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# EXPANDING THE PHOTO-DOCUMENTATION OF THE ORCHID SEED COLLECTION

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MLA SUMMER INTERN PROGRAM 2017

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FOR THE PLANT CONSERVATION PROGRAM AT THE HORTICULTURE RESEARCH CENTER

# Project Goals

- Explore the conservation database & decide which of the 30+ orchid species need photographs
  - On Excel spreadsheet
- Photograph seed (at least 10 different species) using macro and micro cameras
  - Accomplished!
- Organize the photographs into the database folders by botanical name

# The Orchid Conservation Program

- Main goal is to propagate and eventually release native MN orchids into the wild
- MN orchids have been largely undocumented in the past
  - Most know tropical orchids, but forget native ones
  - The pictures I took of seed may have been the first ever...



*Liparis loeselii* seeding

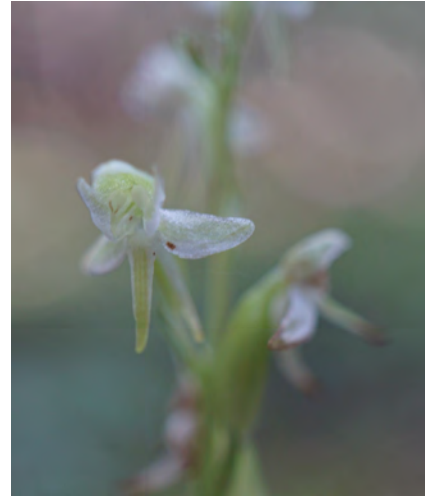
# MN Native Orchid Examples



*Calopogon tuberosus*



*Goodyera pubescens*



*Platanthera obtusata*

+ Lady's-slippers, etc.

# MN Native Orchid Seeds

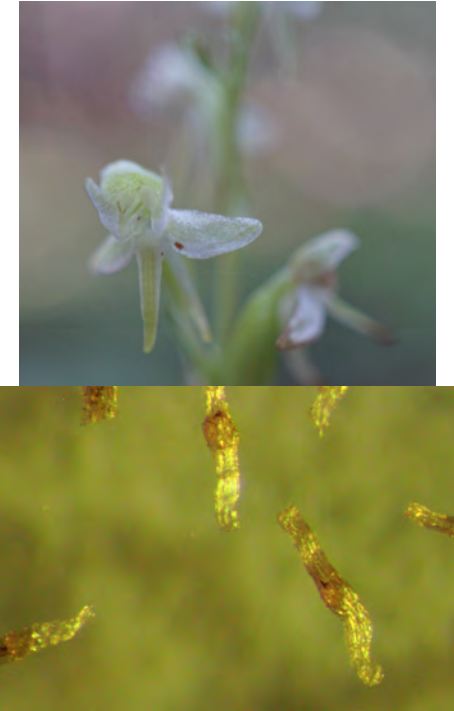
They are almost all unique in shape and color, and very, very tiny (like sawdust)!



*Calopogon tuberosus*



*Goodyera pubescens*



*Platanthera obtusata*

# The Database Spreadsheet

Genus	species	ssp/var/ other	Micro	Macro
Calopogon	tuberosus			
Calypso	bulbosa			
Corallorhiza	odontorhiza			
Corallorhiza	trifida			
Cypripedium	acaule			
Cypripedium	arietinum			
Cypripedium	candidum			
Cypripedium	parviflorum	pubescens		
Cypripedium	parviflorum	makasin		
Cypripedium	reginae			
Epipactis	helleborine			
Galearis	spectabilis			
Goodyera	pubescens			
Goodyera	repens			
Goodyera	tesselata			
Liparis	lilifolia			
Liparis	loeselii			
Listera	cordata			
Malaxis	monophyllos	brachypoda		
Malaxis	paludosa			
Malaxis	unifolia			
Platanthera	aquilonis			
Platanthera	flava	herbiola		
Platanthera	hookeri			
Platanthera	huronensis			
Platanthera	obtusata			
Platanthera	obtusata	Giant		
Platanthera	orbiculata			
Platanthera	praeclara			
Platanthera	psycodes			
Pogonia	ophioglossoides			
Spiranthes	cernua			

<- 2016

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Platanthera	flava	herbiola		
Platanthera	hookeri			
Platanthera	huronensis			
Platanthera	obtusata			
Amerorchis	rotundifolia			
Platanthera	orbiculata			
Platanthera	praeclara			
Platanthera	psycodes			
Pogonia	ophioglossoides			
Spiranthes	cernua			

<-2017

# Macro Lens Camera

- Digital camera donated
- Trial and error



*Goodyera pubescens*

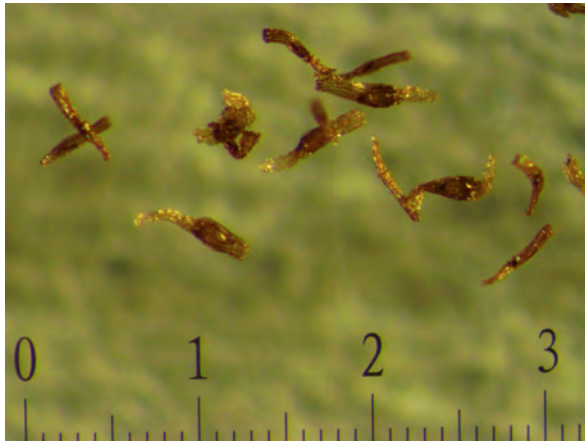


*Amerorchis rotundifolia*

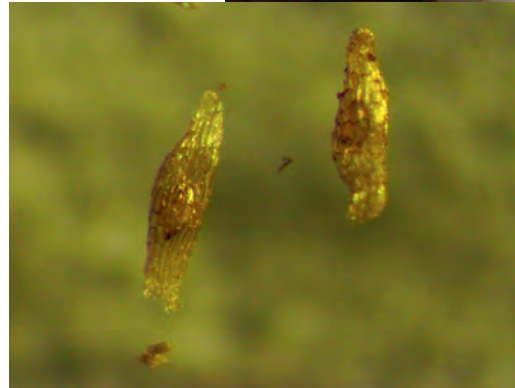


# Micro Lens Camera

- AmScope program used to take photos
  - Able to view microscopic images on computer
- Very small scale, more trial and error



*Amerorchis rotundifolia*



*Cyripedium candidum*





# Future Use of Macro/Micro Seed Images

- Identifying native orchids from seed
  - Feasible because of unique seed qualities
- Discovering how orchid species evolved from the Orchidaceae family
  - If seeds look similar to each other, there may be evolutionary clues there...
- Making a field guide?
  - Using flower, seedling, seed, etc. photos

# Credits

Thanks to David Remucal and Michelle Dinesen for their orchid knowledge

All photos from the orchid conservation database 