THE STORY of the WILLOW ROSE

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↖ Image from [1]

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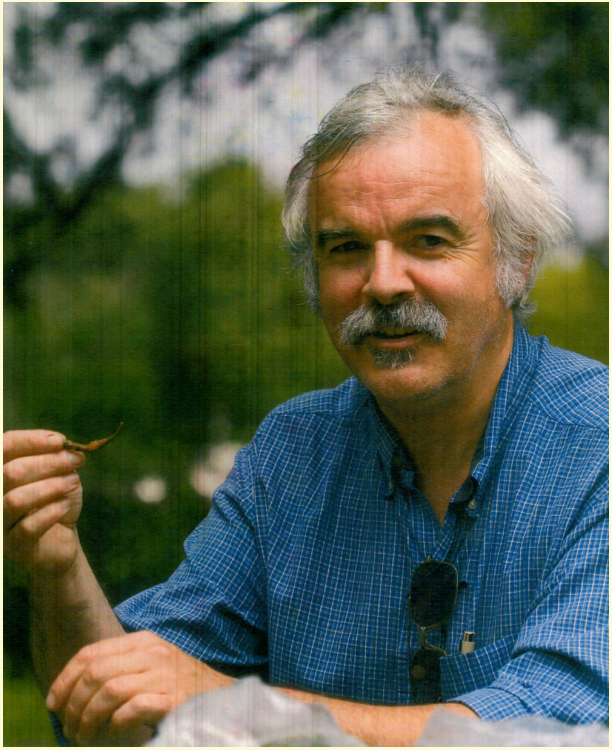
for Dominique



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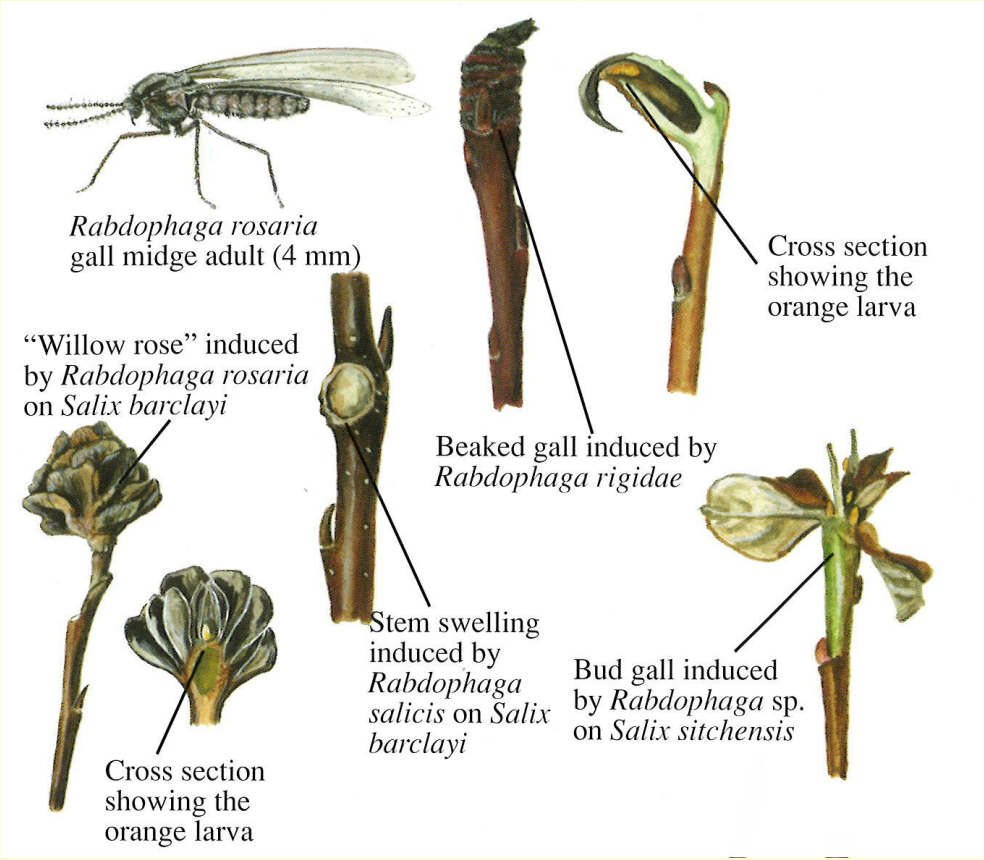
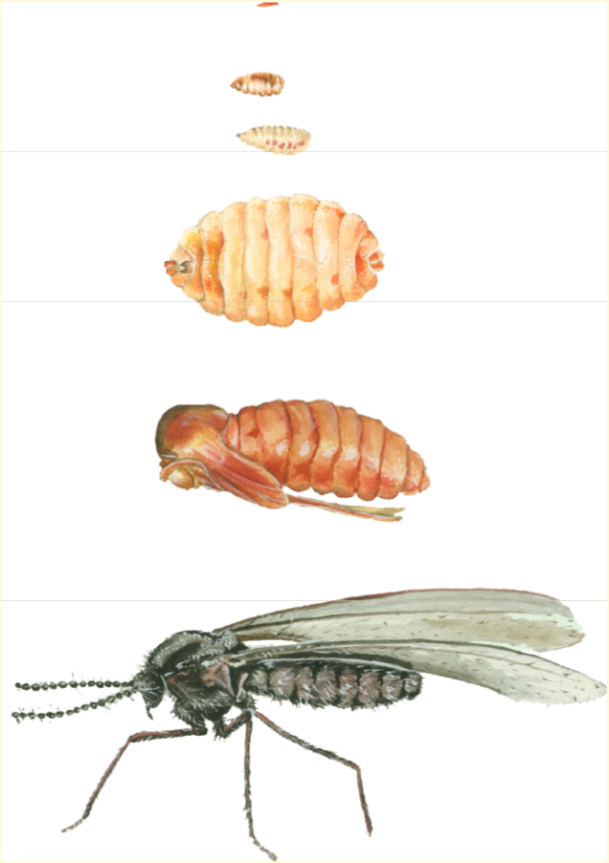
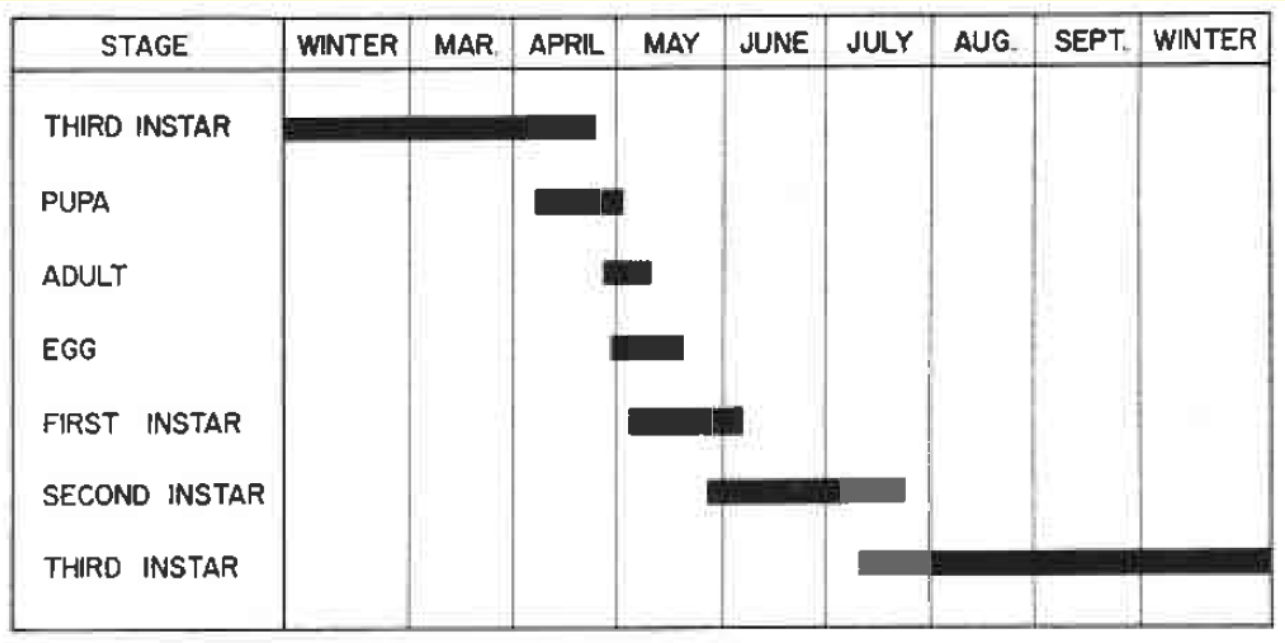
Natural History



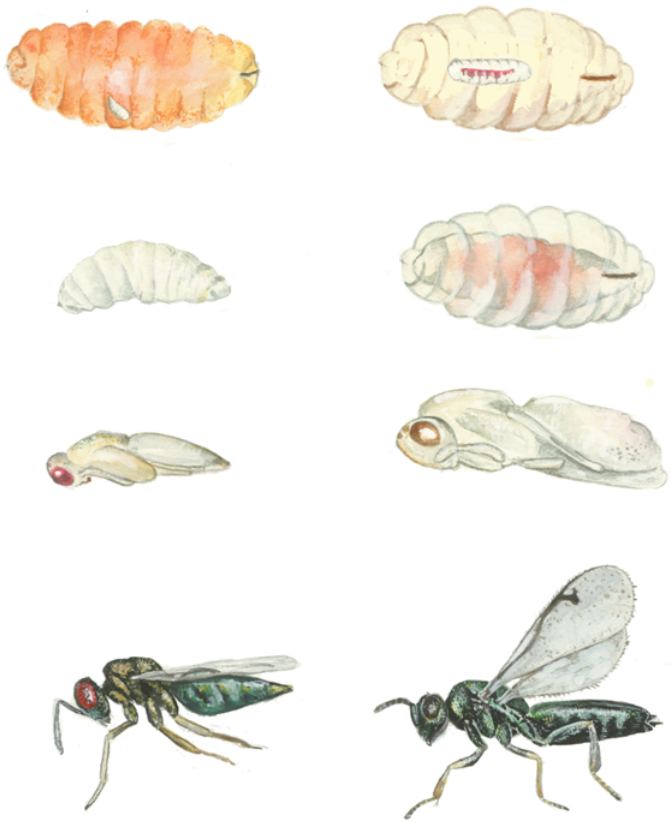
← Image from [2]



← Image from [3]



↑ Image from [4] (*Rabdophaga strobiloides*, Michigan)

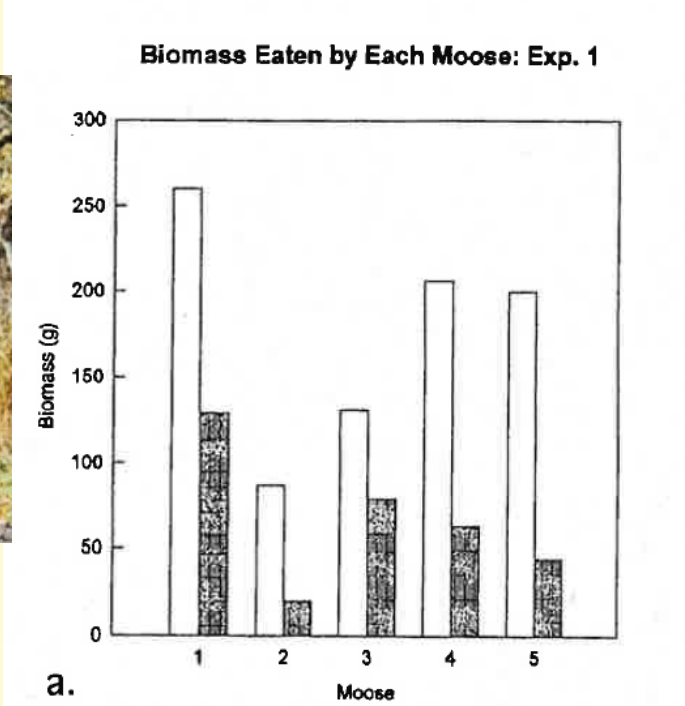


← Image from [3]

← Image from [3]

Moose avoid rose-galled stems [5].

↑ Image from [6]



↑ Image from [5]

A Conundrum of Willow Roses

Old World

Rabdophaga clavifex (Kieffer, 1891)

Rabdophaga rosaria Loew, 1850

Rabdophaga rosariella (Kieffer, 1897)

R. rosaria

← Image from https://commons.wikimedia.org/wiki/File:Rabdophaga_rosaria_(Diptera_sp.)_gall,_Arnhem,_the_Netherlands.jpg.

New World

Rabdophaga salicisbrassicoides Packard, 1869

Rabdophaga saliciscoryloides Osten Sacken, 1878

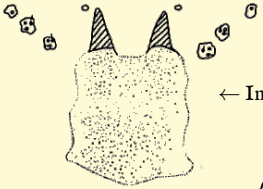
Rabdophaga salicisgnaphaloides Osten Sacken, 1878

Rabdophaga salicisrhodoides Osten Sacken, 1878

Rabdophaga strobiloides Osten Sacken, 1862

ALASKA *Rabdophaga rosaria* Group: One or More?

To Know a Midge



← Image from [1]

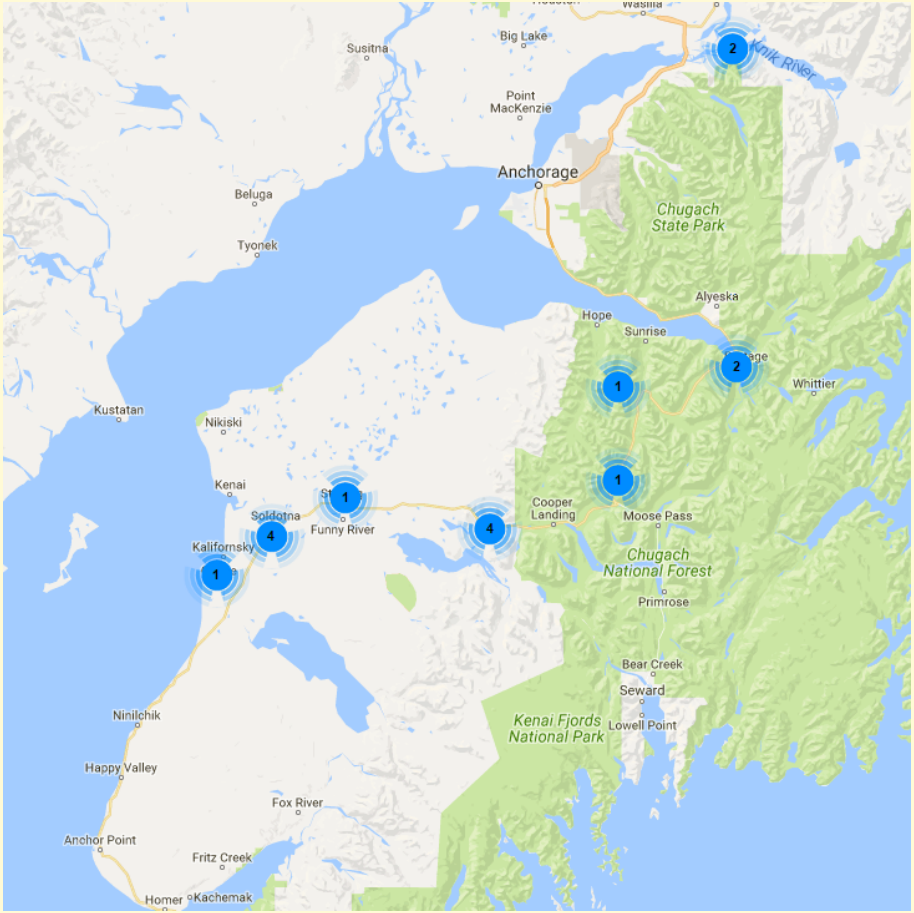
- Midge morphology [1]
- Host species and gall characteristics [1]
- Breeding experiments [7, 9]
- Molecules [8]

← Image from [1]

↑ Image from [7]

↗ Image from [8]

Localities →


Susitna
Big Lake
Point MacKenzie
Anchorage
Chugach State Park
Beluga
Tyonek
Alyeska
Hope
Sunrise
Whittier
Kustatan
Nikiski
Kenai
Soldotna
Funny River
Kalifornsky
Cooper Landing
Moose Pass
Chugach National Forest
Primrose
Bear Creek
Seward
Lowell Point
Kenai Fjords National Park
Ninilchik
Happy Valley
Fox River
Anchor Point
Fritz Creek
Homer
Kachemak
2
2
1
1
1
4
4
1

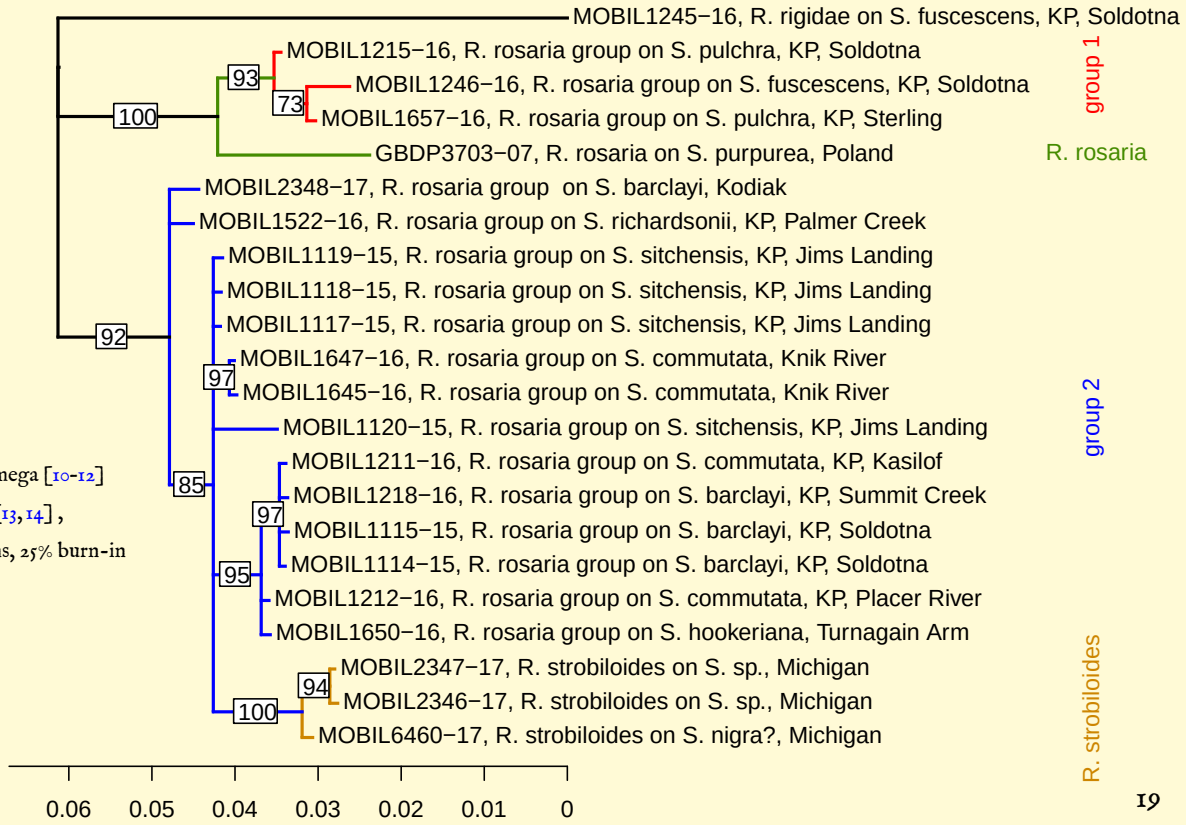
TRI POWE
2X

TRUE POWER
2X

COI sequences obtained via lifescanner kits (http://www.lifescanner.net) ...

↑ Image from https://pbs.twimg.com/media/CVy48OZUAAEfFJ-.jpg:large.

A Plurality of Rose Cecids



Align: Clustal Omega [10-12]

Phylo: MrBayes [13, 14] ,

10,000 generations, 25% burn-in

Rabdophaga rosaria group 1 (BIN [15]: BOLD:ADA9342)

Close to (maybe conspesific with?) Old World *Rabdophaga rosaria*.

Rabdophaga rosaria group 2 (BIN: BOLD:ACZ0652)

← Corroborates Collet's finding that the same midge parasitizes *S. barclayi* and *S. commutata* [7].

Rabdophaga strobiloides

Close to (maybe conspesific with?) Alaska *R. rosaria* group 2

Maybe less of a conundrum now?

OLD WORLD

Rabdophaga clavifex (Kieffer, 1891)

~~*Rabdophaga rosaria* Loew, 1850~~

Rabdophaga rosariella (Kieffer, 1897)

NEW WORLD

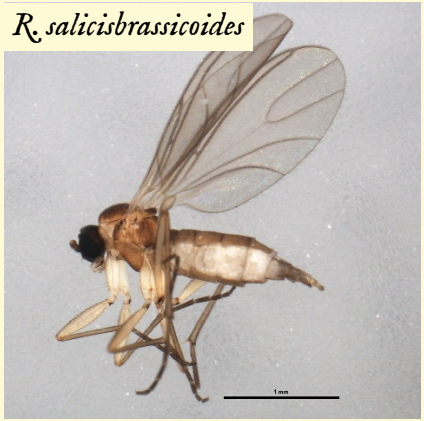
~~*Rabdophaga salicisbrassicoides* Packard, 1869~~

~~*Rabdophaga saliciscoryloides* Osten Sacken, 1878~~

Rabdophaga salicisgnaphaloides Osten Sacken, 1878

Rabdophaga salicisrhodoides Osten Sacken, 1878

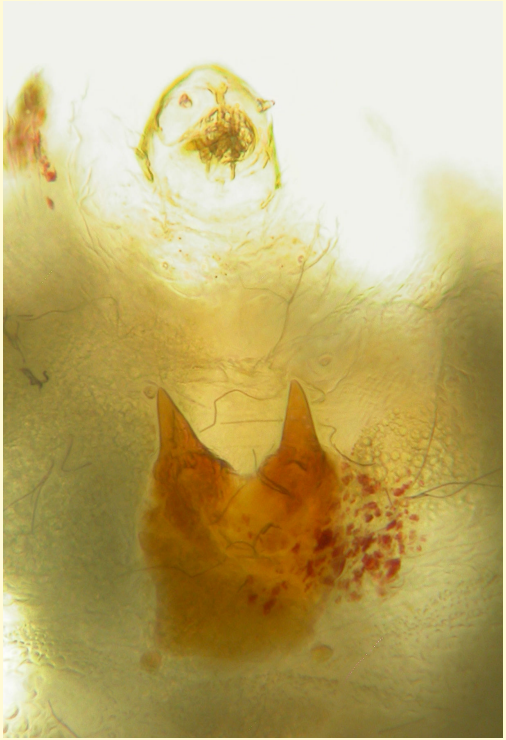
~~*Rabdophaga strobiloides* Osten Sacken, 1862~~



← Image from http://www.boldsystems.org/pics/PBCAG/bioug00974-c06%2B1301498198.jpg.

Onward

- Document morphology
- Still missing willow and midge species
- Many other gall makers to explore



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- Mariah McInnis helped collect specimens.

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