

Columbines School of Botanical Studies
 Second Year Apprenticeship Program
 Trip #9-10 Alpine Zone

Date: July 31- August 1, 2021
 Trip 9-10

Middle Elevation to Alpine Zone 6225' to 8002'
<http://www.botanicalstudies.net/botany/plantlists.php>

Family	Name	Ecosystem	Seen
Tofieldiaceae (Liliaceae)			
	<i>Triantha occidentalis</i> (Tofieldia o.)	Tofieldia	H
Melanthiaceae (Liliaceae)			
	<i>Trillium ovatum</i>	Trillium	Lower H, mostly C & T
	<i>Veratrum viride</i>	False Hellebore	H
Liliaceae			
	<i>Clintonia uniflora</i>	Queen's Cup	Lower H to T
	<i>Erythronium grandiflorum</i>	Glacier Lily	H & C
Orchidaceae			
	<i>Platanthera dilatata</i> (<i>Habenaria dilatata</i> spp. leucostachys)	White Rein Orchid	H to T x
	<i>Platanthera stricta</i> (<i>Habenaria saccata</i>)	Green Rein Orchid	H to T
	<i>Spiranthes romanzoffiana</i>	Twisted Sister	H to T x
Asparagaceae (Liliaceae)			
	<i>Maianthemum stellatum</i> (<i>Smilacina stellata</i>)	Small False Solomon's Seal	Lower H to T
Cyperaceae			
	<i>Carex</i> spp.	Sedge	
Ophioglossaceae			
	<i>Sceptridium multifidum</i> (<i>Botrychium silaifolium</i>)	Grape Fern	H
Pinaceae			
	<i>Pinus albicaulis</i>	Whitebark Pine	H x
	<i>Pinus contorta</i>	Lodgepole Pine	H x
	<i>Tsuga mertensiana</i>	Mountain Hemlock	H x
Papaveraceae (Fumariaceae)			
	<i>Dicentra formosa</i>	Bleeding Heart	H to HT
Ranunculaceae			
	<i>Aconitum columbianum</i>	Monkshood	A to AT
	<i>Anemone drummondii</i>	Drummond's Anemone	H to A x
	<i>Anemone lyallii</i>	Small Windflower	H to T

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Family	Name	Ecosystem	Seen
	Anemone occidentalis	Mountain Pasque Flower	H
	Aquilegia formosa	Columbine	H to T
	Caltha biflora	Marsh Marigold	H x
	Delphinium menziesii	Larkspur	H to T x
	Delphinium sp.	Larkspur	
	Ranunculus alismaefolius	Marsh Buttercup	C to H
	Ranunculus sp.	Marsh Buttercup	
Saxifragaceae			
	Micranthes oregana (Saxifraga o.)	Oregon Saxifrage	H to HT
	Micranthes tolmiei (Saxifraga t.)	Alpine Saxifrage	A and upper H
	Pectiantia breweri (Mitella b.)	Small Bishop's Cap	H & C
	Pectiantia pentandra (Mitella p.)	Five Point Mitrewort	H & C
Crassulaceae			
	Sedum sp.	Stonecrop	
Fabaceae (Leguminosae)			
	Lupinus andersonii	Lupine	H to AT x
	Lupinus lepidus spp. lyallii	Lupine	H to A x
	Lupinus sp.	Lupine	
	Trifolium longipes	Wild Clover	H to T
	Trifolium spp.	Clover	
Rosaceae			
	cf. Potentilla sp.	Potentilla	
	Comarum palustre (Potentilla p.)	Swamp Potentilla	
	Fragaria spp.	Strawberry	
	Leutkea pectinata	Partridge Foot	H to A x
	Potentilla breweri	Cinquefoil	Lower H and C
	Potentilla flabellifolia	Cinquefoil	H
	Sibbaldia procumbens	Creeping Sibbaldia	A & H
	Sorbus sitchensis (S. occidentalis)	Mountain Ash	H
Celastraceae (Saxifragaceae)			
	Parnassia cirrata (intermedia)	Grass of Parnassus	H & C
Hypericaceae			
	Hypericum anagaloides	Bog St. John's Wort	Lower H to HT
Violaceae			
	Viola sp.	Violet	

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Family	Name	Ecosystem	Seen
Salicaceae			
Salix spp.	Willow		
Onagraceae			
Boisduvalia sp. or Epilobium sp.	Willow Herb		x
Chamaenerion angustifolium (Epilobium a.)	Fireweed	Lower H to T	x
Brassicaceae (Cruciferae)			
Arabis sp.	Rock Cress		
Draba sp.	Draba		
Polygonaceae			
Aconogonon davisiae (Polygonum newberryi)	Newberry's Knotweed	A & H	x
Bistorta bistortoides (Polygonum b.)	Mountain Bistort	H & C	
Eriogonum pyrolifolium	Alpine Buckwheat	H to A	x
Eriogonum umbellatum	Sulfur Flower	H to T	x
Montiaceae (Portulacaceae)			
Calyptridium umbellatum (Spraguea u.)	Pussy Paws	A & H	x
Claytonia perfoliata (Montia p.)	Miner's Lettuce	Lower H to T	
Lewisia triphylla	Lewisia	H	
Cornaceae			
Cornus unalaschkensis (C. canadensis)	Bunch Berry	H to HT	
Polemoniaceae			
Polemonium spp.	Polemonium		
Primulaceae			
Dodecatheon jeffreyi	Shooting Star	H	x
Ericaceae			
Arctostaphylos nevadensis	Kinnikinnik	H & C	
Cassiope mertensiana	Mountain Heather	A to Lower H	
Chimaphila umbellata	Pipsissewa	Lower H to T	
Gaultheria humifusa	Alpine Gaultheria	H	
Kalmia microphylla	Kalmia	H	
Orthilia secunda (Pyrola s.)	One Sided Pyrola	H & C	
Phyllodoce empetriformis	Pink Mountain Heather	A to H	x
Pleuricospora fimbriolata (Hypopitys fimbriata)	Fringed Pine Sap	H to T	
Pterospora andromedea	Pine Drops		

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Family	Name	Ecosystem	Seen
Vaccinium scoparium	Grouse Berry	H & C	x
Vaccinium spp.	Huckleberry		
Adoxaceae (Caprifoliaceae)			
Sambucus racemosa	Red Elderberry	H to HT	x
Hydrophyllaceae			
Phacelia sp.	Phacelia		
Plantaginaceae (Scrophulariaceae)			
Penstemon cinicola	Penstemon	H to mostly AT	x
Penstemon davidsonii	Penstemon	A to H	
Penstemon sp.	Penstemon	A	x
Veronica sp.	Veronica, Speedwell		
Veronica wormsjoldii	Veronica, Speedwell	H	
Phrymaceae (Scrophulariaceae)			
Erythranthe guttata (Mimulus g.)	Monkeyflower	H to T	x
Erythranthe lewisii (Mimulus l.)	Great Purple Monkeyflower	H & C	x
Erythranthe moschata (Mimulus moschatus)	Musk Monkeyflower	Lower H to T	
Erythranthe primuloides (Mimulus p.)	Primrose Monkeyflower	H to T	
Orobanchaceae (Scrophulariaceae)			
Castilleja arachnoidea	Paintbrush	H to A	x
Castilleja miniata	Paintbrush	H	x
Castilleja parviflora ssp. oreopola (C. o.)	Paintbrush	A & H	x
Castilleja suksdorfii	Paintbrush	H	x
Pedicularis attollens	Baby Elephant's Head	H & C	x
Pedicularis bracteosa	Cobra's Head	H & C	x
Pedicularis groenlandica	Elephant's Head	H & C	x
Asteraceae (Compositae)			
Achillea millefolium	Yarrow	A & H to T	x
Agoseris aurantiaca	Orange Mountain Dandelion	H	
Anaphalis margaritacea	Pearly Everlasting	H to T	
Antennaria sp.	Everlasting		x
Arnica mollis	Hairy Arnica	H to A	x
cf. Aster sp.	Aster		x
Dieteria canescens var. shastensis (Aster s.)	Shasta Aster	H	
DYC	Damn Yellow Compositae		
Erigeron peregrinus	Daisy	H	
Hieracium albiflorum	White Hawkweed	H to T	x
Hieracium gracile	Alpine Hawkweed	H	

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Family	Name	Ecosystem	Seen
Leucanthemum vulgare (Chrysanthemum l.)	Ox Eye Daisy		
Nothocalais alpestris (Microseris a.)	Alpine Dandelion	H	
Oreostemma alpigenum (Aster alpigenus)	Aster	A to H	
Raillardella scaposa	Raillardella	H to A	
Senecio sp.	Groundsel		x
Senecio triangularis	Arrow Leaf Groundsel	Lower H & C	x
Linnaeaceae (Caprifoliaceae)			
Linnaea borealis	Twinflower	C	
Valerianaceae			
Valeriana sitchensis	Valerian	H	x
Apiaceae (Umbelliferae)			
Ligusticum grayi	Oshala	H & C	x
Lomatium martindalei	Biscuit Root	H to A	x
Osmorhiza berteroi (O. chilensis)	Sweet Cicely	H to T	
Unidentified white Umbelliferae			
Animal Interactions			
Dissosteira carolina	Carolina Grasshopper	clickity clickity	x

Columbines School of Botanical Studies
Second Year Field Program
Trip # 9-10 Highlights
Arctic-Alpine Zone
July 31 - August 1, 2021

Middle Elevation Coniferous Woods and Riparian, Subalpine, and Arctic-Alpine Zones

Located, harvested, processed *Anemone drummondii* for tincture
Uses and tasting *Anemone drummondii*
Adrenaline Stress Review
Ecology of the Subalpine and Arctic Alpine Zones

Polygonaceae: Perianth often 3-merous stems with sheathing stipules, or flowers in involucrate clusters of umbels, often a reddish color in leaves and stems.

Keyed out numerous plants in the *Flora of the Three Sisters Region*:
Spiranthes romanzoffiana, *Lupinus lepidus* ssp. *lyallii*, *Eriogonum pyrolifolium*,
Eriogonum umbellatum, *Aconogonon davisiae*, *Castilleja arachnoidea*, *C. miniata*, *C. suksdorfii*, *C. parviflora* ssp. *oreopola*, *Pedicularis attolens*