

# Thomas Jefferson Howell and the First Pacific Northwest Flora

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Howell's mariposa (*Calochortus howellii*) in the Illinois River Valley, Josephine County; there are brown hairs above the greenish gland. Photo by David McClurg.

Thomas Jefferson Howell (1842-1912), Oregon's earliest pioneer botanist, was a man of great determination. Despite being desperately poor and only semi-literate, Howell created the first regional flora for the Pacific Northwest, self-published as a series of seven fascicles (Lange 1953). After years of gathering information for a compendium of the flora, he began writing in 1882 when he was 40 years old. The first fascicle appeared fifteen years later and the last was published in August 1903, nine years before Howell's death. The *Flora* consisted of 792 pages (plus a 24-page index) and described 3,150 species of which 89 were newly described by Howell. The seven-volume set was priced at five dollars and, although praised by fellow botanists, was a financial failure for its author.

Howell botanized extensively in Oregon and southern Washington, collecting tens of thousands of specimens, many of which he sent to Eastern herbaria (e.g., the Gray Herbarium at Harvard University) or sold to other botanists (later distributed to major herbaria of the US and Europe). As the last fascicle of his flora was being printed, Howell donated approximately 10,000 specimens from his personal collection (dating from 1875 to 1904) to the University of Oregon, and was paid \$500 during the 1903-04 school year to curate his collection (Wagner 1994).

Having a keen botanical eye, Howell discovered numerous new species, including many from the Siskiyou Mountains of Curry and Josephine counties (Chambers 2002). Early in his botanical career Howell made two significant discoveries. The first of these (in 1878) was an aquatic annual he collected with his brother Joseph from a pond near the family farm on Sauvie's Island in the Columbia River west of Portland. It was described in 1879 as *Howellia aquatilis* (Campanulaceae) by Asa Gray, who dedicated this monotypic genus to its "discoverers who are assiduous collectors and acute observers and who have already much increased the knowledge of the botany of Oregon" (Gray 1879).

Thomas Howell's second major discovery was made in 1884, when he collected a new species of spruce along Happy Camp Trail in Siskiyou County, California. The following year this "most remarkable species...singularly different from... any other conifer" (Jepson 1909) was described by Sereno Watson, who named it *Picea breweriana*, after William Henry Brewer (1828-1910) with the California State Geological Survey, co-author with Watson of the *Botany of California* (1876-1880).

Watson (1885) wrote that he named this conifer to "compliment" Brewer, who had an "especial interest in the trees of the coast." Ironically, in the fall of 1863 Brewer had visited Happy Camp and the surrounding region (Farquhar 1949), where he almost certainly encountered, but did not recognize as new, the spruce that was later to be named after him and not after its discoverer.<sup>1</sup>

<sup>1</sup>Other references (Sudworth 1908, Griffin and Critchfield 1976) indicate that the actual discoverer was Josiah Whitney who found the weeping spruce from near Castle Crags (California) in 1862 and gave a sample to Brewer, as recorded in Brewer's journal. The following year Brewer found the spruce near Mt. Shasta, and collected a branchlet. Because these collections lacked cones, Watson could not describe the new species. Perhaps the tree should have been named *Picea howelliana*, because Watson used Howell's specimen as the type for the species. On the other hand, a better name might have been *Picea pendula*, describing the distinctive drooping branches.



Herbarium sheet of *Howellia aquatilis* collected by T. J. Howell from the type site on Sauvie Island, with photo of the Howell family cabin on the island. (This house has since been demolished.) Courtesy of OSU Herbarium. Photo of Howell house by A. R. Sweetser, c. 1935.

At least 27 taxa still bear Howell's name, although some are now varieties or subspecies (see side bar on page 40). The one genus named for him has only a single species, the federally threatened *Howellia aquatilis*. The range of this delicate annual extends inland from the northern Willamette Valley and the Pacific coast states to Idaho and Montana. In addition to the taxa named for him, Howell also named over 175 taxa, of which 57 are currently accepted by the Oregon Flora Project (pers. comm., Katie Mitchell, from the OFP database).

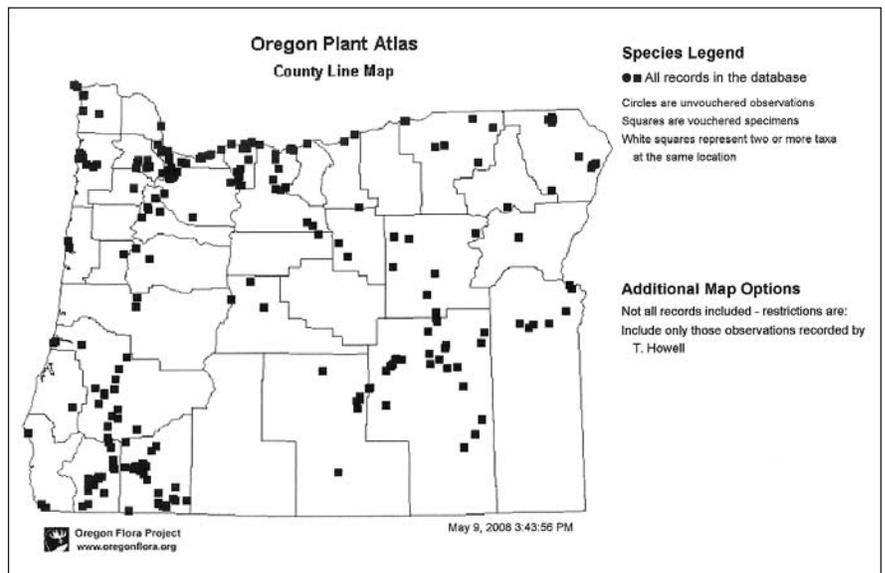
### Three Months in School

Thomas Jefferson Howell was born in Cooper County, Missouri, on October 8, 1842, the youngest of five children of Benjamin and Elizabeth (Matthews) Howell: Joseph (b. 1829), John Benjamin (b. 1831), Sarah (b. 1833), Rebecca (b. 1839), and Thomas Jefferson. Benjamin's mother was Sarah Rittenhouse, a descendent of David Rittenhouse, colonial Pennsylvania mathematician and philosopher. Benjamin did not wish to live in a slave state, so in 1850 his family joined others in a small wagon train that left Missouri in April and arrived in Oregon in October. The family first settled at Hillsboro, then moved in 1851 to Sauvie's Island (the official name is Sauvie Island, but residents of the region refer to it as Sauvie's Island), where the Willamette River empties into the Columbia. Although Thomas's father was trained as a physician, he did not practice medicine, but instead assumed possession of a 240-acre land claim on the island in 1853, which he and his three sons further cleared and farmed. It was here that Thomas and his two older brothers, John and Joseph, lived for many years (Lange 1953, Vaughan 1974). John and Joseph lived on Sauvie Island for the rest of their lives, while Thomas later lived at various locations in and around Portland.

Thomas Howell's formal education consisted of only three months in 1855 at the first school built on the island. Otherwise, he and his brothers were self-taught via reading, with help from their father. As a youngster Thomas became interested in learn-



Brewer spruce (*Picea breweriana*) on Little Grayback Mountain between Happy Camp, California, and Cave Junction, Oregon. Photo by Timothy D. Ives, 2002.



Map of Howell's collection locations in Oregon. Howell collected multiple specimens at each site.

ing the names of plants that grew wild near his home on Sauvie's Island. As he began collecting and describing plants, he developed a strong interest in the science of botany (at the same time losing enthusiasm for farming). In 1877, at the age of 35, he published a 22-page *Catalogue of the Flora of Oregon, Washington, and Idaho*, a work that he later referred to as "an advertisement" because he was selling plants, both pressed and living. This was updated four years later and followed in 1883 by the *Catalogue of the Plants of N. Western America* and in 1887 by the 28-page *A Catalogue of the Known Plants (Phaenogamia and Pteridophyta) of Oregon, Washington, and Idaho* (price: 25 cents). According to the preface of the latter, it listed 2,152 species and 227 varieties (Lange 1953). Howell also learned from fellow botanists during collecting trips, as described in a 1929 letter from Louis F. Henderson to noted California botanist Willis L. Jepson:

"... We made many excursions in Oregon, going from the coast to the limit of vegetation in the mountains, and always friends. Though he read a great deal, owing to lack of early education, he was greatly handicapped. ... He was especially ignorant, as you tell me you realize, of Latin or Greek. So I used to spend a good deal of the time as we traveled about in our wagon in going over with him the common rules of English grammar and conversation, and in trying to at least teach him the three genders of the common Latin adjectives. Even in this I did not succeed very well, as you and many others have realized from his improper endings" (Lange 1966).

Although Howell's grasp of spelling common English words was deficient (as seen in letters below), he carefully taught himself to spell plant names and Latin descriptions.

### Howell's Letters

Much of what we know of Howell comes from his correspondence with botanists who saved his letters, including E. L. Greene, Sereno Watson, W. N. Suksdorf, C. V. Piper, W. L. Jepson, George Vasey, and B. L. Robinson.

Howell corresponded with Greene (1843-1915) for nearly a decade and a half, starting when Greene headed the Botany Department at Berkeley. Approximately 90 letters from Howell to Greene are filed at Notre Dame. Greene was an important source of taxonomic information, identifications, financial assistance (as loans), and provided a journal for publishing some of Howell's articles. Greene was better educated and better situated academically than Howell, but on several occasions Howell's botanical opinions differed from Greene's, usually on matters of identification. Clearly, Howell was a keen observer of plants in the field and knew the flora of the Pacific Northwest intimately, whereas Greene did not. Throughout their voluminous correspondence, Howell addressed Greene as "Mr. Greene" and usually signed his letters "Thos. Howell." His letters seldom strayed from botanical matters, and since only one of Greene's letters to Howell apparently exists, one can only surmise from Howell's replies what Greene wrote to him. After leaving Berkeley in 1884, Greene went to the Catholic University of America in Washington, DC, then in 1915 (the year of his death) to the University of Notre Dame, which is where his correspondence is archived. The earliest letter from Howell preserved there is dated 10 December 1890, and was written from the National Hotel in Portland ("terms, \$1.00 per day").

In April 1897, Howell wrote concerning the names of various lupines. He was apparently responding to Greene's comments on Howell's lupine manuscript. Howell admits his own errors, agrees that Greene is correct about some misidentifications, but also disputes Greene on some issues. A bit of Howell's taxonomic philosophy is inserted: "As I do not beleave [*sic*] in varieties I will leave No. 1918 to you." He concludes with "If you could put in one season here among the Lupines, I think you would find, as I have, that they are in grate [*sic*] confusion." In his rejection of varieties, Howell may have been heavily influenced by Greene, whose religious beliefs led him to regard each kind of plant as a separate species created by God; to acknowledge variation was to accept Darwin's concept of evolution. In the final version of his Flora, Howell included over 50 varieties, even though he writes in his preface that he has "raised nearly all published varieties of the region embraced in this work to specific rank" (Howell 1897-1903).

Characteristic signature of Thomas Jefferson Howell.

### Botanical Specimens for Sale

Howell traveled widely throughout the Pacific Northwest collecting plants, which he pressed, labeled and sold. Because he lacked references and herbarium specimens with which to identify his collections, Howell sent them to botanists elsewhere for identification. His coterie of identifiers included George Vasey (1822-1893) of the U.S. Department of Agriculture in Washington, DC (grasses), L. H. Bailey (1858-1954) at Cornell University (sedges), Asa Gray (1810-1888; Gamopetalae) and Sereno Watson (1826-1892; Polypetalae), both at Harvard University (Lange 1953).

By 1887 Howell had enough confidence in his knowledge of the Northwest flora to write a chiding letter to America's botanical leader, Professor Asa Gray of Harvard, pointing out problems with Grays' recent treatment of the genera *Lewisia* and *Calandrinia* in the family Portulacaceae (Gray Herbarium archives, Harvard).

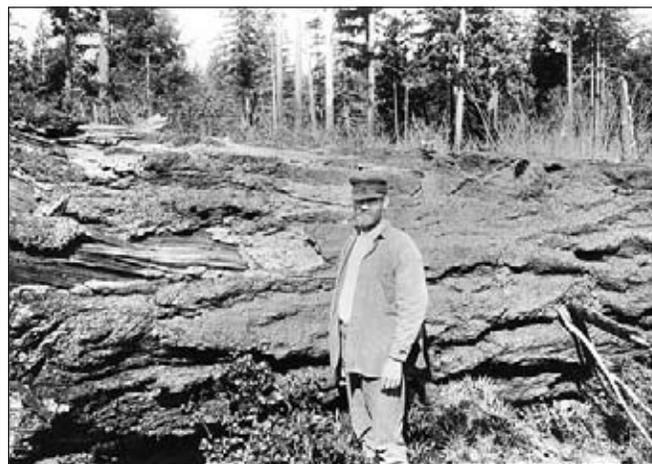


Photo of Thomas Jefferson Howell taken in the field standing in front of a giant Douglas fir log. The date, photographer and place are unknown, but the size of the log suggests a location near the Pacific coast. Photo courtesy of Hunt Institute for Botanical Documentation, Carnegie Mellon University, Pittsburgh, PA.

Modern botanists agree that Gray, who was only a year away from death at the time, was not “up to snuff” on these groups of plants (T. J. H. to A.G., March 28, 1887, Gray Herbarium, Harvard; K. Chambers to R. M. Love, October 2, 2007). Letters from Howell to Sereno Watson between 1884 and 1887 also take Watson to task for some of his identifications. By 1887 Howell had begun naming plants on his own: “I had these on hand and could not distribute them until they were named; and I have to sell all I can to pay the very heavy expense of collecting in this country” (Gray Herbarium archives, Harvard).

An important source of Howell’s financial support, pressed specimens were offered for sale via a number of price lists that were sent to prospective customers. If relatively few specimens were ordered they were priced at 8 to 10 cents each, but larger orders reduced the prices to 4 to 8 cents per specimen. Howell’s last price list was issued in 1896. If Howell kept field notebooks these have not survived (Lange 1953).

It is probable that Greene made Howell an offer to collect living plants for the new botanical garden of the University of California founded by Greene and W. L. Jepson in 1890. On April 11, 1892, Howell wrote:

“I cannot accept your offer to work exclusively for the University of Cal. I have always asked and received \$5.00 per day and all expenses paid whenever I have done any of that work and I have done considerable of it; As none but dealers can afford to pay that price as a rule, and if they find I have worked for you at a low rate it will interfere with business. But I will make you this offer as I will be near Waldo [Josephine County, Oregon] during the latter part of this month I will collect and ship to you all the perennial plants and shrubs that I think will do to ship this spring and note the localities of others so that I can get them next fall. For this I will charge you 10 cents each for all that I send that is 10 cents for each plant and will send

as many of each species as you want...I will also make you as many herbarium specimens as you want of anything that grows there at \$4.00 per hundred.”

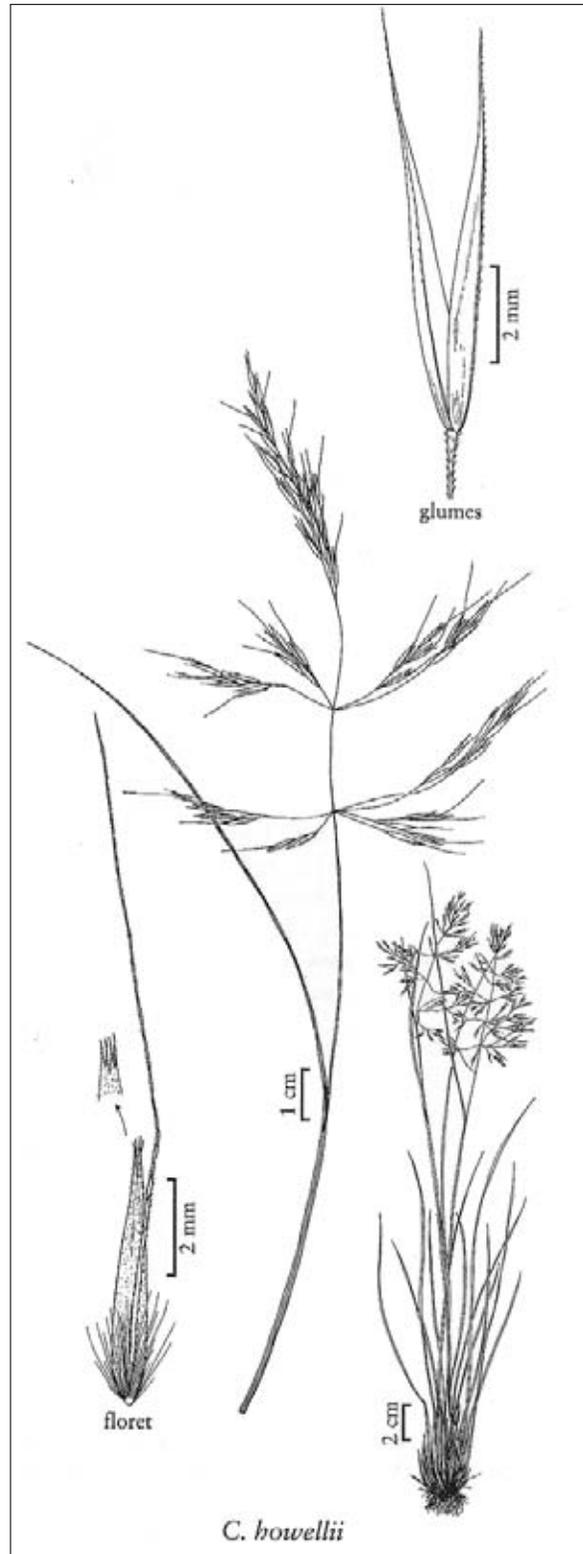
In a letter of June 28, 1892, Howell asked if Greene wanted living bulbs of species of *Erythronium*, *Camassia*, *Calochortus*, *Hastingsia*, *Lilium* and “anything else I can get.” (There is no record of Howell having actually done this work for Greene.) Apparently, Greene persisted in his efforts to employ Howell for collecting herbarium specimens. On 22 March 1893 Howell responded:

“I have never been able to work for you because I did not think that you wanted to pay me what I could afford to take. As you know, traveling expenses are high in Oregon, and my time is worth something so if I worked for you I would not make ordinary wages unless you could pay me five dollars per day. Or I could work for you at two dollars per day and all expenses paid. ...for either of these prices I would go to any part of the Pacific coast States and collect anything that I could that you would want; and make as copious field notes as you would like...If you want me at the above price I will be at your service whenever you want me to go, but I would like to know what you think of it as soon as convenient.”

(Because replies from Greene to Howell have not survived, we do not know if Greene contracted with Howell to collect plants.)

### “Thus is the Breed of Botanists Recognized”

Fellow pioneer botanist, Louis F. Henderson (1853-1942), who at that time taught in the Portland public schools, described Howell as a “great friend of mine,” and visited him frequently (Love 2001). In 1882 they traveled together by horse and wagon to Tillamook Bay, then to Mt. Adams. At Tillamook Bay, Henderson (1932) recalled they rowed out to the spit: “Here we lived for 2 days, literally combing the dunes, tide-lands, and even shallows



Howell collected the type for cliff reedgrass (*Calamagrostis howellii*) at Hood River the year before Henderson wrote during their 1882 botanical exploration that they “discovered on the rocks that peculiar, light-colored grass, known as *Calamagrostis howellii*, and named by Vasey.” Illustration by Cindy Talbot Roché and Annaliese Miller, copyrighted by Utah State University, reprinted with permission.



Thomas Jefferson Howell as a young man. Courtesy of Oregon Historical Society, #OHS54432.

for specimens. Most of the plants we gathered were already known to the books, but a few were new species, as we afterwards found out. Among these were the grasses *Poa macrantha* and *Poa confinis*, both named by Vasey, and *Sanicula howellii*, of Coulter and Rose.” [*Poa macrantha* was based on a later 1887 collection by Howell at the mouth of the Columbia River, but *P. confinis* was based on a collection made during the visit to Tillamook Bay. *Sanicula howellii* is now referred to *S. arctopoides* Hook. & Arn.] On their way up the slopes of Mt. Adams, fallen trees and dense brush impeded their progress until, as Henderson (1932) later recalled:

“Howell himself made a most surprising proposition. It was that we both get out and walk, he driving the team and I catching hold of a wheel and helping team and wagon over the logs!... Thus, by very exhaustive work, we were able to reach the snow line and a most beautiful camping spot by night. And the glory of those subalpine and alpine slopes.... Stock, especially sheep, had not ruined the native pasture at that time, and there were succulent bunch and other grasses up to your knees.... Probably the most beautiful and succulent of these grasses is *Festuca viridula*, then a new species and found by us for the first time on Mt. Adams, though Suksdorf, who was up there at the same time with a band of sheep, first sent it to Vasey. [*F. viridula* Vasey, however, is based on a California collection made by H. N. Bolander.] This grass and some of the other bunch-fescues were then so abundant on the open slopes, that a horse when picketed amongst them by a 40-foot rope would eat his fill and lie down without

finishing his forage within the radius of his rope. Now one has often to travel miles before he will see a stalk of these grasses and then only when protected by rocks or brush. On this same trip we found the then unpublished prickly Gooseberry, named *Ribes ambiguum* by Watson, but later changed to *Ribes watsonianum* [by Koehne, since *R. ambiguum* had been pre-empted].”

It is probable that Henderson induced Howell to assign field numbers to the collections made on this trip, since the holotype of *Sanicula howellii* Coult. & Rose is Howell no. 16.

In 1895 Howell spent two months collecting along the southern coast of Alaska with his friend, Portland amateur botanist Martin W. Gorman (Bornholdt 2006). Seven years later, Gorman visited W. L. Jepson in Berkeley, describing for the latter some of their adventures. In his own field-book entry for 20 January 1902, Jepson noted that Howell used his

“... knowledge of engine-running in his trip to Alaska with Mr. Gorman. The two went in a little steamer. They anchored one day in a little inlet and went off to a mountain top which they saw in the distance to botanize. They returned at night to find that the 24 ft. tide had run out with such velocity that the anchor had (luckily) dragged and carried the steamer out into deep water where they managed to get aboard of her and resume their journeying. Mr. Gorman crossed the path of Tarleton who was collecting in Alaska. Some prospectors coming down the Yukon one day shouted to him ‘Say, there’s a fellow like you up the river!’ Thus is the breed of botanists recognized. Gorman is a man of 50 or 55, gray hair, more or less bald, rather prominent features, blue eyes, clean decisive way of speaking and evidently a first-rate observer.” [John Berry Tarleton (1849-1921), botanical collector in the Yukon, 1898-99. Tarleton’s Yukon collections are housed at the New York Botanical Garden.]

### Publishing his Finds

Howell sent his manuscripts to two western journals: *Erythea*, published by E. L. Greene and W. L. Jepson at the University of California, Berkeley, and *Mazama*, published by the Portland mountaineering club (The Mazamas). Howell’s article in the first issue of *Mazama* on the flora of Mount Hood above 2,000 feet listed 272 species and was for decades the only published account of the flora of that peak (Lange 1953). Howell also published articles in the early numbers of *Erythea*. In a letter from Clackamas on January 2, 1895, Howell wrote to Jepson, accompanying a manuscript for *Erythea* describing some new species:

“My library is small, and some of the names I have suggested may be occupied [sic] without my being able to find it out; if so that you know of please suggest others in their stead and publish without further advise [sic]. With this I send you type specimens of the new species described, for the University herbarium, but I see on packing them that *Mitella Hallii* is missing, and my herbarium is about 20 miles from here, so it is not possible [sic] to send it now, but will do so later.”

On October 16, 1895, Howell responded in detail to Jepson’s questions about *Darlingtonia*: “The geological formation there is a peculiar kind of serpentine and much of the lower parts of the mountain is well supplied with springs that run clear water all

the year round.” Thus Howell went on record as one of the first western botanists to recognize the importance of edaphic factors in plant distribution.

### “Never Saw a Man with So Much Fortitude”

Howell supported himself in various ways. During his early years he helped farm the property on Sauvie Island. From early 1873 until mid-1876 he served as postmaster of the Willamette Slough post office on Sauvie Island. This post office was later changed to Arthur, a name that appears as the place of publication of his early catalogues. After 1895 the catalogues and price lists were issued from Clackamas, Oregon. From early 1904 to early 1906 Howell was postmaster at the Creighton (later Oak Grove) post office. At other times he ran small grocery stores in Clackamas, Milwaukie, and Portland.

On November 12, 1893, when Howell was 51, he married Mrs. Effie McIlwane (née Hudson) who was a widow with one daughter. Howell and Effie had two sons: Dorsey Richard Howell, born October 28, 1894, and Benjamin Allen Howell, born May 29, 1904. Effie verified that the family moved frequently. She listed the following living places: Oregon City, Willamette Falls, Oak Grove, Hood Street, and Woodstock (“about an hour’s ride from Portland”) (A. R. Sweetser files, UO Archives and Special Collections.)

In the field-book entry mentioned above, Jepson wrote further of Gorman’s visit to Berkeley:



Thomas Jefferson Howell and his older son, Dorsey Richard Howell, near the falls of the Willamette River in 1900. Courtesy of Oregon Historical Society, # OrHi88298.



Howell in 1910, proudly displaying a bound copy of his ground-breaking *A Flora of North America*. The photo was taken in Howell’s small grocery store in Portland by Huron H. Smith of the Chicago Field Museum. Smith traveled west specifically to congratulate Howell on his remarkable achievement. AR. Sweetser papers, Ax75 Special Collections and University Archives, University of Oregon Libraries.

*“Gorman said that ‘Howell is very poor but he never saw a man with so much fortitude.’ He is very poor, having lost the money he received from the sale of his share of his father’s estate in ‘unfortunate’ investments. He was really taken in and fleeced by Portland sharpers. One man promised him an income of 300 a year, 25 a month, if he would put in 3000. Mr. Howell felt that he could live on \$25 a month in his simple way and work on his flora. But he never got back a cent either in interest or principal. Another man who was looking for suckers got him into a laundry business scheme and in addition got his signature to certain notes for machinery and then skipped out.”*

Later, at the end of July 1906, after Howell’s complete *Flora* had been published, Jepson paid him a visit in Oregon, making the following entry in his field-book:

*“called on Thos. Howell. He is building a house for himself and family in the ‘woods’ or clearing near Oregon City. ... Howell is a man below medium height, his hair brown & gray, shortish full beard. reddish face, blue eyes, slightly Roman nose. ... He is very very lame now and walks with a cane. Yet each day’s bread must be earned he says. He has a wife - not a bad-looking woman, in fact rather comely - a [step-]daughter*

of 17, etc. I did not ask about his family but so much I saw - a boy of 12, doubtless of the family. [Howell's younger son was 2 at this time.]... It is too bad to see him so miserably poor. He came into Portland with me and [I] insisted on his taking lunch with me but he would allow only a few simple things to be ordered for him."

Four years later, Huron H. Smith of the Field Museum in Chicago traveled to Portland in order to spend a day with Howell. At that time Howell operated a small grocery-candy store on Hood Street, Portland, where he also lived. Smith reported that Howell was living under very reduced financial circumstances and in his spare time manufactured teamsters' mittens on a sewing machine, for which he received seven cents per pair. In spite of this, Howell was "very cheerful at all times and betrayed no impatience with depressing external conditions" (Lange 1953). At this time Smith took the photograph of Howell holding his completed Flora.

### "Throwing away life itself"

Howell's surviving correspondence with E. L. Greene gives us a hint of the heroic efforts involved in completing his magnum opus, *A Flora of Northwestern America* (1897-1903). On 6 May 1896 (a year before his first fascicle appeared in print), he wrote:

"Your somewhat surprising though highly prized letter of April 30th has just come to hand and I hasten to answer it to disabuse your mind of any mistakes that you may labor under in regard to me and my work. ... Nothing would please me more than to have you pass upon every page of my proposed Flora before it goes [sic] to press; can you point out the way that this can be done [as?] can you show me how I can get it published at all? There is no one here that can do the work except under my direct supervision and then they want double price for doing it, and want their pay in advance and this I am unable to meet for I have been reduced to poverty by some unfortunate investments. As to the pages already printed they will probably never be distributed in their present form, for the parties that undertook to [do?] the printing have just gone back on their contract, and refuse to do any more of it on any terms that I can meet. This leaves me on the verge of despair[sic] for the manuscript that I have represents ten years work of the best part of my life and to lose [sic] it now looks to me like throwing away life itself. I shall next try the American Book Co., but I fear in order to get them to publish it I shall have to alter it so much that it will not be satisfactory to me or any other botanist. If you can suggest [sic] any better plan than this it will please me greatly" (Lange 1955).

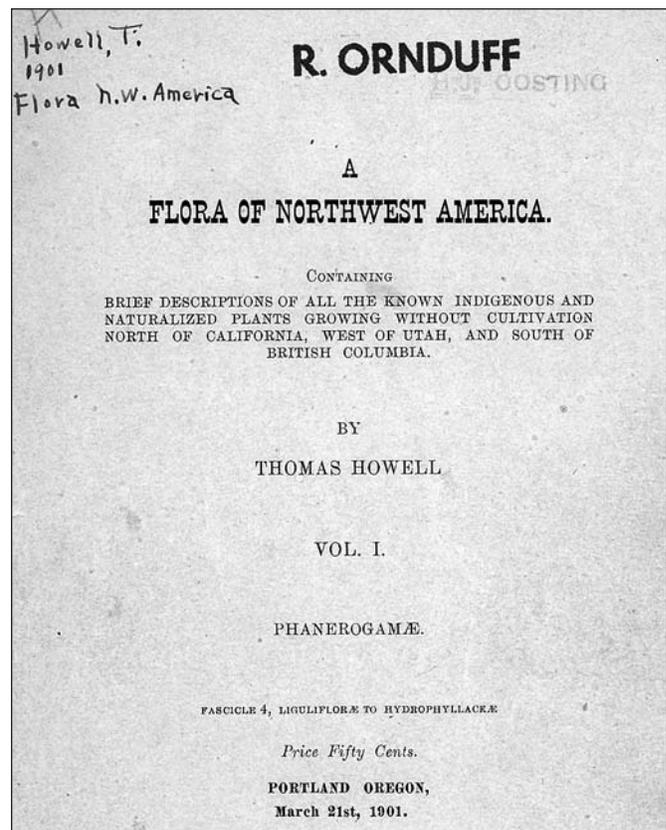
And on 1 Oct 1896:

"I see you still have the impression that I intend to have illustrations in my proposed book, which I wish to assure you is not the case for I never had any intention of illustrations at all: the plates spoken of are book plates that is electroplates of the text and not illustration plates. There are two ways of making a smaller book of it. One is to condense the descriptions and thereby make them worthless. The other is to leave out a large part of the species and make an incomplete work. There are about 3500 species of plants in the territory [sic] that I propose to cover, and nine tenths of them grow in Oregon so you see that it will not reduce the book much to reduce the

territory [sic]. I have made a careful estimate and find that I can have 1000 copies of 100 pages published here for \$1000. I can do this so cheap because I have a pretty fair printing outfit of my own And I have orders on hand now to assure the sale of 1000 copies in less than two years at \$2.50 per copy. With \$500.00 I could get the book out next spring but I have no way of getting that amount now..." (E. L. Greene files, Notre Dame).

Portland printers apparently were unwilling to cope with the technical terminology of the flora and with Howell's often illegible handwriting, so Howell himself set the type at home in sets of eight pages, which he then took to a printer (Kruckeberg and Ornduff 2003). As noted earlier, Howell's scanty formal education was reflected by his idiosyncratic and inconsistent spellings of words; he was more accurate with technical terms than with ordinary English. Gorman assisted Howell by reading copy and correcting proofs, but numerous errors slipped by him. On March 15, 1897, the first paperbound fascicle of *A Flora of Northwest America* appeared, consisting of 112 pages and priced at 50 cents. As a reflection of Howell's difficulties with spelling and proof-reading, the title page read *A flora of northwhst [sic] America*, but this error was caught and quickly remedied and the phrase "Entered according to Act of Congress..." was added.

The only known surviving letter to Howell from Greene was the latter's May 17, 1897 reaction to the first published fascicle. Greene included a gift of forty dollars, but provided a long, harsh, and basically negative review. He pointed out a plethora of perceived



Cover of *A Flora of Northwest America* by Thomas Howell, Vol. 1, Fascicle 4. This fascicle was formerly in the libraries of botanists Henry Oosting of Duke University and Robert Ornduff of Berkeley.

errors which he stated were, "...born of your too great hurry [which] will tell against your book.... [These]...are so innumerable that I shall not be surprised if reviewers ... say that a great book was presumptuously undertaken by a man who could not spell... if they review it at all" (A. R. Sweetser Papers, University of Oregon Archives).

Jepson (1897) reviewed the first fascicle much more positively in *Erythea*, commenting editorially on a few matters, noting that the work was "cyclopedic rather than critical," and that Howell's "personal observations color the completed product." Otherwise, he was sympathetic to Howell and his work, stating that "What he [Howell] has done has been to bring together in a usable form, in the light of his field knowledge (and no other botanist knows so well the plants of these states) all that has been published concerning the flora of the region... The author has not spoken of difficulties, but difficulties must have been many in a region in which library and herbarium facilities are meager."

He concluded that "Mr. Howell, therefore, deserves no small meed of praise for the courage and resolution necessary in the face of such circumstances." The second fascicle was published about a year later, on the first of April 1898, the third fascicle on August 21, 1900. Subsequent fascicles appeared at irregular intervals, and the last one (#7) was published on August 10, 1903 (Stafleu and Cowan 1979). The print run was 1,000 copies; the few that remain are now collector's items. (Oregon State University and the University of Oregon own full bound sets.)

### Howell's Legacy

On December 3, 1912, Thomas Howell died at the age of 70 at Woodstock, after a long illness. His older brother Joseph died two months before Thomas; both are buried in the family plot at Vancouver (Greene 1913). At the time of Howell's death his sons were 18 and 8 years old. Later his widow Effie remarried and moved to Filer, Idaho, becoming Effie M. Faust or Mrs. G. W. Faust. Apparently, troubles plagued the *Flora* even after Howell's death. In a letter to A. R. Sweetser in December 1935, Effie wrote:

*"After Howell died I got an order for books from J. K. Gill at \$5.00. The oldest boy and myself put them in book form and carried them to the binder. The rest we put in boxes and nailed them up. My health became so poorly that the doctor sent me to Tillamook. When I got back somebody broke into the house and destroyed all of them. Just think of it, five thousand dollars of books, so I had nothing left. It sure was a hard hit for me as I had to care for the two boys."* (A. R. Sweetser Papers, University of Oregon Archives, copies in OSU Herbarium files.)

Where does Thomas Jefferson Howell fit in the pantheon of Western botanists? Per Axel Rydberg (1904), author of the *Rocky Mountain Flora*, highly commended Howell's *Flora*: "Few can imagine what such an undertaking means, what difficulties are met with and what an amount of work is needed... Mr. Howell had to work far away from libraries with scarcely any other facilities than



*Darlingtonia* in Thomas Jefferson Howell fen near Kerby, Illinois Valley, Oregon. Photo by AR Kruckeberg.

*those afforded by his private library and collection [and thus] the excellence of the work is really surprising."*

After Howell's death, Greene wrote that Howell "accomplished the greatest amount of meritorious and valuable scientific work that was ever done by any man of any epoch, on so very rudimentary an education in letters." Jepson added that Howell had "organized diagnoses of genera and species scattered in the works of many writers into a pioneer flora which, considering the circumstances of its production, is balanced, judicious, and highly useful. Few men leaving so durable a contribution to American botany have led so obscure an existence as did Howell." The words of Louis F. Henderson, in a letter to Willis L. Jepson, give Howell high praise: "Had he a good college education, I think he might have been one of the great systematists of the United States" (Lange 1966). Although in subsequent years, state and regional floras were issued in the area covered by Howell's *Flora*, 60 years elapsed before it was fully superseded, by *Vascular Plants of the Pacific Northwest* (Hitchcock *et al.* 1955-1969).

Howell will thus be remembered as one who advanced the study of botany despite conditions of extreme hardship. Forever impoverished, barely able to support his family, he nevertheless made outstanding contributions to the botanical knowledge of the Northwest. Alice Eastwood (1898) summarized Howell's publication of his pioneering and encyclopedic *Flora of Northwest America*:

*"The conscientious striving for truth which distinguishes the work of this botanist, his independence in asserting his own views, and his thorough, careful work, command our respect; while the enthusiasm and self-denial which have resulted in the publication of a work of this magnitude by an author comparatively poor in money, at his own expense, commands, again, our admiration."*

### Acknowledgements

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**T. J. Howell's itineraries in Oregon based on Oregon  
Flora Project records**

Compiled by Rhoda Love

1875: Clackamas County, base of Mt. Hood.

1876-1880: Douglas, Columbia, Washington, Multnomah,  
Hood River, and Wasco counties.

1881-1885: heavy collecting throughout much of Oregon;  
Douglas, Curry, Jackson and Josephine in SW, most  
Willamette Valley counties, Deschutes, Wasco, Umatilla,  
Grant, Harney, Lake, Wheeler, and Jefferson counties in  
E. (including the long trips with Henderson to the Oregon  
coast and Mt. Adams in 1882).

1886-1890: Douglas, Jackson, Josephine, Willamette Valley  
counties, Umatilla, Grant, and Harney.

1891-1895: Douglas, Jackson, Josephine, northern Willamette  
Valley, Harney County; Columbia River near The Dalles.

1896-1900: Douglas, Jackson, Josephine, Multnomah,  
Clackamas and Umatilla counties.

1901-1903: Linn and Clackamas counties; in 1903 Howell deposited  
his personal herbarium at the University of Oregon.

1904-1912: single specimen of *Aster hallii* (now *Columbiadoria  
hallii*) from Marion County in 1905.

**Known Publications of T. J. Howell**

1873 "Howell's price list of plants"

1877 *Catalogue of the Flora of Oregon, Washington, and Idaho*

1881 *Catalogue of the Flora of Oregon, Washington, and  
Idaho*

1883 *Catalogue of the Plants of N. Western America*

1883 The geological distribution of North American forests.  
*Popular Science Monthly* 23:516-524.

1887 *A Catalogue of the Known Plants (Phaenogamia and  
Pteridophyta) of Oregon, Washington, and Idaho.*

1893 A rearrangement of American Portulacaceae [*sic*].  
*Erythea* 1:29.

1893 New Plants of Pacific Coast. *Erythea* 1:109.

1893 Note on *Sedum radiatum*. *Erythea* 1:144.

1895 New species of Pacific Coast plants. *Erythea* 3:32.

1895 Distribution of *Darlingtonia* in Oregon. *Erythea* 3:179.

1895 The flora of Mt. Hood. *Mazama* 1:28.

1895 The flora of Mt. Adams. *Mazama* 1:68. (Co-author,  
William N. Suksdorf)

1897-1903 *A Flora of Northwest America*. Portland, Oregon

**Some plants named for Thomas Jefferson Howell**

V: currently valid            S: sunk in synonymy

*Aconitum howellii* A. Nelson & J. F. Macbr. – S

*Agoseris howellii* Greene – S

*Agrostis howellii* Scribn. – V

*Allium howellii* Eastw. – S

*Alopecurus howellii* Vasey -- S

*Antennaria howellii* Greene – V

*Arabis howellii* S. Watson – S

*Arctostaphylos howellii* Eastw. – S

*Astragalus howellii* A. Gray – V

*Boechera howellii* (S. Watson) Windham & Al-Shehbaz -- V

*Brodiaea howellii* S. Watson – S

*Calamagrostis howellii* Vasey – V

*Caltha howellii* Greene – S

*Camassia howellii* S. Watson – V

*Dimeresia howellii* A. Gray -- V

*Draba howellii* S. Watson – V

*Erigeron howellii* A. Gray – V

*Erythronium howellii* S. Watson – S

*Festuca howellii* Hack. ex Beal -- S

*Haplopappus howellii* A. Gray – S

*Hieracium howellii* Rydb. – S

*Horkelia howellii* (Greene) Rydb. – S

*Howellia aquatilis* A. Gray – V

*Isoetes howellii* Engelm. – V

*Juncus howellii* F. J. Herm. - V

*Lewisia cotyledon* var. *howellii* (S. Watson) Jeps. – V

*Lilium howellii* I. M. Johnst. – S

*Limnanthes howelliana* Abrams – S

*Lomatium howellii* (S. Watson) Jeps. – V

*Microseris howellii* A. Gray – V

*Minuartia howellii* (S. Watson) Mattf. -- V

*Montia howellii* S. Watson – V

*Pedicularis howellii* A. Gray – V

*Perideridia howellii* (J. M. Coult. & Rose) Mathias – V

*Poa howellii* Vasey & Scribn. – V

*Polygonum howellii* Greene – S

*Ribes howellii* Greene – V

*Sanicula howellii* (J. M. Coult. & Rose) -- S

*Saxifraga howellii* Greene – V

*Senecio howellii* Greene – V

*Sireptanthus howellii* S. Watson – V

*Tauschia howellii* S. Watson – V

*Thelypodium howellii* S. Watson – V

*Viola howellii* S. Watson – V



*Dimeresia howellii* (Asteraceae) is a low annual up to about 2 inches across that grows on open slopes of fine gravel or sand in southeastern Oregon. Howell collected it on Steens Mountain on June 2, 1885. Photo from Devil's Garden in Klamath County by Ron Larson.

## References

- Bornholdt MD. 2006. Martin Woodlock Gorman (1853-1926): Outdoorsman Extraordinary. *Kalmiopsis* 13:21-31.
- Chambers KL. 2002. Thomas Jefferson Howell discovers *Calyptrium monospermum*. *Oregon Flora Newsletter* 8(3):17-18.
- Cleaver JD. 1986. Island Immigrants: Sauvie Island Heritage Series 2. Oregon Historical Society Press. Portland.
- Eastwood A. 1898. Untitled review. *Erythea* 6(5):58-60.
- Farquhar FP, ed. 1949. Up and down California in 1860-1864: the journal of William H. Brewer, professor of agriculture in the Sheffield Scientific School from 1864 to 1903. U. of California Press, Berkeley, pp. 482-83.
- Gray A. 1879. *Howellia aquatilis*. *Proc. Amer. Acad.* 1:43.
- Greene EL. 1913. The Two Howells, Botanists. *Obituary. American Midland Naturalist* 3:30-32.
- Griffen JR, Critchfield WB. 1976. The Distribution of Forest Trees in California. Pacific Southwest Forest and Range Experiment Station, Berkeley, CA. Washington, DC: US Govt. Printing Office. 118 p.
- Henderson LF. 1932. Early experiences of a botanist. Archival material published December 1981 in the *NPSO Bulletin* 14(12):5-6.
- Hitchcock CL, Cronquist A, Ownbey M, Thompson JW. 1955-1969. *Vascular Plants of the Pacific Northwest* (5 vols). Seattle (WA): University of Washington Press.
- Howell TJ. 1897-1903. *A Flora of Northwest America*. Portland (OR): self published.
- Jepson WL. 1897. Reviews and Criticisms - A Flora of Northwest America by Thomas Howell Vol. 1, Fascicle 1. Portland, Oregon March 15, 1897. 50c. *Erythea* 5(5):66.
- Jepson WL. 1909. *The Trees of California*. San Francisco: Cunningham, Curtis and Welch. p. 87.
- Kruckeberg AR, Ornduff R. 2003. Thomas Jefferson Howell (1842-1912): the untutored, impoverished botanist. *Oregon Flora Newsletter* 9(2):1,12.
- Lange EF. 1953. Thomas J. Howell, pioneer Oregon botanist. *The Scientific Monthly*. October: 199-204.
- Lange EF. 1955. Edward L. Greene and Howell's Flora of Northwest North America. *Madroño* 13(1):1-4.
- Lange EF. 1966. The untutored botanist. *Pacific Discovery* 19(2):12-15.
- Love RM. 2001. Louis F. Henderson (1852-1942): the Grand Old Man of Northwest Botany. *Native Plant Society of Oregon Occasional Paper* 2. 58 p.
- Rydberg PA. 1904. Reviews: Howell's Flora of Northwest America. *Torreya* 4:70.
- Stafleu FA, Cowan RS. 1979. Howell, Thomas Jefferson, Bibliography and Biography References. *Taxonomic Literature Vol. II, H-Le*: 350-351.
- Sudworth GB. 1908. *Forest Trees of the Pacific Slope*. USDA Forest Service. Washington DC: US Govt. Printing Office. 441 p.
- Vaughan T. 1974. Bybee-Howell House on Sauvie Island. Portland (OR): Oregon Historical Society.
- Wagner DW. 1994. History of the University of Oregon Herbarium (1903-1993). *Kalmiopsis* 4:6-11.
- Watson S. 1885. *Picea breweri*. *Proc. Amer. Acad.* 20:378.
- Howell's letters to E. L. Greene are archived at the University of Notre Dame Library, Notre Dame, Indiana. The plant collections of E. L. Greene are in the university herbarium there. Howell's personal herbarium is now part of the Oregon State University Herbarium collection in Corvallis. Copies of Howell's papers (letters, publications, lists of plants for sale) are deposited in the A.R. Sweetser papers, Collection AX75, Box 3 Folders 7-10, University of Oregon Archives and Special Collections in the University of Oregon Knight Library, with a number of copies in the Oregon State University Herbarium biography files.

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**Robert Ornduff** (1932-2000) was born in Portland, Oregon, and carried out his undergraduate studies at Reed College in that city. During the summer of 1952 Bob (along with Rhoda Moore Love and others) took part in the University of Washington's full summer field course under the tutelage of CL Hitchcock and AR Kruckeberg, botanizing at sites in eastern Washington, Oregon, and Idaho, as well as Arizona, Utah, and Colorado. Back at Reed, Bob worked with anthropologist David French and his wife Kay on the ethnobotany of the Warm Springs Indian Reservation in eastern Oregon. Young Ornduff provided most of the plant identifications for this project, receiving his BA in biology from Reed in 1953 based on this floristic work. Bob spent the year after graduation from Reed as a Fulbright Scholar in New Zealand where he collected material for his University of Washington MSc thesis on the systematics of a group of New Zealand *Senecio* species, under the directorship of Dr. Kruckeberg. In 1956, Bob entered the graduate program in Botany at the University of California at Berkeley, completed his PhD there in 1961, and taught biology for a year at Reed College and at Duke University, before returning to Berkeley in 1963. There, he assumed the faculty position of his retiring major professor, Herbert Mason. As a botany professor, Ornduff taught a popular course on California's flora for 30 years, based on which he published *An Introduction to California Plant Life* (UC Press 1974). While at Berkeley, he also held positions of Curator of Seed Plants, Director of the Botanic Garden, Director of the University Herbarium (1967-1982), Director of the Jepson Herbarium (1968 to 1982), and Chair of the Department of Botany (1986-1989). He retired in 1993 and died seven years later of melanoma at the age of 68. A more complete description of Bob Ornduff's life and accomplishments is posted at [http://www.berkeley.edu/news/media/releases/2000/10/03\\_ornduff.html](http://www.berkeley.edu/news/media/releases/2000/10/03_ornduff.html).

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