



*Alaskan Claytonia:*  
section *Rhizomatosae*

by Stephany Jeffers

# *Claytonia*

Formerly Portulacaceae

Moved to Montiaceae



- Superior ovary
- Herbaceous
- Fleshy
- *Not* circumscissile capsule
- Sepals persistent

# Alaskan *Claytonia*



Family  
Montiaceae

Genus  
*Claytonia*

Section  
*Limnia*

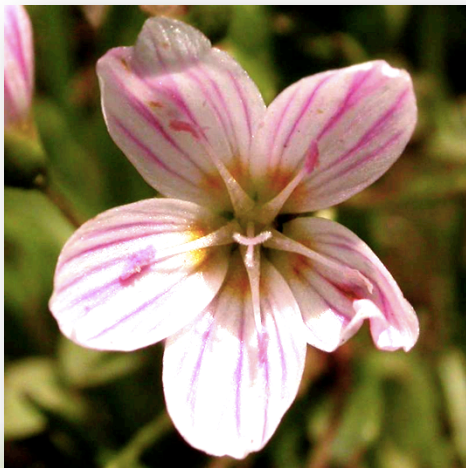
*perfoliata*  
(invasive)  
*sibirica*

Section  
*Claytonia*

*acutifolia*  
(syn. *eschsoltzii*)  
*multiscapa*  
*ogilviensis*  
*tuberosa*

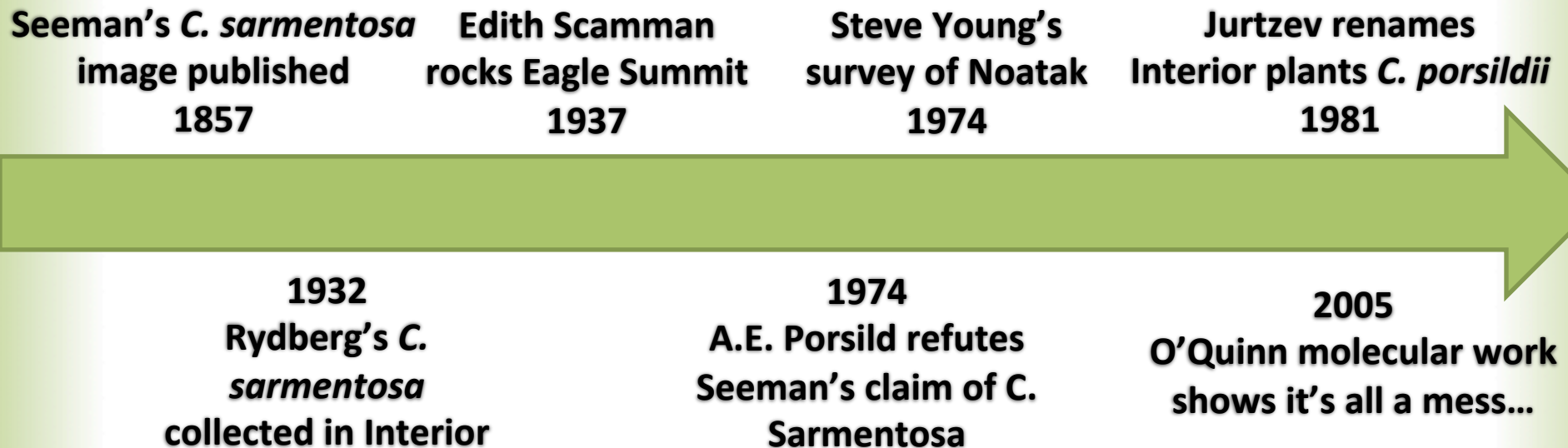
Section  
*Rhizomatosae*

*arctica*  
*porsildii*\*  
*sarmentosa*  
*scammaniana*



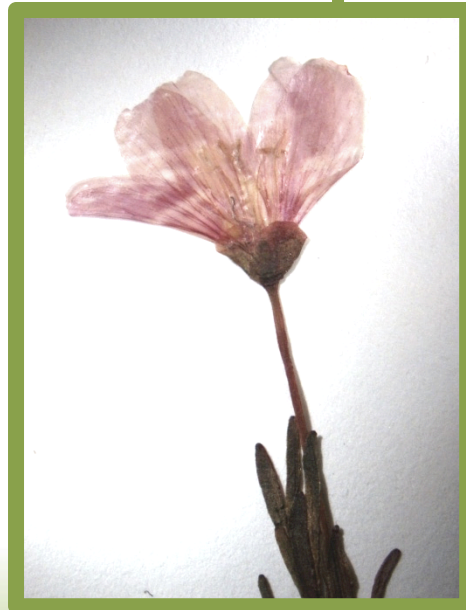
# Historical Perspective

There is a long history of *Claytonia* being documented in Alaska.  
Many early explorers and botanists have recorded its presence....



# Things that are alike

- Sepals
- Fleshy
- 5 stamen
- 5 petals



# Things that vary the most

- Root
- Cauline leaves
- Basal leaves
- Flower number and color



Limnia

- 3 ovules
- annual

Claytonia

- 6 ovules
- bulbs

Rhizomatosae

- 6 ovules
- caudex or rhizome

# Section *Rhizomatosae*

- *C. arctica*
- *C. sarmentosa*
- *C. scammaniana*
- *C. porsildii*



# Species Key

A. Plant with fleshy tap root

B. Flowers yellow to white with yellow spots

.....*C. arctica*

B'. Flowers pink to white with pink lines

.....*C. porsildii*

A'. Plant with filiform root stock

C. Flowers born singly, basal leaves linear, cauline leaves ovate  
*scammaniana*

.....*C.*

C'. Flowers 2-many, basal leaves oblong to obtuse and petiolate,  
cauline leaves ovate to subcordate

.....*C. sarmentosa*





# Root Comparison

*C. arctica*

+ *C. porsildii*



*C. sarmentosa*

+ *C. scammaniana*



VS.

*C. arctica* (Adams) - Fleshy taproot & yellow flower or white flower with yellow at base



# *C. porsildii* (Jurtz.)



- Fleshy taproot, pale pink flower or white flower with pink nerves

# *C. Sarmientosa* (C.A. Mey.)



- Slender filiform rootstalk, propagates by runners, flowers white or rose colored

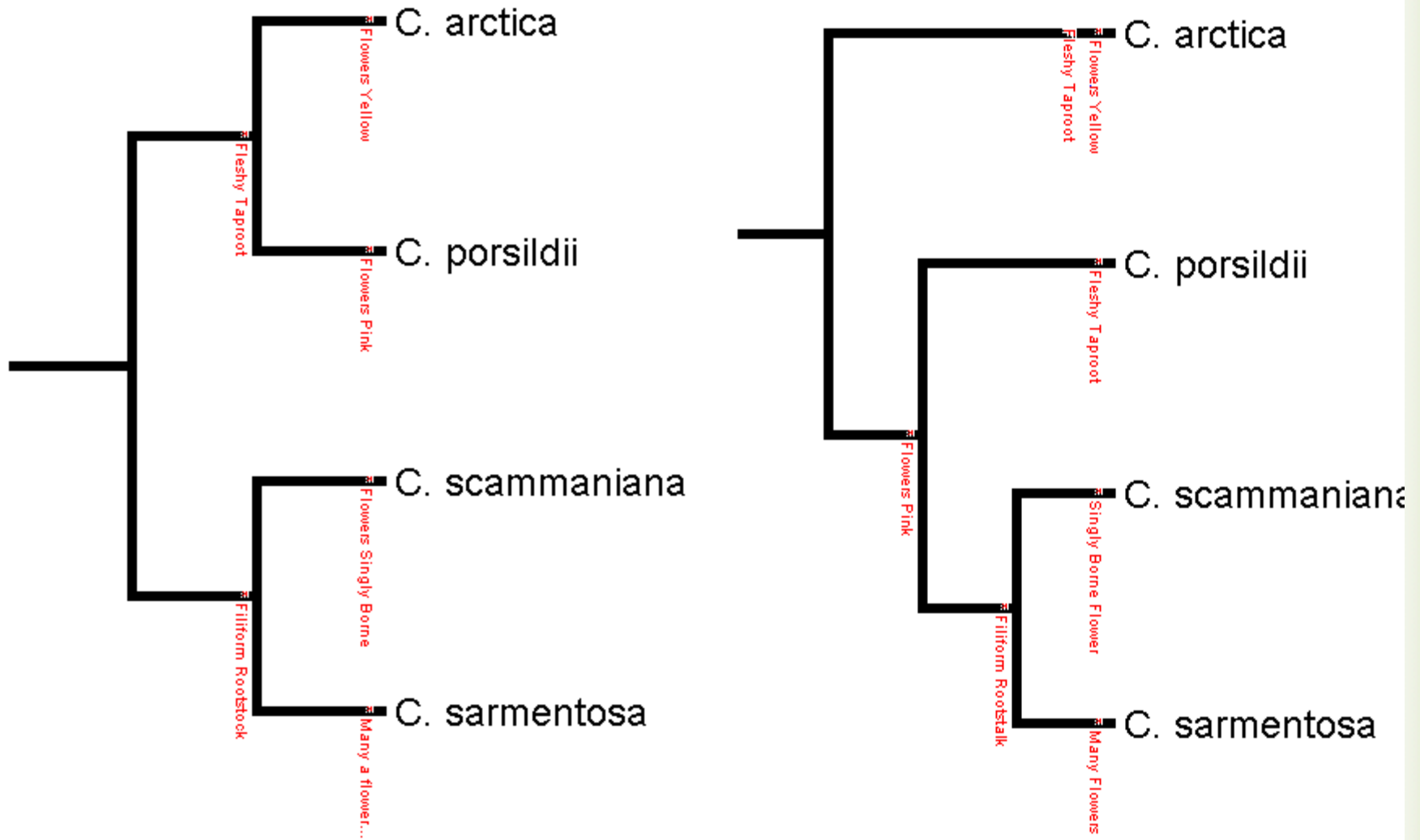
- Basal leaves oblong-obtuse & petiolate, cauline leaves ovate-subcordate

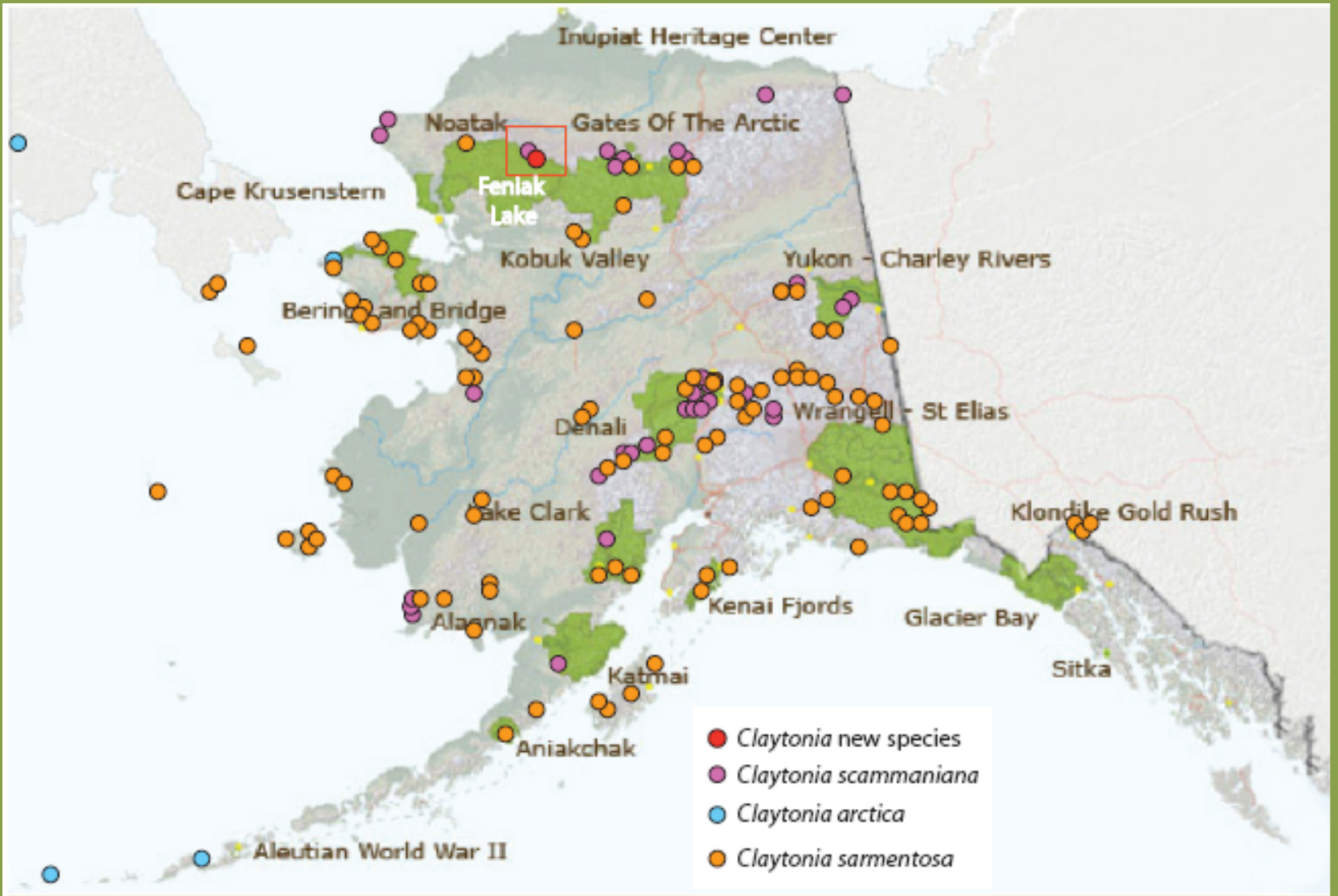
# *C. scammaniana* (Hultén)

- Slender filiform rootstalk, flowers deep purple and borne singly, cauline leaves ovate, basal leaves linear



# Phylogenetic Possibilities





# Specimens used:

## *C. arctica (I)*

V165606

Continent/Ocean: North America Sea: Bering Sea Country: United States State/Province: Alaska Feature: Near Islands  
Island Group: Aleutian Islands Island: Agattu Island USGS Quad: Attu Specific Locality: Agattu Island Collecting Source:  
wild caught Elevation: 449 to 449 ft Coordinates: 52° 28.313' N 173° 34.758' E (North American Datum 1927) Leah  
Kenney; 2008-07-01; unknown Collecting Date: 1 Jul 2008

## *C. arctica (II)*

V143814

Continent/Ocean: North America Country: United States State/Province: Alaska USGS Quad: Teller Specific Locality:  
Seward Peninsula Highlands, Tin City Long Range Radar Site, unnamed creek E of Paulina Cr. and tram  
Collecting Source: wild caught Coordinates: 65.57° -167.97° (unknown) , Error: 3615 m Alan R. Batten; 2004-10-18;  
unknown Collecting Date: 1996/07/11

## *C. porsildii*

V78024

Continent/Ocean: North America Country: United States State/Province: Alaska USGS Quad: Circle Specific Locality:  
Yukon-Tanana Uplands, Mt. Prindle, ridge to SW of summit Associated Species: Collecting Source: wild caught  
Elevation: 1000 to 1500 m Coordinates: 65.46111111° -146.473611° (unknown) unknown; 2007-12-03; unknown  
Collecting Date: 02-Jul-1982

## *C. sarmentosa*

68630

Continent/Ocean: North America Country: United States State/Province: Alaska USGS Quad: Circle Specific Locality:  
Yukon-Tanana Uplands, Mt. Prindle, ridge to SW of summit Associated Species: Collecting Source: wild caught  
Elevation: 1000 to 1500 m Coordinates: 65.46111111° -146.473611° (unknown) unknown; 2007-12-03; unknown  
Collecting Date: 02-Jul-1982

## *C. scammaniana*

V122845

Continent/Ocean: North America Country: United States State/Province: Alaska USGS Quad: Circle Specific Locality:  
Yukon-Tanana Uplands, Eagle Summit, Mi 104 Steese Hwy., headwaters of Miller Creek Collecting Source: wild caught  
Coordinates: 65.45° -145.43° (unknown) , Error: 3615 m Alan R. Batten; 2004-10-18; unknown Collecting Date:  
1997/07/03



## References

- Adams. Mémoires de la Société Impériale des Naturalistes de Moscou 5: 94-96. 1817
- Hultén, E. 1939. *Botaniska Notiser* 1939(4): 826, f. 1. 1939.
- Hultén, E. 1968. [Fl. Alaska](#) i-xxi, 1-1008. Stanford University Press, Stanford.
- Mey, C.A. Mémoires de la Société Impériale des Naturalistes de Moscou 1: 137, pl. 3. 1829.
- O'Quinn & Hufford. 2005. Molecular systematic of *Montieae* (Portulacaceae): implications for taxonomy, biogeography, and ecology. *Systematic Botany* 30(2): 314-331.
- Packer, J. G. 2003. Flora of North America Editorial Committee. Magnoliophyta: Caryophyllidae, Part 1. *Fl. N. Amer.* 4: i-xxiv.
- Parker, C. L. 2006. Vascular Plant Inventory of Alaska's Arctic National Parklands. Bering Land Bridge National Preserve, Cape Krusenstern National Monument, Gates of the Arctic National Park and Preserve, Kobuk Valley National Park, and Noatak National Preserve. Final Report. ARCN I & M, National Park Service, Alaska Region. Report no. NPS/AKRARC/NRTR-2006-1.
- Porsild, A. E. 1980. [Vasc. Pl. Continental Northw. Terr. Canada](#) i-viii, 1-607. National Museum of Natural Sciences, Ottawa.
- Seeman, B. 1852-1857. *The botany of the voyage of H.M.S. Herald: under the command of Captain Henry Kellett*. London : Lovell Reeve, 1852-1857.
- Young, Steve. 1974. The Environment of the Noatak River Basin Alaska. Results of The Center for Northern Studies biological survey of The Noatak River Valley, 1963. US Dept. of Interior, National Park Service. Research Contract No. CX-9000-3-0127.