The Legacy of a Life in Botany: O.A. Stevens and the Handbook of North Dakota Plants

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Rosa arkansana Porter
Prairie wild rose

Original artwork: Alvina Halgrimson
McGregor, North Dakota
Photo credit: Abebooks.com
"Washington D.C., June 20, 1803

To Meriwether Lewis Esquire, Captain of the first regiment of Infantry of the United States of America.

The Object of your mission is to explore the Missouri river & such principal stream of it as by it's course and communication with the waters of the Pacific Ocean, whether the Columbia, Oregon, Colorado or any other river may offer the most direct & practicable water communication across this continent for the purpose of commerce."

—Thomas Jefferson
Meriwether Lewis (1774-1809)  
William Clark (1770-1838)

Portraits by Charles Willson Peale, 1807
Philadelphia as a center for botany and scientific learning

Bartram’s Garden (established 1728)
Philadelphia, PA
Oldest botanic garden in United States

Photo credit: Matthew Halley
Philadelphia as a center for botany and scientific learning

John Bartram (1699 – 1777)

William Bartram (1739 – 1823) → Benjamin Smith Barton (1766-1815)

Frederick Pursh (1774 – 1820) ─── Thomas Nutall (1786 – 1859)
Philadelphia as a center for botany and scientific learning

John Bartram (1699 – 1777)
The King’s Botanist
Father of American Botany
Illustration credit: Howard Pyle

William Bartram (1739 – 1823)
Portrait by Charles Willson Peale
Philadelphia as a center for botany and scientific learning

John Bartram (1699 – 1777)

William Bartram (1739 – 1823)

Benjamin Smith Barton (1766-1815)

Frederick Pursh (1774 – 1820)

Thomas Nutall (1786 – 1859)
Benjamin Smith Barton (1766-1815)
Portrait by Samuel Jennings
Philadelphia as a center for botany and scientific learning

John Bartram (1699 – 1777)

William Bartram (1739 – 1823)  Benjamin Smith Barton (1766-1815)

Frederick Pursh (1774 – 1820)  Thomas Nutall (1786 – 1859)
Flora Americæ Septentrionalis; or, A Systematic Arrangement and Description of The Plants of North America. Containing, Besides What Have Been Described by Preceding Authors, Many New and Rare Species, Collected During Twelve Years Travels and Residence in That Country, by Frederick Pursh.

In Two Volumes. With Twenty-Four Engravings.

Vol. I.


Missouri Botanical Garden

Frederick Pursh (1774 – 1820)

Thomas Nutall (1786 –1859)
Portrait by unknown artist
The Corps of Discovery - Lewis and Clark Expedition 1804-1806

Map: NPS
Lewisia rediviva Pursh
Lewisia rediviva Pursh

Carl Linnaeus (1707-1778)
Portrait by Alexander Roslin
Lewisia rediviva Pursh
Lewisia rediviva Pursh
bitterroot
Photo credit: Andrew Kratz
Clarkia pulchella, “beautiful” Clarkia named in honor of William Clark

Frederick Pursh *Flora Americae septentrionalis*, 1813
Linum lewisii Pursh
wild blue flax
Photo credit: Skoch3
Hidatsa Village, Earth-covered Lodges, on the Knife River, 1810 Miles above St. Louis, George Catlin (1832)

Mandan red clay corn
Zea mays L.

Three Sisters
corn Zea mays L.
bears Phaseolus L.
squash Cucurbita L.
“One kind of tobacco (*Nicotiana quadrivalvis* Pursh),
was grown by the Indians and is mentioned by Rydberg
as ‘escaped in N.D.,’ but we have no record of it.”
O. A. Stevens, *Handbook of North Dakota Plants*
In the fall of 1804, Sacagawea was around seventeen years old, the pregnant second wife of French Canadian trader Toussaint Charbonneau, and living in Awatixa (Metaharta), the middle Hidatsa village on the Knife River, North Dakota.

Sculptor Glenna Goodacre
Pediomelum esculentum (Pursh) Rydb.
tipsin, prairie turnip, breadroot
Photo credit: James R. Sime
Amphicarpaea bracteata (L.) Fernald
American hog-peanut

Glycyrrhiza lepidota Nutt. ex Pursh
wild licorice

Photo credit: Stan Shebs
“Great quantities of a kind of berry resembling a Current except double the Sise and Grows on a bush like a Privey, and the Size of a Damsen deliciously flavoured & makes delitefull Tarts, this froot is now ripe”
-William Clark
Three Affiliated Tribes
Mandan-Hidatsa-Arikara

https://lewisandclarkjournals.unl.edu
The Indian Reorganization Act of 1934 turned federal Indian policies away from the paternalistic objectives of assimilation and assimilation. Tribal self-government was facilitated, and the people of Fort Berthold Reservation became a new political entity—the Three Affiliated Tribes of the Fort Berthold Reservation. The revival of traditional cultural values was encouraged. The federal Civilian Conservation Corps improved roads and schools. A bridge was built from Elkhound to the south side of the Missouri River, and named in honor of two leaders, one a Mandan, the other a Hidatsa, both called Fort Berthold.

1934 The 1940s brought severe floods on the Missouri, followed by taxpayer demands that the government do something about the problem. The solution was to build a series of dams for flood control, irrigation and power generation. Over the objections of the Three Affiliated Tribes, the Corps of Engineers took 152,300 acres of their land for the reservoir to be impounded by Garrison Dam, thirty miles downstream from the southeast boundary of the Reservation.
Awatixa Village, Hidatsa, Knife River, ND

Stanton, ND pop. 336

Photo credit: NPS
Orin Alva Stevens (1885 – 1979)
Timeline – Botany in North Dakota

1802: Louisiana Purchase
1804-1806: Expedition of Corps of Discovery
1811: Nutall collects along Missouri River
1814: Pursh publishes Lewis’ collection
1818: Nutall publishes Genera of North American Plants
1877: KSAC Herbarium established
1890: ND Agricultural College founded; Boley, Waldron establish herbarium
1885: Orin Alva Stevens born in Blue Rapids, KS
1907: Graduates and appointed botany instructor, KSAC
1909: Joins NDAC as assistant professor of botany
1950: Publishes Handbook of North Dakota Plants
1956: Retires from NDSU

Orin Alva Stevens (1885 – 1979)
October 17, 1885
Born on a farm near Blue Rapids, Kansas
Dickens Hall, Kansas State Agricultural College
Manhattan, KS 1907

Built 1907

Professor Hitchcock's Botany laboratory, Dickens Hall. Doorway (at left) enters the Herbarium (ca. 1895)
Photo credits: KSU Archives
Prof. A.S. Hitchcock, USDA & Dr. Otto Stapf, 1924

Albert Spear Hitchcock (1865-1935)
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Orin Alva Stevens (1885 – 1979)
Lithospermum canescens (Michx.) Lehm.
Hoary puccoon

Collector: O. A. Stevens
June 13, 1956

Photo credit: Krista Lundgren

Stevens collected 800-1,000 plants/year for > 50 years
“In 1905, the state of North Dakota had more miles of track per resident than any other state in the Union.” ND State Historical Society
Train at the Great Northern depot, Fargo, N.D. (193?)
Photo credit: David Anderson (1883-1962)
Map: ND Game and Fish
Distribution of *Pinus ponderosa* Douglas ex C. Lawson
Ponderosa pine


Photo credit: Jason Sturner

Photo credit: ag.ndsu.edu
Distribution of *Juniperus scopulorum*, Rocky Mountain juniper Sarg.

Photo credit: USDA

Photo credit: James Reveal

Turtle Mountain, North Dakota

Pembina Escarpment, Tetrault Woods State Forest, ND
EASTERN MIXED-GRASS PRAIRIE
(DRIFT PRAIRIE)

TALLGRASS PRAIRIE
(RED RIVER VALLEY)

Map and photo: ND Game and Fish
Biederman et al (2018)
Current distribution of *Platanthera praeclara* Sheviak & Bowles
Western prairie fringed orchid
**Viburnum trilobum**

Marshall pembina, American cranberrybush

Distribution of highbush cranberry, *Viburnum trilobum* Marshall

Photo credits: arborday.org

Map: USGS
Distribution of *Artemisia tridentata* Nutt., big sagebrush

Map: USGS

Photo credit: Stan Shebs
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Orin Alva Stevens (1885 – 1979)
Chenopodium album  L.  var. stevensii  Aellen
Stevens' lambsquarters
Photo credit: Rasbak

Stevens Hall, NDSU, dedicated 1968
Photo credit: NDSU Archives
Modern-day botanizing in the Badlands of the Little Missouri River, ND
Acknowledgements

• Gunlogson Fund
• NDSU Libraries and Archives
• College of Arts, Humanities and Social Sciences
• Suzzanne Kelley and North Dakota State University Press
• Kendra Greenlee, Chair and Department of Biological Sciences
Sources


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• State Historical Society of North Dakota, https://www.history.nd.gov


• Wikipedia.org