



Preliminary flora of Gallatin county
by Wyatt W Jones

A THESIS Submitted in partial fulfillment of the requirements for the degree of MASTER OF
SCIENCE IN BOTANY

Montana State University

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Abstract:

The plan of this work has been to compile a complete list of all the plants occurring In Gallatin County. This includes all the Indigenous Phanerogams and such introduced species as have become thoroughly established under natural conditions, and those cultivated plants that shown a disposition to escape and degenerate as weeds, as well as the vascular-cryptogams, with brief notes as to relative abundance and habitat. These notes, with few exceptions, are based upon my own observation and knowledge. Beginning with the Ranunculaceae the vidus have been arranged as in Gray's Manual of Botany. Revised Edition, the genera and species being arranged alphabetically under the vidus.

The work is based largely upon the Herbarium of the Montana State College of Agriculture. It includes also a large collection of undistributed material collected by Dr, J. W. Blankinship and other small collections. Dr. Rydberg's flora of Montana has been used as a reference book.

The region covered is essentially mountainous but varies in altitude from 4000 to 11000 feet thus furnishing species from alpine to plains. Probably no other portion of the state contains so extensive a flora as Gallatin County.

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BOZEMAN

PRELIMINARY FLORA OF GALLATIN COUNTY

by

WYATT W. JONES

A THESIS

Submitted in partial fulfillment of the requirements

for the degree of

MASTER OF SCIENCE IN BOTANY

at

MONTANA STATE COLLEGE

Approved:

J. W. Blankinship

In Charge of Major Work

Bozeman, Montana
June, 1901

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J729
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Introduction

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Bot.
Ecol.
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Aconitum Columbianum, Nutt.

Upper West Gallatin River (Peter Koch '87) very rare.

Actaea Spicata Arguta, Torr.

Occurs in damp places along streams; quite generally distributed but not abundant.

Actaea Eburnea, Rydb. (2)

(Bridger Mts. Rydb. & Bessey '97) Rydb.'s flora 153. Rydberg separates this from the preceding, by the white berries, but both forms have been collected arising from one root.

Anemone Cylindrica, Gray.

In hilly regions throughout the county.

Anemone Globosa, Nutt.

Distribution as in the preceding but more abundant.

Anemone Patens Nuttalliana, Gray.

Very abundant in hilly regions near the mountains.

* Anemone Parviflora, Mx.

Bozeman (Tweedy '87) Rydberg's flora 153.

Anemone Tetonensis, Porter.

Bridger Mts. & Spanish Peaks (Flodman '96). Rydberg's flora 153.

Occurs only in high altitudes.

Aquilegia Flavescens, Wats.

Abundant in the mountains.

* Aquilegia formosa, Fischer.

Spanish Basin (Flodman '96) Rydb.'s flora 155.

Aquilegia Jonesii, Parry.

Bridger Mts. (Peter Koch). Dr. Rydberg says "Very abundant in Montana".

Clematis Douglasii, Hook.

Very common on foothills.

Clematis Douglasii Scottii, Coulter.

Spanish Basin (Flodman '96) Bozeman (Canby '83) Bridger Creek (J.W.B. '99) Rydb. flora 160.

Clematis ligusticifolia, Nutt.

Very common in wooded places along streams.

Clematis verticillaris Columbiana, Gray.

Very abundant in the mountains.

Delphinium bicolor, Nutt.

According to Rydberg is the common larkspur. Delphinium bicolor is the larkspur of the plains was call at Lombard by J. W. Blankinship June 1, 1901.

Delphinium bicolor Montanense, Rydb. (2).

According to Rydberg is very common. D. bicolor montanense is doubtful.

Delphinium Menziesii, DC.

Rydberg says "Confined to high mountain regions". D. Menziesii is our common purple larkspur.

Delphinium scopulorum glaucum, Gray.

In mountain regions. D. scopulorum glaucum, grows at an altitude of from 4800 to 7500. D. scopulorum extends from 7500 up 8500.

Myosurus apetalus lepturus, Gray.

Bozeman (J. W. B. '99).

Myosurus minimus, L.

Bozeman (J. W. B. '99).

Ranunculus abortivus, L.

Common in very damp places.

Ranunculus inamoenus, Greene.

Common.

Ranunculus aquatilis trichophyllus, Gray.

Occurs in the streams.

Ranunculus Cymbalaria, Pursh.

In wet places.

Ranunculus eximius, Greene.

Common on the high mountains.

Ranunculus glaberrimus, Hook.

Widely distributed.

Ranunculus inamoenus, Greene - R Affinis Gray.

In damp soil in mountains, rather rare.

Ranunculus Lyallii, (Gray).

In wet soil.

Ranunculus Maccounii, Britton.

In damp places.

Ranunculus Montanensis, Rydb. (?) Rydb's. flora 166.

Ranunculus Nelsoni tenellus, Gray.

In wet meadows.

* Ranunculus ovalis, Raf.

Bridger Mts. (Flodman '96) Rydb's. flora 165.

Ranunculus Pennsylvanicus, L.

In damp places not in the mountains.

Ranunculus Purshii, Rich.

Grows in small streams.

Ranunculus sceleratus, L.

Grows in the mud.

Ranunculus Suksdorfii, Gray.

Spanish Peaks (Flodman '96) Rydb's. flora 164. Mt. Holyoke (Miss Edna Lewis '97).

Thalictrum alpinum, L.

Lower Basins of Gallatin R. rare.

Thalictrum Fendleri, Engelm.

In wooded places.

Thalictrum megacarpum, Torr.

Bridger Mts. & Spanish Basins.

Thalictrum occidentale, Gray.

Quite infrequent.

Thalictrum purpurascens, L.

Common on low ground.

* Thalictrum venulosum, Trelease.

In low altitudes, rather rare. East Gallatin Swamps (Flodman '98) Bezman (Rydb. '95) Rydberg's flora 169.

Trollius laxis albiflorus, Gray.

In high altitudes; rare.

Berberidaceae

Berberis repens, Lindl.

Very abundant.

Nymphaeaceae

Nuphar polysepalum, Engelm.

Spanish Basin and Forks of Madison River. (Rydb. & Bessey '97)

Flora 151. Spanish Creek (E. V. Wilcox & F. W. Troughen '98). Quite rare.

Fumariaceae

Corydalis aurea, Willd.

In low land abundant.

Corydalis aurea occidentalis, Engelm.

As preceding.

Cruciferae

Arabis canescens, Nutt.

Bridger Mts. (Rydb. & Bessey '97) Rydberg's flora 187. Bridger Canon (J. W. B. '99). Infrequent.

A. Columbiana, Macoun.

Spanish peaks (Flodman '95). Spanish Basin & Bridger Mts. (Rydb. & Bessey '97) Rydberg's flora 187. Infrequent.

A. Drummondii, Gray.

Common in valleys.

A. furcata, Wats.

At high altitudes; rather rare.

A. glabra (L.) Bernh.

Not infrequent; in valleys.

A. hirsuta scop.

Bozeman (J. W. B. '99) & W. W. J. '02).

A. Holboellii, Hornem.

Abundant on hillsides and in valleys. Frequently crosses with A. Drummondii.

A. Lemmonii, Wats.

At high altitudes, rather infrequent. Rydberg's flora, page 187.

A. Lyallii, Wats.

High up on mountains; infrequent. Rydberg's flora 188.

A. Nuttallii, Robinson.

Common on hillsides and in valleys.

Arabis puberula, Nutt. (?).

Bozeman (W. T. Shaw '92). Rydberg's flora, p. 187 & Herbarium.

A. pulchra, Jones.

Bridger Canon (J. W. B. '99).

Barbarea vulgaris gracilis, Wats.

Rather infrequent.

Brassica alba, Boiss. cultivated.

Brassica campestris, L.

Escaped from cultivation; rather infrequent.

B. Napus, L.

Escaped; infrequent.

B. Nigra, Koch.

A weed in fields.

B. Sinapistrum, Boiss.

Weed.

Camelina sativa, (L.) Crantz.

Around fields infrequent.

Capsella Bursa-pastoris, Moench.

A troublesome weed in gardens fields and waste places.

Cardamine Breweri, Wats.

Common in damp open woods.

C. Leibergii, Holz.

In rocky places at rather high altitudes.

C. oligosperma, Nutt.

On stream margins; very rare.

C. parviflora, L.

Sometimes intergrades with *C. Pennsylvanica*. Grows in wet places, rather infrequent.

C. Pennsylvanica, Muhl.

Wet shady places; rather infrequent.

C. unijuga, Rydb.

Swampy ground at rather high altitudes; not infrequent.

Draba audina (Nutt, A. Nelson)

Bridger Mts. (Rydb. & Bessey '97 Mrs. Henshall '99 & J. W. B. '99).

Probably only an intergrade of *D. oligosperma* & *D. derisifolia*; occurs on mountain sides and is rather infrequent.

* D. aurea, Vahl. Dry hills near mountains, rare.

Spanish Basin (Rydb. & Bessey '97) Rydberg's flora 182.

D. Caroliniana micrantha, Gray.

Dry hills or low ground near hills, rather infrequent.

D. densifolia, Nutt.

Not uncommon at high altitudes.

D. glacialis, Adams.

Mt. Bridger (J. W. B. '99). Rare.

D. nemorosa L.

Widely distributed and very abundant.

D. nivalis elongata, Wats.

Lava Peak (J. W. B. '98). Grows at high altitudes and is rather rare.

D. oligosperma, Hook.

Common on mountain sides.

D. stenoloba, Ledeb.

(Shale Mt. J. W. B. '98). Quite rare growing at high altitudes.

Erysimum asperum, DC.

Very common on stony hillsides.

E. cheiranthoides, L.

Locally distributed and growing in shady places in valleys. (Central Park).

E. parviflorum, Nutt.

Common on upland plains.

Hesperis matronalis, L.

Has escaped in a few localities. Collected around Bozeman.

Lepidium apetalum, Willd.

Very common in loose soil.

* L. ramosum, A. Nelson.

Gallatin Co. (Scribner '83) Rydberg's flora 172.

Lesquerella alpina, Wats.

Common on sandy hills.

Nasturtium curvisiliqua, Nutt.

In damp places rather infrequent. (Spanish Basins).

Nasturtium obtusum, Nutt.

Bozeman (W. T. Shaw '92) Rydberg's Flora 176. Rare in wet places.

Nasturtium officinale. R. Br.

Not uncommon running water.

N. terrestre, R. Br.

Belgrade (J. W. B. '99). Bridger Mts.

N. terrestre, hispidium.

F. & M. Bozeman (J. W. B. '99). Floodman '84) Rydb's. Flora 175.

Rare; in wet places.

Ornithopus sativus, Brott.

Bozeman (L. Foster '94).

Physaria didymocarpa, (Hook) Gray.

Common on dry barren hills.

Sisymbrium altissimum, L.

Central Park (J. W. B. '99).

S. canescens, Nutt. (?).

Common in dry places.

S. gracile, (Rydb.)

Lava Peak (J. W. B. '98) Rydb's. flora 475.

S. incisum, Engelm.

Bozeman (J. W. B. '99 & '98).

S. incisum Hartwegianum, Wats.

In dry places.

S. intermedium (Rydb.) (?).

S. officinale, Scop.

In waste places, an introduced weed.

Thelypodium integrifolium, Eudl.

Three Forks (J. W. B '99). Rather infrequent. In dry valleys.

Thlaspi alpestre, L.

In stony subalpine places. Not uncommon.

T. arvense, L.

Escaped. Bozeman & Ft. Ellis (J. W. B).

Capparidaceae

Cleome integrifolia, T. & G.

Very abundant in waste places of sandy or saline soil.

Violaceae

Viola aurea, Kellogg.

Summit of Mt. Bridger (J. W. B. '99). Rare.

Viola blanda, Willd.

Bozeman (Peter Koch '87). Rare.

Viola Canadensis, L.

Common in damp places.

V. canina aduma, Gray.

Locality much as the preceding but ground more open and not so damp.

V. cognata Greene.

In wet places.

V. flavovirens, Pollard.

Rather infrequent. Grows in open places among mountains.

V. monticola, Rydb.

Bozeman (W. T. Shaw '92) & (Tweedy '95) Rydbergs flora 264.

Viola Nuttallii, Pursh.

Somewhat locally distributed, growing on hill in soil of a slightly
soline character.

V. orbiculata, Gupr. (?)

Spanish Basin (J. W. B. '99) & Lime Kiln Canon (Peter Koch '00). Rare.

V. praemorsa, Dougl. - V. vallicola, A. Nelson.

Very common in valleys and on hillsides down to 4500 ft.

V. sarmentosa, Dougl. (?)

Bozeman Canon & Lower Basin of Gallatin R. May be V. orbiculata, Hook.

Order 15

Agrostemma Githago L.

Bozeman (J. W. B. '98). Rare.

Arenaria congesta, Nutt.

On mountains; rather infrequent.

A. congesta subcongesta Wats.

Abundant and widely distributed.

A. Hookeri, Nutt.

Common on dry hills and plains.

A. lateriflora, L.

Quite abundant in low thickets in damp places.

A. Nuttallii, Pax.

Occurs in rocky places at rather high altitudes, not very abundant.

A. Sajanensis, Willd.

Spanish Peaks (J. Vogel '01).

A. Sajanenses rigidula Robinson.

Grows in stony places on mountain tops, not very abundant.

A. verna hirta, Wats.

Among rocks on mountain sides; not in frequent.

Gerastium alpinum Berringianum, Regel.

Spanish Peaks (J. Vogel '01).

Gerastium arvense, L.

Very abundant on hills and in valleys. Widely distributed.

G. arvense latifolium, Fenzl.

Grows in alpine regions.

(?) G. arvense oblongifolium, H. & B.

Leverich Canon (J. W. B. '00).

G. elongatum, Pursh.

Spanish Basin (Rydb. & Bessey '97). Rydberg's flora 146.

G. nutans, Raf.

Introduced in a few districts.

G. viscosum, L.

Lychnis Drummondii, Wats.

On hillsides and low mountains, quite frequent.

Sagina Linnaei, Presl.

Hillsides and mountains at high altitudes. Rather infrequent.

Saponaria Vaccaria, L.

Common cackle.

Silene acaulis, L.

Spanish Peaks (Fiedman '96). Rydbergs flora 141. Occurs only at high altitudes.

S. antirrhina, L.

(Lower Canon of Gallatin R. J.W.B '98). Rare.

Silene Douglasii Macounii, Robins.

Infrequent grows on mountain tops. (Bozeman Mrs. Alderson '92).

S. Douglasii multicaulis, Robins.

Quite frequent in valleys and on hillsides at 7,000 ft.

S. Menziesii, Hook.

(Manhattan Rydb. '95) Flora 143. Grows among bushes. Not abundant.

S. noctiflora, L.

(Bozeman J. W. B '98). Grows as a weed in fields and waste places.

* S. Oregana, Wats.

(Forks of the Madison Rydberg & Bessey '96) Rydbergs flora 142.

Infrequent.

S. repens, Patrin.

Common in rocky places in valleys 6000 ft.

Spergularia arvensis, L.

(Bozeman J. W. B '98). Occurs as a weed in grain fields.

Stellaria borealis corollina, Feuzl.

(Bozeman Canon J. W. B '98). Damp shady places. Infrequent.

* S. calycantha, Bong.

(Bozeman Canon Rydb. '95) Rydberg's flora 145. On mountain sides in wet places.

* S. crassifolia, Ehrh.

(Ft. Logan Carby '82). Rydberg's flora 145. On mountain sides in wet places.

Stellaria crispata, Cham & Schl.

In wet places on mountain sides.

S. dichotoma Americana, Porter.

(Bridger Mts. Rydb. & Bessey '97) Rydberg's flora 144 among rocks on mountains.

S. laeta, Rich.

(Spanish Peaks Floodman '96) Rydberg's flora 144). In wet places on mountain sides; often near the snow.

S. longifolia, Muhl.

In damp thickets common.

S. longipes, Goldie.

Common in rich, wet soil; ascending the mountains to 7000 ft.

S. media, Cyr.

(Bozeman J. W. B '98) weed in yards.

Portulacaceae

2 Claytonia lanceolata, Pursh.

Common in rich damp soil on mountain sides at a higher altitude than

C. Virginia occurs.

1 * C. arctica megarrhiza, Gray.

(Gallatin Co. Tweedy '06) Rydberg's flora 139; "On rocky sides of highest mountains."

C. Virginica, L.

Common on hillsides.

Lewisia rediviva, Pursh.

On dry hillsides in gravel and stones. Very abundant in Madison Co., but rarer in Gallatin Co.

L. Novadensis or pygmaea.

Middle Creek Canon.

Montia Chamissonis, Greene.

(Riverside J. W. B. '99). Infrequent, in water or swampy places.

M. linearis, Greene.

(Spanish Basin & Bozeman Pass). Grows in damp ground; infrequent.

M. parviflora depressa, Robins.

Common in damp places on mountain sides, especially, near springs.

M. perfoliata, Howell.

Like the last but perhaps now rare in this county.

Portulaca oleracea, L.

(Bozeman J. W. B. '98). Occurs as a weed in gardens.

Spraguea multiceps, Howell.

(Callatin Co. Mrs. Alderson) Rydbergs flora 138; infrequent.

Elatinaceae

Elatine triandra, Schk.

(Bozeman J. W. B. '98). In a small pond.

Hypericaceae

Hypericum formosum, H. B. K.

(Bozeman J. W. B. '98) & (Cottonwood Cr. W. T. Shaw '92) Rydb's.
flora 259. Grows in damp places.

Malvaceae

Malvastrum coccineum, Gray.

Common on dry prairies.

Sidalcea sp. ?

Middle Creek Canon.

Sphaeralcea acerifolia, Nutt.

Common in thickets along streams and in the mountains.

Linaceae

Linum Lewisii, Pursh.

Quite abundant throughout in open ground. Is very abundant in the Hayden Valley V.N.P. 7500 ft.

L. rigidum, Pursh.

(Manhattan Rydb. '95) occurs at the lower altitudes.

L. usitatissimum, L.

Bozeman (J. W. B '98). Persistent after cultivation.

Geraniaceae

Geranium Carolinianum, L.

Waste places; rather infrequent.

G. Bicknellii; Britton.

(Mystic Lake J. W. B '98).

G. incisum, Nutt.

Very common in rather damp places.

G. Richardsonii, F. & M.

Quite common in groves in wet soil.

Rhamnaceae

Ceanothus velutinus, Dougl.

Abundant on mountain sides.

Sapindaceae

Acer glabrum, Torr.

Common on hill and mountain sides.

Negundo aceroides, Moench.

Cultivated as a shade tree.

Anacardiaceae

Rhus Canadensis trilobata, Gray.

Abundant on open hillsides.

R. Rydbergii,

Small somewhat locally distributed and grows on rather barren hillsides.

Leguminosae

(?) Astragalus aculeatus, A. Nelson.

(16 mile Cr. J. W. B '99).

A. adsurgens, Pall.

Abundant on rather dry plains and hills.

A. alpinus L.

Common on north slopes in rather damp soil.

A. bisulcatus, Gray.

Common on prairies.

* A. Bourgoyii, Gray.

(Bridger Mts. & Spanish Basins Floodman '96) Rydberg's flora 247.

A. campestris, Gray.

Common on hillsides.

A. Canadensis, L.

Not infrequent on river banks and hillsides.

A. caryocarpus, Ker.

Very abundant on dry plains and hills.

A. decumbens, Gray.

(Leverich Canon Mrs. J. A. Henshall, '00).

Astragalus Drummondii, Dougl.

Widely distributed and very abundant.

A. frigidus Americanus, Wats.

Dry soil, near mountains; Not infrequent.

A. hylophyllus included in A. campestris, Gray.

A. hypoglottis, L.

In meadows; quite abundant.

A. inflexus, Dougl.

Frequent in hilly regions.

(2) A. iodanthus, Wats.

(Bozeman J. W. B '99). "In sandy soil" Rydb's. flora 244.

(?) A. Macounii, Rydb. (Bozeman J. W. B '99) Rydb's. flora 243.

* A. microlobis, Gray.

(Bozeman Tweedy '87) & Gallatin Co., Scribner '83) Rydberg's flora 245.

* A. Mortoni, Nutt.

"Common in meadows of mountain regions." (East Gallatin Swamps Flodman

'96) Rydberg's flora 240.

A. oroboides Americanus, Gray.

Common among shrubs or small trees.

A. Purshii, Dougl.

Common in stony ground on hillsides.

A. teuifolius, Nutt.

Included under A. campestris, G.

A. triphyllus, Pursh.

Abundant on hillsides; blooms in early spring.

A. vexilliflexus, Sheldon.

Abundant among hills.

Glycyrrhiza lepidota, Nutt.

Abundant along streams in valleys.

Hedysarum boreale, Nutt.

(Lower Basin of Gallatin & Mystic lake J. W. B '98). Rather uncommon.

* Hedysarum flavescens, G & R.

On mountain sides. Rather uncommon.

H. Mackenzii, Richardson.

(Spring hill Peter Koch '00) & Sixteen Mile Cr. Scribner '83).

Rather uncommon.

Lathyrus odoratus L.

Cultivated extensively.

Leupinus alpestris, A. Nelson.

(Bozeman, Peter Koch '87) & (?) (Line Kilin Canon J. W. B '00).

L. argenteus, Pursh.

Common on prairies and hillsides.

L. Burkei, Wats.

In damp places among mountains; somewhat locally distributed; abundant where found.

L. caespitosus, Nutt.

(Gallatin R. west of Bozeman J. W. B '00). Quite rare in this county

