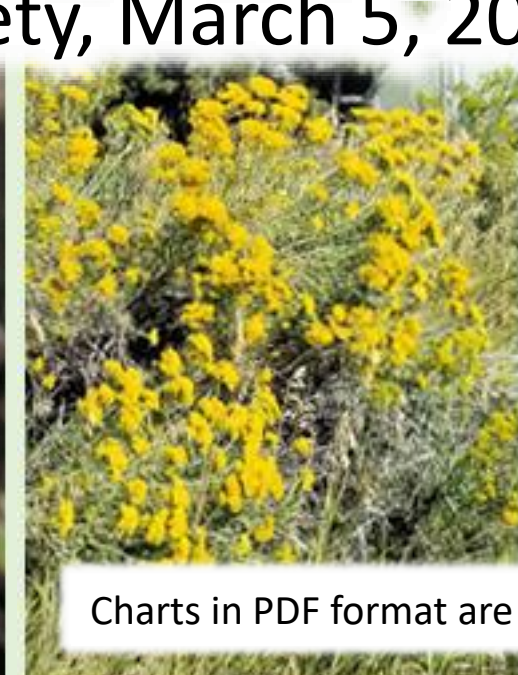




# Thomas Nuttall and the Colorado Flora

Tom Schweich

Colorado Native Plant Society, March 5, 2024



Charts in PDF format are available at: [Schweich.com](http://Schweich.com)

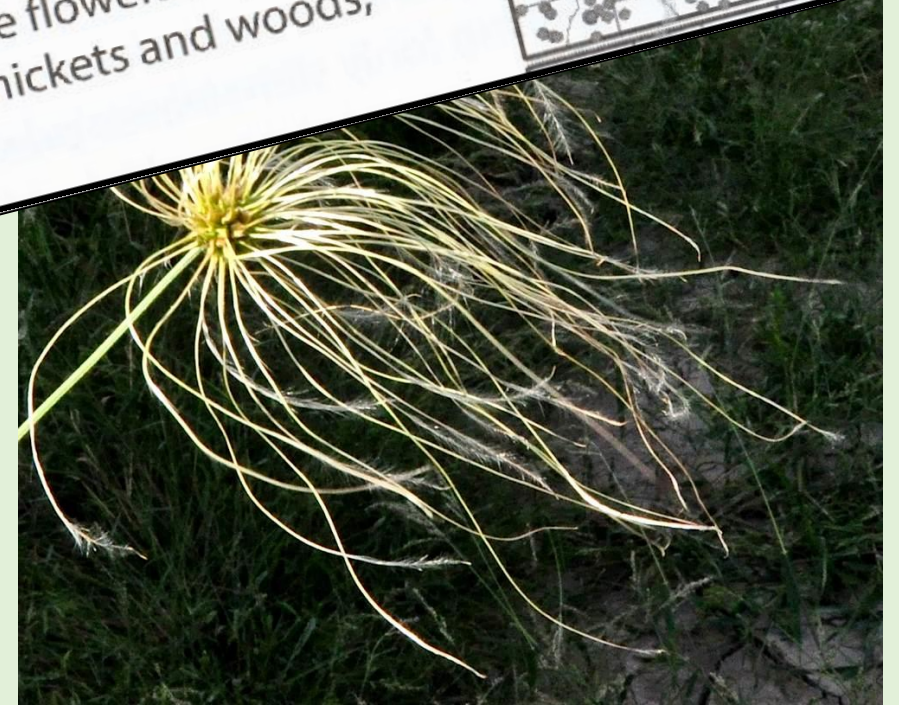
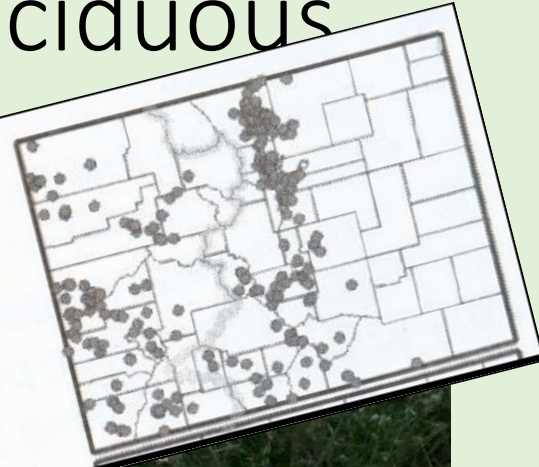


You may recognize *Clematis ligusticifolia*, sometimes called “Western White Virgin’s-Bower,” or “Deciduous Traveler’s-Joy”, or “Barba de Viejo”



***Clematis ligusticifolia* Nutt.**

WESTERN WHITE VIRGIN'S-BOWER. Plants viney; leaves pinnately compound with mostly 5–7 leaflets or sometimes bipinnately compound, the leaflets entire to toothed; inflorescence of numerous flowers crowded in axillary compound cymes, the flowers imperfect; sepals 0.6–1.5 cm long, white to cream; achene beak 3–4 cm long. Vine in thickets and woods, gulches, river bottoms, 4500–8500 ft. June–Aug. (Plate 96)

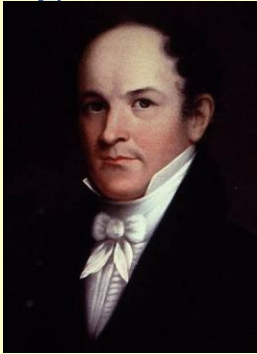


# Early Botanists Who Contributed to the Colorado flora

Meriwether Lewis and William Clark, 1804-1806



Thomas Nuttall, 1811, 1819, 1834



- John Bradbury, 1811
- Nathaniel Wyeth, 1833
- William Gambel, 1841

John C. Fremont, 1842 - 1854



Agustus Fendler, 1848

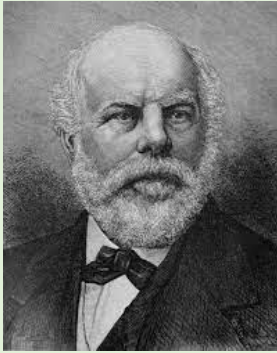
Camera Shy

Sent to Santa Fe by Asa Gray

Edwin James, MD, 1820



George Engelmann, 1833-1884



Charles C. Parry, 1861, 1862



With Elihu Hall and J. P. Harbour (in part).

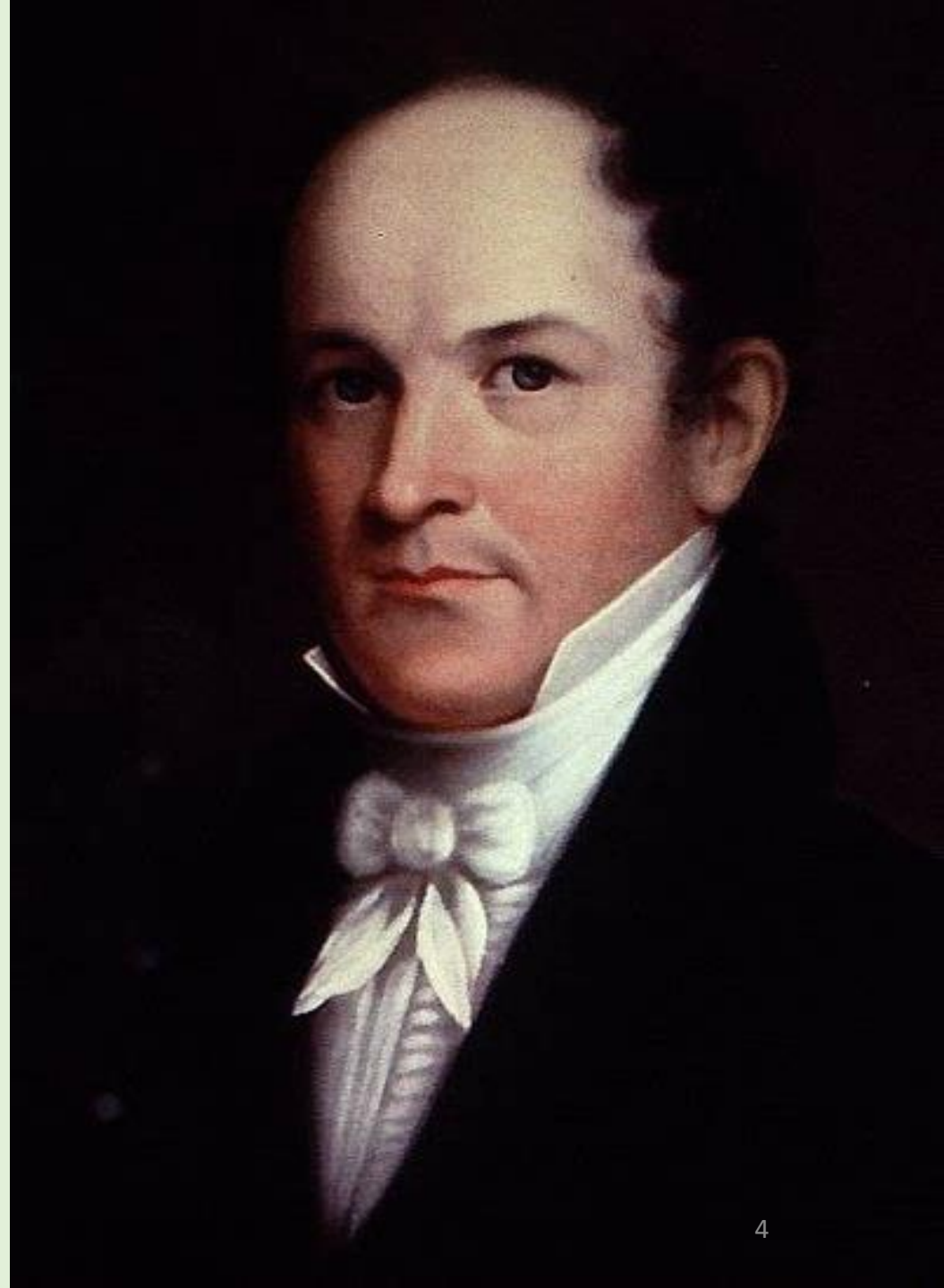
Edward L. Greene, 1870-1874





# Who was Thomas Nuttall?

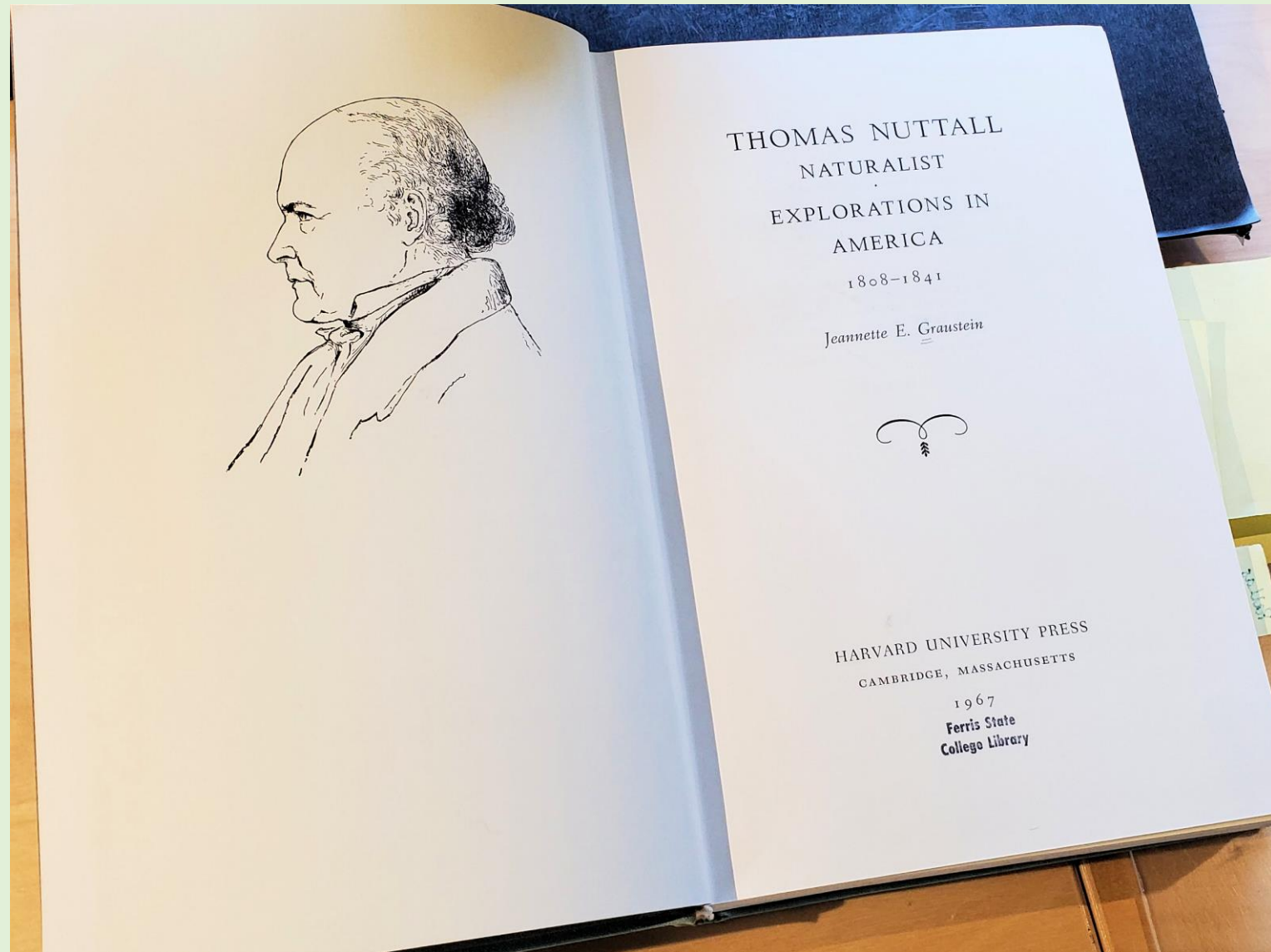
- **Thomas Nuttall** (5 January 1786 – 10 September 1859) was an English botanist and zoologist who lived and worked in America from 1808 until 1841.
- Completed a printer's apprenticeship.
- He found the call of America and its plants stronger than an assured career as a printer.





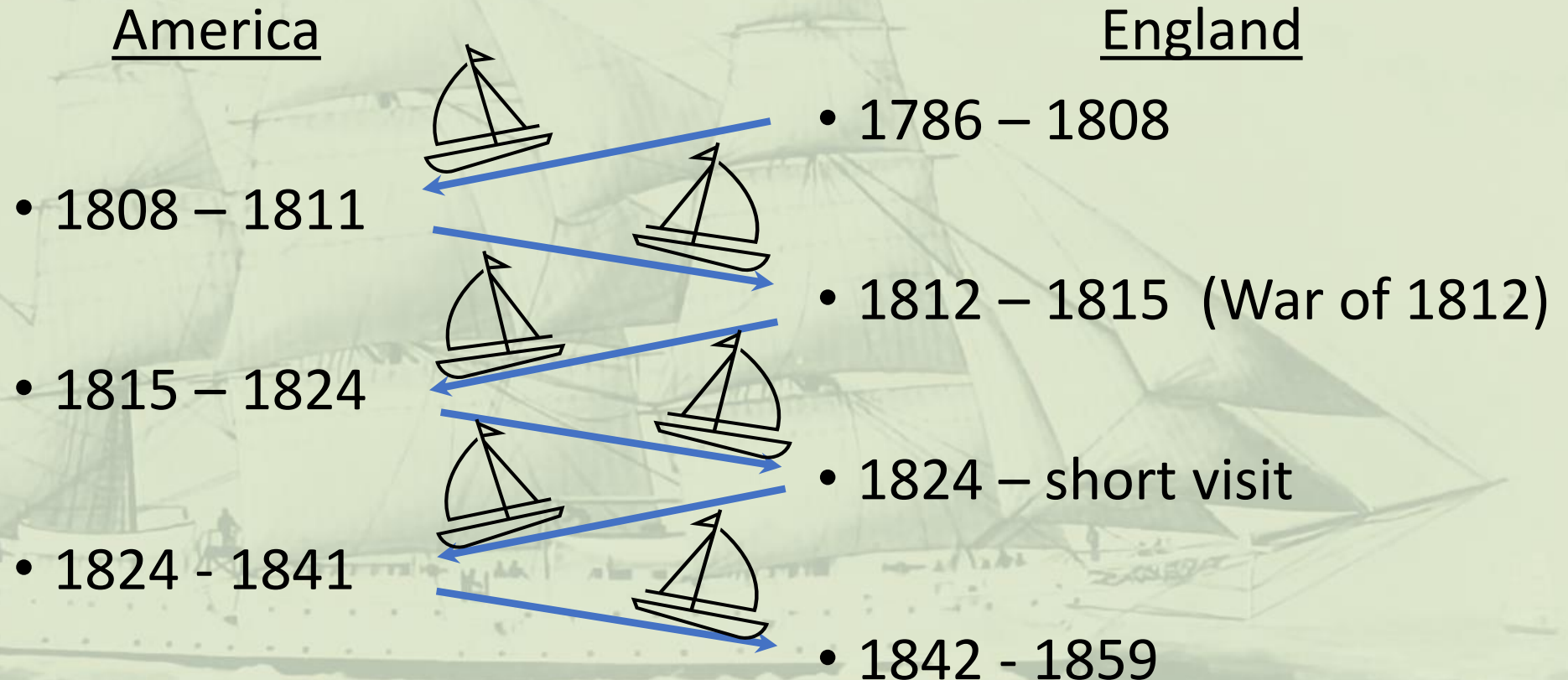
Thomas Nuttall  
Biography:

Graustein, Jeannette.  
1967. Thomas Nuttall,  
Naturalist: Explorations  
in America, 1808-1841.  
Cambridge, MA: Harvard  
University Press, 1967.





# Nuttall moved back and forth between England and America several times





# Nuttall was never in Colorado

- End of story.
- Thank you!
- Questions?





# How was Nuttall relevant to Colorado Flora?

- Nuttall collected or named plants from elsewhere that are also found in Colorado.
- Published several general botanical works.
- Nuttall sent collectors into the field.
- Nuttall identified plants that others brought to him.
- Nuttall contributed to works of John Torrey and Asa Gray, especially their *Flora of North America*.
- Plants were named for Nuttall by others.
  
- In the end, Nuttall is associated with 111 names of plants that are native to Colorado.

# Nuttall was somehow involved in the names of 111 species of plants in Colorado.

## Spreadsheet fields

- First published name
- Current name
- Date first collected
- Collected by
- Collected on what expedition
- Where collected
- Published first by
- Date published
- Published in

First Published Name	Current Name	Date Collected	Collected by	Collected on what expedition	Where Collected	Published by	Published Date	Published in
Eriogonum flavum Nutt	Eriogonum flavum Nutt	1811	Nuttall	Missouri River		Nuttall	1813	Cat. Pl. Upper Louisiana
Amorpha canescens Nutt.	Amorpha canescens Nutt.	1811	Nuttall	Missouri River		Nuttall	1813	Cat. Pl. Upper Louisiana
Amorpha nana Nutt.	Amorpha nana Nutt.	1811	Nuttall	Missouri River		Nuttall	1813	Cat. Pl. Upper Louisiana
Astragalus crassicaucus Nutt.	Astragalus crassicaucus Nutt.	1811	Nuttall	Missouri River	Above the Platte River	Nuttall	1813	Cat. Pl. Upper Louisiana
Malva coccinea Nutt.	Sphaeralcea coccinea (Nutt.) Rydb.	1811	Nuttall	Missouri River	from the Platte to the Rocky Mountains	Nuttall	1813	Cat. Pl. Upper Louisiana
Cactus viviparus Nutt.	Coryphantha vivipara (Nutt.) Britton & Rose	1811	Nuttall	Missouri River	near the Mandan towns on the Missouri	Nuttall	1813	Cat. Pl. Upper Louisiana
Oenothera cespitosa Nutt.	Oenothera cespitosa Nutt.	1811	Nuttall	Missouri River	unknown	Nuttall	1813	Cat. Pl. Upper Louisiana
Rudbeckia columnifera Nutt.	Ratibida columnifera (Nutt.) Woot. & Standl.	1811	Nuttall	Missouri River	on the Missouri	Nuttall	1813	Cat. Pl. Upper Louisiana
Yucca glauca Nutt.	Yucca glauca Nutt.	1811	Nuttall	Missouri River	Missouri River, about 49°N	Nuttall	1813	Cat. Pl. Upper Louisiana
Viola nuttallii	Viola nuttallii Pursh. Yellow Prairie Violet	1811	Nuttall	Missouri River	banks of the Missouri	Pursh	1814-1816	Fl. Sept. Americ.
Bartonia nuda Pursh	Mentzelia nuda (Pursh) Torr. & A. Gray. Goodmother	1811	Nuttall	Missouri River	banks of the Missouri River	Pursh	1814-1816	Fl. Sept. Americ.
Androsace occidentalis Pursh	Androsace occidentalis Pursh. Western Rock-Jasmine	1811	Nuttall	Missouri River	banks of the Missouri	Pursh	1814-1816	Fl. Sept. Americ.
Evolvulus argenteus Pursh	Evolvulus nuttallianus Roem. & Schult.	1811	Nuttall	Missouri River	banks of the Missouri	Pursh	1814-1816	Fl. Sept. Americ.
Troximon glaucum Pursh	Agoseris glauca (Pursh) Raf.. Pale Goat-Chicory	1811	Nuttall	Missouri River	banks of the Missouri	Pursh	1814-1816	Fl. Sept. Americ.
Arnica fulgens	Arnica fulgens Pursh. Shining Leopardbane	1811	Nuttall	Missouri River	banks of the Missouri	Pursh	1814-1816	Fl. Sept. Americ.
Aster canescens Pursh	Dieteria canescens (Pursh) Nutt.. Hoary False Tansy-Aster	1811	Nuttall	Missouri River	denuded banks of the Missouri River.	Pursh	1814-1816	Fl. Sept. Americ.
Amellus villosus Pursh (Sideranthus integrifolius Nutt)	Heterotheca villosa (Pursh) Shinners. Hairy False Golden-Aster	1811	Nuttall	Missouri River		Pursh	1814-1816	Fl. Sept. Americ.
Prenanthes juncea Pursh	Lygodesmia juncea (Pursh) D. Don ex Hook.. Rush Skeleton-Plant	1811	Nuttall	Missouri River	banks of the Missouri	Pursh	1814-1816	Fl. Sept. Americ.
Delphinium virescens Nutt.	Delphinium carolinum ssp. virescens (Nutt.) R. E. Brooks	1811	Nuttall	Missouri River	Plains of the Missouri	Nuttall	1818	Gen. Am.
Chieranthus asper Nutt.	Erysimum asperum (Nutt.) DC.	1811	Nuttall	Missouri River	Mouth of White River.	Nuttall	1818	Gen. Am.
Collomia linearis Nutt. Tiny Trumpet.	Collomia linearis Nutt. Tiny Trumpet.	1811	Nuttall	Missouri River	banks of the Missouri, about the confluence of Shian river, and in the vicinity of the Arikaree village	Nuttall	1818	Gen. Am.
Dracocephalum parviflorum Nutt.	Dracocephalum parviflorum Nutt.	1811	Nuttall	Missouri River	Fort Mandan	Nuttall	1818	Gen. Am.
Solanum triflorum Nutt. Cutleaf Nightshade.	Solanum triflorum Nutt. Cutleaf Nightshade.	1811	Nuttall	Missouri River	Fort Mandan	Nuttall	1818	Gen. Am.
Orobanche fasciculata Nutt.	Orobanche fasciculata Nutt.	1811	Nuttall	Missouri River	Fort Mandan	Nuttall	1818	Gen. Am.
Orthocarpus luteus Nutt. "Yellow Owls Clover."	Orthocarpus luteus Nutt. "Yellow Owls Clover."	1811	Nuttall	Missouri River	plains of the Missouri, near Fort Mandan	Nuttall	1818	Gen. Am.
Ambrosia tomentosa Nutt.	Ambrosia tomentosa Nutt.	1811	Nuttall	Missouri River	In upper Louisiana on the banks of the Missouri.	Nuttall	1818	Gen. Am.
Artemisia ludoviciana Nutt. Silver Wormwood.	Artemisia ludoviciana Nutt. Silver Wormwood.	1811	Nuttall	Missouri River	banks of the Mississippi near St. Louis; alluvial plains of the Missouri.	Nuttall	1818	Gen. Am.
Carduus undulatus Nutt. § Cnicus	Cirsium undulatum (Nutt.) Spreng. Wavy Leaved Thistle	1811	Nuttall	Missouri River	calcareous islands of lake Huron, and on the plains of Upper Louisiana	Nuttall	1818	Gen. Am.
Iva xanthiifolia Nutt.	Cyclachaena xanthiifolia (Nutt.) Fesen.	1811	Nuttall	Missouri River	Fort Mandan	Nuttall	1818	Gen. Am.



# Expeditions in the West

- Nuttall
  - 1810-1811 – Great Lakes and Missouri River
  - 1819 – Arkansas and the Red River
  - 1834 – Oregon Territory and Sandwich Islands
- Others
  - 1833 – Nathaniel Wyeth
  - 1842 – William Gambel

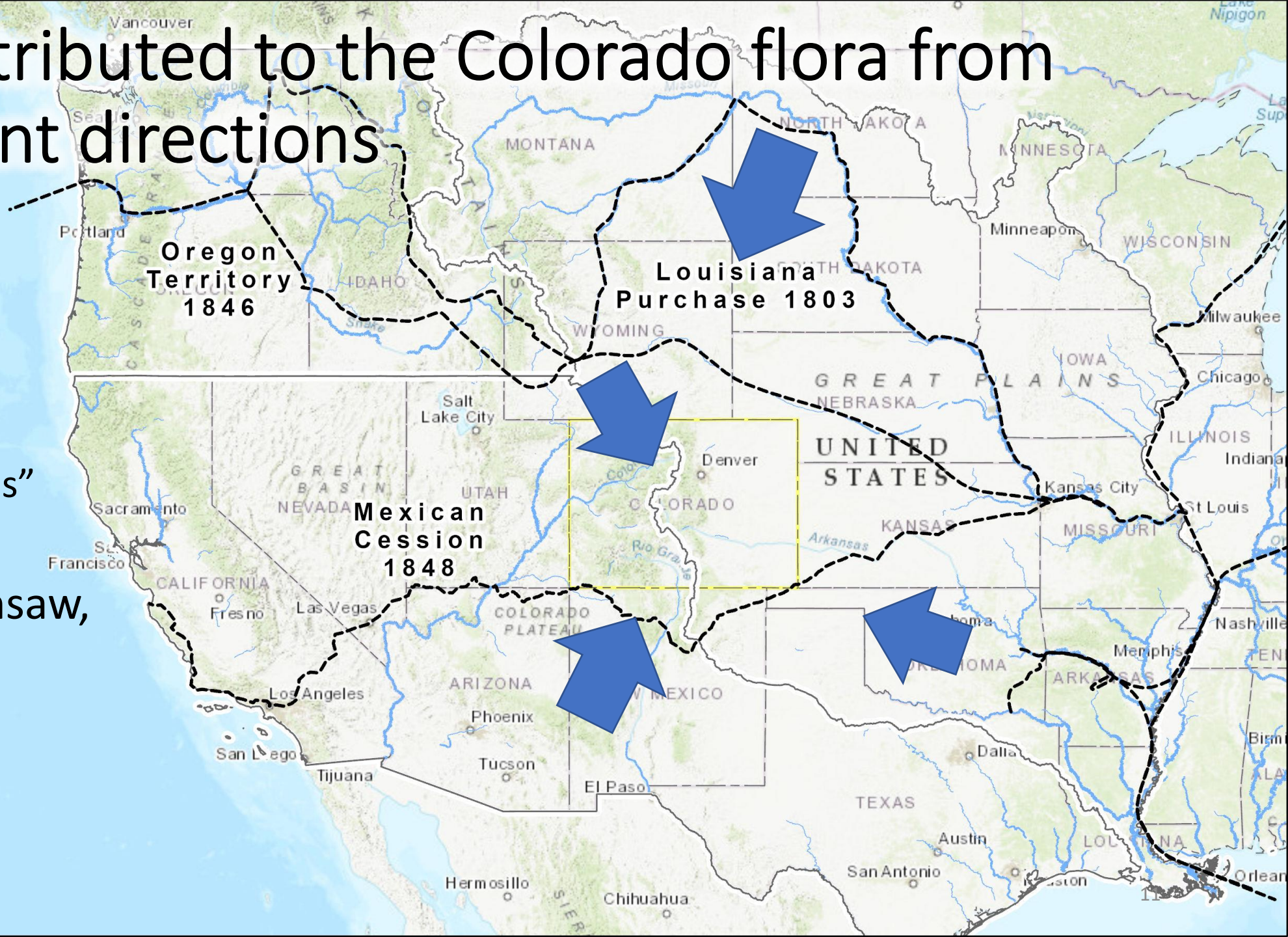


George Catlin, 1832. Grand Detour of the Missouri



# Nuttall contributed to the Colorado flora from four different directions

- Missouri River
  - “missouriensis”
  - “ludoviciana”
- Arkansa, Arkansaw, or Arkansas
- Oregon Trail
- New Mexico





# Missouri River — 1810-11

- Initially financed by Barton
- 1810: Philadelphia to Great Lakes to St. Louis
  - *Platanthera huronensis* (Nutt.) Lindley  
“Huron Green Orchid”
- 1811: Missouri River from St. Louis
  - Loosely traveled with John Bradbury.
  - Nuttall collected or described 48 species of plants from this trip that occur in Colorado.
  - Nuttall traveled down the Mississippi River to New Orleans, leaving there in mid-December 1811, and arriving in England several months later.





# The first publication of Nuttall and his plants was Fraser's Catalogue

- Catalogue was very rare, reprinted by E. L. Greene (1890).
- 89 species of plants for sale.
- Seeds collected in 1811 along the Missouri River.
- Plants grown in the 1812 season and ready to sell by 1813.
- Names we recognize on this page



- *Amorpha nana* Nutt. Dwarf False Indigo



- *Astragalus crassicaarpus* Nutt. Groundplum Milkvetch.

- Names we may not recognize

- *Bartonia decapetala* Pursh = *Mentzelia decapetala* (Pursh) Urb. Ten-Petal Blazingstar.
- *Chloris curtispindula* Michx. = *Bouteloua curtispindula* (Michx.) Torrey. Side-Oats Gramma.
- *Calymenia Nyctaginea* (Michx.) Nutt. = *Mirabilis nyctaginea* (Michx.) MacMill. Heart-Leaf Four O'Clock.

## A CATALOGUE

OF

NEW AND INTERESTING PLANTS,

Collected in UPPER LOUISIANA, and principally on the River MISSOURIE,  
North America,[By T. Nuttall.] *not in original*

FOR SALE AT

Messrs. FRASER'S Nursery  
For Curious American Plants, Sloane Square,  
King's Road, Chelsea, London.

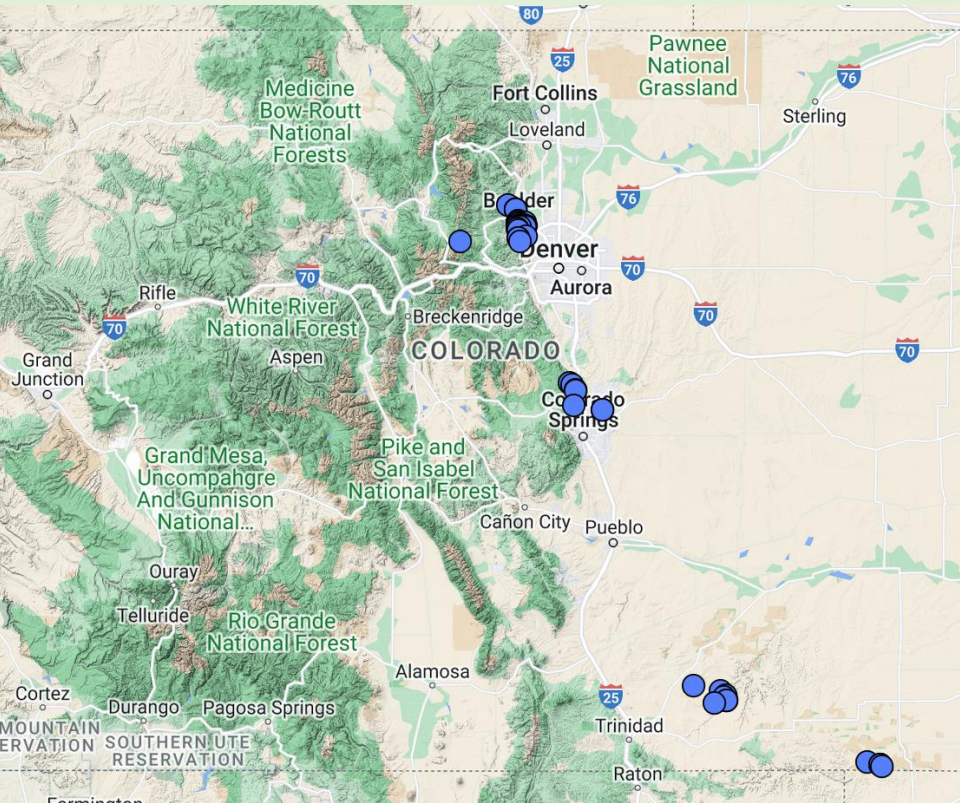
1813.

- |   |   |
|---|---|
| 1 *ALLIUM reticulatum. † M.   | 7 *—— melanocarpus. † M.  |
| 2 *—— stellatum. † M.   | 8 *—— gracilis. † M.  |
| 3 *Allyssum petrocum. † M.  | 9 *Artemisia cernua. †  |
| 4 *Amorpha canescens. † St. Louis   | 10 *Aristida. M.  |
| 5 *—— nana. † This is a very elegant dwarf shrub, with highly odorous purple flowers. Collected near the Mandan towns, 1600 miles up the Missouri. It is perfectly glabrous, dentures of the calyx all acuminate, and the legume one seeded. It appears intermediate between <i>A. fruticosa</i> and <i>A. pubescens</i> , from both of which it is evidently distinct. | 11 *Bartonia decapetala. † M.   |
| 6 *Astragalus crassicaarpus. † Fruit about the size and form of <i>A. physodes</i> , but thick and succulent. Collected above the River Platte.   | 12 *Bumelia confertiflora. † St. Louis.   |
|   | 13 *Bartonia decapetala. M.   |
|   | 14 *—— pollypetala. Both species of this fine genus are hardy, and thrive best in the open ground. M. |
|   | 15 Chloris mucronata. † St. Louis.  |
|   | 16 —— curtispindula. † St. Louis.   |
|   | 17 Cyperus. † Fl. not seen. Hab. near New Orleans   |
|   | 18 *Cynoglossum glomeratum. † M   |
|   | 19 Calymenia Nyctaginea. † M.   |
|   | 20 *—— pilosa. † M.   |



# *Amorpha nana* Nutt. “Dwarf False Indigo”

Habitat. Not described.



© 2024 Dyck Arboretum of the Plains

Permission to use requested, no response.

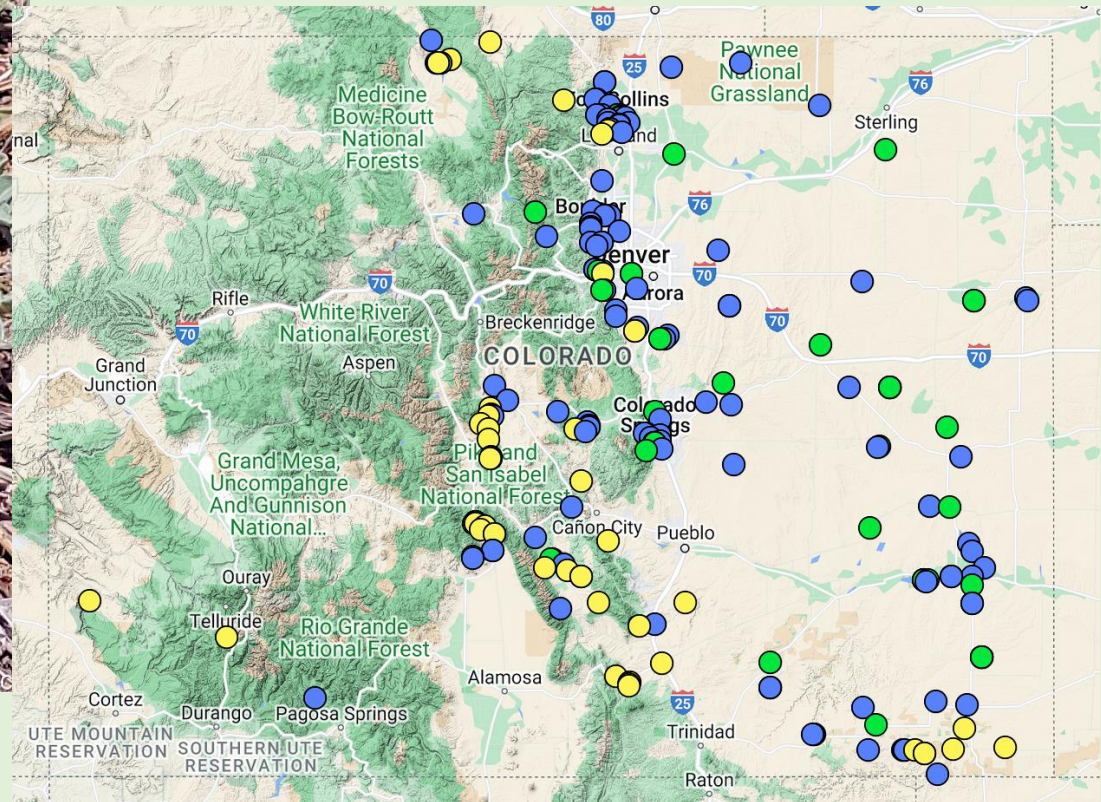
Ranson/Edwards Homestead Open Space Park, Jefferson County, Colorado



# *Astragalus crassicarpus* Nutt. “Groundplum Milkvetch”




May 12, 2020, Schweich Hill, Golden, CO





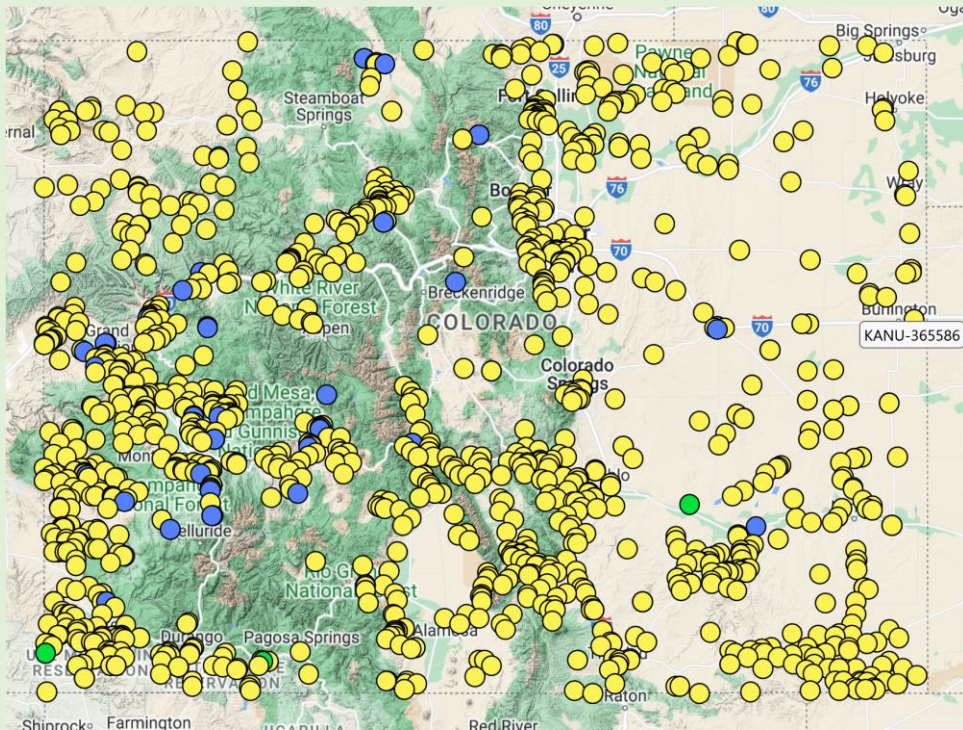
# Collected on the Missouri River in 1810-11 ... ... published in Fraser's Catalogue, 1813

## Other names ...

- *Amorpha canescens* Nutt. "Lead Plant" *nom. Illeg.*, validly published by Pursh, who said he had seen it live, possibly in Fraser's garden (???)
- *Escobaria vivipara* (Nutt.) Buxb. "Beehive Cactus," as *Cactus viviparus* Nutt.
- *Ratibida columnifera* (Nutt.) Woot. & Standl. "Upright Prairie Coneflower"
  - *Rudbeckia columnifera* Nutt. (1313)
  - "125. *Rudbeckia columnaris* must form the genus *Ratibida* of Raf. Fl. Miss." Rafinesque (1818)
- *Eriogonum flavum* Nutt. "Alpine Wild Golden Buckwheat"
-  *Sphaeralcea coccinea* (Nutt.) Rydb. "Cowboy Delight"
  - *Malva coccinea* Nutt.
- *Oenothera cespitosa* Nutt. "Tufted Evening Primrose"
- *Yucca glauca* Nutt. "Soapweed Yucca"


# *Sphaeralcea coccinea* (Nutt.) Rydb. “Cowboy Delight”

- Collected first by Lewis & Clark in 1806 along the Marias River, Montana on their return from the Pacific Coast (Moulton, 1999).
- Collected again by Nuttall in 1811 along the Missouri River “... from the river Platte to the Rocky Mountains.”
- Nuttall's collection published first in Fraser's (1813) Catalogue as *Malva coccinea* Nutt.






Collected on the Missouri River in 1810-11 ...  
... published in Pursh (1814) *Flora Americae Septentrionalis*.

 *Evolvulus nuttallianus* Roem. & Schult., as *Evolvulus argenteus* Pursh

- *Dieteria canescens* (Pursh) Nutt.. Hoary False Tansy-Aster (syn: *Aster canescens* Pursh)
- *Viola nuttallii* Pursh
- *Bartonia nuda* Pursh (= *Mentzelia nuda* (Pursh) Torr. & A. Gray)

 *Androsace occidentalis* Pursh

- *Troximon glaucum* Pursh (= *Agoseris glauca* (Pursh) Raf.)
- *Arnica fulgens* Pursh
- *Amellus villosus* Pursh (*Sideranthus integrifolius* Nutt) = *Heterotheca villosa* (Pursh) Shinnars
- *Prenanthes juncea* Pursh
- *Batschia longiflora* Pursh = *Lithospermum incisum* Lehman
- *Psoralea lanceolatum* Pursh = *Ladeania lanceolata* Egan & Reveal (not a Lewis & Clark coll.)

*Flora Americae 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.

LONDON:

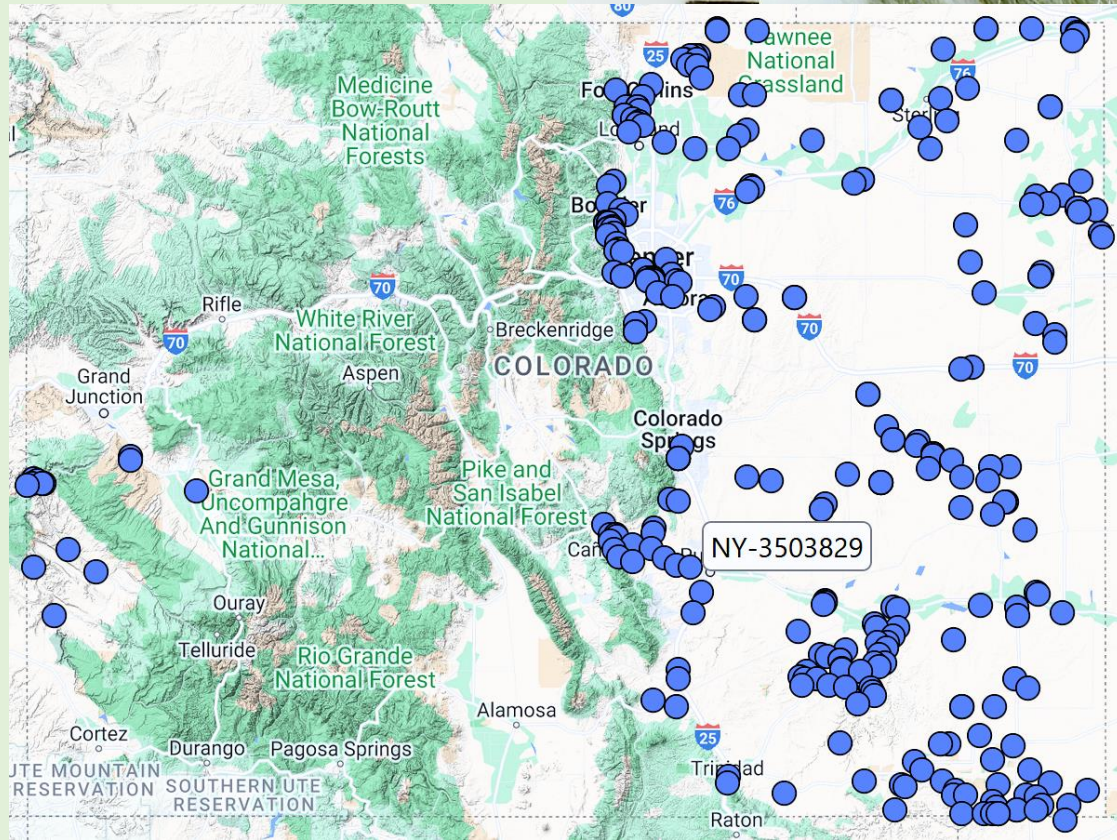
PRINTED FOR WHITE, COCHRANE, AND CO.,  
FLEET STREET.

1814.



# *Evolvulus nuttallianus* Roem. & Schult. “Shaggy Dwarf Morning Glory,” as *Evolvulus argenteus* Pursh

“On the banks of the Missouri.”



Schweich Hill, Golden, Jefferson County



Coll. N

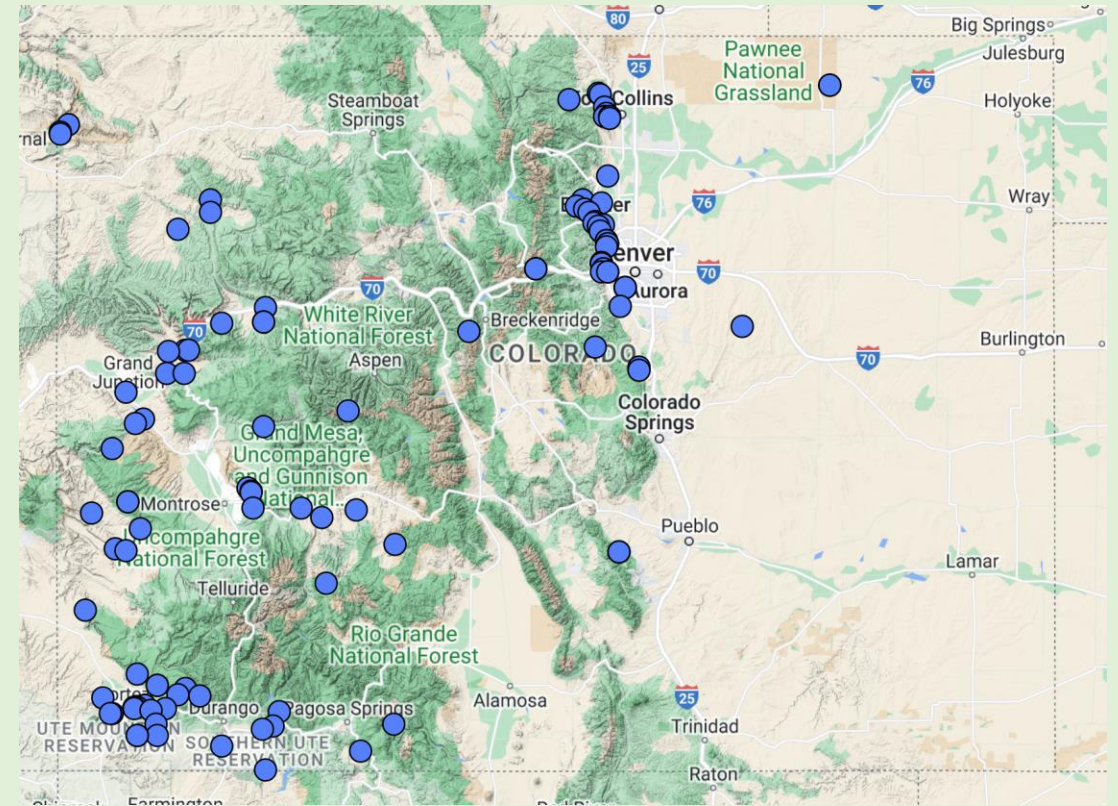
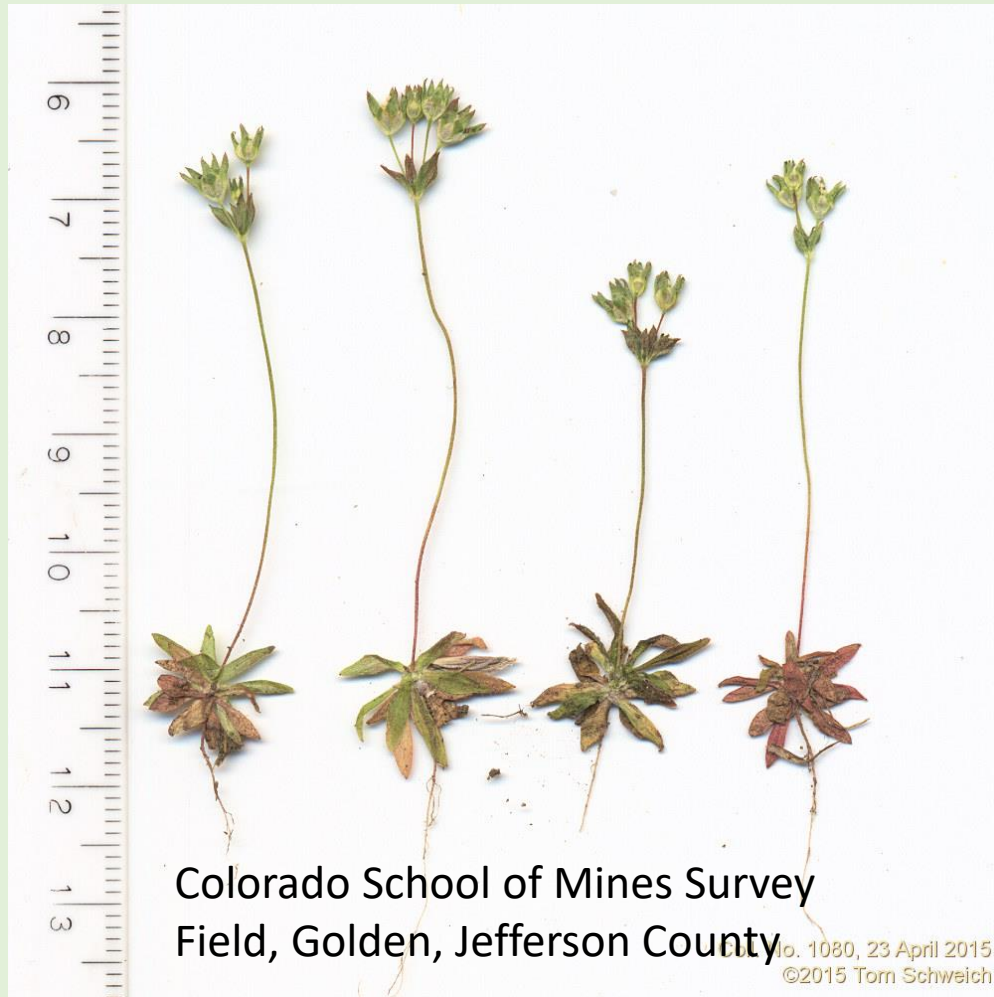
Welch Ditch, Golden, Jefferson County



From Ancient Greek ἀνδρόσακες (andrósakes).

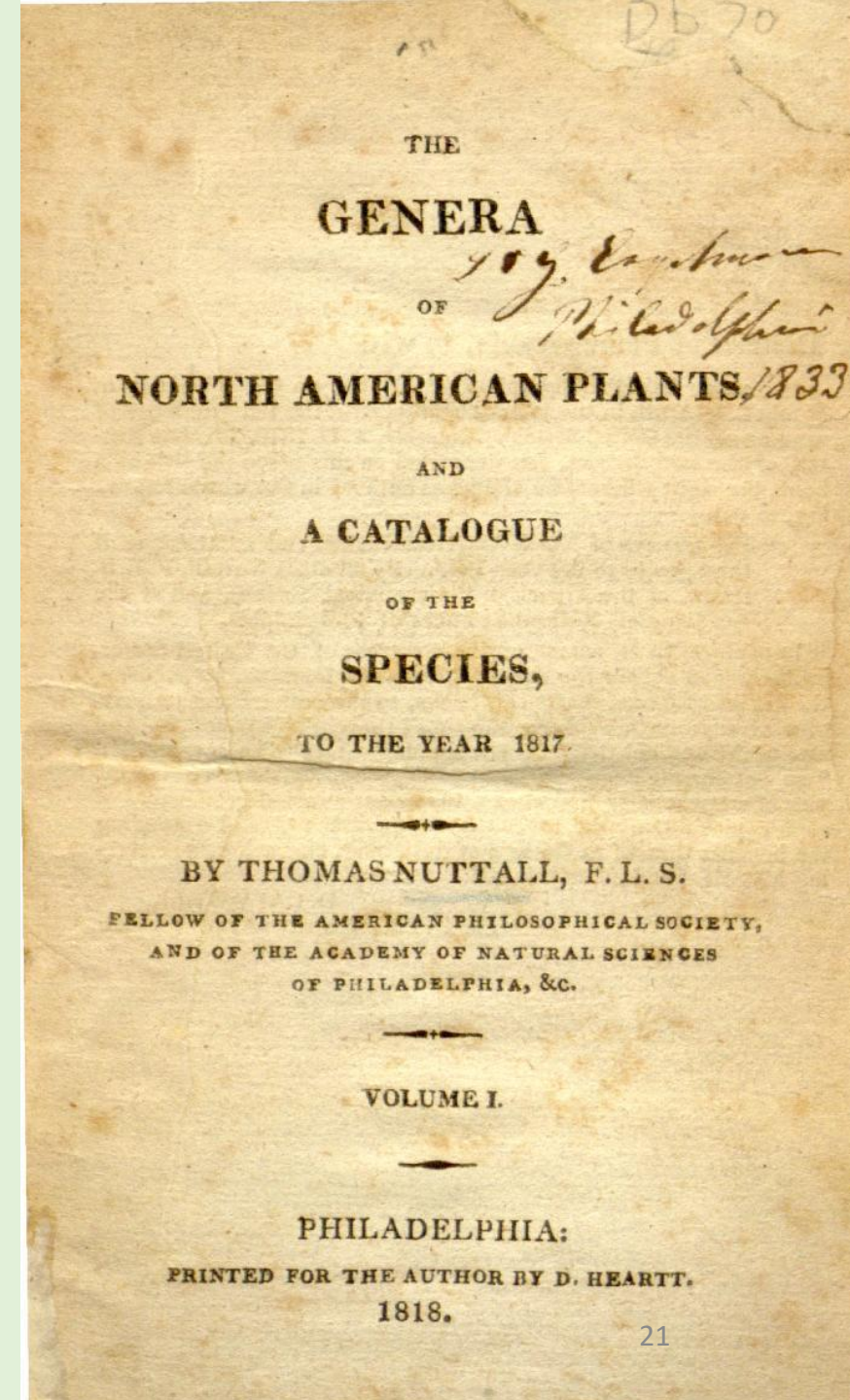
# *Androsace occidentalis* Pursh “Western Rockjasmine”

“On the banks of the Missouri. Nuttall. ☉ *v. s. in Herb. Nuttall.*”



In 1818, Nuttall published his  
*Genera of North American Plants.*

- 834 genera, and a listing of existing and new species.
- Complete, accurate descriptions, written entirely in English, not Latin.
- Praise was not universal.
- Generally recognized as “excellent work” and “the fruits of real personal acquaintance with the plants in nature.”
- Nuttall may have set the type himself.





# Collected on the Missouri River in 1810-11 ... ... published by Nuttall, Gen. Am., 1818

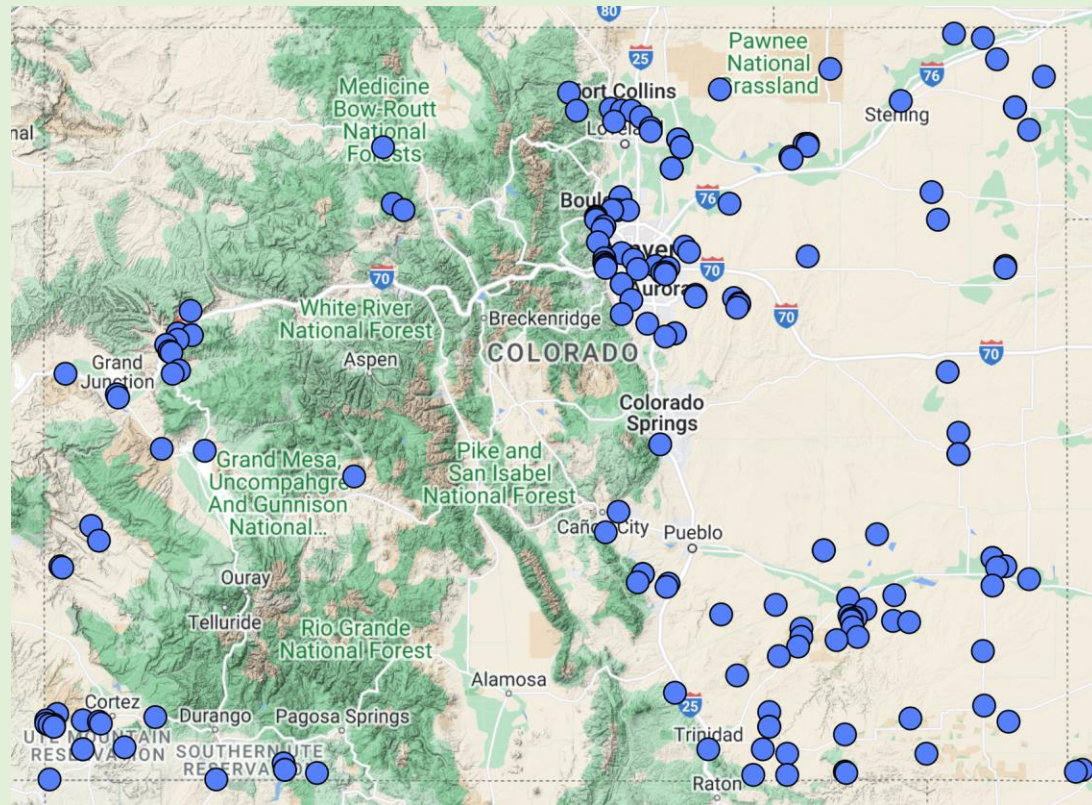
The Genera of North American Plants and a catalogue of the species to the year 1817.

- *Ambrosia tomentosa* Nutt. “Ragweed”
- *Artemisia ludoviciana* Nutt. “Silver Wormwood.”
- *Cirsium undulatum* (Nutt.) Spreng. “Wavy Leaved Thistle”
- *Cyclachaena xanthiifolia* (Nutt.) Fesen. “Carelessweed”
-  *Ericameria nauseosa* (Pall. ex Pursh) G.L.Nesom & G.I.Baird var. *graveolens* (Nutt.) Reveal & Schuyler. “Goldy Locks”
- *Erigeron pumilis* Nutt. “Shaggy Fleabane”
- *Picradeniopsis oppositifolia* (Nutt.) Rydb. ex Britton “Opposite Leaf Bahia”
- *Senecio integerrimus* Nutt. “Columbia Ragwort”
- *Erysimum asperum* (Nutt.) DC. “Western Wallflower”
- *Dracocephalum parviflorum* Nutt. “American Dragonhead”
- *Orobanche fasciculata* Nutt. “Clustered Broomrape”
- *Orthocarpus luteus* Nutt. “Yellow Owls Clover”
-  *Collomia linearis* Nutt. “Tiny Trumpet”
- *Delphinium carolinum* Walter ssp. *virescens* (Nutt.) R. E. Brooks “Plains Larkspur.”
- *Solanum triflorum* Nutt. “Cutleaf Nightshade”
-  *Hordeum pusillum* Nutt. “Little Barley,” on the plains of the Missouri.
- *Munroa squarrosa* (Nutt.) Torr. “False Buffalograss”
- *Schedonnardus paniculatus* (Nutt.) Trel. “Tumblegrass”

# *Hordeum pusillum* Nutt.

## “Little Barley.”

“On the arid and saline plains of the Missouri.”

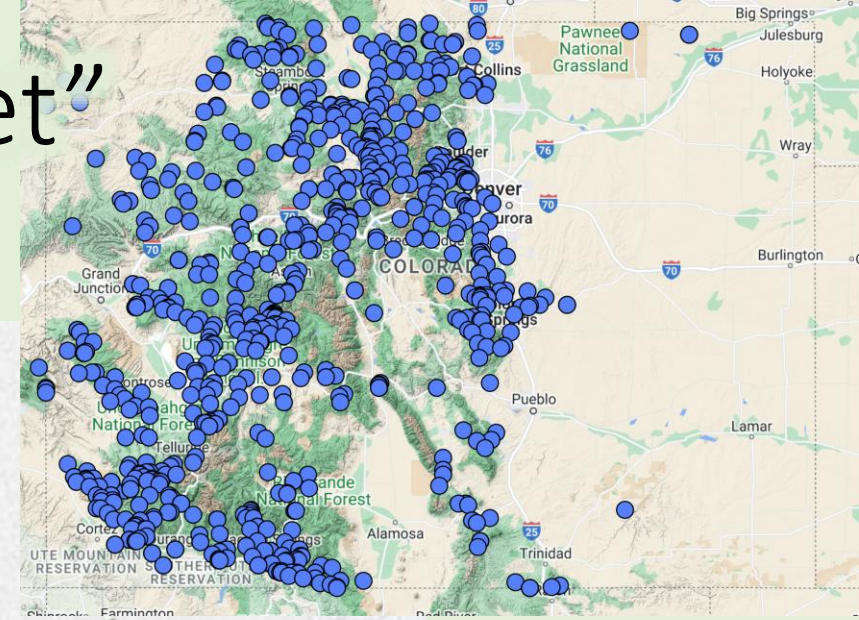


North Table Mountain,  
Jefferson County



# *Collomia linearis* Nutt. “Tiny Trumpet”

“Near the banks of the Missouri, about the confluence of Shian river, and in the vicinity of the Arikaree village, in moist places.”



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# *Chrysocoma graveolens* Nutt. “Goldy-locks”

“Habitat: On the banks of the Missouri in denudated soils; common.”

= *Ericameria nauseosa* (Pall. ex Pursh) G.L.Nesom & G.I.Baird var. *graveolens* (Nutt.) Reveal & Schuyler. “Goldy Locks”



## 544. CHRYSOCOMA. L. (Goldy-locks.)

*Calix* imbricated, oblong or hemispherical. *Style* scarcely exerted. *Receptacle* naked. *Pappus* pilose, scabrous, rays crowded and unequal. *Seed* pubescent.

Shrubby or herbaceous; leaves alternate and entire, often narrow; flowers mostly corymbose and terminal, yellow, rarely purple; calix 3 or 4, 5, or more than 20-flowered, in *C. Linocaryis*, &c. hemispherical, in all the North American species oblong, small, and attenuated at the base, the scales are likewise rigid and carinate. Notwithstanding this diversity of aspect, the genus appears to be perfectly natural, and presents gradations from one extreme to the other.

**SPECIES.** 1. C. \* *graveolens*. Shrubby; leaves linear, 3-nerved, smooth and impunctate; branches whitish, pulverulently tomentose; flowers corymbosely fastigate and crowded; calix angular and smooth, 5-flowered. **HAB.** On the banks of the Missouri in denudated soils; common.



# Collected on the Missouri River in 1810-11 ... one-off publications

- Collected by Lewis & Clark (1806) at The Dalles on the Columbia River, but not published by Pursh (1814).
- First published by Nuttall (1818) as *Aronia alnifolia* Nutt.
  - “In ravines and on the elevated margins of small streams from Fort Mandan to the Northern Andes.”
- Published again by Nuttall (1834a) as *Amelanchier alnifolia* from a collection by Wyeth, did not refer to *Aronia alnifolia* – *nomen nudum*.
- Validly published as *Amelanchier alnifolia* (Nutt.) Nutt. ex M. Roem., Fam. Nat. Syn. Monogr. 1847 “Saskatoon Serviceberry”



@Max Lichter, SEINet, (CC BY-SA)







A photograph of a flowering plant with yellow and red flowers and green stems. The flowers are in various stages of bloom, with some fully open and others as buds. The background is a soft, out-of-focus green.

# *Coreopsis tinctoria* Nutt. "Plains Coreopsis"

Annie's Heirloom Seeds

*A Description of some new species of Plants, recently introduced into the gardens of Philadelphia, from the Arkansa territory. By THOMAS NUTTALL. Read, August 7th, 1821.*

1. *COREOPSIS* \**tinctoria*, foliis radicalibus pseudo-bipinnatis, foliolis subovalibus integris glabris, superioribus pseudopinnatis laciniis linearibus; floribus binatis ternatisve; calicibus exterioribus brevissimis; radiis bicoloribus; seminibus nudis immarginatis.

*Habitat.* Throughout the Arkansa territory to the banks of Red river, chiefly in the prairies which are subject to temporary inundation.—Flowering, from June to October.

*DESCRIPTION.* Annual and biennial, stem erect, smooth, and much branched, extremely variable in magnitude, being from one to five feet high. The leaves, in common with the genus, are somewhat thick and succulent, the primary ones simple, radical pseudobipinnate, the segments also occasionally pinnate, oblong-oval, commonly smooth, and entire, the ultimate divisions largest. Flowers often terminating the branchlets by pairs, with the peduncles unusually short. Exterior calix, minute, much shorter than the interior, and in common with it, and the number of rays mostly eight-leaved. Rays three-lobed at the extremity, of a bright orpiment yellow and brown towards the base; disk brown, and rather small. Receptacle paleaceous, the leaflets deciduous. Seed small, blackish, immarginate, curved, and naked at the summit.

*Economical Use.* The flowers of this species afford a yellow dye, in common with those of the *C. senifolia*.

As an ornamental plant, of easy culture and uncommon brilliance, it promises to become the favourite of every garden where it is introduced.



# Collected in Arkansa Territory

Published by Nuttall  
(1834b)

- *Physalis longifolia* Nutt.  
“Longleaf Groundcherry.”
- *Aristida purpurea* Nutt.  
“Purple Threeawn” – “grassy  
plains of the Red River”
- *Coreopsis tinctoria* Nutt.



## ARTICLE VI.

*Collections towards a Flora of the Territory of Arkansas. By Thomas Nuttall. Read before the American Philosophical Society April 4, 1834.*

### CRYPTOGAMIA.

OT SPORADIA. Gemmule and perfect plant consimilar; sexual organs and flowers heteromorphous and inconspicuous; cotyledons none.

#### FUNGI.

1. *FULIGO flava.* 2. *F. cinnabarina.* 3. *F. \*coccinea.*—*Hab.* The trunks of *Cupressus disticha.*

1. *TRICHIA botrytis.* 2. *T. vulgaris.* 3. *T. reticulata.*

#### FILICES.

*OPHIOGLOSSUM vulgatum.*—*Hab.* Near the town of Arkansas.

1. *BOTRYCHUM fumarioides.* 2. *B. obliquum.*—*Hab.* Of frequent occurrence in shady woods.

1. *OSMUNDA spectabilis.* 2. *O. cinnamomea.*—*Hab.* Near springs on the banks of Arkansas and Red rivers, but not common.

1. *POLYPODIUM vulgare.* 2. *P. incanum.*—Common.



FLORA OF NORTH AMERICA:

CONTAINING

ABRIDGED DESCRIPTIONS OF ALL THE KNOWN INDIGENOUS AND  
NATURALIZED PLANTS GROWING NORTH OF MEXICO;

ARRANGED ACCORDING TO

THE NATURAL SYSTEM.

BY

JOHN TORREY, M. D., F. L. S., &c.,

MEMBER OF THE IMPERIAL ACADEMY NATURÆ CURIOSORUM, ETC., AND PROFESSOR  
OF CHEMISTRY AND BOTANY IN THE UNIVERSITY OF  
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LONDON: WILEY & PUTNAM, 35 PATERNOSTER ROW.  
PARIS: BOSSANGE & Co. 11 QUAI VOLTAIRE.

1838-1840.

LIBRARY  
NEW YORK  
BOTANICAL

# Collected in Arkansa Territory

Published by Torrey  
& Gray (1838-1843)



*Phemeranthus  
parviflorus* (Nutt.)

Kiger. – “on rocks,  
Arkansas”

- *Rorippa sinuata*  
(Nutt.) Hitchc.

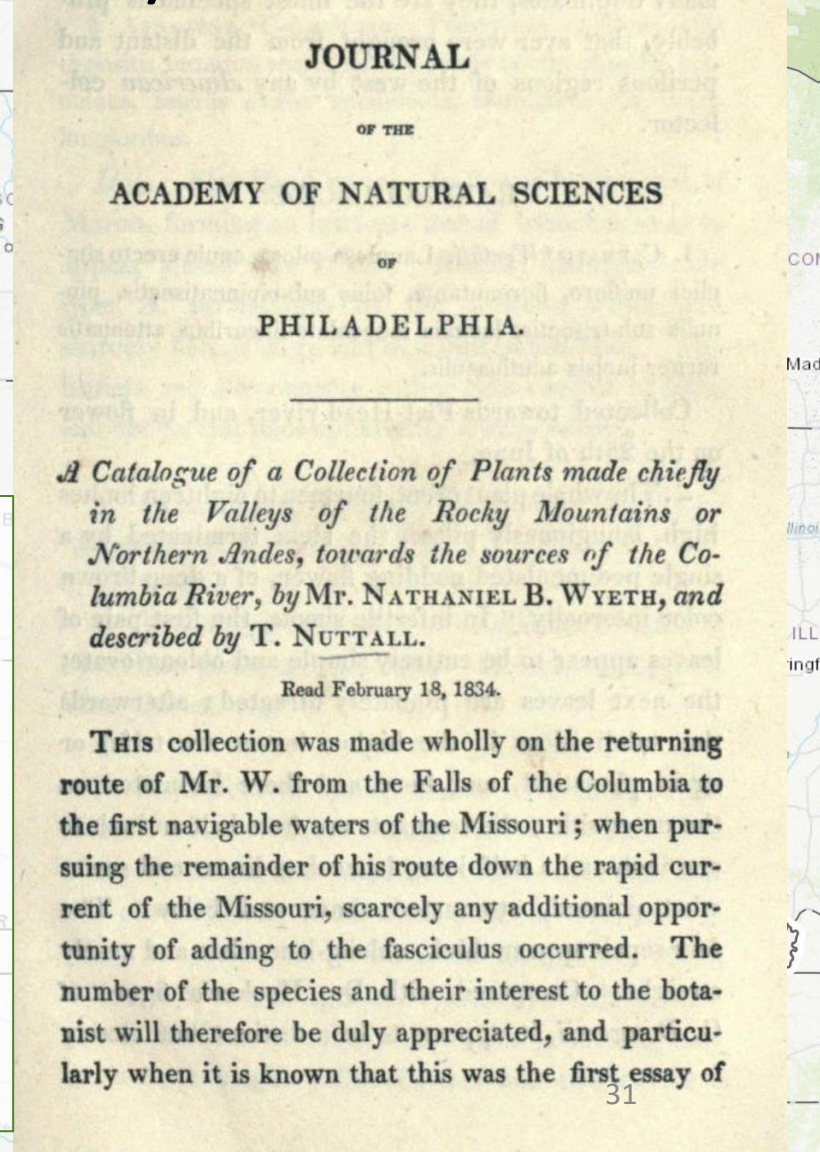
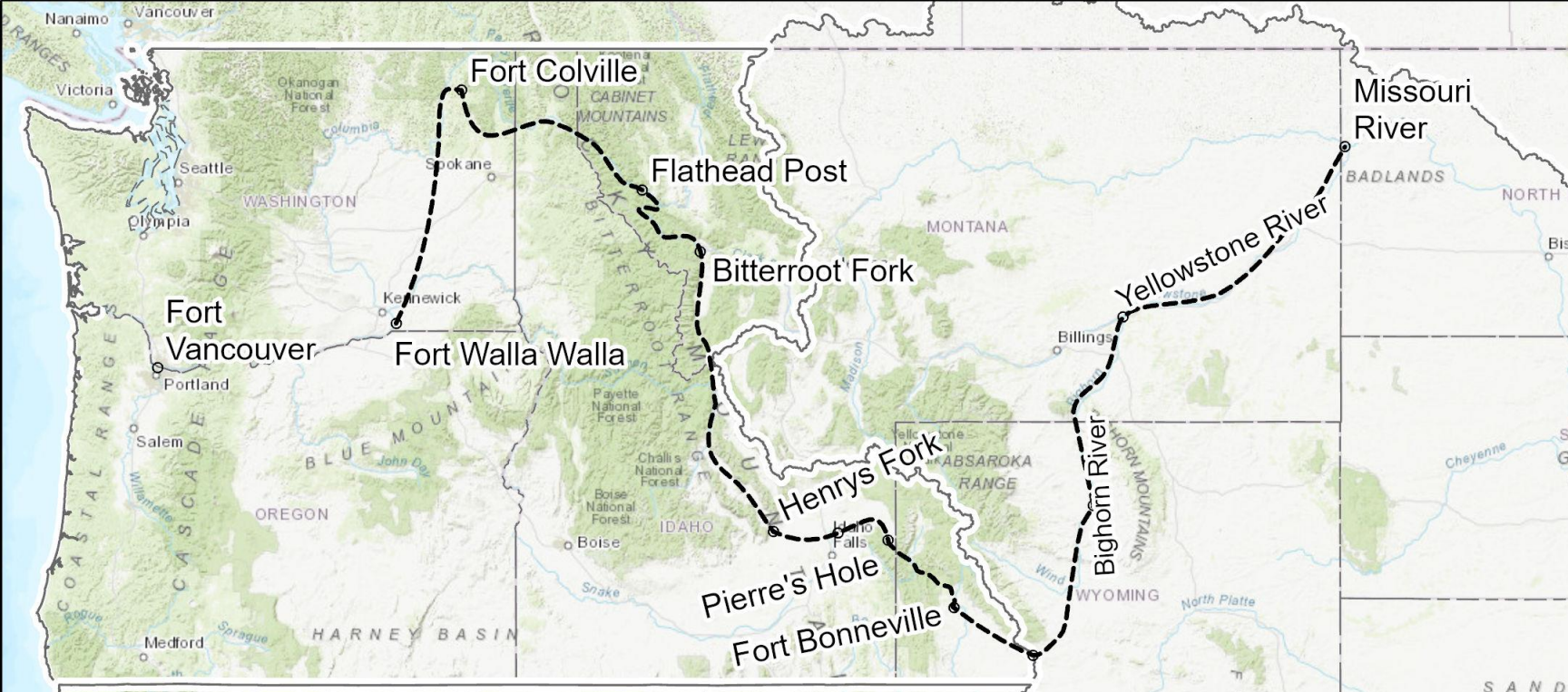
- *Vicia ludoviciana*  
Nutt. ex Torr. & A.  
Gray



©Patrick Alexander (CC BY-SA)



# Nathaniel J. Wyeth – 1833

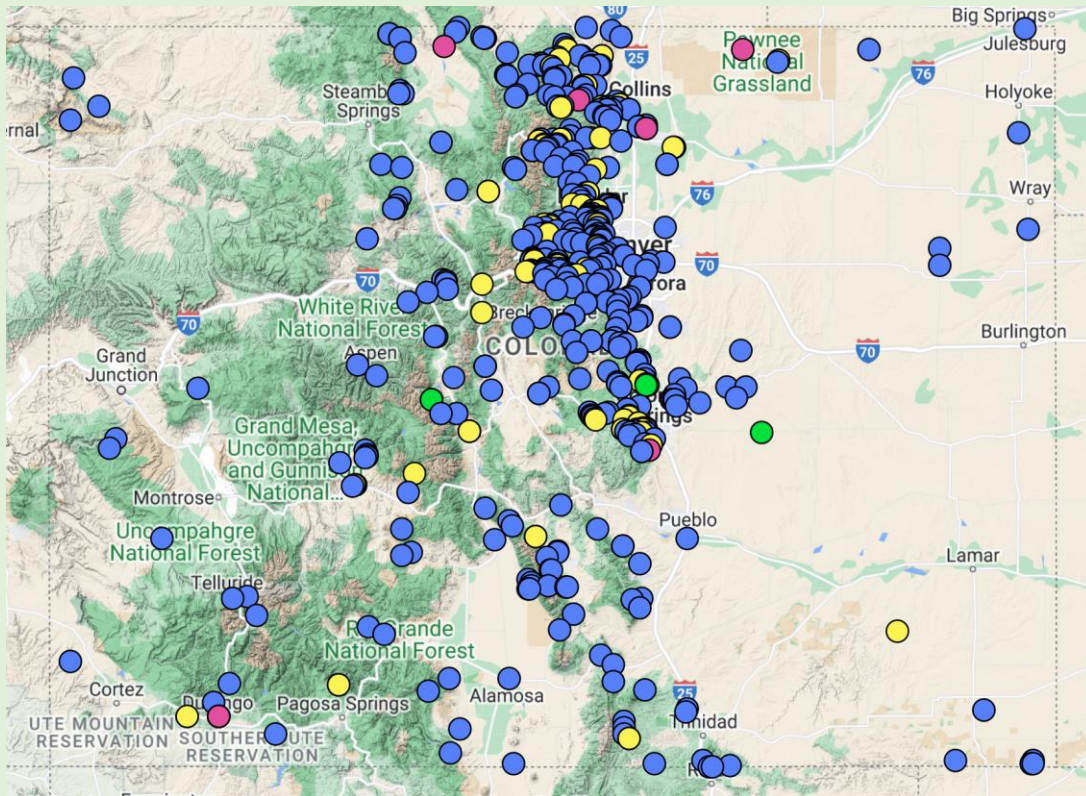


- Nuttall was a neighbor of Wyeth's father in Cambridge, MA.
- Wyeth organized a trading company to operate in Oregon Territory, sent goods around the horn by ship
- Traveled with the Rocky Mountain Fur Company commanded by William Sublette who was taking goods to Pierre's Hole.
- Continued to Fort Vancouver – all trading goods lost.
- Collected for Nuttall on the route back.



# *Solidago missouriensis* Nutt. “Missouri Goldenrod”

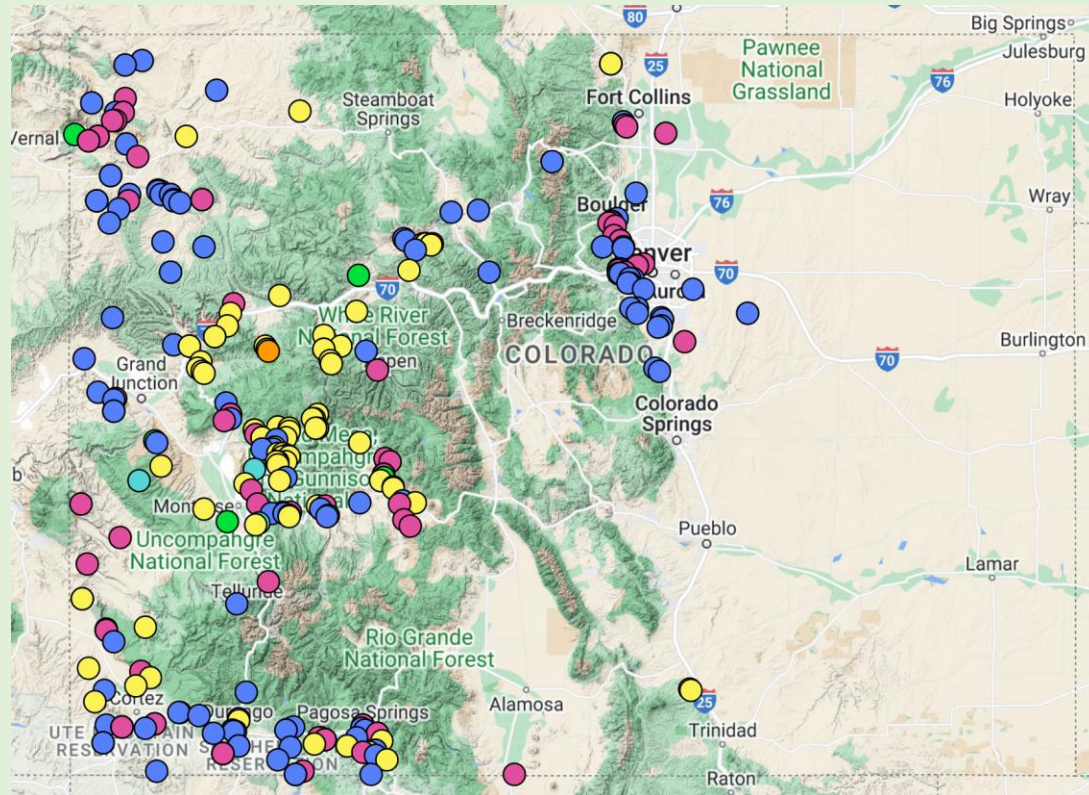
“*Hab.* On the upper branches of the Missouri and in Arkansas.”





# *Crepis occidentalis* Nutt. “Western Hawksbeard”

“*Hab.* Common on the borders and in the vicinity of the river Columbia.”



Colors represent different varieties.



Coll. No. 1894, 28 May 2018, characters observed:  
 Perennial herb to 25 cm, taprooted. Stem green, tomentose, glandular, no bristles. Leaves, basal and cauline, alternate, petiole 20 mm + blade 56 mm × 17 mm wide, reduced distally, pinnately lobed nearly to mid-rib, segments deltoid, tomentose, glandular. Inflorescence, heads #3 per stem, showy, >leaves; Peduncles, 23 mm. Involucre, 12 mm × 12 mm wide, cyathine, tomentose. Phyllaries, 2 graduated series, 3.5 mm. Ray flowers (ligules), 12.5 mm × 3 mm wide, lanceolate, flat, tomentose, gland-tipped, black bristles evenly distributed. Receptacle, 12.5 mm × 2.4 mm wide, yellow. Pappus, 9 mm well-developed, bristles, equal, smooth. Fruit, 2 mm × 1.3 mm wide, brown, glabrous.

**Native and Naturalized Flora of the Golden Area, Jefferson County, Colorado**  
 Asteraceae  
*Crepis occidentalis* Nutt. Largeflower Hawksbeard.  
 Colorado School of Mines Survey Field, Jefferson County, Colorado. Highest Great Plains at the base of the Rocky Mountain Front Range, southeast-facing slope, above an unnamed stream in the south end of the Survey Field, 2.36 km south of the GNIS location of Golden. 39.7343°N, 105.2228°W. WGS 1984 Elev. 1837 m. Chacorene, phyllaries grayish, glandular. Subspecies *costata* if infraspecific names are to be applied.  
 Apr 1, 1894.  
 28-May-2018

Colorado School of Mines Survey Field,  
 Golden, Jefferson County



# A tale of two Phloxes – *P. longifolia* and *P. multiflora*

- Somewhere between Henry's Fork and Fort Bonneville, Wyeth collected a *Phlox*.
- Nuttall (1834a) named it *Phlox longifolia*.
- Nelson (1898a) segregated *P. multiflora* from *P. longifolia*.



*P. longifolia* Nutt.

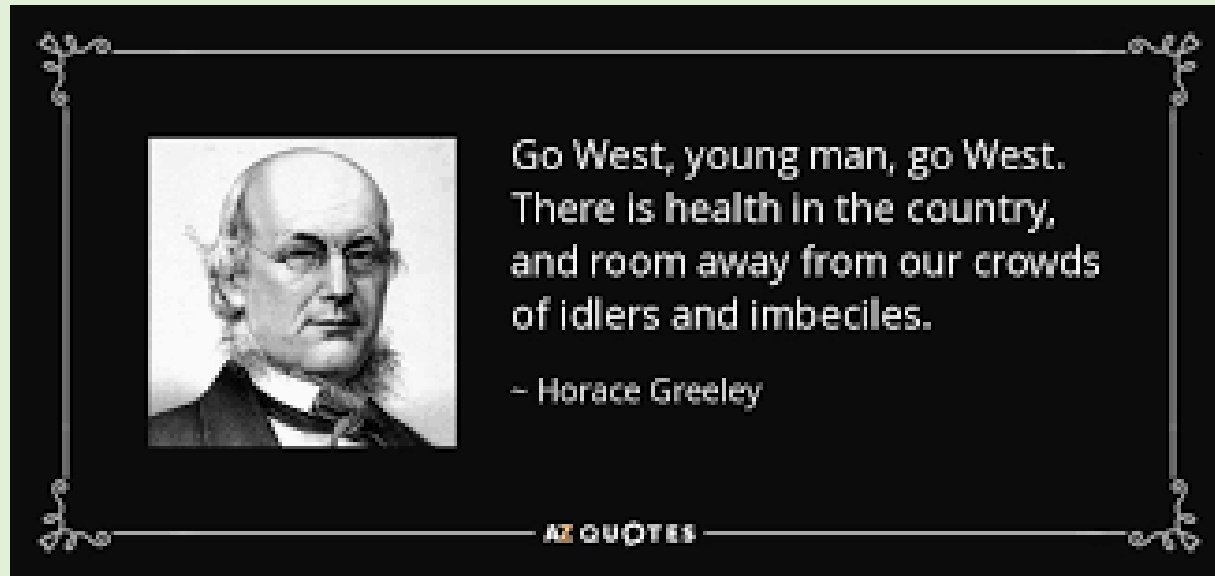


*P. multiflora* A. Nelson

- Which *Phlox* is found on the north side of North Table Mountain?

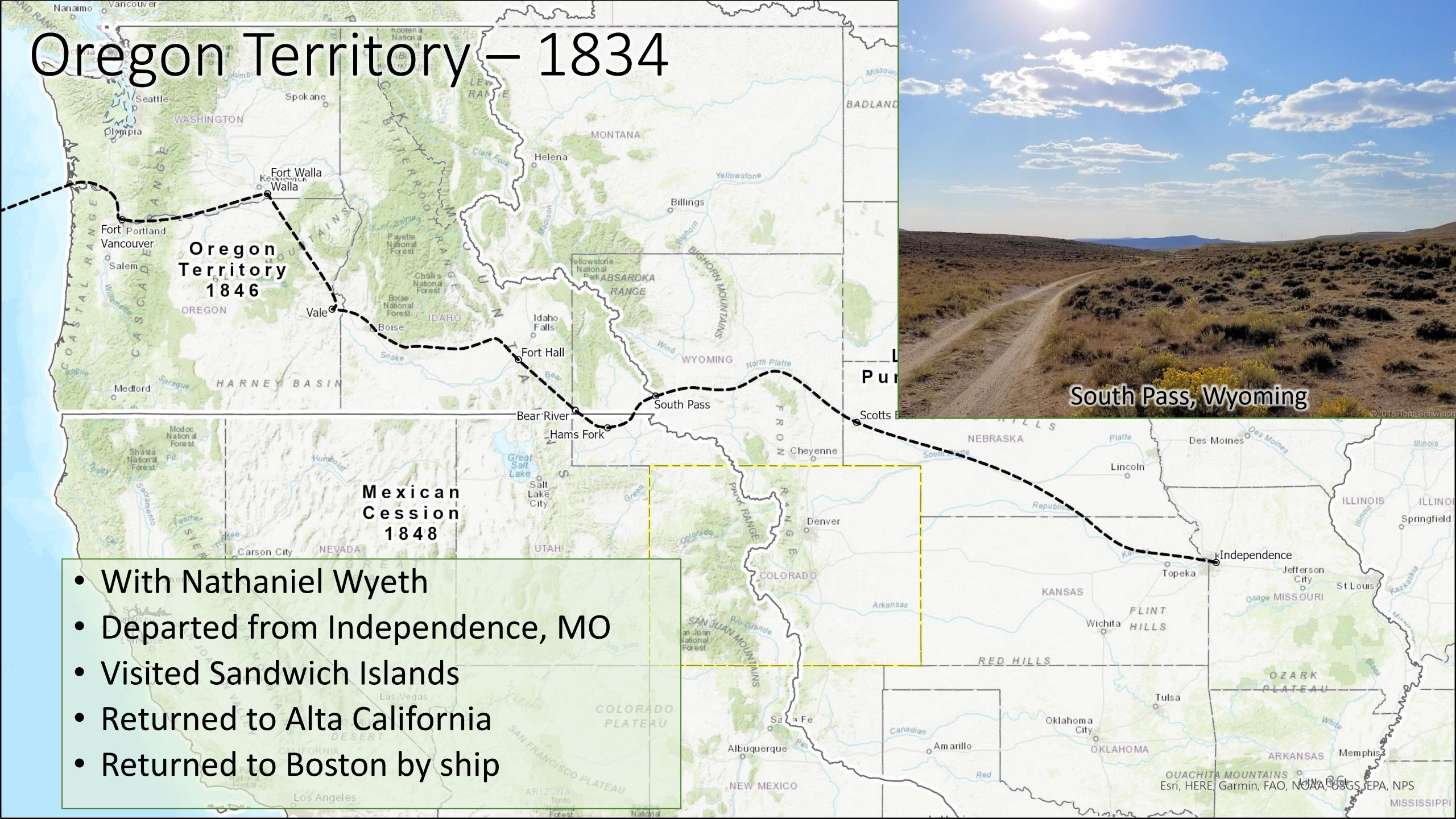


Wyeth's collections whetted Nuttall's appetite to go west.





# Oregon Territory – 1834




- With Nathaniel Wyeth
- Departed from Independence, MO
- Visited Sandwich Islands
- Returned to Alta California
- Returned to Boston by ship

South Pass, Wyoming



# Many of Nuttall's Collections were Published by Torrey & Gray (1838-1840) in *Flora of North America*

Published from Nuttall manuscripts

- *Clematis ligusticifolia* Nutt. "Western White Clematis"
- *Heuchera parvifolia* Nutt. ex Torr & A. Gray "Littleleaf Alumroot"
-  *Potentilla fissa* Nutt. ex Torr. & A. Gray "Bigflower Cinquefoil"
- *Potentilla rivalis* Nutt. "Brook Cinquefoil"
- *Rhus trilobata* Nutt. ex Torr. & A. Gray "Skunkbush Sumac"

A  
1/2 inch in 1838

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# *Potentilla fissa* Nutt. ex Torr. & A.Gray. “Bigflower Cinquefoil”

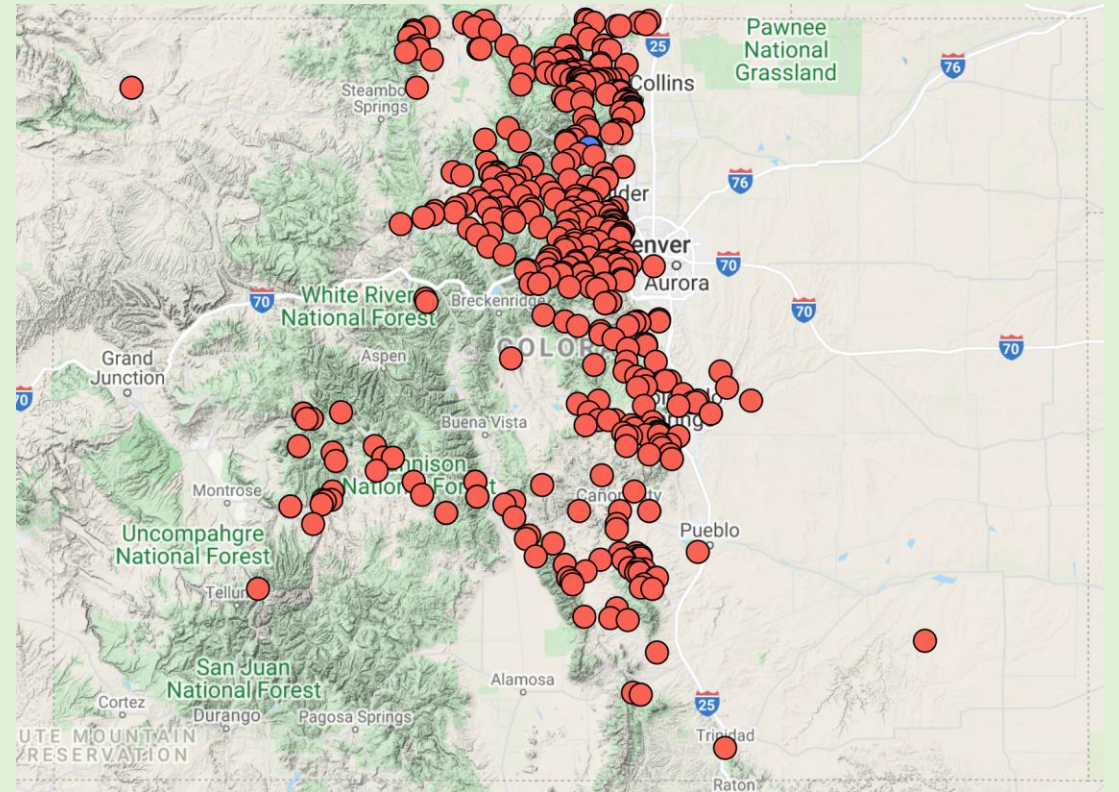
(=*Drymocallis fissa* (Nutt.) Rydb.)

“... plains of the Rocky Mountains towards the Oregon ...”



Coll. No. 1099, 3 May 2015  
©2015 Tom Schweich

Coll. No. 1099, Mt. Galbraith, Jefferson County





# Torrey & A. Gray (1838-1840) quoted Nuttall's descriptions.

- “(Nutt. ! mss.)” acknowledges Nuttall's manuscript.
- Described from
  - Nathaniel Wyeth's return in 1833.
  - Nuttall's 1834 trip on the Oregon Trail.

34. *P. fissa* (Nutt. ! mss.) : “viscidly pubescent ; stem erect, branching, leafy ; leaves pinnately 9–11-foliolate, on short petioles ; leaflets unequal, roundish or oval, deeply incised or incisely toothed, the teeth entire ; stipules entire or toothed ; flowers rather crowded ; segments of the calyx ovate, acute, shorter than the roundish (sulphur-yellow) petals.”





*β. major* : larger in all its parts ; flowers more crowded.—*P. arguta*, Nutt. ! in *jour. acad. Philad.* 7. p. 21, not of Pursh. *P. glutinosa*, Nutt. ! mss.

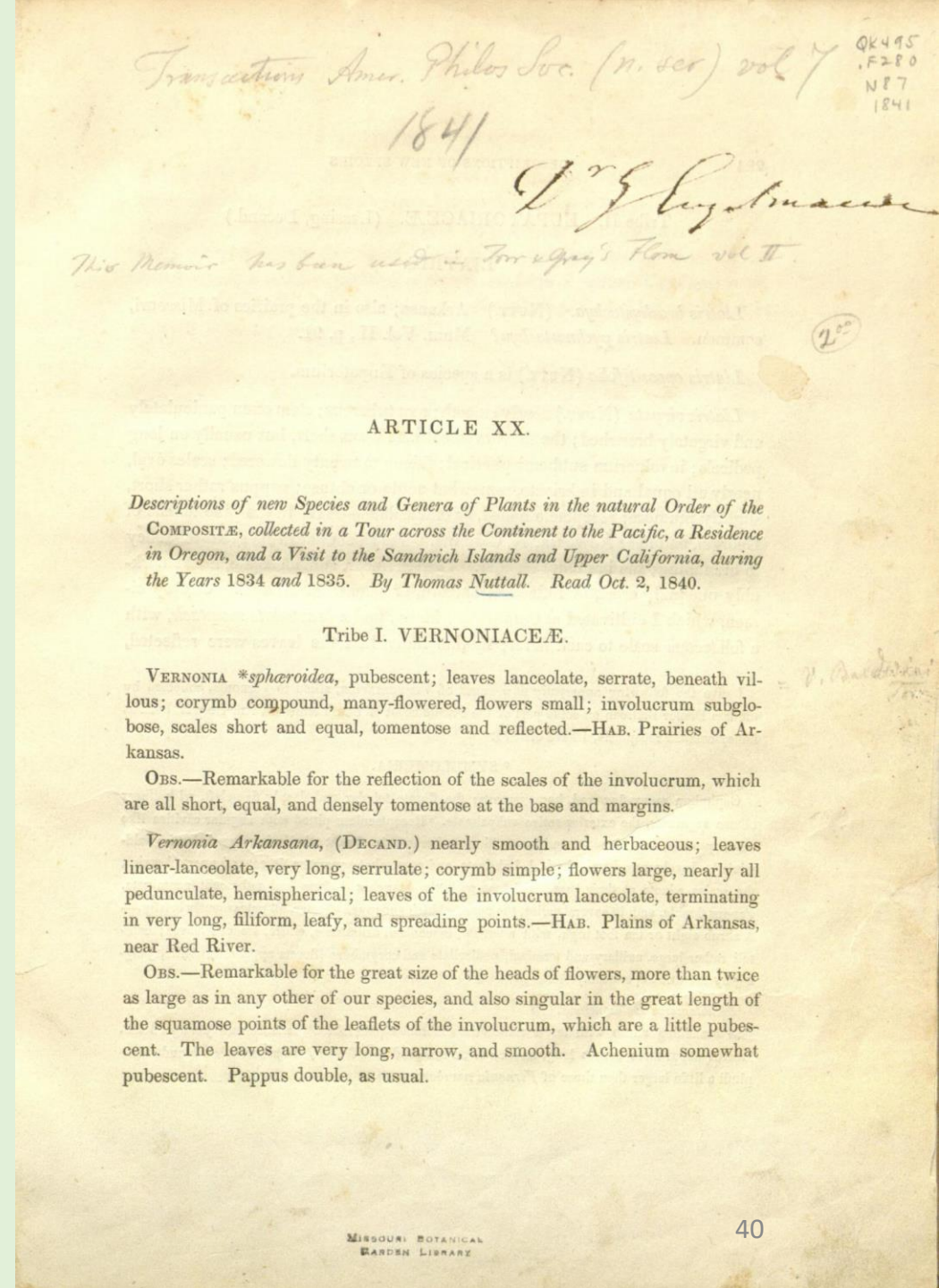
Plains of the Rocky Mountains towards the Oregon, Nuttall ! July. *β.* Head waters of the Oregon, Capt. Wyeth !—“Stem about a span high. Leaflets small, the lower ones roundish ; those of the upper cauline leaves ovate. External sepals much smaller, often toothed. Flowers rather large.” Nutt.—The plant which we have joined as a variety of this species seems to be a larger plant, and bears more resemblance to *P. arguta*.



# Nuttall (1841) published the Asteraceae

*“Descriptions of new Species and Genera of Plants in the natural Order of the Compositae, collected in a Tour across the Continent to the Pacific, a Residence in Oregon, and a Visit to the Sandwich Islands and Upper California, during the Years 1834 and 1835.”*

-  *Agoseris parviflora* (Nutt.) D. Dietr. (Syn: *Troximon parviflorum* Nutt.) Small-Flower Goat-Chicory.
- *Antennaria parvifolia* Nutt. Small-Leaf Pussytoes.
-  *Helianthus pumilus* Nutt. Little Sunflower.
- *Heterotheca foliosa* (Nutt.) Shinnery
- *Packera plattensis* (Nutt.) W. A. Weber & Á. Löve
-  *Solidago nana* Nutt. Baby Goldenrod.
-  *Townsendia grandiflora* Nutt.





# *Agoseris parviflora* (Nutt.) D. Dietr. “Small-Flower Goat-Chicory”

(Syn: *Troximon parviflorum* Nutt.)

“... on the plains of the Platte to the Rocky Mountains ...”



Mt. Galbraith, Jefferson County

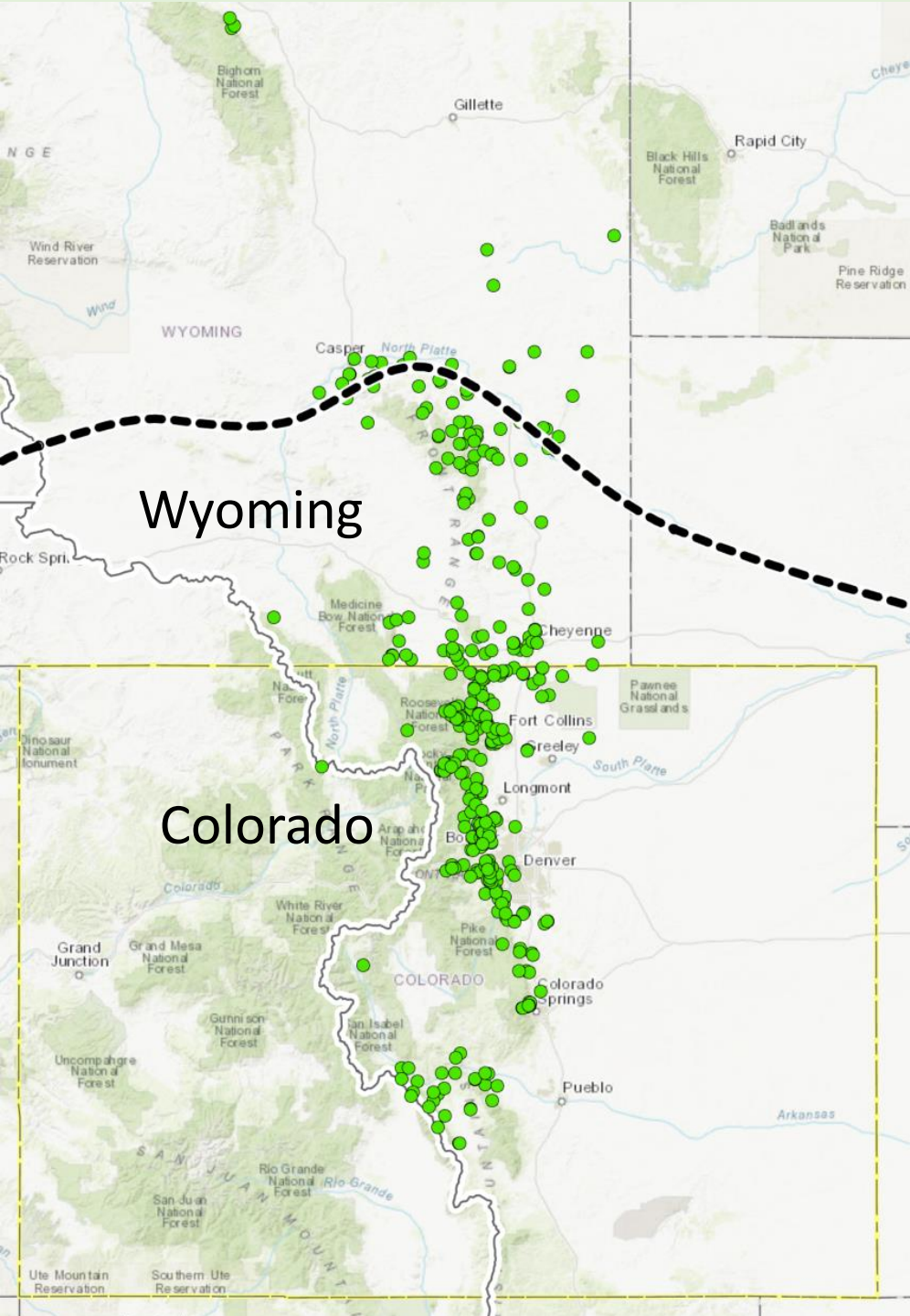


Coll. No. 1101, 3 May 2015  
©2015 Tom Schweich



# *Helianthus pumilus* Nutt. “Little Sunflower”

“Rocky Mountains and plains of the Platte.”



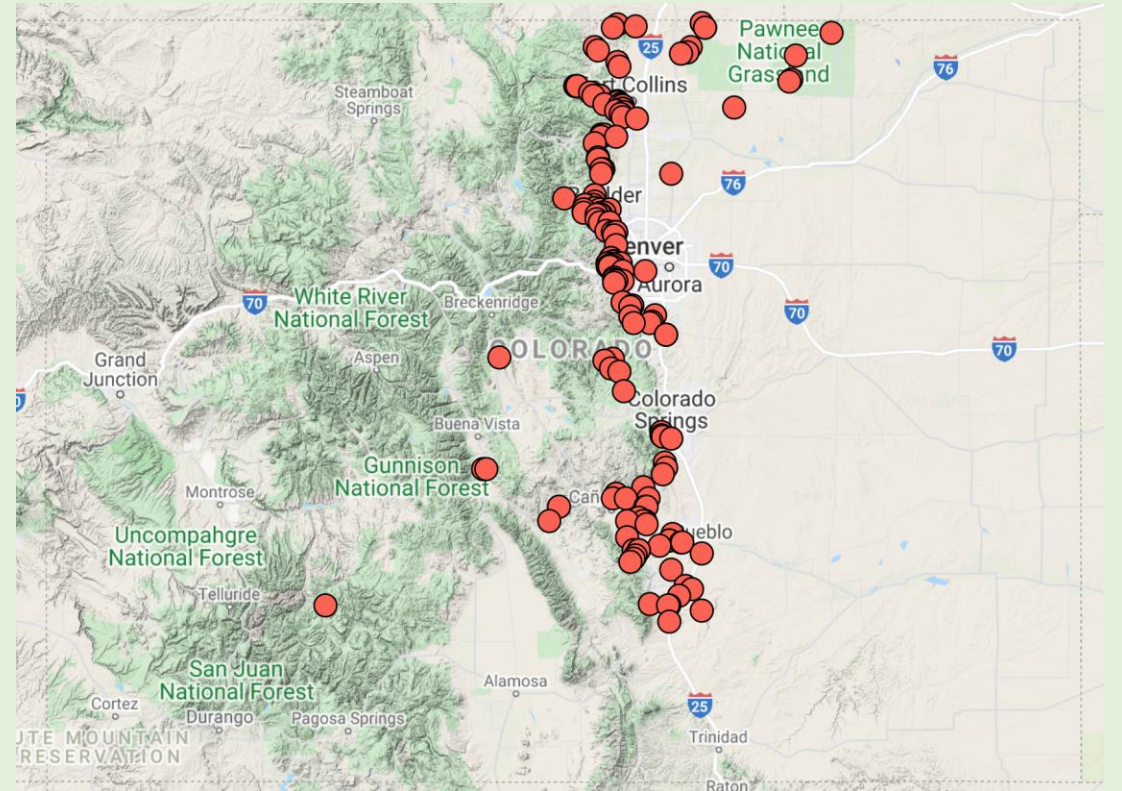
Deadman Gulch, Golden, Jefferson County

126, 15 Jun 2016  
© 2016 Tom Schweich



# *Townsendia grandiflora* Nutt. “Large-Flower Townsend-Daisy”

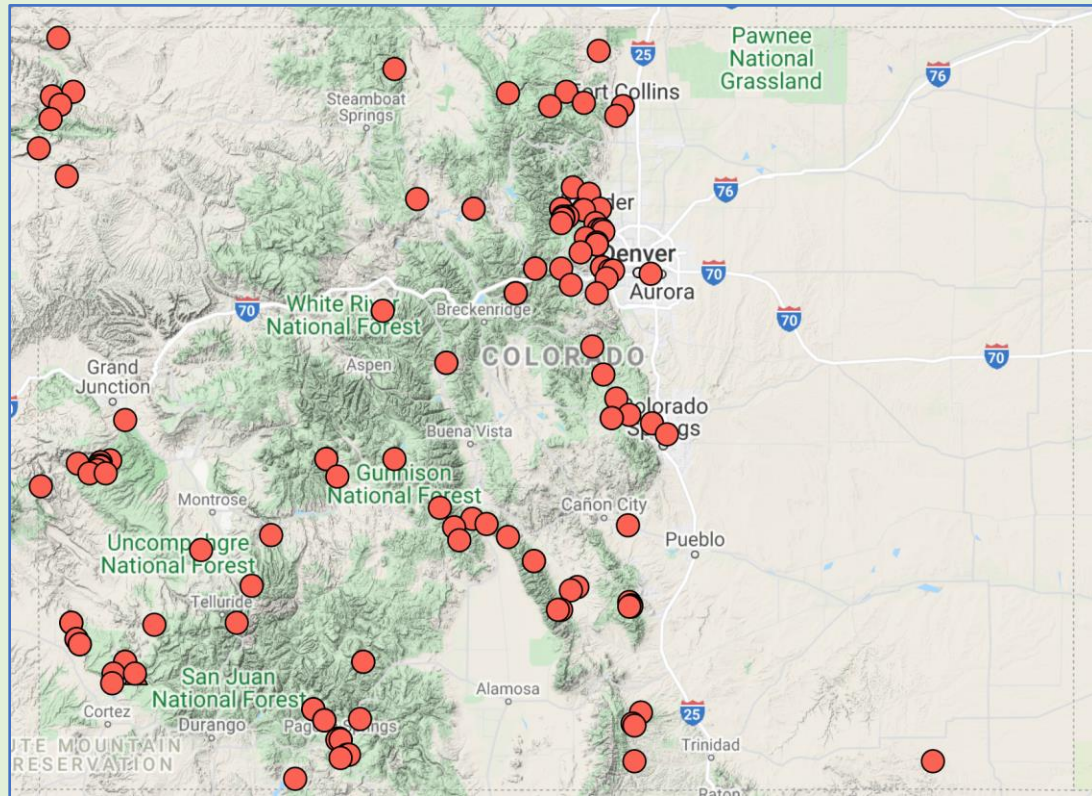
“Black Hills near the banks of the Platte”  
– now the Laramie Mountains.





# *Solidago nana* Nutt. “Baby Goldenrod”

“Rocky Mountain range, near Lewis' River of the Shoshonee”  
 – most likely the Snake River between Jackson, WY and Idaho Falls, ID.

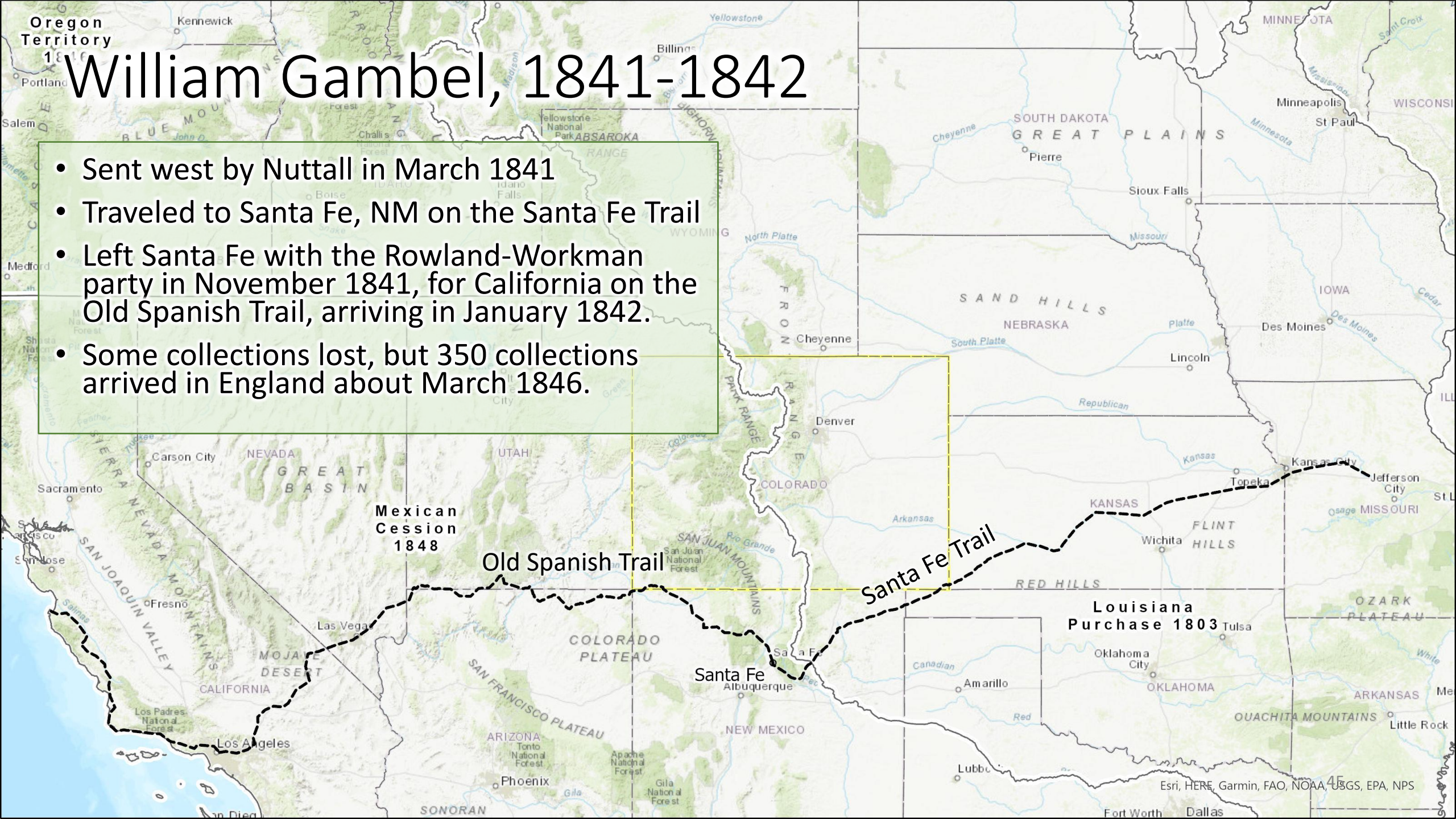




Oregon Territory

# William Gambel, 1841-1842

- Sent west by Nuttall in March 1841
- Traveled to Santa Fe, NM on the Santa Fe Trail
- Left Santa Fe with the Rowland-Workman party in November 1841, for California on the Old Spanish Trail, arriving in January 1842.
- Some collections lost, but 350 collections arrived in England about March 1846.





Nuttall (1848b) described the plants collected by Gambel.

Nuttall also described plants he saw on his trip across the continent.

- Nuttall's own unpublished western specimens that were related to Gambel's were searched out for publication, and the plants were studied comparatively for reciprocal enlightenment.

[ 149 ]

ART. XIII.—*Descriptions of Plants collected by William Gambel, M. D., in the Rocky Mountains and Upper California.* By THOMAS NUTTALL.

QUERCUS.

Q. \*GAMBELII. Leaves obovate, shortly petiolate, narrowed below, sinuately lobed, dilated and somewhat three-lobed at the summit, beneath pubescent, the lobes rather obtuse, the upper ones subdentate; fruit sessile, small, the cup hemispherical, scales ovate-acute; the glande ovate and acute, about half immersed in the cup; the conic summit short.

With the aspect of our northern oaks, but very distinct; in the leaf approaching a little to *L. obtusiloba*, but without any near affinity.

HAB. On the banks of the Rio del Norte, but not abundant.



# Collected by Gambel, published by Nuttall (1848b)

- *Stanleya pinnatifida* Nutt. “Prince’s Plume”
- *Phlox nana* Nutt. “Santa Fe Phlox”
- *Psathyrotes annua* (Nutt.) A. Gray “Mealy Turtleback”
- *Xanthisma gracile* (Nutt.) D. R. Morgan & R. L. Hartm. “Grass-Leaf Sleepy-Daisy”
- *Mentzelia multiflora* (Nutt.) A. Gray “Adonis Blazingstar”
- *Ipomopsis multiflora* (Nutt.) V. Grant. “Many-Flower Skyrocket”

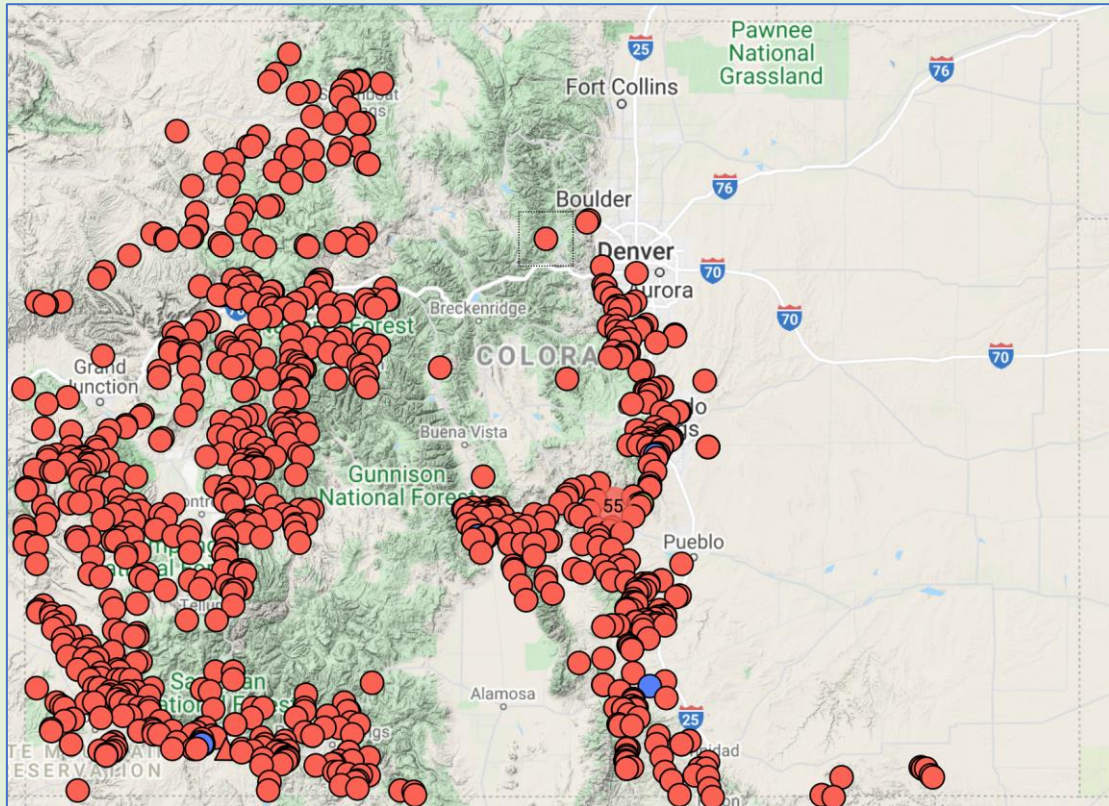
- 📷 *Monarda pectinata* Nutt. “Plains Beebalm”
- *Orobanche multiflora* Nutt. “Many-Flower Broomrape”
- *Chrysothamnus depressus* Nutt. “Long-Flower Rabbitbrush”
- 📷 *Muhlenbergia andina* (Nutt.) Hitchc. “Foxtail Muhly”
- *Muhlenbergia montana* (Nutt.) Hitchc. “Mountain Muhly”
- 📷 *Heliomeris multiflora* Nutt. “Showy Golden Eye”
- 📷 *Quercus gambelli* Nutt. “Gambel Oak”



# *Quercus gambelii* Nutt.

## “Gambel Oak”

“... banks of the Rio del Norte ...”  
– the Rio Grande near Santa Fe, NM.

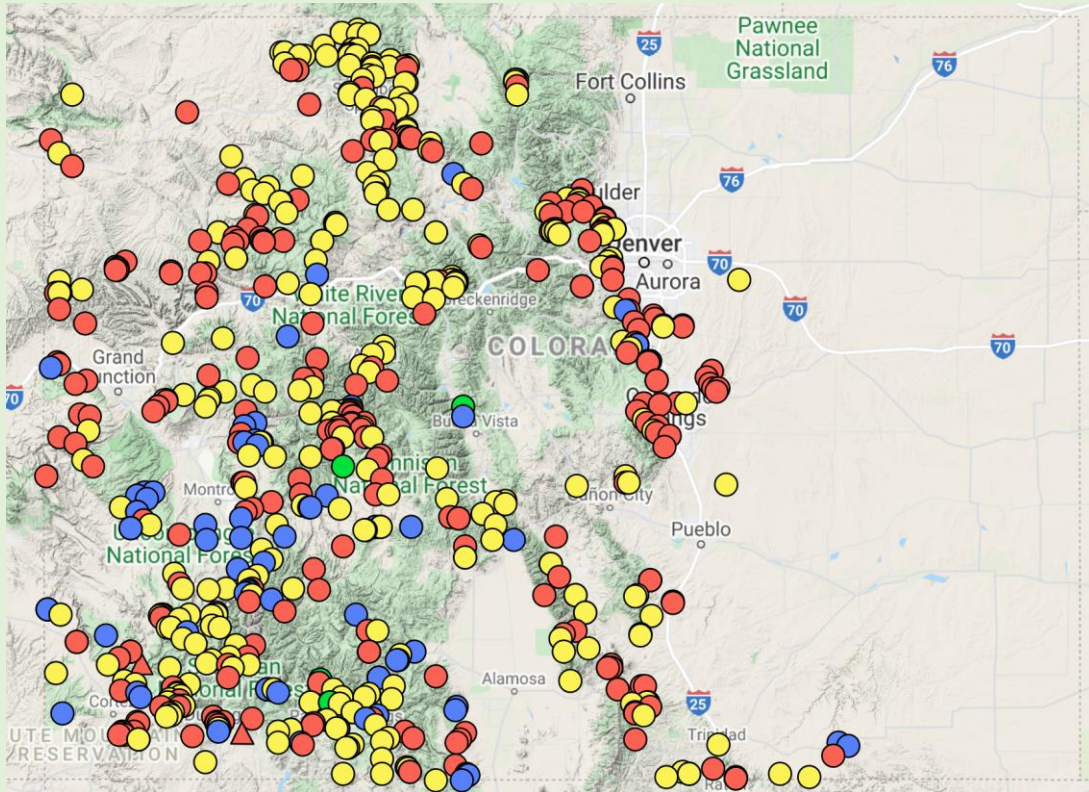




# *Heliomeris multiflora* Nutt. “Showy Golden-Eye”

“Mountains of Upper California, (Dr. Gambel,) and was also collected in the Rocky Mountains by Mr. Gordon.”

Primarily a Rocky Mountain species, and across southern Nevada to eastern California,

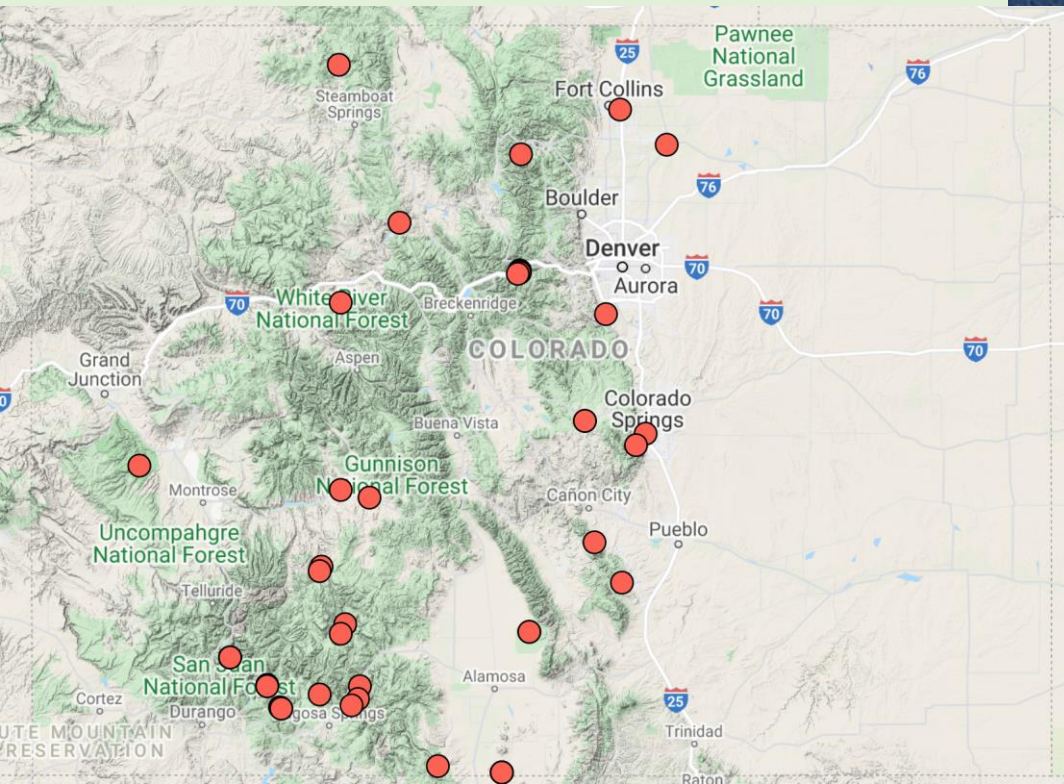


Near Hickison Summit, Lander County, Nevada



# *Muhlenbergia andina* (Nutt.) Hitchc. “Foxtail Muhly”

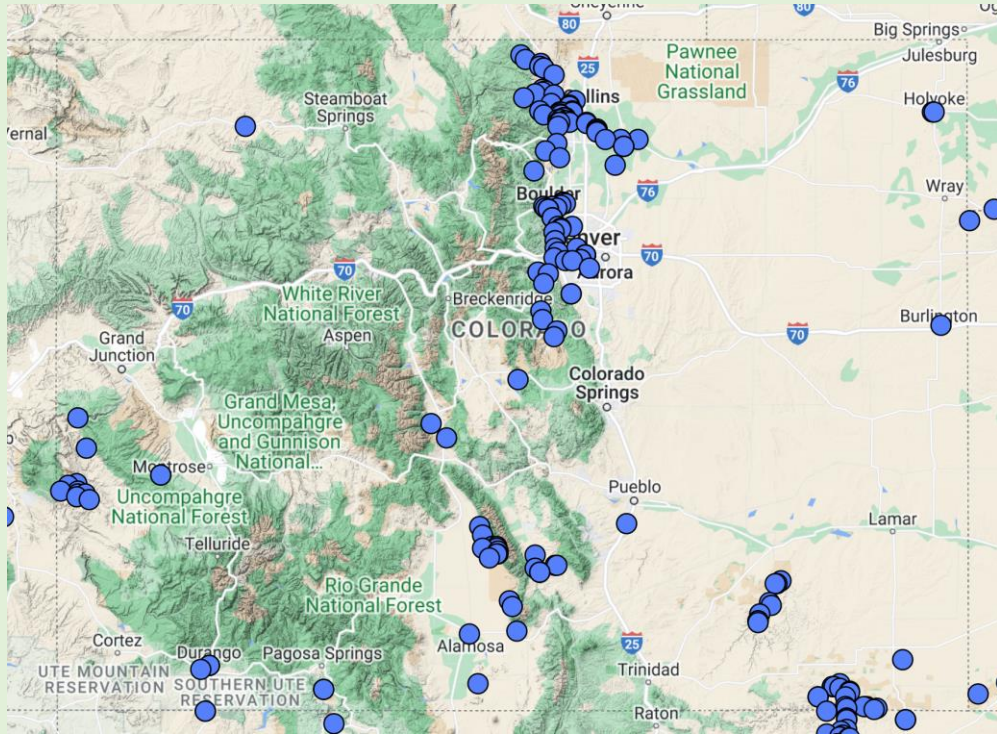
- “... on the Colorado of the West”
- maybe Tsegi Canyon, Navajo County, AZ.
- Recently collected in Jefferson County for the first time.





# *Monarda pectinata* Nutt. “Plains Beebalm”

“Near Santa Fé, New Mexico.”



Apex Park - Northern Parcel, Jefferson County





# Nuttall names that are coming back into use.

- First published as *Stipa membranacea* Pursh (1814), *Flora Amercae Septentrionalis*.
  - “v. s. in Herb. Bradbury” nom. illeg., name previously published by Linnaeus.
- *Stipa hymenoides* Roemer & Schultes (1817), roughly 15th edition of Linnaeus *Species Plantarum* (1753).
- The genus name *Eriocoma* was published by Nuttall (1818)
  - *Eriocoma cuspidata* Nutt., *Genera of North American Plants* (1818).
- *Oryzopsis hymenoides* (Roem. & Schult.) Ricker, *Contr. U.S. Natl. Herb.* 11: 109 (1906), without explanation.
- Rydberg (1912) published *Eriocoma hymenoides* (Roem. & Schult.) Rydb. as a nomenclatural correction.





# Nuttall names that are coming back into use.

- Placed in genus *Achnatherum* by Mary Barkworth (1993), elevating *Stipa* to tribe *Stipeae*.
- Recent recognition that the New World *Achnatherum* form a unique clade from the Old World *Achnatherum*.
- *Achnatherum* being primarily an Old World genus, we need a name for the New World taxa.





# Nuttall names that are coming back into use.

- *Eriocoma* Nutt. was the first genus name applied to this clade in North America.
- *Eriocoma hymenoides* (Roem. & Schult.) Rydb., Bull. Torrey Bot. Club 39: 102 (1912).

## **ERIOCOMA** Nutt. – NEEDLEGRASS

Perennials; *sheaths* open; *ligules* membranous, short-cilia long-awned, usually hairy; *paleas*  $\frac{1}{3}$  to as long as lemma, usual

*Eriocoma occidentalis* (Thurb. ex S.Watson) Romasch. (Ac Colorado in *Flora of North America* based on misidentifications)

## ***Eriocoma hymenoides* (Roem. & Schult.) Rydb.**, INDIAN RICEGRASS

(Roemer & J.A. Schultes) Barkworth; *Oryzopsis hymenoides* (Rydb.) Rydb.; *leaves* convolute, to 1 mm wide, collars glabrous or with to 2–8 mm long, acuminate; *inflorescence* an open panicle with *spikelets* 4–8 mm long; *glumes* 5–9 mm long, 3-, 5-, or 7-nerved





# Plants named for Nuttall by others:

- *Blitum nuttallianum* Schult.
  - [*Monolepis nuttalliana* (Schult.) Greene]
  - Collected ... “on dry banks of the Missouri,” 1811.
- *Lomatium nuttallii* (A. Gray) J. F. Macbr.
  - Collected by Nuttall, 1834? “Rocky Mountains”
  - Published as *Seseli Nuttallii* A. Gray
- *Delphinium nuttallianum* Pritz.
  - Collected by Nuttall, 1834 in “Rocky Mountains and Blue Mountains of the Oregon”
  - First published as *D. pauciflorum* Nutt. ex Torr. & A. Gray. *nom. illeg.*



- *Viola nuttallii* Pursh
  - Collected by Nuttall, 1811.
  - Published by Pursh (1814).



# Even though Nuttall was never in Colorado ...

- Nuttall collected or named plants found elsewhere that are also found in Colorado.
- Nuttall sent collectors into the field.
- Nuttall identified plants brought to him.
- Published several general botanical works.
- Nuttall contributed to works of John Torrey and Asa Gray especially their *Flora of North America*.
- Plants were named for Nuttall by others.
  
- In the end, Nuttall is associated with (at least) 111 names of plants that are native to Colorado.





# Questions?



# Selected Literature

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- Richardson, 1823, *Botanical Appendix*. pp. 729-763 in Franklin, John. *Narrative of a Journey to the Shores of the Polar Sea*. London: John Murray, 1823.
- Roemer, 1847, *Synopsis monographica Rosiflorarum familias naturales Amygdalacearum et Pomacearum continens secindum genera et species digestas*
- Torrey, John, and Asa Gray. 1838-1843. *A flora of North America :containing abridged descriptions of all the known indigenou and naturalized plants growing north of Mexico, arranged according to the natural system*. 1-2.



# Other things to consider ...

- *Shepherdia canadensis* (L.) Nutt.
- *Eremogone congesta* (Nutt.)  
Ikonn.
- *Escobaria missouriensis*, and *E.*  
*vivipara*.