REED COLLEGE HERBARIUM, Room B-211A, Biology Department, 3203 SE Woodstock Blvd., Portland, Oregon 97202- 8199. Contact: Keith Karoly, Curator; phone: 503-517-7846, fax: 503-777-7773, e-mail: kkaroly@reed.edu .
Ca. 10,000 specimens, including about 1600 predating Reed. Pacific Northwest. Mount Hood, Multnomah County, Reed Campus, Cascade Head, Sandy River Gorge. About 200 mosses and lichens.

"Notes on the Reed College Herbarium, Particularly its Origin"

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THE ORIGIN OF REED'S HERBARIUM

Of the ten thousand or so specimens comprising the Reed College Herbarium there are about sixteen hundred, dating from 1848 to 1909, which predate Reed's first classes held in 1911; a summary of data about the specimens under discussion here follows the present examination of their origin. The existence of these historical specimens has been previously noted (Ornduff 1965; Marttala 1969), but not how and when they came to reside to reside at Reed or where they came from; that mystery is an enigma whose cipher has been lost in the mists of time and has long vexed me.

The biology department has no records on the acquisition of its herbarium (Bert Brehm, pers. com.). And there is no known paper trail in the Reed records that document exchanges between Eliot and Henderson; the Reed Archivist informs me they have recently searched the Rev. Eliot's papers but fruitlessly (Gay Walker, 2008 pers. com.).

The combination of people working on the "Urbanizing Flora of Portland, Oregon, 1806 - 2006" (Christy, et al, in prep.) project brought together individuals with knowledge of the Reed Herbarium and historical knowledge of our region's pioneer plant collectors, and provided clues that may have solved this puzzle. Together, this information suggests that Reed's Historic Herbarium contains specimens from Joseph Howell's herbarium, which were identified and in many cases labeled by Louis Henderson, and that the Rev. Thomas Lamb Eliot, was instrumental in their acquisition.

Perhaps a third of Reed's historic specimens - local material - bear no herbarium label: the information is written directly on the sheet; most specimens of the grasses and the genus *Carex* are so labeled. When John Christy and I were examining Reed's material in June 2006, we found a few of these whose identification was dubious; they were sent to OSC for determination. When he first got them, Ken Chambers wrote: "You will be interested to hear that all of the written material on the lower right-hand corners of the mounted specimens is by Louis Henderson! We know his handwriting very well from specimens at OSC and ORE." (7/28/2006 e-mail) I looked up Henderson's handwriting in Rhoda Love's NPSO (2001) paper and found it matched our handwritten "labels" well, including some quirks of Henderson's, e.g., wavy underlines, and she later wrote me (9/5/2006 e-mail) that "you can be sure that Ken knows Henderson's writing when he sees it." So, about 500 Reed sheets bear their label data in Henderson's handwriting.

A specimen in the herbarium in Henderson's handwriting of *Selaginella* [also labeled with the following information: 939 Portland Oregon April 2 '89] has been annotated in pencil to read "*Selaginella douglasii* WRV 5/10/29". WRV is William R. Van Dersal; his 1929 thesis was "The Plants of Multnomah County". So, by no later than 1929, at least some, and I suspect nearly all (vide infra), of the pre-1911 material was in the Reed Herbarium; these specimens have been separated from the more modern material found at Reed as long as I've been connected with Reed, since the late 60's.

I rely on the extensive historical data in "Urbanizing Flora of Portland, Oregon, 1806 - 2006" (Christy, et al, in prep.) for the following list of pioneer botanists whose personal herbaria are candidates for Reed's Historic Herbarium. Because his personal herbarium burned in the University of Idaho fire of 1906, Henderson is immediately excluded. Most of the other botanists are unlikely because the eventual homes of their specimens are reasonably well documented, e.g., James H. Dickson and James Francis Drake ("Drake & Dickson"; to ORE), Michael A. Flinn (to HPSU), Martin W. Gorman (to ORE), Thomas J. Howell (to ORE), Wilhelm N. Suksdorf (to WSU). Other botanists, e.g., Henry Bolander and Edmund P. Sheldon are only partly contemporaneous, the former too early and the latter too late. Joseph Howell, who died in 1912, however, is an excellent possibility. According to Christy et al (in a 2007 draft): Howell "corresponded with eastern botanists and his specimens are distributed in major herbaria around the country....He bequeathed one half of his personal herbarium to M. A. Flinn..., but the fate of the other half of the collection is a mystery " and a later draft the paper includes "[Reed College?]". So not only are some of Joseph Howell's specimens otherwise unaccounted for, they are available at about the right time, when Reed was founded.

There are other clues that suggest this material is "Howell's". In the discussion of the Herbarium below is a comment about "Three specimens labeled *Aspidotis spinulosum* Swz. collected by F. Blanchard from Peacham, VT," on one of which the determination "in pencil is *Aspidotis spinulosum* Swz. var. *dilatatum* Gray fide Howell." "fide Howell" translates as "according to Howell", suggesting that this eastern material identified by Howell was also from his herbarium. In his thesis van Dersal stated "Species have been checked against the herbarium of Reed College which contains collections made by W. Cusick from the Oregon mountains, and specimens determined by Howell." (Van Dersal 1929, p. 1), again giving a Howell connection.

Even if the Reed specimens are Joseph Howell's, how is Henderson connected to Reed sufficiently that he would spend time labeling (and identifying?) them? Through "Henderson's lifelong friend, the Unitarian minister Thomas Lamb Eliot of Portland" (Love 2001: 5), who is commemorated in Eliot Hall on the Reed campus and Eliot Glacier on Mount Hood. And "T. L. Eliot and family had a summer home in Hood River very close to Henderson's property and apple ranch there, so they were in close touch during the period in which we are interested (1911 and after)" (Rhoda Love, 9/7/2006 e-mail).

Rhoda Love (9/5/2006 e-mail) summarized others factors beyond the Henderson written label data which would connect him to Reed's historic herbarium specimens: "Reed opened circa 1911, and that was the year Henderson retired from Idaho and went to Hood River to ranch. He was at loose ends, missed his life as a botanist, and was in touch with his old Portland friends Gorman, Eliot, et al. I would guess that in the period between 1911 and 1924 (when he moved to Eugene), that he may have enjoyed identifying plants in the Reed "starter collection." He may have been asked to check the ids and bring the names up to date; thus he did not make note of the collectors. After 1924, he would have been too far away and too busy for this chore, as in Eugene he worked around the year and around the clock collecting and processing to build up the UO herbarium and exchange with other herbaria."

So, some of Joseph Howell's material was available at just the right time; Henderson, who by his own hand is marked as labeling a substantial portion of it, was available at just the right time - either earlier or later he was occupied but he was available between 1911 and 1924 - and Henderson would have enjoyed keeping botanically active; and a connection to Reed exists through Eliot. It is easy to visualize Eliot asking his good friend Henderson if he could get some plant specimens for the new Reed College. Although there is no documentation that this occurred, the hypothesis is consistent with the available data and the choreography of known events is curiously convenient; there are several small details which are consistent.

REED'S HERBARIUM'S SPECIMENS

What are these specimens under discussion? (The herbarium currently resides in B211A in the Biology Building; visitors are welcome but an appointment is required.) There is no recent survey of the whole the Reed Herbarium, and the information I have is biased by the fact that I have been recording details for plants from the Portland area (for that was the immediate goal) and Reed's Herbarium, historic or newer, covers a broader area. So, I counted specimens in ferns & allies, sedges and buttercups and assuming approximately the same number of specimens per measure of cabinet space, I estimated both the older specimens and the total number of specimens in the Reed Herbarium (vide supra) from the length of specimens I measured. The largest single chunk - "local material" - comes from Oregon, and only the SE part of the state appears not represented, and (southwest) Washington, but predominantly the former - about 700 sheets; the rest is from the remainder of North America, particularly Eastern, Europe and Asia and the Sandwich Islands - about 900 sheets. Please note that there are a few "modern" old specimens in Reed's Herbarium, duplicates from ORE, so marked.

The local material from Oregon and Washington has plants collected by William Cusick, Louis Henderson, and Thomas Howell which bear their herbarium labels, but an estimated five hundred of them have label data handwritten directly on the herbarium sheet and a scant few have collectors such as Henderson, J. F. or F. Drake, J. H. Dickson listed, but most of them have no collector. In addition to the usual handwritten label data these specimens, except for Cusick's material, also bear a number which appears to be (for want of knowing exactly what the labeler intended) an "accession number"; in the case of these "label-less" sheets, the handwriting for the "accession number" and label data appear to be the same. The remainder of the historic herbarium (in my sample groups) were from twenty five states with New York and Vermont specimens the most common, Canada, Germany, Switzerland and Siberia. The collectors I have most commonly seen were: Dr. T. F. Lucy, W. A. Kellerman, F. Blanchard MD, William Canby, and J. W. Chickering; nearly all bear what I have concluded is an "accession number" written directly onto the herbarium sheet, but the handwriting doesn't match that of either handwriting on the sheet's label (most labels are not entirely preprinted) or the similar "accession numbers" which are found in the "local" historic material. The numbers are often (nearly) sequential in genera or families but they can't be collection numbers as the following example shows. Three specimens labeled *Aspidotis spinulosum* Swz. collected by F. Blanchard from Peacham, VT, bear "accession" numbers 1786 ["var. *intermedium* Willd."] and 1787 ["var. *dilatatum* Gray] in ink and in pencil; the first two were collected July 7, 1886 and Aug. 5, 1885 and the only information on the one in pencil is *Aspidotis spinulosum* Swz. var. *dilatatum* Gray fide Howell, the number 1787 in pencil and 659 written in ink but penciled out; 659 is in handwriting that is consistent with that of the "accession numbers" in the "local" material and the penciled handwriting could also be. (This same pattern of "accession numbers" shows up in the Howell-Flinn collection at HPSU, but the number sequences appear not to duplicate each other.) This material gives the appearance of having been assembled to create a starter herbarium for someone; there is fair diversity of groups represented and some, e.g., *Carex*, *Ranunculus*, grasses, are well represented, although not always by local material.

Absent a recent survey of the herbarium as a whole I will say little about it here. A few modern specimens from New Zealand suggest only about 90% of the herbarium material is from Oregon and Washington. Most of the specimens were probably collected by students and not always for theses; but some come from faculty: the genus *Lomatium* is particularly well represented through Bert Brehm's efforts. There are about two hundred moss and lichen specimens.

INTERESTING AND SIGNIFICANT SPECIMENS IN REED'S HISTORIC HERBARIUM

Reed's oldest specimens are interesting beyond their antiquity; some of their collectors were our pioneering botanists. Many of the sheets are quite fine, many are pedestrian; all give some insight in to our floras as it once was; occasional specimens appear to have nomenclatural or other significance, as the following examples show. In the following discussion Vascular Plants of the Pacific Northwest is cited as VPPNW Part: page (Hitchcock, et al, appropriate year).

==>>*Carex squarossa* L. from the Herbarium of Wellesley College, Hartford Ct., 3874, June 6, 1848, is apparently Reed's oldest specimen and certainly one of the oldest around here.

==>>"Henderson 1330 labeled *Carex pansa*, Bailey, Ilwaco, Clatsop and shrub water Bay in sand June 31 '87 n. sp." in Henderson's own hand, with the wavy underline, closely matches the citation in VPPNW 1: 305 (Hitchcock, et al, 1969) for the type for this name, published by Bailey in 1888, so I suspect that if this is not an isotype (which I doubt), that it is a topotype and one annotated by the collector of the type specimen, to boot.

==>>Cusick isotypes:
-Cusick 3186 is cited in VPPNW 5: 175 (Hitchcock, et al, 1955) as the type of *Erigeron eatonii* Gray var. *villosa* Cronq.; Reed's material bears the following label data: "*Erigeron microlonchus* Greene, White rays. Granitic soil, open summit of the Wallowa Mts., 2300 m. alt. July 29/ Coll. in 1907";
-Cusick 3190 is cited in VPPNW 3: 366 (Hitchcock, et al, 1961) as the type of *Trifolium multipedunculatum* Kennedy; Reed's material bears the following label data: "*Trifolium kingii* S. Watson [*kingii* S. Watson crossed out and] *multipedunculatum* Kennedy, n. sp. [handwritten] Purple, Granite, coarse, sandy soil near summit of China Cap (peak), Wallowa Mts., 2890 m. alt. July 30/Coll. in 1907. Muhlenbergia V. 60-61. April, 1909 is also handwritten on the label";
-Cusick 3295 is cited in VPPNW 3: 477 (Hitchcock, et al, 1961) as the type of *Epilobium atrichium* Leveille; Reed's material bears the following label data: "X [handwritten] *Epilobium* [printed] *atrichium* Leveille [handwritten] Basalt cliffs of the Wallowa Mts., 2330 m. alt. July 29/ Coll. in 1908; also handwritten: =/ [i.e., not =?] *E. glaberrimum* Barby X *E. hornemannii* Reichb. det H. Leveille 6. Mar. 1909". I have not reproduced Leveille's diacritical markings here. According to VPPNW this is *E. glaberrimum* Barbey in Brew. & Wats. var. *fastigatum* (Nutt.) Trel.? The Reed material does easily fit this or the typical variety: the two plants are 2-3 dm with some branching above, leaves ovate, 1-3 cm, relatively crowded, and ovaries hairy.

==>>*Myosurus sessilis* Watson; Reed's material bears the following label data: "Flora of Northwest America/Oregon, Alkali Flat, Umatilla Co. May 10th. 1882. Thomas Howell." The (accession) number 391 appears to the left of the label, in Henderson's handwriting. Isotype? According toVPPNW 2: 368 (Hitchcock, et al, 1964) the type was J. & T. J. Howell with the other data the same; it is conceivable that the Reed sheet is not part of the same (single) gathering of Joseph and Thomas J. Howell but I doubt it; if it is from the same gathering and Thomas Howell reflexively labeled it as one of his own (solitary) collections, a good argument can be made that Reed's material is an isotype.

With the centennial of Reed's founding, documenting its herbarium is well timed; this paper is part of that process.

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