



menziesia

Spring/Summer 2014 NPSBC Native Plant Society of British Columbia www.npsbc.ca Volume 19, Issue 1



**Special issue:
John Davidson's
Legacy to
BC Flora**

Geum calthifolium Smith
Det. by F.E. Brackley **CFC**
HODGDON HERBARIUM
UNIVERSITY OF NEW HAMPSHIRE

HERBARIUM
V33,344
UNIVERSITY OF B.C.

1-11
8766

PROVINCIAL HERBARIUM OF BRITISH COLUMBIA.
FAMILY ROSACEE.
NAME Geum calthifolium?
AREA OR RIVER-BASIN Coast
LOCALITY "The Lions"
HABITAT Creek sides.
ALTITUDE 4000 ft. OCCURRENCE Rare & Local
COLLECTED BY J. Davidson DATE Aug. 1914.

Special issue: *John Davidson's legacy*

One of the thousands of specimens collected by John Davidson, housed and now digitized by the University of BC Herbarium.

The specimen – *Geum calthifolium* (caltha-leaved avens) – was collected on a trip to The Lions in 1914.

According to the BC Conservation Data Centre, the species is restricted to coastal BC and Alaska. It is rarely seen in bogs, wet rocky slopes and meadows at low to alpine elevations.



NPSBC is growing in a new direction and we want you to be part of it!

For almost 20 years, NPSBC has developed and led stimulating programs and projects for British Columbians who study, work with and enjoy native plants and habitats. These offerings have included monthly presentations, annual and special symposia, seasonal field trips and workshops, plants sales and salvage projects, a website, list-serve and information service, and the newsletter *Menziesia*. They have been organized for the most part by our directors who offer their time and talents for the benefit of all members.

This spring, the board of directors initiated a strategic planning process to explore future directions for NPSBC, recognizing that dependence on directors only to organize programs is not sustainable. NPSBC provides a community of interest and expertise that is open to all British Columbians. The board sees potential for program and projects initiated and developed in future by members and also by the public and allied organizations – with support from NPSBC.

This fall, NPSBC will hold its annual general meeting to introduce the proposed plan and we hope that you can be part of this dialogue, either at the meeting or through e-mail. The board will be meeting in early September and further communications regarding the strategic plan and the annual general meeting will be forthcoming. The board looks forward to further conversation with you then.

In the meantime, please enjoy this special issue of *Menziesia*.

NPSBC

Native Plant Society of British Columbia

Our Mission

The purpose of the Native Plant Society of British Columbia is to encourage knowledge, appreciation, responsible use and conservation of BC's native plants and habitats.

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menziesia

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A Legacy of the Flora of British Columbia

Digital Archiving and Preservation of John Davidson's and correspondents' British Columbia Plant Collections

By Felicité Dodd, Saskia Wolsak and Linda Lipsen (University of British Columbia Herbarium)

Many of us who are interested in the flora of British Columbia tend to take for granted how easily we can access information about our much loved plants. From favourite field guides to favourite internet sites, it seems that most of the time anyone who wants to identify a plant found in BC can.

Essential to the foundation of the information that builds any flora treatise are herbaria. We often forget there was a time, a century or so ago, when very little written documentation of BC's flora existed. UBC Herbarium is indebted to the dedicated botanist John Davidson (1878 -1970), known as Botany John, and his understanding of the importance of a botanical collection, especially one that remains in its country and region. Davidson's love for plants and collections left BC with a great legacy in his thousands of pressed plant specimens housed at the UBC Herbarium, the nucleus of a collection that has grown to over 670,000 specimens a century later. The UBC Herbarium will be celebrating its 100th anniversary on February 22, 2016. To mark the occasion, the first collections that set the foundation of UBC Herbarium and the future research for BC's flora have been digitally archived and made available to the public.

John Davidson and the UBC Herbarium

In 1911, at the age of 23, Davidson emigrated from Scotland to Canada already an experienced botanist having worked in the Botany Department of Marischal College, at the University of Aberdeen. Once here, he recognised the need for a centralized collection of provincial flora that would be available to



Photo: City of Vancouver Archives

John Davidson sitting at his desk in the Provincial Botanical Office at 821 West Pender Street in Vancouver, taken in 1914.

answer the botanical queries of the rapidly expanding population. Within a year of his arrival, Davidson had secured a position at the Botanical Office in downtown Vancouver, becoming the provincial botanist in 1912. He set about collecting, and established links with other botanists including surveyors, members of natural history societies, field clubs, the British Columbia Mountaineering Club (which established a botanical section) and many of the province's teachers. By 1914, some 110 plant enthusiasts had become formal correspondents, creating a network of information available for exchange province-wide. Specimens, both pressed and live, were sent for processing and incorporation into the herbarium, the new botanical garden at Essondale Hospital¹ or for exchange between botanists and other botanical institutions.

This system thrived for several years, but the war in Europe brought difficult times. In 1916, the Botanical Office was closed down; the provincial

plant collection was moved to Fairview and became the University of British Columbia Herbarium – where Davidson worked until his retirement in 1948.

Preserving and digital imaging Davidson's vascular plant collection

Since 2011, UBC Herbarium has captured high-resolution images of Davidson's and his correspondents' specimens – thanks to generous grants from the Irvine K. Barber BC History Digitization Program, the support of the Beaty Biodiversity Museum and UBC Botany Department – creating a comprehensive digital archive of the first decade of collections. This work entailed UBC Herbarium staff and volunteers painstakingly pulling and organizing specimens from the herbarium cabinets, carefully repairing them to ensure another century of use, and then entering the collection information from each

continued on page 4

Davidson, continued from page 3

sheet into the herbarium's database. Once all these steps had taken place, a high-resolution image (showing details of plant hairs and more) was obtained using a flat-bed scanner. The information together with the digital images is now available to the public through the UBC Herbarium online database and can be viewed at www.biodiversity.ubc.ca/museum/herbarium/database.html

Project findings

This thorough work turned up several previously unrecorded specimens, and identified specimens suitable for exchange with other herbaria. In addition, it also enabled an interesting overview of the Davidson collection.

The three annual reports written by Davidson for the Botanical Office covering the years 1912, 1913 and 1914 give an insight into the early collecting expeditions and the development of the collection. While they do not list the number of specimens collected, it is clear by comparing the dates of the expeditions and the dates of the Davidson specimens that many specimens either did not make it into the herbarium or were lost. (We know that some of the early collections were permanently damaged by insects and moisture during the 1930s and were discarded.) This project found there were still 3,400 specimens attributed to Davidson at the UBC Herbarium: 2,419 were collected by him between 1911 and 1956; he collected a further 981 with Marc Bell on an expedition to the Flathead Valley in 1957.

Of the 2,419 specimens, about 84 percent were collected in the 1910s, six percent in the 1920s, eight percent in the 1930s and the remaining two percent in the 1940s and '50s, confirming that his first decade was the most personally productive.

Half of Davidson's collection comprises just 10 families: *Asteraceae*, *Rosaceae*, *Fabaceae*, *Poaceae*, *Brassicaceae*, *Ericaceae*, *Cyperaceae* and *Ranunculaceae*, which also happen to be some of the largest plant families in the world. The remaining half is distributed between 91 other families; the number of genera represented is 456.



Davidson collected specimens province-wide for over 35 years with 29 percent of his specimens from the Flathead region and 20 percent from in and around Vancouver². Trips to the Thompson, Fraser and Skagit river basins³ in the 1910s, late 1930s and 1940 account for 16 percent of his collection and the five expeditions he took to the Garibaldi area⁴ (1912, '13, '14 '17 and '41) account for 14 percent of Davidson's collection. His annual forays to the North Shore⁵ from 1911 to 1919 makes up seven percent of his collection, while the first two decades'

trips to Vancouver Island make up 4.5 percent, and Mayne, Savary and Curlew islands, 3.5 percent. In his very busy first decade he also made trips to the Okanagan⁶ (four percent of the collection's specimens); the remaining two percent of specimens came from Pemberton and Lund.

Davidson was a thorough collector, but unlike some of his collecting correspondents he did not find any plants that were new species or new to BC. There are three species in his

continued on page 5

Davidson, continued from page 4

collection that have either federal protection under the Species at Risk Act (SARA) or have provincial red- or blue-listed status. These include: the blue-listed *Linaria canadensis* (Canada toadflax) [now known as *Nuttallanthus texanus*]⁷, red-listed *Hydrocotyle ranunculoides* (floating water-pennywort)⁸ and *Castilleja levisecta* (golden paintbrush)⁹, listed as endangered under SARA.

The *Hydrocotyle ranunculoides* specimen even has a wonderful note by John W. Eastham (author of the supplement to *Flora of Southern British Columbia*) that J.K. Henry (author of *Flora of Southern British Columbia and Vancouver Island*) included this species in his 1915 Flora due to this particular specimen collected by John Davidson from Coquitlam.

Davidson's research and explorations were exhaustive and wonderfully productive; this project has enabled the cross-referencing of specimens with the annual reports, giving an insight into why they were collected. In August 1914, while at the famous Vancouver coastal mountains The Lions, Davidson found *Geum calthifolium* (caltha-leaved avens) and collected it, noting on the specimen that it is rare and local. He then describes in his 1914 Annual Report, how he was hoping it would be a *G. peckii*¹⁰ and the main aim of this expedition was to find this species in fruit. Another notable collection, *Pinguicula vulgaris* subsp. *macroceras* (common butterwort) collected on July 12, 1912 is mentioned in the 1913 report: "in marshy situations by Cypress Creek one or two patches of *Pinguicula vulgaris* were found, this plant is comparatively rare in this district...".

In Garibaldi, where he did numerous trips, he collected *Antennaria rosea* (rosy pussytoes) on August 3, 1913; this is mentioned in the 1913 Annual Report: "but on the southern slopes near the top (6,200 ft) a number of beautiful specimens of *Antennaria rosea* ... were found in a few places".

The early collections have been used for biogeographical, taxonomical, ethnobotanical, agricultural and



historical research. They have been instrumental in establishing geographical ranges and histories of species now at risk or endangered. Some of these specimens provide insight into historical and First Nations uses of plants, with typewritten descriptions of strategies of eradication, prices per pound, and edible and medicinal uses, like this note from a collection of *Cypripedium passerinum* (sparrow's-egg lady's-slipper) from 1914: "Both rootstock & root collected in autumn, freed

from dirt, and carefully dried in the shade. The prices paid to collectors of this root range from 32 to 35 cents a pound. The principal use of Lady's-slipper is an antispasmodic and nerve tonic, and it has been used for the same purpose as valerian".

Some places were even named after the plants found there, such as Empetrum Peak in Garibaldi, named after *Empetrum nigrum* (crowberry).

Together these collectors provide a

continued on page 6

Davidson, continued from page 5

window into British Columbian history and the history of botany in this province and as a result of this project, the information can now be accessed by anyone online.

Conclusion

Although Davidson was not the first botanist to collect in BC, he was the one who had the most lasting impression on BC floristics, as he observed; "The collection, which I have had the honour of bringing together, will be the nucleus of what will ultimately become the most complete herbarium of the Provincial Flora."

From the time he arrived in BC in 1911 to his retirement in 1948, Davidson contributed significantly to the work of the provincial Botanical Office, founded both the UBC Botanical Gardens and the UBC herbarium in 1916 and the Vancouver Natural History Society (now Nature Vancouver). Each of his specimens tells a story that provides a window into the botanical history of post-colonial British Columbia.

The UBC Herbarium has seen many great botanists, curators, and collection managers since John Davidson, all adding to and building upon his original collections. Amateurs and professionals alike still send in specimens from all over the province (and world), helping to paint a clearer and more comprehensive picture of BC's great botanical diversity.

For access to the collection and pdf copies of the images please contact Linda Jennings, UBC Herbarium Vascular Assistant Curator linda.jennings@beatymuseum.ubc.ca

References:

- Davidson, J. (1914) First Annual Report of the Botanical Office of the Province of British Columbia 1913
Davidson, J. (1915) Second Annual Report of the Botanical Office of the Province of British Columbia 1914, Volume 1 Part 2
Davidson, J. (1916) Third Annual Report of the Botanical Office of the Province of British Columbia 1915, Volume 1 Part Three.
UBC's Virtual Museum of Canada exhibition, Botany John: Legacy of a Canadian Botanist retrieved February, 2014, <http://botanyjohn.org>

Footnotes:

1. Later called Riverview Hospital, a facility for the severely mentally ill
2. Including Point Grey, Lynn Valley, Coquitlam and Surrey Districts, Lulu Island and Moodyville.
3. Skoonkon, Botanie, Luluwessin, Murray and Twaal



Photo: University of BC Herbarium

Creeks, between the South Thompson and Fraser Rivers.

4. Empetrum Peak, Black Tusk, Panorama Ridge, Castletown Ridge and Sphinx Glacier.
5. Caulfeild, Black Mountain and Grouse Mountain.
6. Spences Bridge, Kamloops, Sicamous, Armstrong, Vernon and Penticton.
7. V30465 collected in 1920 from Savary Island.
8. V80520 collected in Coquitlam in 1913.
9. V80582 collected in Victoria in 1912.
10. While *Geum peckii* is a species native to eastern North America, Davidson noted that the specimen had "larger and more handsome flowers" and more resembled *G. peckii* than the locally known *G. calthifolium*. The specimen was sent to Professor E.L. Greene at the Smithsonian Institution who confirmed that it bore a closer resemblance to *G. peckii* than *G. calthifolium*, and suggested it could be a new species. Fruit was later collected and Davidson decided it was not a new species suggesting that some variances were morphological.