbarium of approximately 3,000 specimens was donated to the University of Oregon. Her sheets are now part of the OSU collection. On October 3, 1992, in honor of their wish, the cremated remains of Lilla and John Leach were scattered in the Kalmiopsis Wilderness.

Challenge celebration (left to right): Linda Hardison, Charlene Simpson, Ken Chambers, Peter McEvoy and Bert Brehm. Photo by Aaron Liston.

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

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

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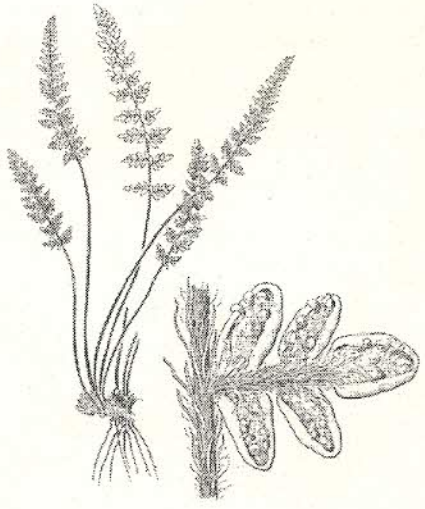
New and old lip-ferns of Oregon

by Kenton L. Chambers

Do ferns hybridize? One might as well ask, "Is the Pope Catholic?" Ferns are notorious for their propensity to develop "hybrid complexes," in which species cross-fertilize in multiple combinations and the hybrids establish true-breeding sexual or asexual populations. Known examples in Oregon's flora include *Polystichum* (sword-fern, holly-fern), in which *P. californicum, P. kruckebergii,* and *P. scopulinum* are polyploid species of hybrid origin, and *Polypodium* (polypody), with *P. hesperium* representing a similarly fertile polyploid hybrid. Other Oregon ferns that may be involved in hybrid complexes include species of *Asplenium, Cystopteris, Dryopteris, Gymnocarpium,* and *Woodsia.*

The fact that particular species of ferns have originated through hybridization is usually not mentioned in standard floristic references, but an outstanding exception is the recently published *Flora of North America*, Volume 2 (1993). In this volume, which covers North American pteridophytes and gymnosperms, there are charts showing species' relationships within many genera, citing numerous hybrids which may be sterile, sexually fertile, or fertile by asexual means.

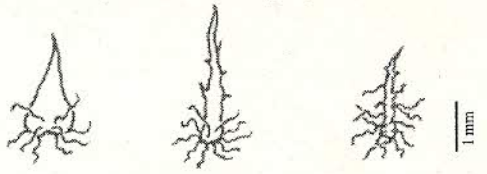
Species of the genus *Cheilanthes* are called "lip-ferns" because the margins of the leaflets roll over and cover the spore-cases like lips covering a mouthful of teeth. *Flora of the Pacific Northwest* mentions two Oregon species, *C. feei* Moore (Fee's lip-fern) and *C. gracillima* D. C. Eaton (lace lip-fern). The former reaches the state only in Wallowa County, while the latter occurs commonly in rocky sites throughout the Cascade Range and Siskiyous, as well as disjunctly in the Wallowas. In Peck's *Manual of the Higher Plants of Oregon* a third species, *C. intertexta* (Maxon) Maxon (coastal lip-fern), is cited from the "Siskiyou Mtns." southward to California. However, the only recorded sighting of *C. intertexta* in Oregon is a 1930s collection by F. H. Heckner from "lava country east of Brownsboro, Jackson Co.," a site in the south Cascade Range, not the Siskiyous. The species has long been listed (e.g. ONHP List 2) as rare in Oregon but stable elsewhere.



Cheilanthes gracillima *showing undersurface of leaf. Drawing by Jeanne R. Janish from Hitchcock et al. 1969,* Vascular Plants of the Pacific Northwest, *courtesy of University of Washington Press.*

In June of last year, Richard Brock made a collection of *Cheilanthes* on Heppsie Mountain, east of Brownsboro, which resembled *C. intertexta* and therefore might comprise the second known occurrence of this species in Oregon. However, when I studied this specimen at Richard's request, I came to the surprising conclusion that it is not *C. intertexta* after all, but rather the closely related taxon *C. covillei* Maxon! This species is best known from desert regions of Arizona and southern California, but according to *The Jepson Manual—Higher Plants of California*, it extends northward to the Sierra Nevada and North Coast Range in California. Its key differences from *C. intertexta* are the shape and degree of dissection of the tiny scales covering the underside of the leaflets. As shown in the accompanying drawings, the scales of *C. covillei* are ovate, hairy at the base, and overlapped to form a continuous cover

Cheilanthes *leaf scales. Drawings by K.L. Chambers.*



C. covillei C. intertexta C. gracillima

over the spore-cases. In *C. intertexta* the scales are much narrower and irregular in shape, with hairs on the base and margins. *Cheilanthes gracillima* is closely related to these two species, but it has matted hairs and narrow scales among the spore-cases, and its leaves are only twice-pinnate rather than three times divided.

The final piece of the lip-fern puzzle in Jackson County came into place recently, when Richard Callagan showed me a collection of *Cheilanthes* he had made in 1998, on rock outcrops in the Little Butte Creek region south of Heppsie Mountain. His plants represent *C. intertexta* and are similar to the 1930s collection by F. H. Heckner from "east of Brownsboro."

To return to the theme of hybridization with which I began this article, *C. gracillima, C. covillei,* and *C. intertexta*—the three lip-ferns now known to occur in eastern Jackson County—comprise a unique "hybrid complex." According to *Flora of North America* and other references, *C. intertexta* evolved as a fertile polyploid hybrid from the cross of *C. gracillima* times *C. covillei.* Like many other hybrid fern species, *C. intertexta* has an ancient origin and behaves like an independent entity, able to grow alongside its parental species and remain genetically isolated from them (although sterile offspring sometimes are produced from back-crossing with *C. gracillima*). Future field studies in the southern Cascades of Oregon might uncover sites where two or more of these lip-fern taxa grow together, possibly with back-cross hybridization adding to the morphological complexity of the group.

Thanks

The Oregon Flora Project is grateful for strong financial support and increased volunteer participation over the past several months. The 2000 Challenge Drive led the way to a large increase in contributions.

Letters and notes were included with some donations. One donation was given in the names of Mike and Nancy Fahey, Russ Jolley, and Debbie Fahey as Christmas and birthday gifts. Other donations were in memory of Karl Urban, Leighton Ho, and Irving Lord. One donor wrote, "I am a Duck. Please do not send any Beaver publications (but I hope they beat Notre Dame)."

We are grateful to the Mountaineers Foundation (of Seattle) for a grant in support of a checklist of Oregon trees. We also thank the JenBeck Foundation, the Native Plant Society of Oregon, NPSO Blue Mountain, Cheahmill, Corvallis, Emerald , Klamath Basin, Mid Columbia, Portland, Umpqua Valley, and William Cusick chapters, and to Willamette Industries Inc. Western Timber and Logging, which have recently made significant contributions to the project.

Thanks to editors and reporters for the *Oregon Stater Magazine* and the newsletter *Posies and Pathogens* for recently publicizing the Oregon Flora Project. Special thanks to Judy Oliver and Barbara Halliday, who recently organized volunteer work parties in the herbarium.

Many thanks to the following donors who have recently contributed via the OSU Foundation or the NPSO Friends:

Thanks also to the following, who have helped by volunteering, sending in species lists or specimens, or providing information on Oregon plants: Maya Abels, Karl Anderson, Clay Anticau, Mariana Bornholdt, Richard Brock, Bob Budesa, Richard Callagan, Stella Coakley, Susan D'Alcamo, Dave Dobak, Jean Findley, Ann Fong, Tom Gatti, Barbara Halliday, Glenn Halliday, Joe Hanus, Don Heinze, Noel Holmgren, Mart Hughes, Jeanne Klein, Barbara Long, Tom Meehan, Ed Meyers, Holly Nielsen, Bob Oliver, Judy Oliver, Sherry Pittam, Mark Quistad, James Reveal, Ward Richter, Cindy Roché, Bruce Ryan, George Schoppert, Hariet Schoppert, Paul Slichter, John Syring, Jessica Wade, Laura White, Jo Yeager, Walt Yungen, and Steve Ziemak.

Rupert C. Barneby (1911-2000)

by Aaron Liston

Rupert C. Barneby, one of the most accomplished taxonomists of the 20th century, died at the age of 89 on December 5, 2000, after a short illness. Barneby, of the New York Botanical Garden, was incredibly productive, describing 1,160 plant species new to science, and publishing over 6,500 pages. He was famous for his lucid prose, meticulous descriptions, and insightful observations into the origins and relationships of species. Barneby's taxonomic treatments were rich in detail, and one learned more upon every reading. Most of Barneby's effort was focused on the plant family Fabaceae, and his monographs of *Astragalus*, *Oxytropis*, *Dalea* and several important Mimosoid and Caesalpinoid genera are unrivaled. In addition to his monographic work, Barneby made a major contribution to North American floristics in his Fabaceae treatment for the *Intermountain Flora* (Volume 3B, 1989).

I met Rupert Barneby in August 1986. I had a budding interest in the genus *Astragalus*, and was eager to meet the man who wrote the magnificent "Atlas of North American *Astragalus*." We had a lengthy discussion, and he suggested a group of annual species, *Astragalus* subsect. *Californici*, as an object of study. I followed up on his suggestion, and ultimately conducted my PhD research on this group. We continued to correspond after our initial meeting, but I regret that we did not meet again. I was thus surprised and honored when he wrote me last year, asking if I would accept his *Astragalus* and *Oxytropis* books. Seven boxes of books arrived soon after his death, and have been placed in the OSU Herbarium Library. The books and reprints will be a valuable resources for students and researchers studying these genera and will serve as an inspirational reminder of Rupert Barneby's immense contributions to systematic botany.

www.oregonflora.org

The Oregon Flora Project now has its own Internet address! We have recently moved from the OSU herbarium web site. The site has been redesigned and has several new features, including an online version of the **Asteraceae checklist**. Check it out!

Louis F. Henderson (1853-1942)
The grand old man of Northwest botany
by Rhoda Love [Occ. Paper No. 2, NPSO, 2001]

review by Scott Sundberg

Louis F. Henderson was one of few early Pacific Northwest botanists who collected and described plants throughout Oregon, Washington, and Idaho. He essentially had three careers, as a high school teacher and principal in Portland, Oregon, as a professor at the University of Idaho in Moscow, and late in life as Curator of the University of Oregon Herbarium in Eugene.

Rhoda Love has given us a glimpse into the many fascinating facets of Henderson's life in a clear, readable style. Numerous quotes and anecdotes accent this account of his personal and professional lives. One of my favorites describes his swimming across the Columbia River nine days before his 70th birthday! Dr. Love's interest in Henderson began in the mid-1960s. For the past several years she has painstakingly researched his life by poring over voluminous written archives and plant specimens, visiting many places where Henderson had lived, and interviewing family members.

Henderson's memory is now alive at the OSU Herbarium, where most of his specimens have resided since 1993, when UO Herbarium was closed and the specimens moved to Corvallis. His distinctive handwriting can be seen on thousands of specimens he and his student assistants collected. They are a delight to study, as Henderson often wrote notes concerning aberrant characteristics of the plants as well as their uses by Native Americans.

The 64-pageHenderson biography is enriched by 54 figures, including photographs of numerous letters, people important to Henderson, work places, and plant specimens. It is organized into sections, with a 32-page narrative on his life, an astonishing set of 133 notes, a life chronology, his publications, and a list of plants named for Henderson. A full page of acknowledgments attests to the thoroughness of Dr. Love's research on "one of the most remarkable of the early resident botanists of the Pacific Northwest."

To order a copy send a $10 check or money order made out to NPSO to: Occasional Papers, Native Plant Society of Oregon, PO Box 902, Eugene, Oregon, USA 97440-0902.

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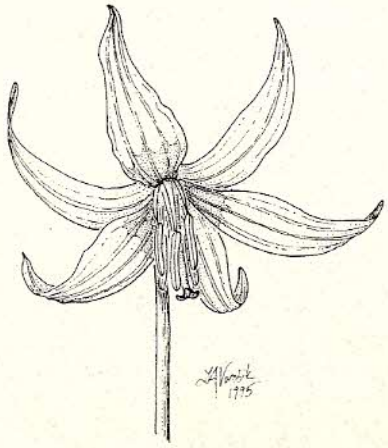
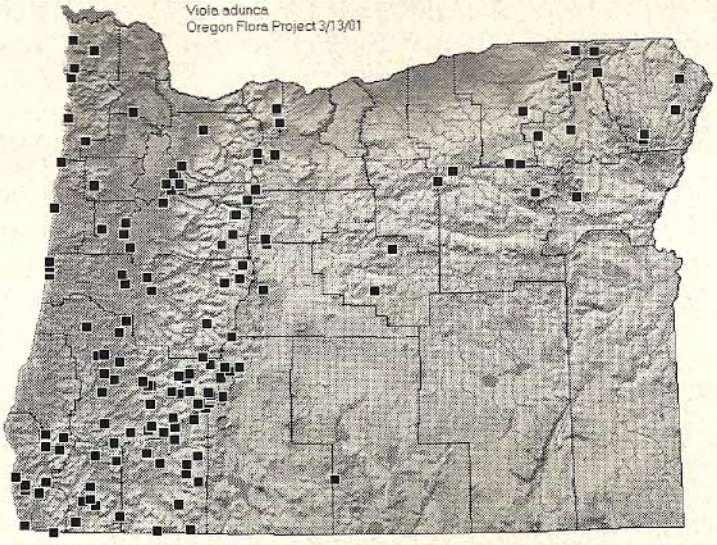


Did you know?

• In the photo on page 1, Lilla Leach is shown collecting fringed waterplantain, *Damasonium californicum* in Harney County, June, 1927. In the OSU Herbarium one can view what is most certainly this collection. The sheet, in Family Alismataceae, bears the Leach number *1046*.

• Collector Louis F. Henderson is known to have been traveling with the Leaches that summer. He too made a collection of *D. californicum,* probably at the same time. Henderson felt the specimens had narrower leaves and larger flowers than those typical of the species and in 1930 proposed a new varietal name, *D. californicum* var. *biddlei,* in memory of his friend, Henry J. Biddle (*Rhodora 32: 21).* The herbarium sheet, *Henderson 8256* from Burns, June 23, 1927, is filed at OSU with the type specimens; however, the variety is not accepted today.



Oregon distribution of hooked spur violet (*Viola adunca*)

This map of the Oregon distribution of V. adunca *was requested by U.S. Fish and Wildlife Service staff. They are updating the Recovery Plan for the endangered Oregon silverspot butterfly, whose caterpillar stage feeds only on violets in native grasslands along the coast. The map will eventually be enhanced with hundreds of additional records and varieties may be recognized within the species.*