

PLANTS OF THE
FARMING AND
RANCHING AREAS
OF THE CANADIAN
PRAIRIES

ARCH.^D G. BUDD.

DOMINION EXPERIMENTAL STATION,
SWIFT CURRENT, SASKATCHEWAN.

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Title: Plants of the Farming and Ranching Areas of the Canadian Prairies

Date of first publication: 1952

Author: A. C. Budd

Date first posted: May 10, 2015

Date last updated: May 10, 2015

Faded Page eBook #20150535

This eBook was produced by: David Jones, Mardi Desjardins, Stephen Hutcheson & the online Distributed Proofreaders Canada team at <http://www.pgdpCanada.net>

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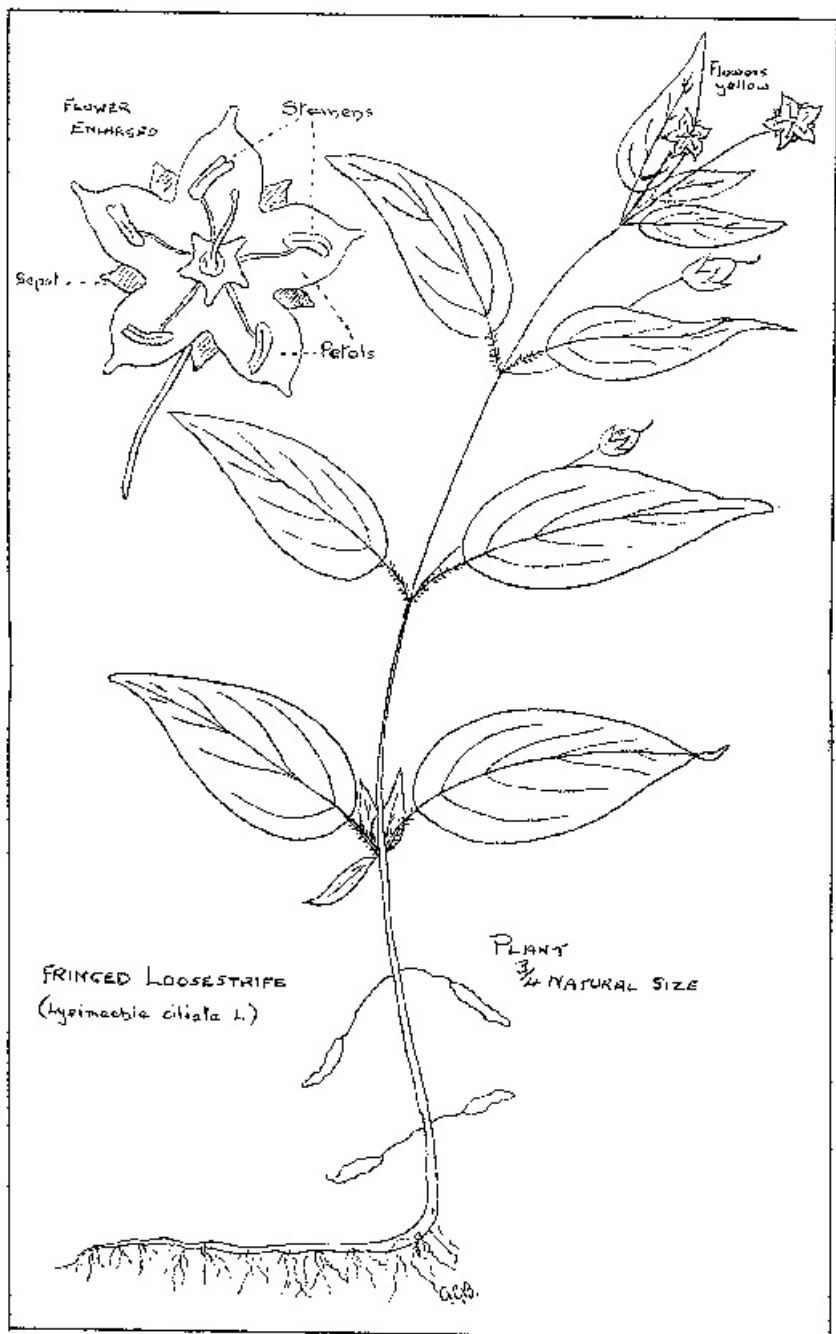
SWIFT CURRENT, SASKATCHEWAN.

038

A Key to Plants of the Farming and Ranching Areas of the Canadian Prairies

by A. C. Budd
Experimental Station,
Swift Current, Saskatchewan

Experimental Farms Service
Department of Agriculture
Canada, 1952



Flowers Yellow

FLOWER ENLARGED

Stamens

Sepal

Petals

AN AID TO UNDERSTANDING HOW TO USE A PLANT KEY

Plant keys are usually paired contrasting statements and the plant must agree with one of them. Find out which of the pair it agrees with and then follow to the name or number following that statement until the name is found. This book “Plants of the Farming and Ranching Areas of the Canadian Prairies” has keys to the Families and then keys to the Genera, and finally keys to the Species. The procedure is to follow from one to the other until the species is found.

Imagine that the plant in the [sketch](#) is actually before you and that you have no idea what it is and wish to identify it.

Turn to [Page 1](#) of the book “Plants of the Farming and Ranching Areas of the Canadian Prairies” and do not worry too much about the long scientific names as they are not very important for ordinary purposes. If there are any terms or expressions that you do not understand; just turn to the glossary on Pages [322](#) to 324 and to the diagrams just before the glossary.

Section 1. It obviously has flowers and will undoubtedly have seeds so is in the SPERMATOPHYTA, so drop to the Section 2.

Section 2. Certainly it is not an evergreen tree bearing cones so it must be an ANGIOSPERM, so go to the Section 3.

Section 3. The leaves are not parallel-veined so it must be a DICOTYLEDONEAE.

Now look through the section marked “KEY TO THE FAMILIES” and find the portion headed “CLASS-DICOTYLEDONEAE” which is on [Page 3](#). If you look carefully at the flower you will find that the petals are not entirely separate, but are joined near the base so the plant is a SYMPETALOUS DICOTYLEDON, Clause C, so turn to the heading of that clause on [Page 8](#).

Clause 1. It is obviously an herb and not a shrub or tree so go to Clause 7.

Clause 7. It is a green plant so turn to Clause 10.

Clause 10. The flowers are neither in heads nor in spikes so down to Clause 16.

Clause 16. The ovary is superior as you will find by referring to the glossary and the diagram of flower parts, so go to Clause 22.

Clause 22. The petal portion or corolla is regular (see glossary), so go down to Clause 25.

Clause 25. Well, it does not happen to have a milky juice, so go to Clause 27.
Clause 27. It is certainly not a climbing or trailing plant, so go to Clause 28.
Clause 28. The stamens are directly in front of the petals, so it should belong to the PRIMULACEAE or Primrose family which is described on [Page 203](#).

Turning to [Page 203](#), under PRIMULACEAE, we start again at Clause 1 and note that the leaves are not all basal, so we go to Clause 4.

Clause 4. The leaves are opposite, so go to Clause 5.

Clause 5. Both sepals and petals are present, so go to Clause 6.

Clause 6. The stem leaves are normal and the flowers are yellow, so it appears to belong to the LYSIMACHIA or Loosestrife genus.

The genera are in alphabetical order so we will find LYSIMACHIA on [Page 205](#), and we again begin with Clause 1 of the key to the species, and we will note that the flowers are borne on separate stalks in the axils of the leaves, so go to Clause 2.

Clause 2. The leaves are lanceolate (see leaf shape diagrams) and rounded at the base so we apparently have a specimen of *Lysimachia ciliata* L. or fringed loosestrife.

Now we read the description of that species and we find that it agrees in every way with our specimen. Apparently our keying has been correct.

It was quite simple so long as we did not let the long scientific names bamboozle us and checked carefully on each clause by using the glossary and diagrams for anything we did not understand.

The L. after the scientific name means that the Swedish botanist Linnaeus gave that name to this plant. The other name is a synonym or another name given to it by another botanist. In this case Rafinesque considered the plant should be in a separate genus called *Steironema*, so he took the specific name from Linnaeus and placed it after *Steironema*, but has to divide the credit for the name with Linnaeus and so the authority is (L.) Raf. Later botanists were inclined to agree with Linnaeus, so Rafinesque's name is relegated the position of a synonym.

PREFACE

This handbook has been written to supply the need for a field reference book of the native plants of the Canadian Prairies. Although intended primarily for those who require a ready reference key, it will be useful to agricultural representatives, weed inspectors, school teachers, farmers, ranchers and flower lovers in general. It is not claimed to be a complete flora.

Keys for identification and an illustrated glossary are included. The keys have been made as practical and simple as possible. They have been tested and revised where necessary and it is believed that they will prove useful to all persons seriously interested in the identification of the common native plants. Emphasis has been put on the outstanding field characters of the plants described and on their distribution and habits. Technical terms have been avoided so far as possible, but they have been used where it was necessary to present accurate descriptions.

Approximately 1,200 species of plants are described. All species that are commonly met with in the area are included, except the less common sedges and willows. Both these latter groups contain so many species and are so difficult to distinguish that the inclusion of all of them would defeat the purpose of the book, so only the more common and more important species are described. Introduced weeds have been included so far as possible but new weeds are constantly being reported and some may have been overlooked. Cultivated plants such as cereals, garden and field crops are generally omitted. The majority of the species described are in the herbarium at the Dominion Experimental Station at Swift Current, Saskatchewan.

The botanical works most freely consulted in preparing this flora were "Gray's Manual of Botany" 7th and 8th editions; Rydberg's "Flora of the Rocky Mountains and adjacent Plains" and "Flora of the Prairies and Plains of Central North America"; Hale's "Selected Western Flora"; and Technical Bulletin No. 19. Canada Department of Agriculture, "A short guide to Canadian genera of seed plants" by John Adams.

Because of the confusion existing in botanical nomenclature, the writer's purpose has been to use the more familiar botanical names and to retain the larger and more practical concept of genus and species. In some cases the scientific name of long standing is retained in preference to one more recently

adopted. An example is wild mustard, where *Sinapis arvensis* L. is used in preference to *Brassica Kaber* (DC.) Wheeler var. *pinnatifida* (Stokes) Wheeler.

To list all the sources from which information has been received and all those to whom the compiler is indebted for advice, suggestions and information would take up much space, but the writer is very appreciative of their help and interest. Acknowledgement must be made, however, to Mr. August J. Breitung, who has not only rendered practical assistance in making determinations in difficult taxonomic groups and nomenclatural problems, but has also kindly written the keys to the *Lupinus* and *Castilleja* which are used. Great encouragement and assistance has been forthcoming from Mr. G.N. Denike, Superintendent, Dominion Experimental Station, Swift Current, Saskatchewan, as well as Mr. J.B. Campbell, Mr. Keith Best and other members of the Station staff.

This handbook has been prepared with particular consideration of the requirements of interested field men. The data have been repeatedly checked over, but there are doubtless some inaccuracies. The author would appreciate receiving information as to corrections that may be needed from those who make use of this handbook.

Archibald C. Budd.

INTRODUCTION

The area covered by this compilation is bounded on the south by the International Boundary, on the north and east by the Boreal or northern forests and on the west by the foothills of the Rocky Mountains. To include the plants of the Boreal forest area and the whole of the foothills and mountain approaches would make this handbook too unwieldy.

Variations in climate, soil and altitude divide this area into eight floral zones with rather indefinite margins. These may be designated as Eastern, Northern, Southeastern, South-central, Southwestern, Northwestern, Central and the Foothills Region.

The Eastern and Northern zones

The Eastern zone stretches from Winnipeg east and northeast along the southern end of Lake Manitoba and is a part of the Boreal or northern forest. This zone merges into the Northern zone which is the southern margin of the Boreal forest through the three Prairie Provinces. Generally speaking the vegetation of the two zones is similar. A few species which are more typical of western Ontario are found in the Eastern zone but are not found in the Northern zone. The area is mostly heavy forest, largely coniferous, with jack-pine on the sandy ridges, black spruce and tamarack in swampy places and the remainder made up mainly of white spruce, balsam fir and poplar. Many swampy places and muskegs are found and support a growth of Labrador tea, glandular birch, cranberries etc. The Riding Mountains in Manitoba are an island of this Boreal forest surrounded by prairie.

The Southeastern zone

The Southeastern zone comprises the First Prairie Steppe, the Red River valley park lands, and bears good stands of oak, ash and balm-of-Gilead poplar in the woodlands. The open parts are tall-grass prairie with big blue-stem, porcupine-grass, prairie cord-grass, panic-grasses etc. and amongst the weedy species the ragweeds are more plentiful than in other zones. Several plant species that are

found here are more characteristic of the areas farther south and east. Moisture conditions are generally good and the soil is deep and black.

The South-central zone

The South-central zone takes in the southwestern corner of Manitoba and the southeastern corner of Saskatchewan and is the southern part of the Second Prairie Steppe. This area is mostly open prairie but a forested area exists in the Moose Mountain Hills. The vegetation is true prairie and mixed-grass prairie, with the dominant grasses being western porcupine-grass, wheat-grasses, June-grass and blue grama-grass. Moisture is occasionally deficient and the soil is dark brown. Oak, ash and elm are found but do not grow so high and luxuriantly as in the Southeastern zone.

The Southwestern zone

The Southwestern floral zone lies along the southwestern part of Saskatchewan and the southeastern portion of Alberta and is characterized by a general deficiency of moisture. This is reflected in the vegetation, which is mainly composed of xerophytic or drought-tolerant species. Most of the area is short-grass prairie with blue grama-grass, spear-grass, June-grass, Sandberg's blue-grass, sedges, prairie selaginella, sage bush and cactus as the dominants. In some parts there is a transition area between the mixed-grass and the short-grass prairie. Here the vegetative dominants vary with seasons and degree of grazing use. Very few trees are found and these only in favoured spots, river valleys, etc. A somewhat different vegetation is found in the sand-hill areas, which bear a growth of roses, choke cherry and poplar as well as sand-hill grasses. iii

The Central zone

The Central zone lies between the dry Southwestern zone and the northern Boreal forest zone and is mostly park land, with scattered bluffs of aspen poplar and willows. The plant species here are of a less drought-resistant nature. They give the country a pleasing park-like appearance during the summer months.

The Northwestern zone

The Northwestern vegetation zone is roughly the district north of Calgary to the forest zone north of Edmonton. Moisture is generally sufficient for crop production and the soil is mostly dark brown to black. This country was originally poplar bush and park land but is now mostly cleared.

The Foothills Region

The Foothills Region is situated in the western part of Alberta, adjacent to the Rocky Mountains, and is sub-montane prairie, with fescues and oat grasses as the dominant grass species. The flora here is quite different from that of the other zones and many mountain species are found. The moisture is usually sufficient and the soil is black. The Cypress Hills, which are situated in the centre of the short-grass prairie are almost identical, florally, with the Foothills Region, with lodge-pole pine, spruce, mountain ash, lupines and saxifrages to be found. The southwestern corner of Alberta probably bears the most luxuriant flora in the entire area covered.

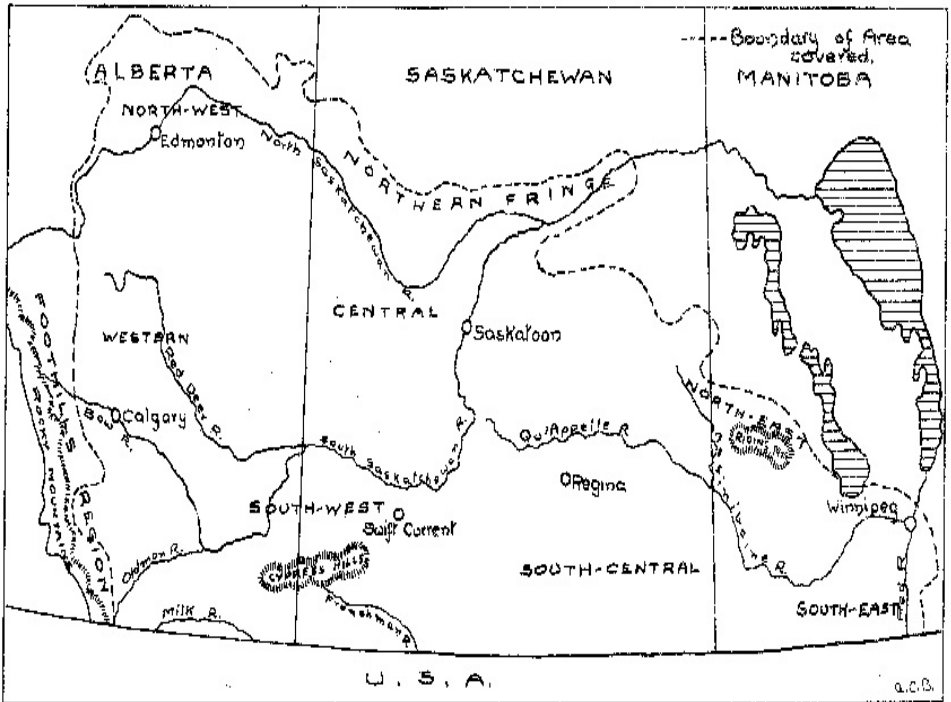
Exceptional areas

In exceptionally favourable locations plant species may be found which belong apparently to an entirely different floral zone. This is particularly noticeable in the Southwestern, short-grass prairie zone, where deep, shaded ravines may sometimes be found with cactus and arid vegetation at the top and fragile fern, carrion flower, baneberries and other moist woodland species at the bottom. The saline sloughs and “alkali-flats” throughout the entire area have a distinctive vegetation and contain some species generally associated with the sea coast such as sea-milkwort, samphire and sea-blite.

HOW TO USE THE KEYS

The keys used are in the form of opposing statements, and the method of using them is simple. With the plant at hand, one starts at the beginning of the classification key, and compares the plant with the two statements in clause 1. It

must agree with one of them and as each statement is followed by a number, the student goes down to the clause bearing that number and proceeds in the same fashion. Eventually this question and answer procedure will bring one to the name of a family. Turning to the page indicated, the generic key for that family will be found and the same procedure followed until the genus is reached. These, being in alphabetical order, are easy to locate, and the procedure is again repeated until the species is indicated. A check-up with the description given of the species will either corroborate the finding or else will indicate that one has been mistaken in checking on some of the clauses.



Map, Plant Zones in the Prairie Provinces

CLASSIFICATION OF PLANTS

Plants are classified according to their physical characteristics into various groups. The first of these are Divisions, which are in turn broken down into Subdivisions. The Subdivisions are segregated into Classes, and the Classes into Families. Families are split into various Genera, and each Genus contains Species. Finally the Species is sometimes further broken up into Forms, Subspecies and Varieties.

Keys are used in order to simplify the distribution of plants to their various groupings.

KEY TO DIVISIONS, SUBDIVISIONS AND CLASSES

Two Divisions.

1. Plants without true flowers, reproducing by spores.

([p. 11](#)) PTERIDOPHYTA

Plants with flowers, reproducing by seeds.

([p. 17](#)) SPERMATOPHYTA [2.](#)

Spermatophyta. Two Subdivisions.

2. Plants bearing flowers which have neither ovary nor stigma, and ovules (seeds) are naked and borne on the upper side of a scale. Mostly evergreen trees and shrubs bearing cones or cone-like fruit.

([p. 17](#)) GYMNOSPERMAE

Plants bearing flowers with either ovary or stigma or both and the seeds borne in a closed ovary.

([p. 19](#)) ANGIOSPERMAE [3.](#)

Angiospermae. Two Classes.

3. Stems, when present, without central pith or annular layers; leaves usually parallel-veined; flower parts generally in threes or multiple of threes; seeds with only one cotyledon or seed leaf.

([p. 19](#)) MONOCOTYLEDONEAE

Stems with a central pith, or if woody, the wood generally arranged in annual layers; leaves net-veined; seeds with two cotyledons or seed leaves.

([p. 69](#)) DICOTYLEDONEAE

KEY TO THE FAMILIES

DIVISION—PTERIDOPHYTA (Ferns and Fern Allies) 5 FAMILIES

1. Leaves broad and not scale-like.

[2.](#)

Leaves scale-like, awl-shaped, or none.

[4.](#)

2. Leaves with 4 leaflets; spores of two kinds, male and female.

[\(p. 13\)](#) MARSILEACEAE

Leaves entire or dissected, not with four leaflets; spores of one kind.

[3.](#)

3. Fronds arising from fleshy roots, with practically no rootstock; spore-bearing bodies borne on a spike or panicle; fronds not coiled in bud.

[\(p. 11\)](#) OPHIOGLOSSACEAE

Fronds arising from rootstocks; spore-bearing bodies borne on undersides of fronds (leaves); fronds coiled in bud.

[\(p. 11\)](#) POLYPODIACEAE

[2](#)

4. Stems with conspicuous grooves and with toothed sheathing joints.

[\(p. 13\)](#) EQUISETACEAE

Stems not conspicuously grooved and without toothed sheathing joints.

[5.](#)

5. Spores all of one sort and size; evergreen, trailing plants of moist woodlands.

[\(p. 15\)](#) LYCOPODIACEAE

Spores of two sizes; cushion-like plants of dry, open areas.

[\(p. 16\)](#) SELAGINELLACEAE

DIVISION—SPERMATOPHYTA (Seed bearing) 2 CLASSES

SUB-DIVISION—GYMNOSPERMAE (Naked-seeded)

1 FAMILY.

[\(p. 17\)](#) PINACEAE

SUB-DIVISION—ANGIOSPERMAE (Covered seeds)
2 CLASSES.

CLASS—MONOCOTYLEDONEAE. 14 FAMILIES

Stems, when present, without central pith or annual layers; leaves usually parallel-veined; flower parts mostly in threes or multiples of three; seeds with only one cotyledon or seed-leaf.

1. Plants small, floating and leaf-like; no definite distinction into stem and leaves.

(p. 54) LEMNACEAE

Plants not generally floating and leaf-like; definite distinction between stem and leaves.

2.

2. Perianth (sepals and petals) inconspicuous.

3.

Perianth conspicuous, in 2 whorls of 3 segments each, one or both brightly coloured.

10.

3. Perianth absent or single and inconspicuous.

4.

Perianth in 2 whorls, mostly inconspicuous.

8.

4. Aquatic plants, generally entirely submerged or with floating leaves; flowers in spikes or solitary, frequently developing under water.

(p. 20) ZOSTERACEAE

Dryland or water plants, not generally submerged or with floating leaves.

5.

5. Flowers enclosed in axils of dry, chaffy, and generally overlapping scales.

6.

Flowers not enclosed in axils of dry, chaffy scales.

7.

6. Stems generally hollow; leaf sheaths usually split; leaves in two rows

on stem.

([p. 25](#)) GRAMINEAE

Stems generally solid; often triangular; leaf sheaths not split; leaves in
3 rows on stem.

([p. 50](#)) CYPERACEAE

7. Flowers in dense cylindrical spike.

([p. 19](#)) TYPHACEAE

Flowers in globular heads; fruit nut-like.

([p. 19](#)) SPARGANIACEAE

8. Submerged water plants.

([p. 24](#)) HYDROCHARITACEAE

Plants not submerged.

[9.](#)

9. Flowers in a spike-like raceme.

([p. 22](#)) JUNCAGINACEAE

Flowers in a much-branched inflorescence.

([p. 55](#)) JUNCACEAE

[3](#)

10. Aquatic or marsh plants.

([p. 23](#)) ALISMACEAE

Land plants.

[11.](#)

11. Ovary superior.

([p. 57](#)) LILIACEAE

Ovary inferior, or half inferior in 1 genus.

[12.](#)

12. Stamens 2; corolla irregular.

([p. 63](#)) ORCHIDACEAE

Stamens 3; leaves in 2 rows.

([p. 63](#)) IRIDACEAE

Stamens 6; ovary half inferior

([p. 62](#)) AMARYLLIDACEAE

CLASS—DICOTYLEDONEAE 80 FAMILIES

Stems with a central pith, or if woody, the wood generally arranged in annual layers; leaves net-veined; seeds with two cotyledons or seed-leaves.

- A. **APETALOUS**—With only one floral ring, sepals but no petals.
- B. **CHORIPETALOUS**—With two floral rings, and each petal distinct from the others.
- C. **SYMPETALOUS**—With two floral rings, but the petals wholly or partly united to form a tube.

A. APETALOUS DICOTYLEDONS
(With only one floral ring)

- 1. Herbs. [2.](#)
 - Shrubs or trees. [19.](#)
- 2. Water plants. [3.](#)
 - Land plants. [6.](#)
- 3. Leaves all simple. [4.](#)
 - Some or all of the leaves divided into filiform segments. [5.](#)
- 4. Leaves opposite. [\(p. 173\)](#) CALLITRICHACEAE
 - Leaves whorled. [\(p. 189\)](#) HALORAGIDACEAE (Hippuris)
- 5. Free-floating, rootless plants. [\(p. 102\)](#) CERATOPHYLLACEAE
 - Plants rooted at bottom. [\(p. 189\)](#) HALORAGIDACEAE (Myriophyllum)
- 6. Flowers generally having either stamens or pistils only on each flower.

- Flowers having both stamens and pistils on each flower. [7.](#)
7. Plants with milky sap; fruit 3-seeded splitting open at maturity. [\(p. 172\)](#) EUPHORBIACEAE [10.](#)
Plants without white, milky sap. [8.](#)
8. Twining, climbing plants; female flowers and fruit in catkin-like spikes. [\(p. 75\)](#) CANNABINACEAE [9.](#)
Not climbing plants; fruit not catkin-like. [9.](#)
9. Stigmas 2; no calyx, but fruit enclosed in two bracts. [\(p. 84\)](#) CHENOPODIACEAE (Atriplex)
Stigmas 1; calyx present; fruit enclosed by 2 to 4 perianth segments; leaves often bearing stinging hairs. [\(p. 75\)](#) URTICACEAE [4](#)
10. Leaves with stipules which are free or sheathing the stem. [11.](#)
Leaves without stipules. [12.](#)
11. Leaves opposite; stipules membranous; plant cushion-like. [\(p. 95\)](#) CORRIGIOLACEAE
Leaves alternate; stipules forming a sheath above nodes. [\(p. 77\)](#) POLYGONACEAE
12. Leaves all opposite. [13.](#)
Leaves alternate, lower ones sometimes opposite. [15.](#)
13. Stem fleshy; leaves scale-like; flowers sunk in stem; plants of saline areas. [\(p. 84\)](#) CHENOPODIACEAE (Salicornia)

- Leaves normal; calyx coloured. [14.](#)
14. Erect herbs; inflorescence in panicles or clusters. [\(p. 93\)](#) NYCTAGINACEAE
Low growing plants, flowers solitary in leaf axils. [\(p. 203\)](#) PRIMULACEAE (Glaux)
15. Fruit fleshy when ripe. [\(p. 76\)](#) SANTALACEAE
Fruit dry when ripe. [16.](#)
16. Leaves orbicular or reniform; sepals 4. [\(p. 129\)](#) SAXIFRAGACEAE (Chrysosplenium)
Leaves not orbicular or reniform. [16a.](#)
- 16a. Leaves compound or else very deeply divided. [\(p. 102\)](#) RANUNCULACEAE
Leaves neither compound nor very deeply divided. [17.](#)
17. Perianth segments 6, in 2 series; flowers coloured. [\(p. 77\)](#) POLYGONACEAE (Eriogonum)
Perianth segments 2 to 5; flowers small, numerous and greenish. [18.](#)
18. Bracts and perianth segments dry and membranous. [\(p. 92\)](#) AMARANTHACEAE
No membranous bracts present; perianth segments greenish. [\(p. 84\)](#) CHENOPODIACEAE
19. Male flowers at least, in catkins or aments. [20.](#)
Flowers not in catkins or aments. [23.](#)
20. Seeds each with a tuft of hairs. [\(p. 69\)](#) SALICACEAE
Seeds without a tuft of hairs.

21. Styles 3 or more; fruit an acorn.

[\(p. 74\)](#) FAGACEAE

Styles 2; fruit not an acorn.

22. Three flowers in axil of each bract of male catkin.

[\(p. 72\)](#) BETULACEAE

One flower in axil of each bract of male catkin; fruit a nut.

[\(p. 74\)](#) CORYLACEAE

23. Climbing plants with coloured sepals; fruit with a persistent feathery style.

[\(p. 102\)](#) RANUNCULACEAE (Clematis)

Not climbing plants, nor with feathery style.

24. Fruit a double samara (winged fruit).

[\(p. 174\)](#) ACERACEAE

Fruit not a samara.

25. Fruit fleshy when ripe.

Fruit dry when ripe.

26. Leaves silvery or brownish-scurfy.

[\(p. 183\)](#) ELAEAGNACEAE

Leaves not silvery or brownish-scurfy; aromatic.

[\(p. 72\)](#) MYRICACEAE

27. Shrubs with no stipules; branches spiny.

[\(p. 84\)](#) CHENOPODIACEAE (Sarcobatus)

Trees with stipules; flowers appearing before the leaves.

[\(p. 75\)](#) ULMACEAE

B. CHORIPETALOUS DICOTYLEDONS

(Plants with two floral rings, the petals being distinct and not united)

1. Succulent, spiny plants; leaves absent or scale-like and inconspicuous.

([p. 182](#)) CACTACEAE

Plants with leaves. [2.](#)
2. Leaves all basal, tubular or with tentacles for catching insects.

[3.](#)

Plants with normal leaves. [4.](#)
3. Plants with solitary flowers; leaves tubular with lid-like lobe on top.

([p. 128](#)) SARRACENIACEAE

Plants with flowers in racemes; leaves flat with glandular tentacles.

([p. 127](#)) DROSERACEAE
4. Herbs. [5.](#)
Shrubs or trees. [33.](#)
5. Leaves opposite, in whorls or basal. [6.](#)
Some or all the leaves alternate. [11.](#)
6. Low plants with an involucre of 4 petal-like bracts; fruit a red drupe.

([p. 197](#)) CORNACEAE

Plants without large petal-like bracts. [7.](#)
7. Plants aquatic with small axillary flowers. ([p. 177](#)) ELATINACEAE
Terrestrial plants. [8.](#)
8. Styles single. [9.](#)
Styles 2 or more.

9. Parts of flowers in twos or fours.

[\(p. 184\)](#) ONAGRACEAE

Parts of flowers in fives.

[\(p. 198\)](#) PYROLACEAE

10. Sepals 4 or 5.

[\(p. 96\)](#) CARYOPHYLLACEAE

Sepals only 2.

[\(p. 94\)](#) PORTULACACEAE

11. Leaves with stipules.

[12.](#)

Leaves without stipules, or merely glands for stipules.

[17.](#)

12. Stamens numerous, united into a column; leaves palmately veined.

[\(p. 176\)](#) MALVACEAE

Stamens usually separate or partially so, not in column.

[13.](#)

[6](#)

13. Flowers irregular in shape.

[14.](#)

Flowers regular in shape.

[15.](#)

14. Corolla pea-like; fruit a legume.

[\(p. 148\)](#) LEGUMINOSAE

Corolla with 1 petal spurred or sac-like; fruit a 3-valved capsule.

[\(p. 178\)](#) VIOLACEAE

15. Stamens usually numerous; ovary of 1 or more carpels, which are either separate or enclosed by a fleshy receptacle.

[\(p. 134\)](#) ROSACEAE

Stamens 5 or 10; ovary of 5 united carpels.

[16.](#)

16. Leaves more or less palmately divided; fruit with a long beak.

- Leaves of 3 leaflets; fruit not beaked. (p. 167) GERANIACEAE
- (p. 168) OXALIDACEAE
17. Stamens usually more than 10. [18.](#)
- Stamens 10 or less. [22.](#)
18. Aquatic plants with simple, floating leaves. (p. 102) NYMPHAEACEAE
- Mostly land plants. [19.](#)
19. Carpels separate. (p. 102) RANUNCULACEAE
- Carpels united. [20.](#)
20. Sepals 4; fruit a pod; annuals. (p. 126) CAPPARIDACEAE
- Sepals 4 to 8; fruit a capsule opening at top. [21.](#)
21. Flowers few, large, over 1 inch long, solitary and terminal. (p. 182) LOASACEAE
- Flowers many, small, in terminal spikes. (p. 127) RESEDACEAE
22. Ovary inferior. [23.](#)
- Ovary superior. [25.](#)
23. Parts of flowers arranged in twos or fours. (p. 184) ONAGRACEAE
- Flowers in umbels; parts of flowers mostly in fives. [24.](#)
24. Styles 5; fruit fleshy. (p. 190) ARALIACEAE

- Styles 2; stems hollow. (p. 190) UMBELLIFERAE
25. Carpels 3 to 5. [26.](#)
Carpels 1 or 2. [29.](#)
26. Sepals 3; one petal-like and spurred; fruit an explosive capsule. (p. 170) BALSAMINACEAE
None of petals or sepals spurred; fruit not explosive. [27.](#)
27. Sepals 2. (p. 94) PORTULACACEAE
Sepals 3 to 5. [28.](#)
28. Stamens 5, united at base; fruit a capsule. (p. 169) LINACEAE
Stamens 8 to 10; fleshy leaved plants. (p. 128) CRASSULACEAE
- 7
29. Corolla irregular in shape. [30.](#)
Corolla regular in shape. [31.](#)
30. Petals 3; sepals 5; two large, coloured and petal-like. (p. 171) POLYGALACEAE
Petals 4; sepals 2. (p. 113) FUMARIACEAE
31. Petals 5; receptacle more or less cup-shaped. (p. 129) SAXIFRAGACEAE
Petals 4; sepals 4. [32.](#)
32. Stamens 6, of equal length; leaves trifoliate.

([p. 126](#)) CAPPARIDACEAE

Stamens usually 6, four long and two short.

([p. 113](#)) CRUCIFERAE

33. Leaves opposite.

[34.](#)

Leaves alternate.

[36.](#)

34. Climbers with coloured sepals; fruit with a persistent feathery style.

([p. 102](#)) RANUNCULACEAE (Clematis)

Not climbers.

[35.](#)

35. Trees with palmately lobed leaves; fruit a two-seeded samara.

([p. 174](#)) ACERACEAE

Shrubs or low trees; 4 petals; fruit fleshy.

([p. 197](#)) CORNACEAE

36. Leaves compound.

[37.](#)

Leaves simple.

[40.](#)

37. Stamens numerous.

([p. 134](#)) ROSACEAE

Stamens 10 or less.

[38.](#)

38. Climbers with tendrils; leaves 5-foliolate.

([p. 175](#)) VITACEAE

Plants without tendrils.

[39.](#)

39. Fruit a legume; leaves pinnate.

([p. 148](#)) LEGUMINOSAE (Amorpha)

Fruit a drupe; leaves trifoliolate.

([p. 174](#)) ANACARDIACEAE

40. Fruit dry when ripe.

[41.](#)

Fruit fleshy when ripe.

[42.](#)

41. Leaves small, scale-like, imbricated.

([p. 178](#)) CISTACEAE

Leaves broad, not imbricated.

([p. 134](#)) ROSACEAE

42. Stamens more than 10.

([p. 134](#)) ROSACEAE

Anther bearing stamens less than 10.

[43.](#)

43. Climbers with tendrils.

([p. 175](#)) VITACEAE

Plants without tendrils.

[44.](#)

44. Broad-leaved tree or shrub; fertile stamens 4 to 9.

([p. 175](#)) RHAMNACEAE

Shrubs with small leaves; stamens 3.

([p. 129](#)) SAXIFRAGACEAE

8

C. SYMPETALOUS DICOTYLEDONS

(With two floral rings but petals wholly or partly united to form a tube or bell)

1. Shrubs or trees.

[2.](#)

Herbs.

[7.](#)

2. Leaves opposite or whorled.

[3.](#)

Leaves alternate.

[5.](#)

3. Trees with pinnately-compound leaves; 2 stamens; fruit winged.

([p. 206](#)) OLEACEAE

Shrubs with 5 to 10 stamens.

4. Stamens 5; ovary inferior; fruit fleshy.

[\(p. 249\)](#) CAPRIFOLIACEAE

Stamens 5 to 10; ovary superior, fruit a capsule.

[\(p. 200\)](#) ERICACEAE

5. Flowers in heads; fruit 1-seeded.

[\(p. 256\)](#) COMPOSITAE

Flowers not in heads; fruit several seeded.

6. Ovary inferior; fruit fleshy.

[\(p. 201\)](#) VACCINIACEAE

Ovary superior; fruit usually a capsule, sometimes a mealy fleshed drupe.

[\(p. 200\)](#) ERICACEAE

7. Parasitic or saprophytic plants, without chlorophyll (green colouring matter).

Plants green or with some chlorophyll.

8. Twining plants attached to stems of other plants.

[\(p. 214\)](#) CONVOLVULACEAE (Cuscuta)

Plants growing out of soil or attached to roots of other plants.

9. Corolla regular; stamens 6 to 10.

[\(p. 199\)](#) MONOTROPACEAE

Corolla two-lipped; stamens 4.

[\(p. 245\)](#) OROBANCHACEAE

10. Flowers in heads or apparent heads.

Flowers in long or short spikes.

Flowers neither in heads nor spikes.

11. Flowers in true heads with an involucre of bracts. [12.](#)
Flowers in apparent heads, opening in irregular order. [13.](#)
12. Stamens united by their anthers. (p. 256) COMPOSITAE
Stamens distinct and separated. (p. 256) DIPSACACEAE
13. Corolla two-lipped, leaves opposite; stems square. (p. 225) LABIATAE
Corolla regular; stems round. (p. 216) POLEMONIACEAE
14. Flowers inconspicuous, on long spikes; leaves all basal. (p. 246) PLANTAGINACEAE
Flowers brightly coloured, irregular. [15.](#)
15. Fruit of 4 nutlets. (p. 225) VERBENACEAE
Fruit a many-seeded capsule. (p. 233) SCROPHULARIACEAE
- 9
16. Ovary inferior. [17.](#)
Ovary superior. [22.](#)
17. Climbing plants with tendrils. (p. 253) CUCURBITACEAE
Not climbing plants with tendrils. [18.](#)
18. Leaves basal or alternate; plants often with milky juice. [19.](#)
Leaves opposite; plants without milky juice. [20.](#)

19. Corolla regular, bell-shaped; anthers free.
(p. 253) CAMPANULACEAE
Corolla irregular, split down one side; anthers united into a tube.
(p. 254) LOBELIACEAE
20. Stamens 3.
(p. 255) VALERIANACEAE
Stamens 4 or 5. 21.
21. Leaves with stipules, thus appearing to be whorled.
(p. 248) RUBIACEAE
Leaves without stipules.
(p. 249) CAPRIFOLIACEAE
22. Corolla irregular in shape. 23.
Corolla regular in shape. 25.
23. Aquatic plants; leaves bearing bladders; corolla spurred.
(p. 244) LENTIBULARIACEAE
Plants not aquatic; leaves not bearing bladders. 24.
24. Stems 4-sided; leaves opposite; fruit of 4 nutlets.
(p. 225) LABIATAE
Stems not 4-sided; fruit a many-seeded capsule.
(p. 233) SCROPHULARIACEAE
25. Plants with milky juice. 26.
Plants without a milky juice. 27.
26. Stamens united; styles distinct; pollen grains united into a mass.
(p. 212) ASCLEPIADACEAE
Stamens distinct; styles united; pollen grains separate.
(p. 211) APOCYNACEAE
27. Twining plants with large funnel-form corolla.

Plants not twining.

[28.](#)

28. Stamens directly in front of corolla lobes.

([p. 203](#)) PRIMULACEAE

Stamens alternating with corolla lobes, or twice their number.

[29.](#)

29. Stamens 8 or 10.

([p. 198](#)) PYROLACEAE

Stamens 4 or 5.

[30.](#)

30. Fruit of 4 nutlets; style from centre of lobes of ovary; inflorescence usually scorpioid.

([p. 219](#)) BORAGINACEAE

Fruit a capsule or berry; style terminal.

[31.](#)

[10](#)

31. Ovary 1-celled with seeds borne on the wall of the cell.

[32.](#)

Ovary 2 or 3-celled with seeds borne on axis in centre of the cell.

[33.](#)

32. Flowers in cymose clusters.

([p. 207](#)) GENTIANACEAE

Flowers solitary in axils of leaves or scorpioid.

([p. 218](#)) HYDROPHYLLACEAE

33. Ovary 3-celled; fruit a capsule.

([p. 216](#)) POLEMONIACEAE

Ovary 2-celled; fruit a berry or a capsule.

([p. 231](#)) SOLANACEAE

[11](#)

KEY TO GENERA AND SPECIES

DIVISION—PTERIDOPHYTA (Ferns and Fern Allies) 6 families.

OPHIOGLOSSACEAE (Adder's-tongue Family) 1 genus.

BOTRYCHIUM (Grape-fern) genus. 4 species.

Plants from fleshy roots with a sheath at the base of frond (leaf) stalk containing the following year's bud. The fertile frond bears the spore-bearing bodies and is spike-like or raceme-like. The sterile frond is leaf-like and lobed.

1. Bud of following year exposed on one side.

(4) *B. virginianum*

Bud of following season not exposed.

2.

2. Buds with soft hairiness; primary segments of sterile blades stalked.

(3) *B. multifidum*

Buds not hairy; primary segments of sterile fronds not stalked.

3.

3. Primary segments of sterile fronds toothed.

(1) *B. lanceolatum*

Primary segments of sterile fronds not toothed but sometimes wavy-margined.

(2) *B. Lunaria*

- (1) *Botrychium lanceolatum* (Gmel.) Angstr. LANCE-LEAVED GRAPE-FERN

A plant from 2 to 14 inches high with a sterile leaf-like frond once or twice divided into toothed stalkless segments. Found in moist woodlands and quite rare but has been found in the Cypress Hills.

- (2) *Botrychium Lunaria* (L.) Sw. MOON FERN

The sterile frond of this species has stalkless, somewhat fleshy, fan-shaped divisions, net toothed at the margins. Found in moist, sandy soil and woodlands in the forested margins of the area but is not common. It has been found in the Cypress Hills.

- (3) *Botrychium multifidum* (Gmel.) Rupr. THICK-LEAVED GRAPE-FERN
(*B. silaifolium* Presl)

This species has stalked primary segments on the sterile, leaf-like fronds, and is uncommon, but has been found in sandy soils around the wooded margins of the area.

- (4) *Botrychium virginianum* (L.) Sw. VIRGINIA GRAPE-FERN

A fern-like plant with thrice divided sterile frond, occasionally found in rich woodlands in the moister parts of the area and in the Cypress Hills.

POLYPODIACEAE (Fern Family) 4 genera.

Ferns with fronds spirally coiled in the bud and generally bearing green, leaf-like fronds. The spores are generally borne in little clusters (sori) which are usually under a membranous cover called the indusium.

1. Fronds of two kinds, fertile fronds (leaves) pinnate and brownish, with smaller divisions than the sterile fronds.

[PTERETIS](#)

All fronds similar in appearance and green in colour.

[2.](#)

12

2. Spore cases in a continuous line close to the edge of the leaflets.

[PTERIDIUM](#)

Spore cases separate on underside of leaflets.

[3.](#)

3. The indusium or cover of spore cases is attached by its base and opens on one side like a lid.

[CYSTOPTERIS](#)

The cover over spore cases attached by its centre.

[DRYOPTERIS](#)

CYSTOPTERIS (Bladder Fern) genus. 1 species.

(1) *Cystopteris fragilis* (L.) Bernh.
(*Filix fragilis* (L.) Gilib.)

FRAGILE FERN

A fern growing from 4 to 12 inches high from a black creeping rootstock. The leaves have thin, brittle stems and are two or three times pinnate and the segments are toothed. Common in very shady, moist places throughout the entire area covered.

DRYOPTERIS (Shield-fern) genus. 3 species.

1. Segments of fronds tipped with tiny, somewhat spine-like teeth.

(3) *D. spinulosa*

Segments of fronds not tipped with spine-like teeth.

2.

2. Indusia (spore case covers) concave and firm; spores usually in lower part of leaf segments; rootstock erect or ascending.

(2) *D. Filix-mas*

Indusia flat and thin; rootstock creeping.

(1) *D. cristata*

(1) *Dryopteris cristata* (L.) A. Gray

CRESTED SHIELD-FERN

A fern growing from 12 to 30 inches high with oblong to triangular frond segments. The stems of the fronds and the rootstocks are covered with light brown chaffy scales. Found in damp, shady places in the forested portions of the area.

(2) *Dryopteris Filix-mas* (L.) Sw.

MALE FERN

Very similar to the preceding species but from a more ascending rootstock. The sori or spore cases are generally borne on the lower part of the frond segments, those of *D. cristata* not being so restricted. Found in rocky woodlands in the eastern parts of the area and in the Riding Mountains.

(3) *Dryopteris spinulosa* (O. F. Mueller) Kuntze SPINULOSE SHIELD-FERN

A fern from 8 to 24 inches high, growing from a stout, chaffy, creeping root. The ultimate segments of the fronds bear tiny, somewhat spiny, curved teeth. Occasionally found in damp, shady woods in the forested portions of the area.

PTERIDIUM (Brake-fern) genus. 1 species.

(1) *Pteridium aquilinum* (L.) Kuhn
(*Pteris aquilina* L.)

BRACKEN

A very coarse fern with smooth, branching leaf stems with no chaffy scales, growing from creeping rootstocks to a height of 2 to 5 feet. The spore cases form a continuous line near the margin of the leaf segments. Found in moist, shady land and woodlands in the eastern portion of the area and in the Riding Mountains.

PTERETIS (Ostrich Fern) genus. 1 species.

(1) *Pteretis pennsylvanica* (Willd.) Fern.
(*P. nodulosa* (Michx.) Nieuwl.)

OSTRICH FERN

A large, coarse fern with two different kinds of leaves. The fertile fronds are from 12 to 18 inches high, with dark brown segments having rolled edges covering the spore cases. The sterile fronds are large and green, sometimes up to 5 or 6 feet in height. Found in damp, shady places and woodlands throughout all but the drier parts of the area. This is the largest fern in the area and very common in the eastern parts.

MARSILEACEAE (Marsilea Family) 1 genus.

MARSILEA (Pepperwort) genus. 1 species.

(1) *Marsilea vestita* Hook. & Grev.

HAIRY PEPPERWORT

A low plant growing from slender, creeping rootstocks. The leaves are borne singly on long, thin stalks from 2 to 5 inches long and are divided into four triangular leaflets, each from $\frac{1}{8}$ to $\frac{1}{2}$ inch long. The spores are borne in ovoid, bean-like containers (sporocarps) which are on short stalks near the base of the plant and are covered with hair-like scales. While not common, these plants have been found growing in slough bottoms at several points in the south-central part of the area. This seems to be now called *M. mucronata* R. Br. by Fernald.

EQUISETACEAE (Horsetail Family) 1 genus.

EQUISETUM (Horsetail) genus. 10 species.

Perennial, rush-like plants with the stems fluted or grooved and the joints or nodes solid but surrounded by a toothed sheath. The fertile stems bear a terminal cone in which the spores are borne.

1. Branches compound with branchlets; sheaths bright reddish brown. (9) *E. sylvaticum*
Branches not compound, sometimes absent; sheaths not bright reddish brown. 2.
2. Stems usually much branched with whorls of branches. 3.
Stems usually not branched above the ground. 6.
3. Plants with hollow branches. 4.
Plants with solid branches. 5.
4. Centre cavity of stem very small. (5) *E. palustre*
Centre cavity of stem large. (4) *E. limosum*
5. Fertile stems not branched, soon withering. (1) *E. arvense*
Fertile stems eventually branching, the tip only withering. (6) *E. pratense*
6. Stems low, slender and tufted, 5 to 10 grooved. 7.

Stems tall and stouter, many grooved.

8.

7. Stems solid; sheaths three toothed.

(8) E. scirpoides

Stems with small central cavity; sheaths 5 to 10 toothed.

(10) E. variegatum

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8. Sheaths almost as broad as high, cylindrical, turning black or gray with black bands above and below.

(7) E. prealtum

Sheaths higher than broad, somewhat funnel-shaped, generally with a narrow black band.

9.

9. Cones with a rigid point at tip; stems perennial.

(3) E. laevigatum

Cones with a rounded tip; stems annual.

(2) E. kansanum

(1) *Equisetum arvense* L.

COMMON HORSETAIL

A plant with annual stems which wither at end of season and are of two kinds, fertile, unbranched stems bearing the spore containing cone at the summit, and sterile, much branched stems. The plants grow from 3 to 10 inches high, the sheaths having 8 to 12 brownish teeth. The sterile stems have whorls of branches. Very common in wet places throughout the entire area, especially on sandy soils.

(2) *Equisetum kansanum* Schaffn.

KANSAS SCOURING-RUSH

An unbranched annual stemmed species with long green sheaths, flaring somewhat at the top and with a black band at the top but not at the base of the sheath. The cone is rounded at the tip. Found occasionally in wet, low areas, especially on clay soils in the southern part of the area.

(3) *Equisetum laevigatum* A. Br.

SMOOTH SCOURING-RUSH

A species growing from 6 to 40 inches high, generally with perennial

stems. The sheaths are green and flaring at the summit, often without a black band, but sometimes a band of gray or black at the base of the sheath. The cone has a rigid point. Occasionally found in moist, sandy soil by streams or lakes in the southern part of the area.

- (4) *Equisetum limosum* L.
(*E. fluviatile* L.)

SWAMP HORSETAIL

An annual stemmed species from 3 to 48 inches high with whorls of hollow branches. The sheaths are flaring and bear about 18 dark brown teeth. Common in marshes and shallow water in the northern and eastern forested portions of the area.

- (5) *Equisetum palustre* L.

MARSH HORSETAIL

An annual stemmed plant from 10 to 18 inches high, with a very small cavity in the centre of the stem. There are generally whorls of hollow branches. The sheaths are usually somewhat flaring at the top and bear 8 brownish but white margined teeth. Fairly common in wet soil throughout the forested parts of the area.

- (6) *Equisetum pratense* Ehrh.

MEADOW HORSETAIL

An annual stemmed species growing from 6 to 15 inches high, the fertile stems appearing before the sterile ones. The sterile stems are much branched but the fertile ones only become branched with age. Fairly frequent in moist, sandy soils along the forested margins of the area and in the Cypress Hills and other favourable locations.

- (7) *Equisetum prealtum* Raf.
(*E. affine* Engelm.)

COMMON SCOURING-RUSH

A perennial stemmed, unbranched species growing from 12 to 40 inches high, with broad, conspicuous sheaths, generally grayish in colour with black bands above and below. Quite common throughout almost the entire area where the sub-soil is moist, in sandhill areas, creek flats, and lake margins.

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- (8) *Equisetum scirpoides* Michx.

DWARF SCOURING-RUSH

A tufted species with thread-like, unbranched, solid stems from 3 to 6

inches high. The sheaths are three toothed and the cones are very small. Found in swamps in the wet spruce woods of the forested borders of the area.

(9) *Equisetum sylvaticum* L.

WOODLAND HORSETAIL

This is a very pretty species with very conspicuous sheaths bearing large, loose, reddish brown teeth. Both the fertile and sterile stems are annual and are branched with solid, compound (divided) branches. Fairly common in moist woodlands in the forested parts of the area.

(10) *Equisetum variegatum* Schleich.

VARIEGATED HORSETAIL

A low, tufted, perennial stemmed species growing from 6 to 18 inches high, with 5 to 10 teeth on each sheath, the teeth being black with a white border and a bristle-like tip. Found occasionally in wet places along the eastern and northern parts of the area.

LYCOPODIACEAE (Club-moss Family) 1 genus.

LYCOPODIUM (Club-moss) genus. 5 species.

Perennial, low, generally trailing plants with short, stiff, single-nerved overlapping leaves. The sulphur-coloured spores are borne in spore cases (sporangia) on the upper surfaces or in the axils of the leaves, on ascending or aerial branches. The spores contain much oil and are inflammable.

1. Spore cases (sporangia) borne in the axils of ordinary leaves, which are not arranged in a distinct spike.

(4) *L. lucidulum*

Spore cases borne in axils of leaves arranged in spikes on ascending branches.

2.

2. Spikes borne on bract-covered stalks more than $\frac{3}{4}$ inch long.

3.

Spikes without stalks or stalks less than $\frac{1}{2}$ inch long.

4.

3. Spikes flattened, with leaves in 4 rows; leaves of trailing stems tightly clasping the stem.

(3) *L. complanatum*

Spikes cylindrical, with leaves in many rows; leaves of trailing stems spreading out from stem.

(2) *L. clavatum*

4. Main stem underground; aerial branches resembling a small tree.

(5) *L. obscurum*

Main stem above ground; aerial branches not tree-like, spikes stalkless and not borne in clusters.

(1) *L. annotinum*

(1) *Lycopodium annotinum* L.

STIFF CLUB-MOSS

Long, trailing, prostrate plants often up to 3 or 4 feet long, with stiff, linear-lanceolate, sharp-tipped leaves about $\frac{1}{8}$ to $\frac{1}{4}$ inch long, crowded along the stems and branches. The aerial or upright branches are from 5 to 10 inches high, tipped with the yellowish fruiting spike from $\frac{1}{2}$ to 1 inch long. Frequently found in moist woodlands in the boreal forest areas of the eastern and northern portions of the area and also in the Riding Mountains and the Cypress Hills. 16

(2) *Lycopodium clavatum* L.

RUNNING PINE

A prostrate, trailing plant with the main stem up to 5 or 6 feet long with leaves very similar to the previous species, but tipped with a fine bristle. The fruiting spikes are borne on a bract-covered stalk from $1\frac{1}{2}$ to 5 inches long. Not common but is found in swampy forests in the eastern and northern portion of the area.

(3) *Lycopodium complanatum* L.

TRAILING CLUB-MOSS

A plant with the main stem trailing on or slightly under the ground surface with the leaves small and tightly clasping the stem, giving the stem a very narrow, smooth appearance, quite different from the other club-mosses. The fruiting spikes are from $\frac{3}{4}$ to 1 inch long, cylindrical and borne on a chaffy stalk from 2 to 6 inches high. Fairly common in pine woods and damp forests along the northern and eastern fringes of the area.

(4) *Lycopodium lucidulum* Michx.

SHINING CLUB-MOSS

A species with branched stems from a somewhat spreading base with widely spreading, dark green, shiny leaves. The spore cases are borne in the axils of the ordinary leaves and not in spikes. Rare, but has been reported from swampy woodlands of the eastern part of the area and the Riding Mountains.

(5) *Lycopodium obscurum* L.

GROUND PINE

In this species the main stem creeps horizontally below the surface of the ground. The aerial upright branches have the appearance of miniature evergreen trees and grow to a height of 4 to 10 inches, with tightly packed, spreading leaves about $\frac{1}{8}$ to $\frac{1}{16}$ inches long, linear-lanceolate, and sharp-tipped. The fruiting spikes are almost stalkless and are from $\frac{1}{2}$ to 1 inch

long. Occasionally found in moist woods in the evergreen forests along the margins of the area and in the Cypress Hills.

SELAGINELLACEAE (Spikemoss Family) 1 genus.

SELAGINELLA (Little Club-moss) genus. 1 species.

(1) *Selaginella densa* Rydb.

PRAIRIE SELAGINELLA

A low, densely matted plant with the stems rooting almost their whole length and densely branched. These plants are covered thickly with tiny leaves up to $\frac{1}{8}$ inch long, each tipped by a minute bristle, and varying in colour from green to yellowish according to age and condition. The fruiting spikes are from $\frac{3}{8}$ to 1 inch long, covered with somewhat triangular, green, much overlapping bracts, the spore containers being singly in the axils of these bracts. Although not generally noticed and inconspicuous, this plant is probably one of the commonest and most dominant plants of the drier and more open prairie. While it may serve to arrest soil erosion and perhaps build up soil by its decaying organic matter, it has no forage value and increases with overgrazing and abuse of prairie pastures. Very plentiful on drier, light soils, and eroded spots throughout the entire south-central, central, and southwestern parts of the area.

**DIVISION—SPERMATOPHYTA (Seed-bearing) 2
sub-divisions.**

**SUB-DIVISION—GYMNOSPERMAE (Naked-
seeded) 1 family.**

PINACEAE (Pine Family) 5 genera.

1. Leaves opposite or in whorls, awl-shaped or scale-like; the fruit is a bluish, fleshy, berry-like cone, with few opposite scales.

[JUNIPERUS](#)

Leaves linear or needle-like, alternate or on small shoots; the fruit a cone composed of many over-lapping scales.

[2.](#)

2. Needle-like leaves in fascicles or clusters, deciduous or falling off every fall.

[LARIX](#)

Leaves evergreen, not falling off in fall.

[3.](#)

3. Leaves borne in tufts of 2, 3, or 5; cones maturing the second year.

[PINUS](#)

Leaves not borne in tufts, but singly; cones maturing the first year.

[4.](#)

4. Branches roughened by the persistent leaf bases.

[PICEA](#)

Branches smooth, without persistent leaf bases.

[ABIES](#)

ABIES (Fir) genus. 1 species.

(1) *Abies balsamea* (L.) Mill.

BALSAM FIR

A tall tree with fairly smooth gray bark, with numerous resinous blisters. The needle-like leaves are from $\frac{3}{4}$ to $1\frac{1}{4}$ inches long, flat and stalkless, dark shiny green above and whitish below. The male and female flowers are borne on the same tree, the male being yellowish to red in colour and the female purple. The dark purple cones are somewhat oblong and from 2 to 4 inches long. Common in woodlands along the eastern and northern borders of the area covered.

JUNIPERUS (Juniper) genus. 2 species.

Low shrubs with short, awl-shaped or scale-like leaves, borne opposite or in whorls. The fruit is composed of 3 to 6 fleshy scales, each containing a seed and joined to form a fleshy berry-like cone.

1. Leaves linear, awl-like, sharp pointed; fruit borne in axils of leaves.

(1) *J. communis*

Leaves flat and scale-like; fruit borne at ends of branchlets.

(2) *J. horizontalis*

- (1) *Juniperus communis* L.
(*J. sibirica* Burgsd.)

LOW JUNIPER

A low shrub growing to a height of about 4 feet in some places but generally very low. The leaves are from $\frac{1}{4}$ to $\frac{1}{2}$ inch long, narrowly awl-shaped, pointed and dark green below, but whitish and grooved above. The berry-like cones are borne on the leaf axils and are bluish with a bloom and from $\frac{1}{4}$ to $\frac{3}{8}$ inches in diameter. The variety *depressa* Pursh is fairly common on light, rocky soil throughout most of the area covered.

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- (2) *Juniperus horizontalis* Moench
(*Sabina horizontalis* (Moench) Rydb.)

CREeping JUNIPER

A prostrate shrub, with long, gnarled, woody stems often up to 10 or 12 feet long. The scale-like leaves are overlapping, each about $\frac{1}{16}$ inch long and forming narrow branchlets up to $\frac{1}{2}$ inch long. The cones are bluish and berry-like, about $\frac{1}{4}$ inch long and borne at the ends of the branchlets. Very common throughout the drier parts of the area, forming large mats on dry banks and sandy side hills.

LARIX (Larch) genus. 1 species.

(1) *Larix laricina* (Du Roi) Koch

TAMARACK

A rather slender tree from 20 to 50 feet high with a reddish brown bark with small, flaky scales. The needle-like leaves are from $\frac{3}{4}$ to $1\frac{1}{4}$ inches long, very pale green in colour and borne in clusters of 10 to 20 along the twigs. They turn yellow with autumn and drop off. The fruit are small cones which develop the first year and are soon shed. Common in swamps and marshy woods along the northern, eastern, and western fringes of the area.

PICEA (Spruce) genus. 2 species.

Shapely evergreen trees with four-sided, needle-like leaves scattered on all sides of the twigs. The pendulous cones mature the first year.

1. Branchlets not hairy; cones falling the first winter; cones oblong-cylindric, often over 1½ inches long.

(1) *P. glauca*

Branchlets somewhat hairy; cones remaining on tree for several years; cones oval or ovoid, not over 1½ inches long.

(2) *P. mariana*

(1) *Picea glauca* (Moench) Voss

WHITE SPRUCE

A shapely tree from 25 to 60 feet in height with scaly, brown bark. The leaves are bluish-green, from ½ to 1 inch long. The female inflorescence is crimson and the cones are cylindric, from 1 to 2 inches long, with smooth margined scales. Very plentiful throughout all except the open southern parts of the area.

A variety, the WESTERN WHITE SPRUCE, *Picea glauca* (Moench) Voss var. *albertiana* (S. Brown) Sarg. which has the cone scales erose or somewhat toothed at the margins is the common variety of the southern Foothills Region.

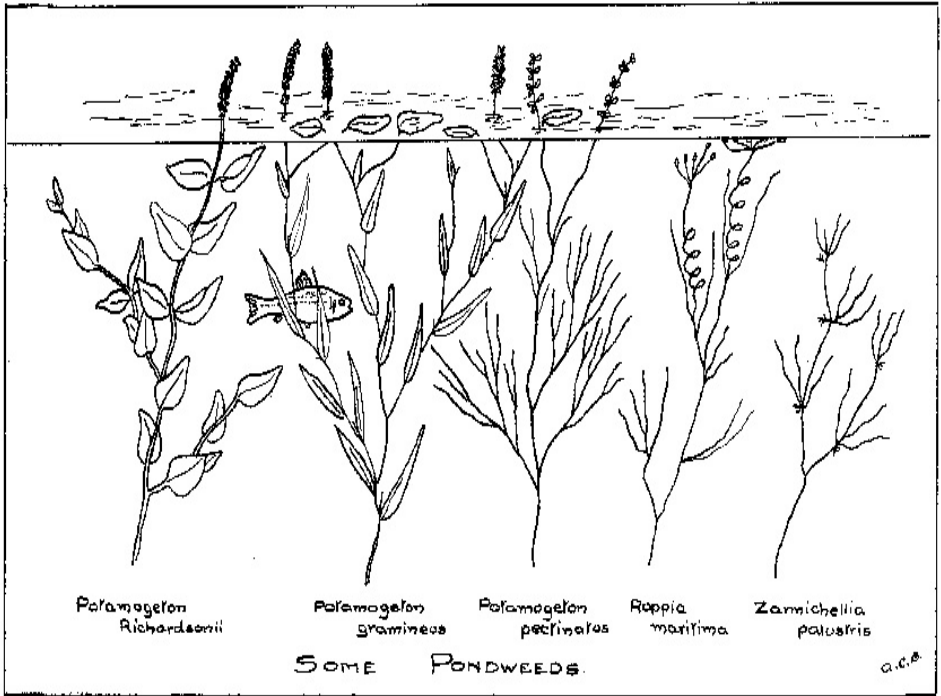
(2) *Picea mariana* (Mill.) B.S.P.

BLACK SPRUCE

A less shapely tree than the previous species and growing from 30 to 50 feet high. The bark is greyish to reddish brown and scaly. The needles are from ½ to ¾ inch long, bluish-green. The male inflorescence is dark red and the female purplish and the cones are from ½ to 1½ inches long, ovoid, and remaining on the trees for several seasons. Fairly common in wet or swampy woodlands throughout all but the open southern portion of the area.

PINUS (Pine) genus. 2 species.

Tall evergreen trees with leaves borne in pairs. The cones mature in the second season.



SOME PONDWEEDS.

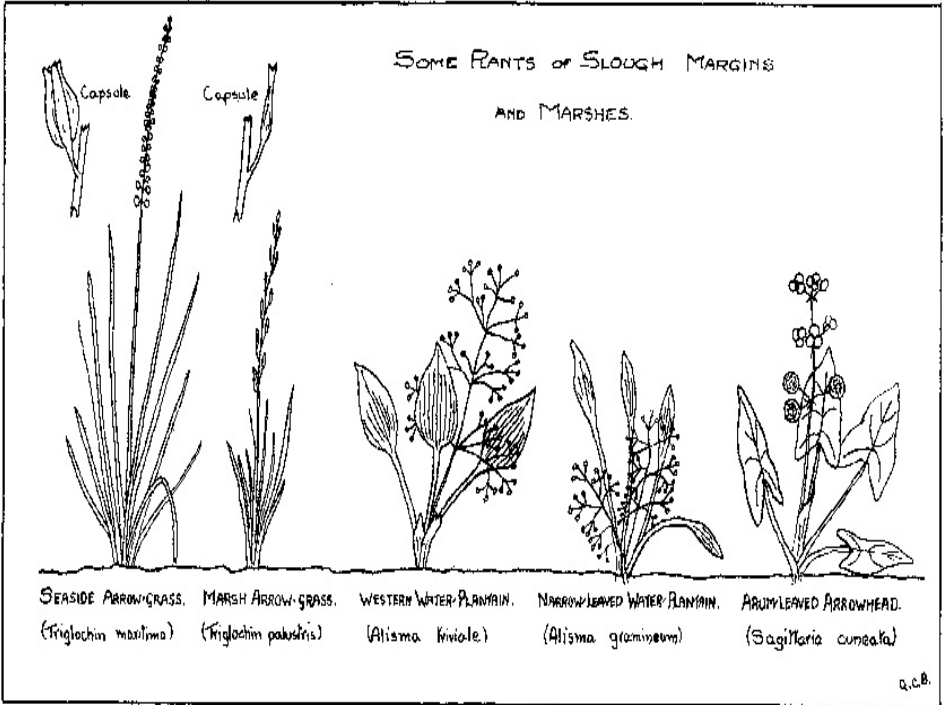
Potamogeton Richardsonii

Potamogeton gramineus

Potamogeton pectinatus

Ruppia maritima

Zannichellia palustris



SOME PLANTS OF SLOUGH MARGINS AND MARSHES.

SEASIDE ARROW-GRASS. (*Triglochin maritima*)

Capsule

MARSH ARROW-GRASS. (*Triglochin palustris*)

Capsule

WESTERN WATER-PLANTAIN. (*Alisma triviale*)

NARROW-LEAVED WATER-PLANTAIN. (*Alisma gramineum*)

ARUM-LEAVED ARROWHEAD. (*Sagittaria cuneata*)

1. Scales of cones without prickle or spine at tip.

(1) *P. Banksiana*

Scales of cones with definite prickle or spine at tip.

(2) *P. contorta*

(1) *Pinus Banksiana* Lamb.

JACK PINE

A tree growing up to 60 feet in height with thin, reddish-brown bark. The needle-like leaves are generally somewhat twisted, from $\frac{3}{4}$ to 2 inches long and borne in twos, yellowish-green in colour. The male inflorescence is yellow, the female dark purple and the curved cones are from 1 to 2 inches long, generally in pairs, with unarmed scales and usually point towards the apex of the branches. Very abundant on sandy soils in the northern and eastern parts of the area.

(2) *Pinus contorta* Dougl. var. *latifolia* Engelm.
(*P. Murrayana* Balf.)

LOGGEPOLE PINE

A tree very similar to the preceding and it is very difficult to distinguish between the two species. The Lodgepole Pine generally has darker and less twisted needles, a darker and thinner bark, and less curved cones, which are often recurved and pointing downwards away from the apex of the branches. The cone scales bear a small, recurved prickle at the tip. The Lodgepole Pine is very common in the Foothill Regions and in the Cypress Hills, but apparently intergrades with the Jack Pine in the northwestern portions of the area.

SUB-DIVISION—ANGIOSPERMAE (Covered-seeded) 2 classes

CLASS—MONOCOTYLEDONEAE 14 families.

TYPHACEAE (Cat-tail Family). 1 genus.

(1) *Typha latifolia* L.

COMMON CAT-TAIL

Marsh or aquatic plants growing up to 6 feet in height with perennial, creeping roots and long, narrow, grass-like leaves which sheath the stem and die off in winter. The leaves are up to $\frac{3}{4}$ inch in width. The flowers of both sexes are borne in large dense spikes on the same stem, the male flowers in a pale brown spike on top of the stem and the female inflorescence in a very dense, dark brown spike immediately below. The fruit is nut-like with attached bristles which make a copious downy mass when ripe. Flowers from mid-June to August and is very common in marshes and wet places throughout the entire area.

SPARGANIACEAE (Bur-reed Family) 1 genus.

SPARGANIUM (Bur-reed) genus. 4 species.

1. Stigmas usually 2; fruit almost flat at summit, inverted pyramid-shaped.

(2) *S. eurycarpum*

Stigmas single; fruit ovoid, tapering at summit, and generally stalked.

2.

2. Beak of fruit not over $\frac{1}{32}$ inch long; fruiting heads not over $\frac{3}{8}$ inch wide.

(3) *S. minimum*

Beak of fruit over $\frac{1}{16}$ inch long; fruiting heads over $\frac{1}{2}$ inch wide.

3.

3. Leaves decidedly triangular-keeled; stem erect, short.

(1) *S. chlorocarpum*

Leaves very slightly keeled; stem usually weak, and floating.

(4) *S. multipedunculatum*

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- (1) *Sparganium chlorocarpum* Rydb. var. *acaule* (Beeby) Fern.
STEMLESS BUR-REED

A very short-stemmed species with the leaves overtopping the stem. It is not common and is only found in the northern parts of the area.

- (2) *Sparganium eurycarpum* Engelm. BROAD-FRUITED BUR-REED

A stout marsh plant with very conspicuous fruiting heads. Found in shallow water and marshes throughout the entire area covered and is probably the commonest of the Bur-reeds.

- (3) *Sparganium minimum* (Hartm.) Fries SMALL BUR-REED

A slender floating water plant, only to be found in the northern fringe of the area and quite rare.

(4) *Sparganium multipedunculatum* (Morong) Rydb. MANY-STALKED BUR-REED

A more slender plant than the Broad-fruited Bur-reed, but is found in similar localities, especially towards the western part of the area and is fairly plentiful.

ZOSTERACEAE (Pondweed Family) 4 genera.

Annual or perennial aquatic or marsh plants, growing in water. The roots are usually fibrous and often grow from the lower nodes of the stem. The leaves vary in shape from thread-like to broad and are all either floating or submerged. The flowers are inconspicuous, with neither sepals nor petals.

1. Flowers bisexual, appearing above the surface of the water; stamens 2 to 4; leaves alternate.

2.

Flowers unisexual, usually developed below the water; stamens 1; leaves opposite or all basal from the crown of the root.

3.

2. Stamens 4; flowers in spikes; fruit without stem.

POTAMOGETON

Stamens 2; flowers not in spikes; fruit long stemmed.

RUPPIA

3. Annual plants; stemless; inflorescence either solitary in the leaf axils or in spikes on summit of scape.

LILAEA

Perennial plants with stems; leaves opposite.

ZANNICHELLIA

LILAEA (Flowering Quillwort) genus. 1 species.

(1) *Lilaea scillioides* (Poir.) Haum.
(*Lilaea subulata* Humb. & Bonpl.)

FLOWERING QUILLWORT

An annual marsh or mud plant with narrow leaves, circular in cross section and clustered. The plants grow from 3 to 6 inches in height and bear spikes up to $\frac{3}{4}$ inch long of mixed male and female flowers and also solitary female flowers enclosed in a sheath at the base of the leaves. The fruit are small achenes, those of the flowers of the spikes are winged and ridged while those of the basal flowers are larger and are not winged. This is a plant of the Pacific coast and very few records are known from the area covered, these being in saline sloughs in the vicinity of the Cypress Hills and the southeast corner of Alberta. Some authorities place this species in a separate family, the LILAEACEAE or Quillwort family.

POTAMOGETON (Pondweed) genus. 6 species common in the area.

Perennial aquatic plants with fibrous roots from the lower nodes of the stems. The leaves are generally submerged but some are floating in one species. They vary from thread-like to broad. The flowers have neither sepals nor petals and are sometimes borne on spikes projecting from the water and sometimes in the axils of the leaves.

1. Plants with all leaves similar and submerged.

2.

Plants with broader leaves floating and narrower leaves submerged.

(2) P. gramineus

2. Leaves broad, their bases clasping the stem.

(5) P. Richardsonii

Leaves linear and thread-like.

3.

3. Stipules free from base of leaf.

(1) P. foliosus

Stipules fused with base of leaf forming a sheath at least $\frac{3}{8}$ inches long.

4.

4. Stigmas raised on evident style; nutlets with 2 keels.

(4) P. pectinatus

Stigmas inconspicuous; nutlets not keeled.

5.

5. Plant slender; sheaths close around stem.

(3) P. interior

Plant coarse; sheaths 2 to 5 times diameter of stem.

(6) P. vaginatus

(1) *Potamogeton foliosus* Raf.

LEAFY PONDWEED

More apt to be found towards the eastern part of the area, but not very common.

(2) *Potamogeton gramineus* L.

VARIOUS-LEAVED PONDWEED

Easily distinguished by the broad floating leaves and narrower submerged ones. Not very common but may be expected around the northern and eastern borders of the area.

(3) *Potamogeton interior* Rydb.

INLAND PONDWEED

Fairly common in alkaline ponds in the eastern portion of the area.

(4) *Potamogeton pectinatus* L.

SAGO or FENNEL-LEAVED PONDWEED

Our commonest thread-leaved pondweed and found in ponds, lakes and streams throughout the whole area covered.

(5) *Potamogeton Richardsonii* (Benn.) Rydb.

RICHARDSON'S PONDWEED

Easily recognized by the broad, clasping leaves. One of the commonest species and found in ponds and streams throughout the entire area.

(6) *Potamogeton vaginatus* Turcz.

SHEATHED PONDWEED

Distinguished from Sago by the broadened sheath at base of the narrow leaves, produced by the stipule. Fairly common in larger sloughs and lakes.

RUPPIA (Ditch Grass) genus. 2 species.

Submersed perennial plants with hair-like stems and thread-like leaves which are single nerved and have a membranous sheath at the base. The flowers are perfect and are clustered on a slender stem which elongates into a spiral coil and curls up after the fertilization of the flowers. The habitat is brackish and saline sloughs throughout the entire area, but these plants are not common.

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1. Leaf sheaths $\frac{1}{4}$ to $\frac{5}{8}$ inch long; fruit $\frac{1}{12}$ inch long or less.

(1) *R. maritima*

Leaf sheaths $\frac{3}{4}$ to $1\frac{1}{4}$ inches long; fruit $\frac{1}{8}$ inch or more long.

(2) *R. occidentalis*

(1) *Ruppia maritima* L.

DITCH-GRASS

Widespread, but uncommon in the area.

(2) *Ruppia occidentalis* S. Wats.

WESTERN DITCH-GRASS

Can be expected in sloughs over the entire area, commoner than preceding species.

ZANNICHELLIA (Horned Pondweed) genus. 1 species.

(1) *Zannichellia palustris* L.

HORNED PONDWEED

A submerged branching aquatic plant with thread-like, opposite, single nerved leaves with membranous sheaths at the base. The flowers of both sexes are borne in the axils of the leaves and the fruit are curved, nut-like, and from $\frac{1}{12}$ to $\frac{3}{16}$ inch long with a short beak which gives this plant its common name. Very common in brackish ponds throughout the entire area.

JUNCAGINACEAE (Arrow-grass Family) 1 genus.

TRIGLOCHIN (Arrow-grass) genus. 2 species.

Perennial marsh or semi-aquatic herbs with short rootstocks. The leaves are linear or rush-like, semi-cylindric, all basal and clustered, and bearing membranous sheaths. The flowers are perfect and borne in tall, slender, spike-like racemes, and the fruit are capsules which split open at maturity. These plants are *poisonous* to both cattle and sheep.

1. Plant stout; carpels 6; fruit oblong or ovoid, obtuse at base.

(1) *T. maritima*

Plant slender; carpels 3; fruit linear or club-shaped, tapering at base.

(2) *T. palustris*

(1) *Triglochin maritima* L.

SEASIDE ARROW-GRASS

A stout plant, with rootstock but no stolons; leaves long, narrow and half cylindric, up to 12 inches long and $\frac{1}{12}$ inch wide, the bases usually covered with old leaf sheaths. Flowering stem up to 2 feet high with flowers in a raceme at the summit. Raceme up to 18 inches in length. Fruit about twice as long as thick, from $\frac{3}{16}$ to $\frac{1}{4}$ inch long and $\frac{1}{12}$ to $\frac{1}{8}$ inch in diameter, on short stalks. Found over the entire area in marshy and wet places. Quite common. *A poisonous* plant to both cattle and sheep.

(2) *Triglochin palustris* L.

MARSH ARROW-GRASS

A slender plant, with rootstock and slender stolons. Leaves similar to the preceding species but usually about 4 to 8 inches long. Flowers on slender stalk. Fruit about 3 to 5 times as long as thick, usually $\frac{1}{4}$ to $\frac{5}{16}$ inch long and about $\frac{1}{25}$ inch in diameter, on fine stems and paralleling the stalk. Found in marshy places throughout the whole area but not nearly so common as the preceding species. *Poisonous* to both cattle and sheep.

ALISMACEAE (Water-plantain family). 2 genera.

1. Flowers all perfect; fruit a single ring of carpels.

[ALISMA](#)

Flowers of one sex, the lower ones female and the upper ones male;
fruit in dense globular heads.

[SAGITTARIA](#)

ALISMA (Water-plantain) genus. 3 species.

Perennial aquatic or marsh plants growing from stout, corm-like rootstocks which produce offshoots. The leaves are generally ovate or oblong, with several parallel veins and are borne on long stems from the crown of the root. The flowers are perfect, with 3 green sepals and 3 white petals. The fruit are flat-sided, short-beaked achenes.

1. Flowering stem usually not extending above the leaves, its branches generally curved downwards; achenes as wide as long; leaves generally ovate-lanceolate.

(1) *A. gramineum*

Flowering stems extending above leaves, its branches ascending; achenes longer than wide; leaves usually ovate.

2.

2. Petals slightly longer than the sepals; flowers $\frac{1}{8}$ to $\frac{3}{16}$ inch in diameter.

(2) *A. subcordatum*

Petals much longer than sepals; flowers $\frac{3}{8}$ to $\frac{1}{2}$ inch in diameter.

(3) *A. triviale*

- (1) *Alisma gramineum* K. C. Gmel. NARROW LEAVED WATER-PLANTAIN
(*A. Geyeri* Torr.)

The leaves of this species are usually long and narrow or ovate-lanceolate, and from $1\frac{1}{4}$ to $3\frac{1}{2}$ inches long. The flowering stems are usually shorter than the leafage. This is a very common plant in suitable locations throughout the entire area.

- (2) *Alisma subcordatum* Raf. AMERICAN WATER-PLANTAIN

This species has ovate to broadly lanceolate leaves and quite small flowers with the petals only slightly exceeding the sepals in length. The sepals are only very narrowly membranous margined. This is not as common as the other two species but is more plentiful towards the eastern part of the area.

- (3) *Alisma triviale* Pursh WESTERN WATER-PLANTAIN

(*A. brevipes* Greene)

A species with broad oblong or ovate leaves, 2 to 7 inches long, rounded at the bottom and pointed at the top. The white flowers are about $\frac{3}{8}$ inches across, with petals much longer than the sepals. The sepals have broad membranous margins. This is probably the most common species and is found in wet and marshy places throughout the entire area covered.

SAGITTARIA (Arrowhead) genus. 2 species.

Perennial water or marsh plants from fleshy rootstocks. The leaves, which are all basal, are usually broadly arrow-shaped and borne on long stems. Occasionally the leaves may be reduced to mere thickened stems which take the place of the blade and are called “phyllodia”. The flowers have 3 sepals and 3 waxy white petals, and the female flowers, which are borne lowest on the stem, are developed before the male flowers. The fruit are achenes, crowded into globular heads.

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1. Beak of achenes erect and very minute.

(1) *S. cuneata*

Beak of achene horizontal and long.

(2) *S. latifolia*

- (1) *Sagittaria cuneata* Sheld.

ARUM-LEAVED ARROWHEAD

Readily identified by its broad arrow-shaped leaves and waxy white flowers, which are borne in whorls of 3 on the long stem. The flowers vary from $\frac{1}{4}$ to $\frac{1}{2}$ inch in diameter and later form globular seed heads up to $\frac{5}{8}$ inch in diameter, green at first but turning black later. The leaves vary up to 5 or 6 inches long, but the submerged stems often have no blade, the thickened stem taking the place of the blade. Very common in all parts of our area in water and marshy habitats.

- (2) *Sagittaria latifolia* Willd.

BROAD-LEAVED ARROWHEAD

Very similar to the preceding species but differs in the beak of the achene, which is horizontal and fairly long. The leaves are very variable and may be found either broadly, or quite narrowly, arrow-shaped. This species is not common over most of the area but is found in the northern and the eastern portions.

HYDROCHARITACEAE (Frog's-bit Family) 1 genus.

ANACHARIS (Waterweed) genus. 1 species.

- (1) *Anacharis canadensis* (Michx.) Planch. CANADIAN WATERWEED
(*Elodea canadensis* Michx.)

Submerged, perennial aquatic plants with fibrous roots springing from the nodes of the stems. The leaves are not stalked, and are borne in whorls of 2 to 4, oblong-ovate in shape and up to $\frac{3}{16}$ inch long. The flowers are rarely found, but are on the end of an apparent stalk, the male flowers on one plant and the female on another. This is the only species found in the area and has been found in the Souris River in Saskatchewan, in eastern Manitoba and north of the area covered at Big River. It is found only in slow moving water and lakes and the plant is widely used as an oxygenating weed in aquariums where it grows very rapidly. This species was inadvertently introduced into England some years ago and has multiplied so rapidly that many streams and canals have been choked by it and rendered useless for navigation although only the female plant is present.

SEPARATION OF THE TRUE GRASSES FROM OTHER GRASS-LIKE PLANTS

To distinguish the grasses from the sedges and rushes, which they superficially resemble, the following table is presented.

Character	Gramineae	Cyperaceae	Juncaceae
Culm	Usually hollow, cylindrical or flattened.	Filled with pith, rarely hollow, usually 3-sided.	Filled with sponge-like pith, cylindrical
Nodes	Conspicuous.	Indistinct.	Indistinct.
Leaf arrangement	Two-ranked.	Three-ranked.	Three-ranked.
Leaf blade	Usually flat, often folded, involute or bristle-like; glabrous or pubescent.	Flat, plicate, or bristle-like; rarely pubescent.	Channelled or round; usually glabrous.
Leaf margins	Smooth, scabrous or ciliate.	Usually scabrous.	Smooth.

GRAMINEAE (Grass Family) 45 genera.

Annual or perennial herbs, usually hollow-stemmed, except at the nodes. The leaves are borne on two sides of the stem, one growing from each node, and consisting of a sheath which envelops the main stem and is usually split, and a blade which is a continuation of the sheath and which grows at an angle to the stem. The blades are flat or rolled, narrow and without stalks. The flowers are usually perfect, but some are unisexual, and are borne in spikelets which may be single or many flowered. They can be arranged in spikes, racemes or panicles. The flowers are enclosed in a series of bracts, alternating on either side of the stem (rachilla). The innermost bract, which partly encloses the grain or caryopsis, is the palea. The next is the lemma, which also partly encloses the grain. The outer two bracts are called glumes, outer and inner glumes, or first and second glumes. In some instances one or both the glumes may be missing or replaced by bristles. The female, feather-like organs are the stigmas, arising from the style. The male organs, generally three, are called stamens. The fruit is a caryopsis or grain. This family is very large, and the structural characters required for identification are often so small as to need the use of a magnifying lens.

The Gramineae is such a large family that subdivisions have been made. The family is divided into two sub-families, Panicoideae and Festucoideae. These are further subdivided into tribes, eight of which are represented in the area covered, Paniceae, Andropogoneae, Phalarideae, Hordeae, Chlorideae, Agrostideae, Aveneae and Festuceae.

1. Spikelets with 1 perfect terminal floret and 1 sterile or staminate (male) floret below; articulation usually below glumes.
(PANICOIDEAE sub-family)

2.

Spikelets of from 1 to many fertile florets; sterile florets, if any, above the fertile florets (except in *Phalaris* and *Hierochloa*); articulation usually above the glumes, (FESTUCOIDEAE sub-family)

3.

2. Glumes membranous.

PANICEAE

Glumes hard or indurate.

ANDROPOGONEAE

3. Spikelets with 2 sterile florets below the perfect floret.

PHALARIDEAE

All sterile florets above the perfect floret.

4.

4. Spikelets sessile or not stalked, on a continuous rachis or central stem.

5.

Spikelets pedicelled or stalked.

6.

5. Spikelets on opposite sides of the rachis or central stem; spike solitary at head of stem.

HORDEAE

Spikelets in 2 rows, all on one side of the rachis or stem; spike usually more than one, racemose or digitate.

CHLORIDEAE

6. Spikelets with only one flower.

AGROSTIDEAE

Spikelets 2 to many flowered.

7.

7. Glumes as long or longer than first floret; lemmas awned from the back.

AVENEAE

Glumes shorter than the first floret; lemmas awnless or awned from the tip.

FESTUCEAE

FESTUCOIDEAE sub-family. 6 tribes.

AGROSTIDEAE tribe. 11 genera.

1. Articulation below the glumes. 2.
Articulation above the glumes. 3.
2. Panicle dense, spike-like. ALOPECURUS
Panicle open, drooping. CINNA
3. Fruit hard, nerves not prominent; callus well developed. 4.
Fruit thin or firm but not stiff and hard, nerves prominent; callus weak. 6.
4. Awn trifid or triple. ARISTIDA
Awn simple, a ring between awn and lemma. 5.
5. Awn persistent, twisted and bent, many times longer than the fruit. STIPA
Awn deciduous, not twisted, less than four times length of fruit. ORYZOPSIS
6. Glumes longer or as long as the lemma. 7.
Glumes shorter than the lemma. 9.
7. Glumes compressed carinate (keeled). PHLEUM

Glumes not compressed keeled.

8.

8. Florets with a ring of hair at base.

CALAMAGROSTIS

Florets without a ring of hair at base.

AGROSTIS

9. Lemmas awned from the tip or with a sharp point.

MUHLENBERGIA

Lemmas awnless or awned from the back.

10.

10. Florets bearing a tuft of hairs at the base.

CALAMOVILFA

Florets without hair at the base.

SPOROBOLUS

AVENEAE tribe. 6 genera.

1. Articulation below glumes.

[SPHENOPHOLIS](#)

Articulation above glumes.

[2.](#)

2. Spikelets several flowered.

[DANTHONIA](#)

Spikelets 2 flowered, sometimes with a rudimentary third flower.

[3.](#)

3. Spikelets large, glumes more than ½ inch long.

[AVENA](#)

Spikelets small, glumes less than ½ inch long.

[4.](#)

4. Lemma rounded, awn from below middle of lemma.

[DESCHAMPSIA](#)

Lemma keeled, awn from above middle of lemma.

[5.](#)

5. Lemma awnless or with straight awn from apex.

[KOELERIA](#)

Lemmas with bent awn from back of lemma.

[TRisetum](#)

CHLORIDEAE tribe. 4 genera.

1. Spikelets with only one perfect floret, but having one or more sterile florets above the perfect one.

[BOUTELOUA](#)

Spikelets with only one perfect floret and no sterile florets.

[2.](#)

2. Rachilla (stem) articulate or jointed above the glumes.

[SCHEDONNARDUS](#)

Rachilla articulating below the glumes, the spikelets falling entire.

[3.](#)

3. Glumes unequal and narrow.

[SPARTINA](#)

Glumes equal, broad and boat-shaped.

[BECKMANNIA](#)

FESTUCEAE tribe. 12 genera.

1. Plants growing in sloughs, marshes, springs or very wet places. 2.
Plants growing on dry land or around slough margins. 6.
2. Tall, stout, reed-like plants with plume-like heads. PHRAGMITES
Shorter growing plants without plume-like heads. 3.
3. Lemma with three prominent nerves. CATABROSA
Lemma five to many nerved. 4.
4. Callus bearded; lemmas awnless. FLUMINEA
Callus not bearded. 5.
5. Lemmas keeled on back. DACTYLIS
Lemmas rounded on back. GLYCERIA
6. Plants growing on low lying saline flats. 7.
Plants of non-alkaline upland areas. 8.
7. Plants dioecious, or sexes on separate plants; short erect plants growing from creeping rootstocks. DISTICHLIS
Plants not dioecious; taller bunch grasses up to 18 inches high. PUCCINELLIA
8. Lemmas three nerved; inflorescence amongst sharp pointed leaves;

annual plants.

MUNROA

Lemmas five to many nerved.

9.

9. Callus of floret bearded; sheath not split.

SCHIZACHNE

Callus of floret not bearded, but may be cobwebby in some of Poa.

10.

10. Apex of lemma bifid at tip.

BROMUS

Apex of lemma not bifid at tip.

11.

11. Leaves with boat-shaped tip.

POA

Leaves not boat-shaped at tip.

FESTUCA

HORDEAE tribe. 5 genera.

1. Spikelets solitary at each node of rachis (stem).

2.

Spikelets more than one at each node of the continuous rachis or stem.

3.

2. Spikelets placed flatwise on the rachis; two glumes per spikelet.

AGROPYRON

Spikelets placed sidewise on the rachis; one glume only except on terminal spikelet.

LOLIUM

3. Three spikelets at each node of the rachis.

HORDEUM

Two spikelets at each node of the rachis.

4.

4. Awns not over $1\frac{3}{16}$ inch long.

ELYMUS

Awns up to 3 or 4 inches long; head breaking into joints at maturity.

SITANION

PHALARIDEAE tribe. 2 genera.

1. Spikelets brown and shiny.

[HIEROCHLOE](#)

Spikelets green or yellowish.

[PHALARIS](#)

PANICOIDEAE sub-family. 2 tribes.

ANDROPOGONEAE tribe. 2 genera.

1. Raceme of from one to few joints.

[SORGHASTRUM](#)

Raceme of from several to many joints.

[ANDROPOGON](#)

PANICEAE tribe. 3 genera.

1. Spikelets surrounded by bristles.

[SETARIA](#)

Spikelets not surrounded by bristles.

[2.](#)

2. Glumes and sterile lemmas awned, but awn sometimes very minute.

[ECHINOCHLOA](#)

Glumes and sterile lemmas not awned.

[PANICUM](#)

AGROPYRON (Wheat-grass) genus. 10 species.

1. Plants with creeping rootstocks. 2.
Plants without creeping rootstocks. 6.
 2. Lemmas awned, divergent at maturity. 3.
Lemmas either awnless, or a short, straight awn. 4.
 3. Lemmas hairy with fine hairs. (1) A. albicans
Lemmas not hairy. (2) A. Griffithsii
 4. Glumes rigid, tapering into short awn and usually with glaucous blue foliage. (7) A. Smithii
Glumes not rigid, abruptly awn pointed, foliage green. 5.
 5. Lemmas not hairy or downy. (6) A. repens
Lemmas hairy with fine hairs. (4) A. dasytachyum
 6. Spikelets much compressed, closely overlapping, divergent. (3) A. cristatum
Spikelets not much compressed or closely overlapping. 7.
- 29
7. Spikelets awnless, or practically so, and rarely overlapping, generally rather remotely spaced on stalk. (9) A. trachycaulum
Spikelets awned. 8.

8. Awn straight or nearly so. Spikelets in two rows that are crowded to one side of spike.

(10) *A. trachycaulum* var. *unilaterale*

Awn divergent when dry; spikelets arranged in two rows on opposite sides of spike.

9.

9. Spikelets overlapping.

(2) *A. Bakeri*

Spikelets distant.

(8) *A. spicatum*

The wheat-grasses are very valuable forage plants, and usually have auricles or small projecting appendages where the leaf blade and sheaths join. The heads are usually narrow and spike-like, either with or without awns on the florets.

(1) *Agropyron albicans* Scribn. & Smith

AWNED NORTHERN WHEAT-GRASS

Very similar to *A. dasytachyum* but with conspicuous divergent awns.

Occasionally found throughout the drier, open parts of the area.

(2) *Agropyron Bakeri* E. Nels.

BAKER'S WHEAT-GRASS

A tall-growing species found on open areas and slopes, mainly in the western portion.

(3) *Agropyron cristatum* (L.) Gaertn.

CRESTED WHEAT-GRASS

Tall species with congested, dense head, which has been introduced as a forage crop and is rapidly becoming common throughout the entire area, especially the drier portion. Is very aggressive and drought tolerant, and is therefore much used in reseeding abandoned fields and overgrazed pastures in the less humid areas.

(4) *Agropyron dasytachyum* (Hook.) Scribn.

NORTHERN WHEAT-GRASS

A very common species of the drier prairie and also sandy lands in the more northern parts of the area. Often found mixed with *A. Smithii*, and is an important forage plant.

(5) *Agropyron Griffithsii* Scribn. & Smith

GRIFFITH'S WHEAT-GRASS

Very similar to *A. albicans*, of which it may be a form. Found on open, dry sites but not by any means common.

(6) *Agropyron repens* (L.) Beauv. QUACK OR COUCH-GRASS

A very persistent field weed introduced from the Old World and spreading throughout the moister cultivated areas. This grass is very difficult to eradicate, especially in areas of moderate precipitation.

(7) *Agropyron Smithii* Rydb. WESTERN WHEAT-GRASS

A native species with usually a bluish green foliage, which is very persistent after breaking up of prairie and often detrimental to shelterbelts and crops. Found on moister soils, low and saline areas throughout most of the area, and is especially abundant on prairie which has been disturbed or covered with drift soil. The variety *molle* has a very dense growth of short hairs on the lemma, and may be confused with *A. dasystachyum*. However, the glumes of *A. Smithii* var. *molle* differ from those of *A. dasystachyum*; the variety is relatively rare.

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(8) *Agropyron spicatum* (Pursh) Scribn. & Smith
BLUEBUNCH WHEAT-GRASS

A tall growing, tufted species, occasionally to be found on dry slopes and bench land throughout the southern portion of the area.

(9) *Agropyron trachycaulum* (Link) Malte var. *typicum* Fern.
(*A. pauciflorum* (Schwein.) Hitchc.) SLENDER WHEAT-GRASS

A tall, tufted species found on moister areas, meadows, alkaline areas throughout the area.

(10) *Agropyron trachycaulum* (Link) Malte var. *unilaterale* (Cassidy) Malte
(*A. subsecundum* (Link) Hitchc.) AWNED WHEAT-GRASS

Similar to preceding species but with short, straight awns. Found on moist prairie, and particularly around woods over all our area. Seldom eaten by livestock. Consequently is common on overgrazed pastures throughout the Cypress Hills, Foothills and the northern boundary of the area.

AGROSTIS (Bent-grass) genus. 4 species

1. Palea evident, 2-nerved, at least half as long as lemma.

2.

Palea missing or a minute nerveless scale.

3.

2. Panicle contracted: long stolons developed.

(2) *A. palustris*

Panicle open, with ascending branches: no long stolons developed.

(4) *A. stolonifera*

3. Panicle narrow and contracted, some of lower branches spikelet bearing from near base.

(1) *A. exarata*

Panicle open; lower branches not spikelet bearing at base.

(3) *A. scabra*

Fairly tall-growing grasses, usually with feathery paniculate inflorescence.
Spikelets 1 flowered.

(1) *Agrostis exarata* Trin.

SPIKE RED-TOP

This species has rather a narrow, often interrupted head up to 8 or 10 inches high, and has been found in the southwestern part of the area in fairly wooded and moist spots. It is by no means common.

(2) *Agrostis palustris* Huds.

CREEPING BENT

Occasionally found where escaped from lawns. Not a native but becoming fairly common in some moist areas.

(3) *Agrostis scabra* Willd.

ROUGH HAIR-GRASS

A common grass of sloughs and moist places throughout the entire area. The inflorescence breaks off readily and can be found blowing across areas far removed from its place of growth. Common on abandoned fields even in dry areas.

(4) *Agrostis stolonifera* L.

RED-TOP

Fairly common in moist spots throughout the entire area. Authorities appear to be doubtful regarding the separation of *A. alba*, *A. stolonifera* and *A. palustris* as they are very similar. *A. stolonifera* seems, however, to be the native form, the others being introduced.

ALOPECURUS (Foxtail) genus. 2 species.

1. Awn scarcely exceeding the glumes.

(1) *A. aequalis*

Awn protruding from spike, about $\frac{1}{10}$ inch.

(2) *A. geniculatus*

Low to medium plants with spike-like and narrow inflorescence. Found in low, wet places throughout entire area.

- (1) *Alopecurus aequalis* Sobol.

SHORT-AWNED FOXTAIL

Awms not showing on spike; plant usually does not root at nodes. Common in wet places throughout area.

- (2) *Alopecurus geniculatus* L.

WATER FOXTAIL

Awms protruding from side of spike; stems often almost horizontal at base and rooting at nodes. Common in wet spots through entire area.

ANDROPOGON (Blue-stem) genus. 2 species.

1. Racemes solitary on each stalk of inflorescence.

(2) *A. scoparius*

Racemes several on each stalk of inflorescence.

(1) *A. furcatus*

Rather coarse grasses with solid stems. They usually have purplish leaf sheaths.

(1) *Andropogon furcatus* Muhl.

BIG BLUE-STEM

A tall-growing coarse grass with usually 2 or 3 racemes of flowers at head of stem. Quite common in the moister, eastern section, especially on tall-grass prairie.

(2) *Andropogon scoparius* Michx.

LITTLE BLUE-STEM

An erect, purplish grass with short, broad leaves growing in tufts on dry slopes, on sandy soil and in marsh areas throughout most of area.

ARISTIDA (Three-awn) genus. 1 species.

Plants easily distinguished by the three-awned lemmas.

(1) *Aristida longiseta* Steud.

RED THREE-AWN

Occasionally to be found on gravelly slopes in the very south and southwest of the area. Uncommon.

AVENA (Oat) genus. 3 species.

1. Plants perennial; native.

(2) *A. Hookeri*

Plants annual; introduced or cultivated.

2.

2. Spikelets usually 3-flowered; lemmas hairy; grain with horse-shoe shaped scar at base.

(1) *A. fatua*

Spikelets usually 2-flowered; lemmas smooth; grain without horse-shoe shaped scar at base.

(3) *A. sativa*

(1) *Avena fatua* L.

WILD OATS

A common weed in grain fields in the moister regions throughout the area.

(2) *Avena Hookeri* Scribn.

HOOKER'S OAT-GRASS

Erect, tufted grass with flattened, compressed sheath, distinctly keeled. Spikelets brown and shining at maturity. Common in rather moister places on bench land and hillsides throughout all the southwest and northern districts. Some authorities name this *Helictotrichon Hookeri* (Scribn.) Henr.

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(3) *Avena sativa* L.

COMMON OATS

A cereal grain grown extensively throughout the area and sometimes found escaped in waste places.

BECKMANNIA (Slough-grass) genus. 1 species.

(1) *Beckmannia syzigachne* (Steud.) Fern.

SLOUGH-GRASS

A tall, erect, tufted annual grass growing in water in sloughs and moist places. The spikelets are very easily rubbed off when ripe. Very common throughout the entire area. It is eaten readily by stock and forms a valuable hay grass.

BOUTELOUA (Gramma) genus. 2 species.

1. Spikelets arranged like a comb, glumes persistent at maturity.

(2) *B. gracilis*

Spikelets not comb-like, remote from each other, glumes falling off at maturity.

(1) *B. curtipendula*

Low, sod-forming grasses with one-sided spikes of flowers.

- (1) *Bouteloua curtipendula* (Michx.) Torr.

SIDE OATS GRAMA

Distinguished from blue grama by the many spikelets spread at intervals up one side of stem. Not common, but may be occasionally found in the south-central part of the area.

- (2) *Bouteloua gracilis* (H. B. K.) Lag.

BLUE GRAMA

Very plentiful on dry prairie. Rapidly increases with overgrazing. Leafage is short but highly nutritive, but does not yield much forage except in very favourable seasons.

BROMUS (Brome) genus. 11 species.

1. Spikelets strongly flattened, lemmas compressed-keeled.

2.

Spikelets not strongly flattened, lemmas rounded with or without a keel.

3.

2. Leaf blades rounded, with or without a keel, narrow, usually less than $\frac{1}{8}$ inch wide, with fine white hairs.

(2) B. breviaristatus

Leaf blades, usually more than $\frac{1}{8}$ inch wide, not very hairy.

(3) B. carinatus

3. Plants perennial, native except *B. inermis*.

4.

Plants annual, introduced.

10.

4. Creeping rootstocks present.

5.

No rootstocks present.

6.

5. Lemmas not hairy.

(5) B. inermis

Lemmas with fine hairs near margins.

(9) B. Pumpellianus

6. Lemmas with fine hairs along margin and lower part of back, upper part not hairy.

(4) B. ciliatus

Lemmas with fine hairs over all of back.

7.

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7. Panicle drooping, small, usually not more than 4 inches long, leaf blades along stem.

8.

Panicle erect, larger; leaf blades wide and loose.

9.

8. Leaf blades $\frac{1}{12}$ to $\frac{5}{32}$ inch wide, barely hairy.

(1) *B. anomalus*

Leaf blades $\frac{3}{16}$ to $\frac{3}{8}$ inch wide, conspicuously hairy.

(7) *B. Kalmii*

9. Leaf sheaths shorter than internodes; nodes 4 to 6.

(10) *B. purgans*

Leaf sheaths longer than internodes; nodes 10 to 20.

(8) *B. latiglumis*

10. Lemmas broad, rounded above, teeth less than $\frac{1}{25}$ inch long.

(6) *B. japonicus*

Lemmas narrow, gradually pointed, two cleft, teeth $\frac{1}{12}$ to $\frac{3}{16}$ inch long.

(11) *B. tectorum*

Usually medium to tall grasses associated with woodlands and shaded places. They have good forage value. Annuals are classed as weeds.

(1) *Bromus anomalus* Rupr.

NODDING BROME

Has drooping heads with short-awned spikelets. Quite common around bluffs and woodlands throughout the southern section.

(2) *Bromus breviaristatus* Buckl.

ERECT BROME

An erect species with narrow leaves and an erect panicle. Not common but found in the Cypress Hills, Saskatchewan, and Porcupine Mountains, Manitoba.

(3) *Bromus carinatus* Hook. & Arn. var. *marginatus* (Nees) Hitch.

CALIFORNIA BROME

A western and southern species occasionally found in the area around the Cypress Hills. Often named *B. marginatus* Nees.

(4) *Bromus ciliatus* L.

FRINGED BROME

A woodland species common around bluffs and woods throughout the entire area.

- (5) *Bromus inermis* Leyss. AWNLESS BROME

An introduced grass that is now common along roadsides and waste places throughout the entire area. This species is the common brome used for pasture seedings.

- (6) *Bromus japonicus* Thunb. JAPANESE CHESS

An introduced weed found growing in a few districts but not yet common.

- (7) *Bromus Kalmii* A. Gray KALM'S BROME

In open woods and sandy soil, but very uncommon.

- (8) *Bromus latiglumis* (Shear) Hitchc. BROAD-GLUMED BROME

A fairly common species of shady and wooded places towards the eastern part of area.

- (9) *Bromus Pumpellianus* Scribn. NORTHERN AWNLESS BROME

A tall-growing species found in meadows, hillsides and woodlands, especially in the northern and western part of the area.

- (10) *Bromus purgans* L. CANADA BROME

Found in moist woodlands in the eastern part of the area.

- (11) *Bromus tectorum* L. DOWNY BROME

An annual, introduced, weedy grass, very common in the southwest of the area and rapidly spreading. Matures very early in season and creates fire hazard when dry. Palatable to livestock in the spring, but is not eaten when dry.

CALAMAGROSTIS (Reed grass) genus. 6 species.

1. Awn longer than glumes.

(5) *C. purpurascens*

Awn hardly longer than the glumes.

2.

2. Awn of lemma abruptly bent, protruding sidewise from glume, callus hairs sparse, shorter than lemma.

3.

Awn of lemma straight, not protruding sidewise; callus hairs not much shorter than lemma.

4.

3. Leaf blades rolled, narrow; glumes sharply keeled; plant low, usually less than 12 inches high, with running rootstocks. A prairie species.

(3) *C. montanensis*

Leaf blades flat; glumes not strongly keeled; plant tall, usually more than 18 inches high; tufted, a pine woods species.

(6) *C. rubescens*

4. Panicle rather loose and open; callus hairs almost or quite equalling lemma.

(1) *C. canadensis*

Panicle more or less narrow and dense; callus hairs shorter than lemma.

5.

5. Leaf blades firm and rough; ligules $\frac{5}{32}$ to $\frac{1}{4}$ inch long.

(2) *C. inexpansa*

Leaf blades soft and narrow; ligules not over $\frac{1}{8}$ inch long.

(4) *C. neglecta*

Medium to tall-growing creeping-rooted grasses with open or narrow panicles of small flowered spikelets. Few or no basal leaves. Found in all types of vegetation across entire area. The tall species are usually plants of low and moist localities.

- (1) *Calamagrostis canadensis* (Michx.) Beauv. MARSH REED-GRASS

Tall, open paniced species of moist places, very similar to *C. inexpansa* and *C. neglecta* but much looser in the inflorescence. Very common in moist spots, woodlands, slough margins and meadows throughout entire area.

- (2) *Calamagrostis inexpansa* A. Gray NORTHERN REED-GRASS

Tall, with narrow, close panicle, and found in saline and moist areas, marshes, etc. Quite common throughout the whole area covered.

- (3) *Calamagrostis montanensis* Scribn. PLAINS REED-GRASS

A medium grass growing to about 15 inches in height and may be mistaken for Junegrass, but differs in having rootstocks instead of being tufted and also by its very conspicuous ligule. Very common in drier open prairie throughout all the southwestern portions of the area.

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- (4) *Calamagrostis neglecta* (Ehrh.) Gaertn. NARROW REED-GRASS

Very similar to *C. inexpansa* but thinner and smaller. Fairly plentiful in wet and marshy sites throughout most of the area.

- (5) *Calamagrostis purpurascens* R. Br. PURPLE REED-GRASS

A tall species with purplish or pinkish compact heads, only found in the extreme west and southwest of the area adjacent to the Foothills.

- (6) *Calamagrostis rubescens* Buckl. PINE-GRASS

A tall, compact headed species only found in coniferous woods. Occurs in the Cypress Hills and Porcupine Hills of the southwest.

CALAMOVILFA (Sand-grass) genus. 1 species.

(1) *Calamovilfa longifolia* (Hook.) Scribn.

SAND-GRASS

A tall, coarse grass with feathery, paniculate head, long scaly rootstocks and long tough leaves. Not very palatable to livestock. One of the principal grasses of sandhills and very sandy soil throughout the entire area.

CATABROSA (Brook-grass) genus. 1 species.

(1) *Catabrosa aquatica* (L.) Beauv.

BROOK-GRASS

A feathery paniced aquatic grass with creeping bases to the stems and flat, soft leaves. Fairly abundant in springs, streams and wet places throughout entire area.

CINNA (Wood-grass) genus. 1 species.

(1) *Cinna latifolia* (Trev.) Griseb.

SLENDER WOOD-GRASS

A tall, broad-leaved, tufted grass with very open panicle. Fairly common in damp, shady woods throughout the area where such habitats are found.

DACTYLIS (Orchard-grass) genus. 1 species.

(1) *Dactylis glomerata* L.

ORCHARD-GRASS

A tufted grass with flat leaf blades from 3 to 9 inches long. The inflorescence is a panicle with the spikelets 3 to 5 flowered and borne in dense one-sided clusters. The culms are from 18 to 30 inches high. An escape from cultivation and occasionally found in the eastern and northern parts of the area.

DANTHONIA (Oat-grass) genus. 5 species.

1. Lemmas hairy on margin only.

2.

Lemmas hairy on back.

4.

2. Panicle narrow, spikelets close to stem.

(2) *D. intermedia*

Panicle open, spikelets spreading.

3.

3. Panicle usually of a single spikelet.

(5) *D. unispicata*

Panicle of 2 to several spikelets.

(1) *D. californica*

4. Glumes $\frac{3}{4}$ inch long or over.

(3) *D. Parryi*

Glumes less than $\frac{3}{4}$ inch long.

(4) *D. spicata*

Medium to low growing, tufted grasses with few flowered, rather large, awned spikelets.

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(1) *Danthonia californica* Boland. var. *americana* (Scribn.) Hitchc.

CALIFORNIA OAT-GRASS

A medium tall, tufted grass usually bearing 3 to 5 awned spikelets and found in moist or shady areas. Not common but has been found in the Cypress Hills and as far east as Swift Current.

(2) *Danthonia intermedia* Vasey

WILD OAT-GRASS

A medium tall, tufted grass with a compact head of bent awned spikelets, usually associated with rough fescue. Is quite abundant out on the moister areas of the Cypress bench and Foothills, and found occasionally in favourable locations throughout most of the southern part of the area.

(3) *Danthonia Parryi* Scribn.

PARRY OAT-GRASS

A tufted, erect, fairly tall grass of a light yellowish-green colour (with large glumes)—associated with rough fescue and increasing in abundance when those areas are grazed. Found only in the extreme southwest of the area in the Foothill region of southern Alberta from Waterton to about 40 miles north of Calgary.

(4) *Danthonia spicata* (L.) Beauv.

POVERTY OAT-GRASS

A short-leaved tufted species growing on dry, sandy or gravelly soil and of very little forage value. This species is not very common, but has been found in the open pine-woods of the Cypress Hills and occasionally through the southern section.

(5) *Danthonia unispicata* (Thurb.) Munro

ONE-SPIKE OAT-GRASS

A short, erect and tufted grass, usually bearing a single, bent awned spikelet at summit of stem. This is a western species but has occasionally been found as far east as Swift Current, but is not very abundant.

DESCHAMPSIA (Hair-grass) genus. 1 species.

(1) *Deschampsia caespitosa* (L.) Beauv.

TUFTED HAIR-GRASS

A tall, densely-tufted grass with much branched, feathery and often purplish florets, that are straw-coloured when mature. There is a marked swelling where the blade and sheath of the leaf unite. Common in sloughs, marshes, moist draws and stream banks and other moist places throughout the entire area.

DISTICHLIS (Alkali-grass) genus. 1 species.

(1) *Distichlis stricta* (Torr.) Rydb.

ALKALI-GRASS

Low-growing, creeping-rooted grasses with male flowers and female flowers on separate plants. The leaves are short and coarse and the flowering stems rarely exceed 6 inches, and bear compact straw-coloured heads. It is found in great abundance in saline areas throughout the entire region, and on abandoned fields.

ECHINOCHLOA (Barnyard grass) genus. 1 species.

(1) *Echinochloa crusgalli* (L.) Beauv.

BARNYARD-GRASS

A coarse annual weedy species found in gardens and waste places. The stems are usually decumbent at the base, and grow erect up to 3 feet high. The heads are branched, and bear large millet-like seeds. Usually awned but the awnless form is often found. A very common weed in eastern Manitoba but is becoming more abundant in gardens further west.

ELYMUS (Wild rye) genus. 8 species.

1. Slender, creeping rootstocks present.

2.

No rootstocks present, except short and stout ones in *E. condensatus*;
plants tufted.

3.

2. Lemmas copiously hairy; awns less than $\frac{3}{16}$ inch long.

(5) *E. innovatus*

Lemmas with stiff hairs; awns $\frac{3}{16}$ to $\frac{3}{8}$ inch long.

(4) *E. hirtiflorus*

3. Axis of spike disjuncting at maturity; the entire head or a portion of it
being shed when mature.

(7) *E. Macounii*

Axis of spike continuous; spikelets falling separately.

4.

4. Glumes awl-shaped, not broadened above base, nerves obscure.

5.

Glumes lanceolate, broadened above base, strongly 3 to several
nerved.

6.

5. Lemmas awn-pointed, awn shorter than body of lemma.

(2) *E. condensatus*

Lemma awn bent, and as long or longer than body of lemma.

(6) *E. interruptus*

6. Glumes and lemmas hairy.

(1) *E. canadensis*

Lemmas not hairy.

7.

7. Glumes thin, flat, not hardened at base.

(3) *E. glaucus*

Glumes firm, hardened at base.

Tufted, usually fairly tall grasses with spike-like awned heads. They are very closely related to the wheat-grasses, but the double floret at each node distinguishes the rye grasses from the wheat-grasses, which have only one floret per node of the rachis. They are fairly palatable to livestock.

(1) *Elymus canadensis* L. NODDING WILD RYE

A tall-growing grass with nodding, awned heads. The most common species of this genus. Very common on sandy soil, but also found along river banks and moist places throughout the entire area.

(2) *Elymus condensatus* Presl GIANT WILD RYE

Very tall, coarse grass up to 6 feet high, with spikes up to 12 inches long, awns very short. Base of plants may be over 2 feet across. Plants grow in colonies. A western species to be found in southwestern Alberta and occasionally in southern Saskatchewan. Not very palatable to any class of livestock.

(3) *Elymus glaucus* Buckl. SMOOTH WILD RYE

Tall, tufted species with bluish green foliage, found in open woods, meadows and moist areas of the southwestern part of the area.

(4) *Elymus hirtiflorus* Hitchc. BLUE WILD RYE

Has glumes and lemmas quite hairy. Very rare but reported from east-central Saskatchewan.

(5) *Elymus innovatus* Beal HAIRY WILD RYE

A medium tall grass with purplish or brownish, hairy spikelets. Found in open woodlands and around bluffs in the northern parts of the area and also in western Alberta.

(6) *Elymus interruptus* Buckl. VARIABLE GLUMED WILD RYE

Tall grass with nodding heads and conspicuous bent awns. Very uncommon,

but has been found in the far northern portion of area.

(7) *Elymus Macounii* Vasey

MACOUN'S WILD RYE

A fairly tall densely-tufted grass with slender, short awned spike which breaks to pieces fairly readily at maturity. Very abundant in meadows and moist places throughout the southwest of the area. Occasionally present on saline flats.

(8) *Elymus virginicus* L.

VIRGINIA WILD RYE

Found in moist areas, shady woodlands and stream banks fairly abundantly throughout the entire area.

FESTUCA (Fescue) genus. 4 species.

1. Plants annual.

(2) *F. octoflora*

Plants perennial.

2.

2. Lemmas about $\frac{3}{16}$ inch long, rarely short-awned, leaves long and rough.

(4) *F. scabrella*

Lemmas less than $\frac{3}{16}$ inch long; leaves shorter and smoother.

3.

3. Leaf blades short; panicle narrow; lemmas not over $\frac{3}{16}$ inch long.

(3) *F. ovina*

Leaf blades long; panicle open and spreading; lemmas $\frac{9}{32}$ inch long; bluish coloured leafage.

(1) *F. idahoensis*

Small to medium-growing grasses with paniculate heads. Useful forage grasses and very palatable to stock.

(1) *Festuca idahoensis* Elmer

BLUEBUNCH FESCUE

Of medium height and densely tufted, with rolled bluish-green leaves, and spreading panicle. Fairly abundant in the southwest of Alberta and as far east as the Cypress Hills. Eaten readily during the fall and winter, but less palatable during other seasons.

(2) *Festuca octoflora* Walt.

SIX WEEKS' FESCUE

An annual, erect and low-growing with dark green leaves. Narrow panicle. Not common but may be found on dry, sandy soil in the southwest of the area.

(3) *Festuca ovina* L.

SHEEP FESCUE

Very fine leaved tufted, low-growing grass found occasionally throughout

the entire area.

(4) *Festuca scabrella* Torr.

ROUGH FESCUE

A densely tufted medium-growing grass with long rolled leaves and found on the moister prairie slopes from Brandon westward. It is the dominant species in the Cypress Hills and the foothills of Alberta and is locally abundant throughout most of the area. An excellent and fairly palatable forage plant.

FLUMINEA (Spangle-top) genus. 1 species.

(1) *Fluminea festucacea* (Willd.) Hitchc.

SPANGLE TOP

A tall-growing, very open headed grass found in sloughs and shallow water. Has long, broad, pale green leaves and is usually associated with beaked and awned sedge, and is frequently cut with marsh hay. Fairly common throughout the entire area. Palatable for both pasture and hay. Grows in solid stands. Some authorities now name this *Scolochloa festucacea* (Willd.) Link.

GLYCERIA (Manna-grass) genus. 4 species.

1. Spikelets linear, nearly circular in cross section, usually more than $\frac{3}{8}$ inch long; long ligule.

(1) *G. borealis*

Spikelets ovate or nearly oblong, flat in cross section, usually not over $\frac{1}{4}$ inch long.

2.

2. Lemmas with 5 prominent nerves.

(3) *G. pauciflora*

Lemmas with 7 prominent nerves.

3.

3. Spikelets $\frac{1}{8}$ inch long or less.

(4) *G. striata*

Spikelets $\frac{3}{16}$ inch long or more.

(2) *G. grandis*

Mostly medium to tall semi-aquatic grasses, found in sloughs, shallow water and marshes. Quite palatable to livestock.

- (1) *Glyceria borealis* (Nash) Batch.

NORTHERN MANNA-GRASS

Found in wet and marshy places throughout most of the area but nowhere abundant.

- (2) *Glyceria grandis* S. Wats.

TALL MANNA-GRASS

A tall, stout, erect plant often over 4 feet high with large open inflorescence frequently more than 12 inches high, with purplish spikelets. Quite common in wet places throughout the entire area.

- (3) *Glyceria pauciflora* Presl

SMALL-FLOWERED MANNA-GRASS

Very rare in the area, one record from northern Saskatchewan.

- (4) *Glyceria striata* (Lam.) Hitchc.

FOWL MANNA-GRASS

Occasionally found in marshy and wet places throughout entire area.

HIEROCHLOE (Sweet-grass) genus. 1 species.

(1) *Hierochloe odorata* (L.) Beauv.

SWEET-GRASS

An erect, medium grass with a pleasant smell. Panicle about 3 or 4 inches high with stalked spikelets. Fairly common throughout most of the area in meadows and moist grassland. Often found in abandoned fields.

HORDEUM (Wild barley) genus. 2 species.

1. Awns less than $\frac{3}{8}$ inch long.

(3) *H. nodosum*

Awns $\frac{5}{8}$ to $1\frac{3}{16}$ inch long.

(2) *H. jubatum* var *caespitosum*

Awns 1 to 2 inches long.

(1) *H. jubatum*

Low-to medium-growing tufted grasses with spike-like, awned heads. They are usually associated with moist or saline area.

(1) *Hordeum jubatum* L.

WILD BARLEY

Has long awns which make the plant very objectionable to livestock, as they pierce the nose and mouth parts. Very common and is often the dominant species on moist and saline flats throughout the entire area. Palatable before flowering.

(2) *Hordeum jubatum* L. var. *caespitosum* (Scribn.) Hitchc.

SHORT-AWNED WILD BARLEY

Similar to the species but has shorter awns. It is not quite so abundant but may be found around sloughs across the whole area.

(3) *Hordeum nodosum* L.

MEADOW BARLEY

A tufted grass with spike shorter and more slender, and with shorter awns than wild barley. Quite uncommon but has been found occasionally along the southern portion of the area. This is now thought to be *Hordeum brachyantherum* Nevski. by some authorities.

KOELERIA (June-grass) genus. 1 species.

(1) *Koeleria cristata* (L.) Pers.

JUNE-GRASS

A low, tufted, pale green species with spike-like compact head from 1 to 5 inches long, which becomes looser at maturity. The leaves are short and distinctly veined. Short, sparse hairs on upper side of leaf blade. Flowers fairly early in summer and forms a very valuable forage plant. Very common on dry prairie throughout the entire region covered, more particularly in the southern portion. Has a taller and more slender growth in the Foothill area.

LOLIUM (Rye-grass) genus. 1 species.

(1) *Lolium persicum* Boiss & Hohn.

DARNEL

Somewhat similar to wheat-grasses but spikelets are placed edgeways instead of sideways on the stem. Troublesome weed in many areas in grain fields.

MUHLENBERGIA (Muhly) genus. 4 species.

1. Creeping, scaly rootstocks present.

2.

No creeping rootstocks, culms tufted, from hard bulb-like bases; very short ligule.

(2) *M. cuspidata*

2. Panicle open, spikelets on slender stalks.

(1) *M. asperifolia*

Panicle narrow, spikelets on short stalks.

3.

3. Leaf blades not more than $\frac{1}{12}$ inch wide, usually rolled, long ligule.

(4) *M. squarrosa*

Leaf blades from $\frac{1}{8}$ to $\frac{3}{16}$ inch wide, flat.

(3) *M. racemosa*

A very variable genus with panicles usually narrow.

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(1) *Muhlenbergia asperifolia* (Nees & Mey.) Parodi

SCRATCH-GRASS

Low-growing plant with short, pale green leaves and very fine open panicles of small single spikelets. Glumes white after seed has shed.

Grows in solid stands. Found throughout the southern part of the area in moist or alkaline sites, but not very common.

(2) *Muhlenbergia cuspidata* (Torr.) Rydb.

PRAIRIE MUHLY

A medium-growing, densely tufted plant with hard bulb-like bases to stems and erect, fine leaves. The inflorescence is a narrow, contracted panicle of small spikelets. Distinguished from Mat Muhly by absence of rootstocks and short ligule. Very common on dry and eroded hillsides throughout the southern, open parts of the area.

(3) *Muhlenbergia racemosa* (Michx.) B.S.P.

MARSH MUHLY

An erect, medium high-growing species with running rootstocks and compact spike-like panicle. Found in swamps and marshy ground throughout the area but not very common in the drier, southwestern portion.

(4) *Muhlenbergia squarrosa* (Trin.) Rydb.

MAT MUHLY

A low, tufted species with long, scaly rootstocks, fine wiry stems, rolled short leaves with conspicuous ligule. Very common on low or fairly moist ground throughout the entire southwestern area.

MUNROA (False Buffalo-grass) genus. 1 species.

(1) *Munroa squarrosa* (Nutt.) Torr.

FALSE BUFFALO-GRASS

A very low, mat-forming grass with very small leaves in clusters of three at ends of horizontal branches radiating from a central clump. The small spikelets are enclosed in the sheaths of the small leaves. A southern species which has been occasionally found on river flood plains and dry ground in the southwestern portion of the area, but is very uncommon.

ORYZOPSIS (Rice grass) genus. 4 species.

1. Lemmas not hairy, smooth.

(4) *O. micrantha*

Lemmas covered with fine hairs.

2.

2. Lemmas with long, silky hairs; leaves with long ligules.

(3) *O. hymenoides*

Lemmas with short, appressed hairs.

3.

3. Spikelets, not including awn, over ¼ inch long.

(1) *O. asperifolia*

Spikelets, not including awn, less than $\frac{3}{16}$ inch long.

(2) *O. canadensis*

Long-leaved, tufted grasses of medium height with rather large, rice-like seeds, found in a great variety of locations.

(1) *Oryzopsis asperifolia* Michx.

WHITE-GRAINED MOUNTAIN RICE

An erect, long-leaved species with spike-like panicles of awned one-flowered spikelets, from which the seed sheds very readily. Found in woodlands, bluffs and similar localities throughout the entire area and is quite plentiful in such areas.

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(2) *Oryzopsis canadensis* (Poir.) Torr.

CANADIAN RICE-GRASS

An erect woodland species found frequently in the northern portion of area.

(3) *Oryzopsis hymenoides* (Roem. & Schult.) Ricker

INDIAN RICE-GRASS

A tufted, pale green, long rolled-leaved species with large open head with very light coloured single flowered spikelets on long stalks. The lemmas are copiously hairy and the seed is readily shed. Very common on sandy soil and amongst sandhills over the entire southwestern part of the area. Very palatable.

(4) *Oryzopsis micrantha* (Trin. & Rupr.) Thurb. LITTLE-SEED RICE-GRASS

Densely tufted with slender rolled leaves and very open heads with short spikelets on ends of long stalks. Occasionally found on sandy soil in the southwestern portion of area.

PANICUM (Millet) genus. 4 species.

1. Plants annual, large feathery head.

(1) *P. capillare*

Plants perennial.

2.

2. Panicles over 6 inches high, creeping roots.

(4) *P. virgatum*

Panicles less than 5 inches high, bunch grasses.

3.

3. Leaves $\frac{1}{4}$ inch to $\frac{3}{4}$ inch in width.

(3) *P. Scribnerianum*

Leaves less than $\frac{1}{4}$ inch in width.

(2) *P. perlongum*

Annual or perennial grasses of various habits and habitats, glumes very unequal, the first often being very minute. Mostly found in the moister, eastern part of the area.

(1) *Panicum capillare* L.

WITCH-GRASS

A tall, coarse, hairy annual with a very large feathery panicle often half the length of the entire plant. This panicle breaks off readily and rolls with the wind scattering the seed. A fairly common garden weed in the eastern parts of the area.

(2) *Panicum perlongum* Nash

LONG-STALKED PANIC-GRASS

A tall bunch grass with thin, folded leaves and narrow panicle. Has been found in Manitoba and southeastern Saskatchewan.

(3) *Panicum Scribnerianum* Nash

SCRIBNER'S PANIC-GRASS

A very broad-leaved species with panicked head. Found on dry, sandy soils but very rare.

(4) *Panicum virgatum* L.

SWITCH-GRASS

Tall, erect, glaucous-green grass with rootstocks, and a fairly open head.
Found commonly in moister soils in the eastern part of the area.

PHALARIS (Canary-grass) genus. 2 species.

1. Perennial with creeping rootstock; panicles narrow; outer glumes not winged.

(1) *P. arundinacea*

Annual; panicle spike-like, ovate; outer glumes winged.

(2) *P. canariensis*

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(1) *Phalaris arundinacea* L.

REED CANARY-GRASS

A very tall, erect grass with long, scaly, pinkish rootstocks found in water and very wet soils. It has a tall, compact panicle up to 6 inches high and is common in favourable localities throughout the entire area.

(2) *Phalaris canariensis* L.

CANARY-GRASS

A medium-growing annual with rather pretty ovoid head about 1¼ inches long, pale with green stripe on glumes. Found where cage bird seed has been scattered.

PHLEUM (Timothy) genus. 2 species.

1. Panicles elongate-cylindric; awns less than half length of empty glumes.

(2) *P. pratense*

Panicles short, ovoid or oblong; awns about half length of empty glumes.

(1) *P. alpinum*

Have very dense, cylindrical, spike-like panicles and erect stems.

(1) *Phleum alpinum* L.

ALPINE TIMOTHY

Densely-tufted grass with somewhat decumbent stem, and a few creeping rootstocks. Really a species of the mountain meadows, but is fairly plentiful in the Cypress Hills. Some authorities consider our plants as a separate species from this Old World grass.

(2) *Phleum pratense* L.

TIMOTHY

A tall, tufted grass with swollen bulb-like bases, which has been cultivated and escaped in many areas. Very common all through area, especially in the extreme southwest.

PHRAGMITES (Giant reed-grass) genus. 1 species.

(1) *Phragmites communis* Trin.

COMMON REED-GRASS

The tallest grass in the area covered, growing up to 12 feet in height, from strong creeping rootstocks. The leaves are large and flat with overlapping sheaths. Bears very large feathery panicles, sometimes 12 inches long and is found abundantly in marshes, streams and lakes throughout the eastern and northern parts of the area covered.

POA (Blue-grass) genus. 16 species.

1. Spikelets narrow, little compressed; lemmas not keeled. 2.
Spikelets distinctly compressed; lemmas keeled. 6.
 2. Lemmas with fine, crisp hairs on back towards base. 3.
Lemmas with no hairs. 5.
 3. Leaf sheaths rough to touch. (14) P. scabrella
Leaf sheaths not roughened. 4.
 4. Flowering culms, stems less than 12 inches high; numerous short basal shoots. (15) P. secunda
Flowering culms, stems usually 20 inches high; not many basal shoots. (4) P. Canbyi
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5. Leaf-blades rolled. (9) P. juncifolia
Leaf-blades flat. (1) P. ampla
 6. Plants annual. (2) P. annua
Plants perennial. 7.
 7. Plants with creeping rootstocks. 8.
Plants with no creeping rootstocks. 12.

8. Flowering culms, stems strongly flattened, 2-edged. (5) *P. compressa*
Flowering culms, stems round and not strongly flattened. 9.
9. Only the keel and marginal nerves of lemmas hairy. 10.
All nerves of lemmas hairy near base. 11.
10. Lower leaf sheaths hairy, purplish, lemmas not webbed at base, very tall stems, few basal leaves. (10) *P. nervosa*
Lower leaf-sheaths not hairy; lemmas webbed at base; panicle branches in whorls of 5. (12) *P. pratensis*
11. Panicle contracted, its branches appressed, usually has one stem leaf, the rest basal. (3) *P. arida*
Panicle open, its branches spreading. (7) *P. glaucifolia*
12. Lemmas webbed at base. 13.
Lemmas not webbed at base. 15.
13. Lemmas not hairy, or only slightly so on keel. (16) *P. trivialis*
Lemmas hairy on keel and marginal nerves. 14.
14. Culms decumbent at the purplish base; panicle 4 to 12 inches long, large and open. (11) *P. palustris*
Culms erect from green or tawny base; panicle small, few-flowered and less than 4 inches long. (8) *P. interior*
15. Lemmas hairy on keel and marginal nerves.

(13) *P. rupicola*

Lemmas not hairy.

(6) *P. Cusickii*

A very large and difficult genus, mainly of low to medium-growing species and found in all types of habitat. The leaves have boat-shaped tips and usually have a double line down the mid-rib.

They are valuable forage grasses and many species grow very early in the season.

(1) *Poa ampla* Merr.

BIG BLUE-GRASS

An intermountain species, which has been reported from southern Saskatchewan but is very rare.

(2) *Poa annua* L.

ANNUAL BLUE-GRASS

An introduced weed occasionally found in moist gardens.

(3) *Poa arida* Vasey

PLAINS BLUE-GRASS

An erect, short, sod-forming species with narrow, appressed panicles and stiff, folded leaves, and usually but one stem leaf. Fairly common on prairie and in alkaline meadows throughout the southern parts of the area.

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(4) *Poa Canbyi* (Scribn.) Piper

CANBY BLUE-GRASS

Erect, tufted, medium-growing species with conspicuous ligules, and compact panicles (shining straw-coloured glumes). Quite common on the open prairie and often found on moderately saline sloughs.

(5) *Poa compressa* L.

CANADA BLUE-GRASS

A bluish-green, flat-stemmed, creeping-rooted grass fairly plentiful in many areas where it has escaped from cultivation.

(6) *Poa Cusickii* Vasey

EARLY BLUE-GRASS

An erect, bluish-green, tufted species with no rootstocks, narrow leaves

and with club-shaped, compressed panicle. Quite common on hillsides and dry slopes in the southwestern part of the area.

(7) *Poa glaucifolia* Scribn. & Will. GLAUCOUS BLUE-GRASS

An erect, tall glaucous species with distantly whorled panicle branches. Not common, but may be found in moist places and open woodlands in the southwestern and south-central portions of the area.

(8) *Poa interior* Rydb. INLAND BLUE-GRASS

Erect, medium species with panicle short and loose, usually less than 4 inches high. Found usually in medium dry soil, outer slough margins and open woodlands throughout the entire area.

(9) *Poa juncifolia* Scribn. ALKALI BLUE-GRASS

Fairly tall, erect species with rolled leaves and very narrow panicle. Found in alkaline meadows in the southern section but not very common.

(10) *Poa nervosa* (Hook.) Vasey WHEELER'S BLUE-GRASS

A species with very short, stiff, flat basal leaves and a very long flowering stem, fairly open panicle. Occasionally found in open woods in the southwestern and central sections of the area.

(11) *Poa palustris* L. FOWL BLUE-GRASS

A loosely-tufted species with large, open panicle, with decumbent stems, purplish at base. Common in moist meadows throughout the entire area.

(12) *Poa pratensis* L. KENTUCKY BLUE-GRASS

A tall, erect, slender species with long rootstocks, dark green, flat or folded leaves and a fairly open panicle, the lower branches of which are usually in whorls of five. Common almost everywhere and has escaped from lawns and pastures. Particularly common in the eastern and moister portion.

(13) *Poa rupicola* Nash TIMBERLINE BLUE-GRASS

An erect, densely-tufted, short grass with short leaves and short, appressed,

purplish panicle. Found on dry and rocky slopes at medium altitudes in the extreme southwest.

(14) *Poa scabrella* (Thurb.) Benth.

PINE BLUE-GRASS

An erect, medium, pale green tufted species with narrow compressed panicle. Found in meadows and open woods in the southwest of the area covered.

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(15) *Poa secunda* Presl

SANDBERG'S BLUE-GRASS

Low-growing, erect and densely-tufted species with short, close panicle, narrow leaves with conspicuous ligules. Very common on dry, open prairie throughout the entire southwest section. Flowers early in May and dries up early in July. Not palatable after flowering.

(16) *Poa trivialis* L.

ROUGH-STALKED BLUE-GRASS

A medium-growing species, erect from a decumbent base with fairly open panicle. Found occasionally in moist grasslands in the Riding Mountains. An introduced plant used in pasture mixtures.

PUCCINELLIA (Salt-meadow grass) genus. 2 species.

1. Lower panicle branches usually reflexed; lemmas broad, obtuse, not narrowed above.

(1) *P. distans*

Lower panicle branches not usually reflexed; lemmas narrow, narrowed into an obtuse apex.

(2) *P. Nuttalliana*

Low to medium, tufted, feathery paniced grasses of moist alkaline soils.

- (1) *Puccinellia distans* (L.) Parl. SLENDER SALT-MEADOW-GRASS
(*P. tenuifolia* (Griseb.) Scribn. & Merr.)

A short, open paniced species found in moist slightly alkaline flats in the southeast of the area. Not common.

- (2) *Puccinellia Nuttalliana* (Schultes) Hitchc.

NUTTALL'S SALT-MEADOW-GRASS

A dull bluish-green, tufted plant with feathery open, purplish panicles, found in moist alkaline soils throughout the entire area. Very common but not grazed readily. Although it makes a palatable hay, stands are too sparse to obtain heavy yields.

SCHEDONNARDUS (Tumble-grass) genus. 1 species.

(1) *Schedonnardus paniculatus* (Nutt.) Trel.

TUMBLE-GRASS

A tufted species with short, wavy leaves crowded at the base. The panicle has slender, very divergent branches at intervals on the main stem and the spikelets are very small and scattered along the branches. Found in dry and gravelly places, particularly on railway grades throughout the central-southern section. At maturity the panicle readily breaks off and rolls with the wind, thus spreading the seed.

SCHIZACHNE (Purple oat-grass) genus. 1 species.

(1) *Schizachne purpurascens* (Torr.) Swallen

PURPLE OAT-GRASS

A tall, dark green grass with rootstocks, stems usually decumbent at base. Sheath entire before maturity. Panicle narrow and loose with few fairly large, long-stalked, awned spikelets. Common in bluffs and woodlands throughout the entire area.

SETARIA (Foxtail) genus. 2 species.

1. More than 5 bristles below each spikelet; leaf blades with a twist beyond middle.

(1) *S. lutescens*

Less than 5 bristles below each spikelet; leaf blades without a twist.

(2) *S. viridis*

Weedy annuals with cylindric, dense, spike-like, bristly heads, found in waste places and as a weed in cultivated fields. Introduced from Europe but rapidly spreading.

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(1) *Setaria lutescens* (Weigel) F. T. Hubb.

YELLOW FOXTAIL

Of medium height with long, flat leaves up to 10 inches long. The heads turn yellow at maturity. Becoming common in the southeastern portion of area.

(2) *Setaria viridis* (L.) Beauv.

GREEN FOXTAIL

Has short, flat leaves, usually less than 6 inches long. The heads remain green even when mature. A common weed in most sections.

SITANION (Squirrel-tail) genus. 1 species.

(1) *Sitanion Hystrix* (Nutt.) J. G. Smith

SQUIRREL-TAIL

A densely-tufted grass with stiff leaves and a very dense, long-awned spike-like head, which breaks up very readily. Found in very dry areas along the southern border but is not common. Can be confused with *Elymus* or *Hordeum*.

SORGHASTRUM (Indian-grass) genus. 1 species.

(1) *Sorghastrum nutans* (L.) Nash

INDIAN-GRASS

A very tall, erect species with scaly rootstocks and long, flat leaves, narrowed at base and tapering to sharp points. The heads are long, fairly dense, with awned spikelets. Found in moist areas in the southeast corner of the area covered.

SPARTINA (Cord-grass) genus. 2 species.

1. Lemmas awned, found only in eastern part of area.

(2) *S. pectinata*

Lemmas not awned.

(1) *S. gracilis*

Erect, coarse grasses with scaly rootstocks, found in moist areas throughout entire area. The spikelets are crowded on one side of panicle branches, which are borne alternately on the main stem and closely parallel it. Leaves are very coarse.

(1) *Spartina gracilis* Trin.

ALKALI CORD-GRASS

Found in saline and moist areas, as well as in sandy areas, throughout the entire area and very common. In favourable locations may reach 3 feet in height, but is usually from 18 inches to 2 feet. Often cut for hay, but does not provide palatable pasture.

(2) *Spartina pectinata* Link

PRAIRIE CORD-GRASS

Distinguished from preceding species by conspicuous awns and larger growth. Very common in the moister, eastern part of the area in marshes and wet places.

SPHENOPHOLIS (Wedge-grass) genus. 2 species.

1. Second glume much wider than lemma, wedge-shaped; panicle dense, spike-like, erect.

(2) *S. obtusata*

Second glume not much wider than lemma, obtuse or acute; panicle not dense, or spike-like drooping.

(1) *S. intermedia*

Tall, tufted grasses with narrow panicles and numerous shining spikelets.

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(1) *Sphenopholis intermedia* Rydb.

SLENDER WEDGE-GRASS

Occasionally found in moist areas along the northern and eastern parts of the area.

(2) *Sphenopholis obtusata* (Michx.) Scribn.

PRAIRIE WEDGE-GRASS

Found in moist soil, slough margins, ravines and sandy soils throughout the entire area. Fairly common.

SPOROBOLUS (Dropseed) genus. 3 species.

1. Plants annual; panicle contracted or spike-like.

(3) *S. neglectus*

Plants perennial; panicle open and branches more or less spreading.

2.

2. Spikelets less than $\frac{1}{8}$ inch long.

(1) *S. cryptandrus*

Spikelets more than $\frac{1}{8}$ inch long.

(2) *S. heterolepis*

Tufted plants with paniculate inflorescence, the seeds readily falling at maturity, giving the common name to the genus. Fairly palatable forage plants.

(1) *Sporobolus cryptandrus* (Torr.) A. Gray

SAND DROPSEED

A tufted, medium tall grass with short rootstocks. The leaves are short, stout and rather stubby, of a dull bluish-green colour and project almost horizontally from the stems, with a tuft of hairs at the joint of sheath and blade. The panicle is often enclosed in the topmost leaf sheath until almost mature. Very common on sandy soil and sand dunes throughout the entire area.

(2) *Sporobolus heterolepis* A. Gray

PRAIRIE DROPSEED

Longer leaved than the preceding species, with many straw-coloured basal leaves. Found on dry prairies and hillsides in the east-central portion of the area, but not very abundant.

(3) *Sporobolus neglectus* Nash

ANNUAL DROPSEED

An annual, which has been found in sandy and saline places in the southeast portion, but very unusual.

STIPA (Needle-grass) genus. 5 species.

1. Lemma $\frac{5}{16}$ inch long or more.

2.

Lemma not over $\frac{5}{16}$ inch long.

3.

2. Mature lemmas pale or finally brownish, usually less than $\frac{1}{2}$ inch long.

(2) *S. comata*

Mature lemmas dark, from $\frac{1}{2}$ to 1 inch in length.

(4) *S. spartea*

3. Panicle open, loose and spreading.

(3) *S. Richardsoni*

Panicle narrow with appressed branches.

4.

4. Leaf sheaths hairy along edge and at throat, lower nodes of panicle hairy.

(5) *S. viridula*

Leaf sheaths and nodes of panicle not hairy or only very slightly so.

(1) *S. Columbiana*

Medium to tall-growing tufted grasses with narrow panicles of fairly large spikelets bearing twisted awns. The spikelets break off at maturity above the glumes. The lemmas remain attached to the seed and are characterized by a hard, sharp-pointed, hairy callus at the bottom, and a long twisted awn at the top making it needle-like and very offensive and injurious to the mouth parts and skin of grazing animals, particularly sheep. Except for the period when the seeds are mature and still attached, the Stipas are excellent forage plants, both for hay and pasture, and constitute one of the most important groups of forage plants on the western range.

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(1) *Stipa columbiana* Macoun

COLUMBIA NEEDLE-GRASS

A tall-growing species found in the extreme southwest portion and occasionally in the Cypress Hills and as far east as Swift Current.

(2) *Stipa comata* Trin. & Rupr.

SPEAR-GRASS

A tufted species, generally with decumbent spreading, rolled, grey-green leaves; the younger leaves being almost bristle-like or sharp pointed. As a rule the older clumps have an empty space in the centre of the crown. The lemmas are pale or light brown in colour and the awn is from 2 to 4 inches long, twisted and bent, curled above the second bend. The base of the panicle is usually enclosed in the upper part of the leaf sheath. Very common over all the open prairie in the southwest and south-central portions of the area and one of the main forage plants of the drier prairie.

(3) *Stipa Richardsoni* Link

RICHARDSON NEEDLE-GRASS

A tall species with very open, spreading panicle and with the spikelets on very long stalks. Occasionally found in woodlands and moist places over most of the western portion, but not common.

(4) *Stipa spartea* Trin.

PORCUPINE-GRASS

A very tall species with long rolled, erect leaves and dark brown lemmas. The awns are from 2 to 5 inches long, twisted and bent but straight above the bend. The panicles are quite free from the upper leaf sheath. Very common in the southeastern part of the area on dry or sandy soils, but does not occur in the southwestern portion.

(4A) *Stipa spartea* Trin. var. *curtiseta* Hitchc.

WESTERN PORCUPINE-GRASS

Very similar to spear-grass but is smaller, has erect leaves and the awn and lemma are similar to Porcupine-grass. One of the dominant species of the south-central portion of the area and can be found in association with spear-grass, often being dominant on the moister and more favoured sites with speargrass dominant on the drier places.

(5) *Stipa viridula* Trin.

GREEN NEEDLE-GRASS

A tall, tufted species with the leaf sheath hairy along its edge and at the throat. The awns are only about 1 inch long, twice bent, and the heads are usually erect. Found in moister places and heavier soil throughout all the southern area and quite common.

TRISETUM (*Trisetum*) genus. 1 species.

(1) *Trisetum spicatum* (L.) Richt.

SPIKE TRISETUM

An erect, fairly tall, tufted species with short leaves and a fairly tall stem with narrow, spike-like, compact panicle of short, bent-awned spikelets. Is really a mountain species but has been found in the Cypress Hills of Alberta and Saskatchewan. Not at all common.

CYPERACEAE (Sedge Family) 5 genera.

Grass-like or rush-like annual or perennial plants, generally with solid stems. The roots are fibrous or long running rootstocks. The long, narrow leaves have closed sheaths and are borne three-ranked, or on three sides of the stem. The flowers are either perfect or unisexual with no sepals or petals, their places being taken by bristles or scales, (perigynia). While usually associated with moist or marshy areas, many species are found in very arid localities.

1. Flowers all imperfect, unisexual.

[CAREX](#)

Flowers perfect.

[2.](#)

2. Scales of spikelets in 2 ranks.

[CYPERUS](#)

Scales of spikelets imbricated in more than 2 ranks.

[3.](#)

3. Spikelets solitary, terminal on stem.

[ELEOCHARIS](#)

Spikelets usually several, in terminal or lateral clusters.

[4.](#)

4. Bristles much elongated as fruit ripens forming silky-cottony heads.

[ERIOPHORUM](#)

Bristles not much elongating in fruit.

[SCIRPUS](#)

CAREX (Sedge) genus. 10 common species in our area

(The sedges or Carices are a very large genus, over 70 species being found in our area. They are also very difficult to distinguish and the mature fruit is usually needed for positive identification. For this reason only 10 of the more important and commoner species are included here.)

1. Plants of upland prairie and meadows.

Plants of water and marshes.

[2.](#)

[7.](#)

2. Plants of dry bench lands or hillsides.

Plants of lower, moister spots, meadows, etc.

[3.](#)

[6.](#)

3. Roots dense, black and coarse with very conspicuous chestnut-brown coloured stems crowded at base of plants.

[\(5\)](#) *C. filifolia*

Roots creeping, without dense mass of stems at base of plants.

[4.](#)

4. Flower spikes solitary on stem, small; achene very dark coloured.

[\(8\)](#) *C. obtusata*

Flower spikes two or more on stem, sometimes crowded into a head.

[5.](#)

5. Leaves rolled; stigmas 2.

[\(4\)](#) *C. eleocharis*

Leaves not much rolled; stigmas 3.

[\(6\)](#) *C. heliophila*

6. Flower spikes large, broad, not interrupted, usually not extending above the foliage.

[\(3\)](#) *C. Douglasii*

Flower spikes tall, narrow and interrupted, usually extending considerably above the foliage.

(9) *C. praegracilis*

7. Coarse-leaved, widest leaves over $\frac{1}{4}$ inch wide.

8.

Finer leaved, widest leaves not over $\frac{1}{4}$ inch wide.

9.

8. Leaf sheaths hairy with very fine hairs.

(2) *C. atherodes*

Leaf sheaths not hairy.

(10) *C. rostrata*

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9. Flowering parts (perigynia) with fine hairs.

(7) *C. lanuginosa*

Flowering parts not woolly or hairy.

(1) *C. aquatilis*

(1) *Carex aquatilis* Wahl.

WATER SEDGE

A tall sedge with pale green leaves, usually less than $\frac{1}{4}$ inch wide. Plant grows up to 3 feet in height in favourable locations. It usually has one or two long, narrow spikes of male flowers near the top of the stem with 2, 3 or 4 spikes of female flowers below. The scales enclosing the fruit have no beak. It is found in wet places, swamps and marshes across the whole area, particularly in the north and east.

(2) *Carex atherodes* Spreng.

AWNED SEDGE

A very coarse-growing sedge with long leaves, the blades up to almost $\frac{1}{2}$ inch in width. The leaf sheaths are pubescent with fine downy hairs and often the undersides of the leaves are hairy also. This species is very common throughout the entire area in wet sloughs and marshy places.

(3) *Carex Douglasii* Boott

DOUGLAS' SEDGE

A pale-green sedge growing from 4 inches to 1 foot in height, usually short, however, with the foliage usually taller than the flowering stems. The flower spikes are usually large, broad and appear as a single spike up to 1 inch high and $\frac{3}{8}$ inch wide. The male and female flowers are usually borne

on separate spikes. It is fairly common in moister spots on the prairie in the southern and the southwestern parts of the area.

(4) *Carex eleocharis* Bailey

LOW SEDGE

A small, low-growing sedge with tightly rolled narrow leaves. The flower spikes are crowded at the top of the stem in a head $\frac{1}{4}$ to $\frac{1}{2}$ inch high and $\frac{1}{8}$ to $\frac{1}{4}$ inch wide. Flowering stems from $1\frac{1}{2}$ to 6 inches long. This species flowers very early, usually about the first week of May. One of the commonest plants of the dry prairie throughout all the southern parts of the area.

(5) *Carex filifolia* Nutt.

THREAD-LEAVED SEDGE

A tufted sedge with wiry, rolled, thread-like leaves of pale green colour and very coarse black roots. The base of the plants is a chestnut-brown colour with the leaf sheaths and the persistent old sheaths. The flower is a solitary narrow spike at the summit of the stem, about $\frac{1}{2}$ to $\frac{3}{4}$ inch high and $\frac{1}{16}$ to $\frac{1}{8}$ inch broad, the male flowers being above the female flowers on the same spike. Very common on dry prairie throughout the southern part of the area, especially on eroded lands and on hillsides.

(6) *Carex heliophila* Mack.

SUN-LOVING SEDGE

A short, slender, erect sedge of the open bench land, with narrow, flat leaves, $\frac{1}{32}$ to $\frac{1}{16}$ inch wide. The flowers are borne in several spikes on a stem, the terminal being of male flowers and the lower ones female flowers. Fairly common on dry prairie over all the southern part of the area, and especially abundant on overgrazed pastures.

(7) *Carex lanuginosa* Michx.

WOOLLY SEDGE

A tall-growing, fine-leaved sedge with the widest leaves not over $\frac{1}{4}$ inch wide. The stems are sharply three-angled. The flowers are in several spikes with the male spikes nearest the top of the stem. The scales (perigynia) of the fruiting spikes are very finely woolly or hairy, thus giving its name. Very common throughout the whole area in the edges of wet sloughs and marshes.

(8) *Carex obtusata* Liljebl.

BLUNT SEDGE

A short plant from 3 to 8 inches high with pale green leaves, usually rolled. Flowers in short, blunt spikes at head of stem with male flowers at top and female flowers below. The achenes, in the lower portion of the spikes, are very dark in colour, and the spike is much shorter than in most sedges. Fairly common on dry bench land throughout almost all the southern part of the area.

(9) *Carex praeegracilis* W. Boott

GRACEFUL SEDGE

Light green, medium tall sedge, from 6 to 18 inches in height, with triangular stems and flattened leaf blades. The rootstocks and bases of stems are very dark brown to blackish and quite coarse. The flowers are borne in interrupted spikes at the summit of the stem with the male flowers uppermost. Quite common in prairie meadows and moister spots on bench land throughout the southern part of the area.

(10) *Carex rostrata* Stokes

BEAKED SEDGE

One of the coarse, rank-growing sedges, up to 3 feet in height, with leaves up to ½ inch wide with a prominent mid-vein. The flowers are usually borne in 2 to 4 male spikes near the summit of the stem with 2 to 4 female spikes lower down. The perigynia or flower scale of the female spikes are elongated into a beak, giving the spikes a prickly appearance. Very common in sloughs, marshes and wet places throughout our entire area. Many authorities consider the correct name to be *C. inflata* Huds. var. *utriculata* (Boott) Druce.

CYPERUS (Cyperus) genus. 2 species.

Perennial triangular-stemmed plants with long, grass-like leaves, mostly basal. The flowers are perfect and borne in spikelets or in an umbel-like inflorescence at the summit of the stem. The fruit is a three-angled achene.

1. Flower scales light green; spikelets flattened.

(1) *C. Schweinitzii*

Flowers scales straw-coloured; spikelets round in cross section.

(2) *C. strigosus*

- (1) *Cyperus Schweinitzii* Torr.

SCHWEINITZ'S CYPERUS

A rather uncommon perennial to be sometimes found on sand dunes and on sandy soil.

- (2) *Cyperus strigosus* L.

STRAW-COLOURED CYPERUS

May be looked for in moist meadows and swamps but quite scarce.

ELEOCHARIS (Spike-rush) genus. 2 species common in the area.

Perennial, sedge-like, slough margin plants, from coarse, creeping roots. The leaves are generally reduced to sheaths without blades and are all basal. The flowers are perfect and borne in a spike at the summit of the stem.

1. Small tufted plants with thin wiry stems, less than 8 inches high, spikes up to $\frac{1}{4}$ inch long; style branches 3.

(1) *E. acicularis*

Larger, coarse plants with spikes from $\frac{1}{4}$ to $\frac{3}{4}$ inches long; style branches 2.

(2) *E. palustris*

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- (1) *Eleocharis acicularis* (L.) R. & S.

NEEDLE SPIKE-RUSH

A small tufted, wiry plant growing in large quantities around slough margins and in muddy places. Very common throughout the entire area.

- (2) *Eleocharis palustris* (L.) R. & S.

CREEPING SPIKE-RUSH

A coarse-stemmed perennial with coarse, blackish rootstocks and dark brown sheathing bases to leaves. Stems usually yellowish, round and erect. Very common in wet places and slough margins throughout the entire area.

ERIOPHORUM (Cotton-grass) genus. 1 species.

(1) *Eriophorum angustifolium* Roth

TALL COTTON-GRASS

Grass-like bog or marsh plants with cottony heads. The leaves are narrow and grass-like, and the flowers are perfect, and bear long soft bristles. The seed is a three-angled achene. Fairly common in bogs, marshes and swampy land around the northern and eastern boundaries of the area.

SCIRPUS (Bulrush) genus. 6 species.

Rush-like plants growing from perennial rootstocks, and bearing narrow, grass-like leaves. The flowers are perfect and borne in clusters of spikelets at the head of the stem, but the leaf-like bracts which extend above the inflorescence make it appear as though the heads were part way up the stem.

1. One leaf-like bract extending beyond inflorescence.

2.

Two or more leaf-like bracts extending above inflorescence.

5.

2. Spikelets stalkless in clusters on stem.

3.

Spikelets stalked and in umbel-like inflorescence.

4.

3. Stems sharply 3-angled.

(2) *S. americanus*

Stems not sharply 3-angled, almost round.

(4) *S. nevadensis*

4. Inflorescence usually drooping; basal sheaths not fringed.

(6) *S. validus*

Inflorescence usually erect; basal sheaths usually fringed.

(1) *S. acutus*

5. Inflorescence of densely clustered, stalkless, large spikelets.

(5) *S. paludosus*

Inflorescence of small, stalked spikelets, arranged as an umbel.

(3) *S. microcarpus*

- (1) *Scirpus acutus* Muhl.

VISCID GREAT BULRUSH

Very similar to Great Bulrush *S. validus* but has green stems and rather viscid flowering bracts. The basal sheath is fringed with a very slender fringe. Not uncommon towards the eastern part of the area.

- (2) *Scirpus americanus* Pers.

THREE-SQUARE BULRUSH

A tall-growing bulrush up to 3 or 4 feet in height, the stem very definitely triangular, giving the species its common name. Very common around sloughs and wet places throughout the entire area.

(3) *Scirpus microcarpus* Presl (*S. rubrotinctus* Fern.)

SMALL-FRUITED BULRUSH

This species has very small, but numerous spikelets, on long stalks, and may be found throughout the entire area but is not very abundant.

(4) *Scirpus nevadensis* S. Wats.

NEVADA BULRUSH

Very similar to three-square bulrush but has not the triangular stem, and grows to a height of only 12 to 15 inches. Occasionally found throughout the western part of the area but not very common.

(5) *Scirpus paludosus* A. Nels.

PRAIRIE BULRUSH

Has two leafy bracts extending above the inflorescence and large, stalkless spikelets. It has triangular stems and grows up to 2 feet in height, particularly in alkaline marshes and sloughs. Common throughout the entire area.

(6) *Scirpus validus* Vahl

GREAT BULRUSH

A very coarse, tall and thick-growing bulrush with round stems up to $\frac{3}{4}$ inch thick. This rush can grow up to 8 feet in height. The inflorescence is in umbel-like clusters with long-stalked spikelets, usually drooping. Probably the commonest bulrush and found in great abundance in water and along the margins of sloughs and lakes throughout the entire area covered.

LEMNACEAE (Duckweed Family) 2 genera.

Aquatic perennials with small disk-like, leafy fronds floating on or in the water, with one or several rootlets hanging from the lower surface of the frond. The flowers are unisexual, minute and borne on the surface of the fronds, and the fruit is a minute achene with a thin-walled covering. Duckweeds are found in still water throughout the entire area.

1. Rootlets solitary, one to a frond.

[LEMNA](#)

Rootlets several to a frond.

[SPIRODELA](#)

LEMNA (Duckweed) genus. 2 species.

1. Fronds short-stalked or stalkless, floating.

(1) *L. minor*

Fronds long-stalked, usually submerged.

(2) *L. trisulca*

(1) *Lemna minor* L.

LESSER DUCKWEED

Small, floating fronds $\frac{1}{8}$ to $\frac{3}{16}$ inch across, found floating in large quantities in still water. Common throughout the entire area in suitable locations.

(2) *Lemna trisulca* L.

IVY-LEAVED DUCKWEED

Small oblong or lanceolate fronds tapering to a narrow stalk, and found floating at various depths in the water. Fairly common throughout the entire area.

SPIRODELA (Larger duckweed) genus. 1 species.

(1) *Spirodela polyrhiza* (L.) Schleid.

LARGER DUCKWEED

Found floating solitary or in small groups on surface of water. Has 5 to 11 rootlets hanging from beneath fronds. Fairly common around the northern and the eastern margins of the area.

JUNCACEAE (Rush Family) 2 genera.

Grass-like plants growing from either fibrous roots or rootstocks, and sometimes bearing round or stem-like leaves. The flowers are perfect, regular, with 3 sepals and 3 petals, both very similar and scale-like. They are borne on the summit of the stem but the projecting stem-like bract often makes the flowers appear to be borne on the side of the stem. The fruit is a capsule which splits at maturity.

1. Leaf-sheaths open; plants not hairy, capsules 1 to 3-celled with many seeds.

[JUNCUS](#)

Leaf-sheaths closed; plants usually with some fine hairs when young; capsule 1-celled with 3 large seeds.

[LUZULA](#)

JUNCUS (Rush) genus. 11 species.

1. Inflorescence appears to be borne part way up stem of plant, caused by erect, cylindrical bract projecting above flower and appearing like a continuation of stem.

[\(1\)](#) J. balticus

Inflorescence terminal, bracts channelled or grooved if protruding above inflorescence.

[2.](#)

2. Leaves divided into compartments by cross partitions.

[3.](#)

Leaves not divided into compartments.

[7.](#)

3. Leaves equitant or folded at base and straddling each other, later becoming flat.

[\(5\)](#) J. ensifolius

Leaves not equitant, circular in cross section.

[4.](#)

4. Inflorescence with short branches; flowers prickly-spreading; capsule narrowly lanceolate.

[5.](#)

Inflorescence on long branches; flowers erect-ascending; capsule oblong.

[6.](#)

5. Heads not over $\frac{3}{8}$ inch in diameter; leaf-blades erect, petals usually longer than sepals.

[\(8\)](#) J. nodosus

Heads over $\frac{3}{8}$ inch in diameter; leaf-blades usually spreading; sepals longer than petals.

[\(11\)](#) J. Torreyi

6. Capsule not longer than the sepals and petals.

[\(7\)](#) J. Mertensianus

Capsule longer than the sepals and petals.

[\(9\)](#) J. Richardsonianus

7. Flowers with small bracts, inserted singly on branches or clustered, but not in true heads.

8.

Flowers in true heads on branches without bractlets; leaves flat and grass-like.

(6) *J. longistylis*

8. Annual, with branching stem; inflorescence, exclusive of its leaves more than $\frac{1}{3}$ height of plant.

(2) *J. bufonius*

Perennial, with short rootstocks and simple stems.

9.

9. Auricles, or ear-like appendages, at top of leaf-sheath firm and tough, of a yellowish-brown colour.

(4) *J. Dudleyi*

Auricles at top of leaf-sheath membranous, whitish.

10.

10. Capsule oblong, narrow and 3-celled, almost equalling petals and sepals.

(3) *J. confusus*

Capsule oval or ovate, 1-celled, three-fourths length of petals and sepals or less.

(10) *J. tenuis*

(1) *Juncus balticus* Willd. var. *montanus* Engelm.
(*J. ater* Rydb.)

BALTIC RUSH

Very dark green, bladeless leaves with dark brown bases, growing from 6 inches to 3 feet high from creeping rootstocks. Very common in wet places, sandy and saline shores throughout the entire area. The commonest rush in the region.

(2) *Juncus bufonius* L.

TOAD RUSH

A short plant, rarely over 8 inches high, found in mud and wet places. Fairly common throughout the whole region.

(3) *Juncus confusus* Cov. FEW-FLOWERED RUSH

A wiry-leaved, slender rush growing from 15 to 18 inches high. Found in moist places in the south of the area but by no means common.

(4) *Juncus Dudleyi* Wieg. DUDLEY'S RUSH

A slender fairly tall-growing rush from 1 to 3 feet in height, and found fairly frequently in wet places and meadows across the whole area.

(5) *Juncus ensifolius* Wikstr. EQUITANT-LEAVED RUSH

Has stems compressed and 2-edged from 1 to 2 feet in height, from creeping rootstocks. Panicles of 2 to 7 many flowered clustered heads about $\frac{3}{8}$ inch in diameter. Leaves flattened, not rolled. A western species which has been found in moist places in the Cypress Hills but is not common.

(6) *Juncus longistylis* Torr. LONG-STYLED RUSH

A medium rush, 8 to 20 inches high with slender, wiry stems and terminal inflorescence. Common in wet meadows throughout entire area.

(7) *Juncus Mertensianus* Bong. SLENDER-STEMMED RUSH

A short, thin-stemmed rush with solitary or very few terminal heads. A western alpine species, which has been found in a sub-alpine meadow in the Cypress Hills. Quite rare.

(8) *Juncus nodosus* L. KNOTTED RUSH

Erect, wiry rush, 6 to 28 inches high, with a rootstock bearing tube-like thickenings. Bears several spike-like heads with leaf-like bract protruding beyond inflorescence. Very common in moist places throughout entire area.

(9) *Juncus Richardsonianus* Schult. RICHARDSON'S RUSH

A medium-growing, wiry species with many small heads, found fairly abundantly in moist places across the area, particularly in the northern part.

(10) *Juncus tenuis* Willd. SLENDER RUSH

A rush 8 to 24 inches high, with small heads and narrow, flat leaves. Occasionally found in moist grassland in the eastern portion of area.

(11) *Juncus Torreyi* Cov.

TORREY'S RUSH

A stout, fairly tall species 8 inches to 2 feet in height, with clusters of rather large heads, $\frac{1}{2}$ to $\frac{3}{4}$ inch in diameter. Found in wet places in the north and eastern portions of the area.

LUZULA (Wood-rush) genus. 1 species.

Similar to the Juncus but capsule 1-celled with three seeds.

(1) *Luzula multiflora* (Ehrb.) Lej.

COMMON WOOD-RUSH

Slender stemmed, from 6 to 18 inches high with an umbel-like cluster of many small heads (leaves flat and grass-like). Not common but to be found in sandy woodlands in the northern and eastern parts.

LILIACEAE (Lily Family) 15 genera.

Perennial herbs growing from bulbs, corms or rootstocks. With a few exceptions the leaves are parallel-veined. Except in the *Maianthemum* genus the flowers bear 3 sepals and 3 petals, all brightly coloured, and 6 stamens in two whorls. The fruit is a capsule or a berry.

1. Climbing plants with tendrils; leaves net-veined; flowers unisexual.

[SMILAX](#)

Non-climbing plants.

[2.](#)

2. Leaves stiff and rigid, two-edged, sword-shaped and all basal.

[YUCCA](#)

Leaves not stiff, rigid and sword-shaped.

[3.](#)

3. Plants with bulbs, corms or tubers.

[4.](#)

Plants with rootstocks.

[9.](#)

4. Leaves net-veined in one whorl of 3 beneath a single flower.

[TRILLIUM](#)

Leaves not in a whorl of 3, and flowers from one to many.

[5.](#)

5. Flowers single or few in number, and large; uppermost leaves in whorls.

[6.](#)

Flowers many, small and in terminal umbels, spikes or racemes.

[7.](#)

6. Flowers nodding and bell-shaped.

[FRITILLARIA](#)

Flowers usually erect, segments spreading.

[LILIUM](#)

7. Flowers in umbels, strong odour when bruised.

[ALLIUM](#)

Flowers in terminal racemes or panicles.

[8.](#)

8. Flowers nodding, greenish purple or brownish purple.

[STENANTHIUM](#)

Flowers erect, greenish white or yellowish white.

[ZYGADENUS](#)

9. Flowers solitary or in umbels.

[10.](#)

Flowers in a raceme or panicle.

[14.](#)

10. Flowers terminal, at end of the stem.

[11.](#)

Flowers hanging from the axils of the leaves.

[12.](#)

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11. Downy plants, often with more than one flower in a group; fruit berry-like.

[DISPORUM](#)

Smooth plants; flowers solitary at the ends of branches; fruit a three-angled capsule.

[UVULARIA](#)

12. Petals and sepals each separate, berry red.

[STREPTOPUS](#)

Petals and sepals united into cylindrical tube; berry dark blue.

[POLYGONATUM](#)

13. Leaves linear, stem sticky.

[TOFIELDIA](#)

Leaves ovate, or lanceolate.

[14.](#)

14. Leaves with stalks, cordate at base; flower parts 4.

[MAIANTHEMUM](#)

Leaves without stalks, tapered at base; flower parts 6.

ALLIUM (Onion) genus. 3 species.

Strong-scented herbs growing from a bulbous root which is generally covered with a fibrous coat. The leaves are linear and narrow and the flowers are brightly coloured and borne in umbels. The fruit is a capsule containing dark seeds.

1. Umbel nodding or drooping.

(1) *A. cernuum*

Umbel erect.

2.

2. Flowers rose-coloured.

(2) *A. stellatum*

Flowers white or pale pink.

(3) *A. textile*

- (1) *Allium cernuum* Roth

NODDING ONION

Growing from coarse-necked bulbs, usually on a short rootstalk; flower heads rose-coloured, or rarely white. Found occasionally across the entire southern portion.

- (2) *Allium stellatum* Ker.

PINK-FLOWERED ONION

Erect umbels of pink or rose-coloured flowers from a membranous-coated bulb. Fairly common throughout the northern, eastern and southeastern portions in wooded lands.

- (3) *Allium textile* Nels. and Macbr.

PRAIRIE ONION

A short plant from an onion-like bulb with a net-like coating and a very pungent odour. Low-growing from 3 to 10 inches high, with umbels of white or pale pink flowers, which blossom early in season. Very common on dry prairie throughout the entire south portion of area.

DISPORUM (Fairy Bells) genus. 1 species.

(1) *Disporum trachycarpum* S. Wats.

FAIRY BELLS

A plant of shady places with branched stem from 1 to 2 feet in height, and broad, oval leaves with no stalks, up to 3 inches long and 2 inches wide. The flowers are about $\frac{1}{2}$ inch long, greenish white and hung on slender stalks from end of stem. Fairly common in shady woodlands and wooded ravines throughout the entire area.

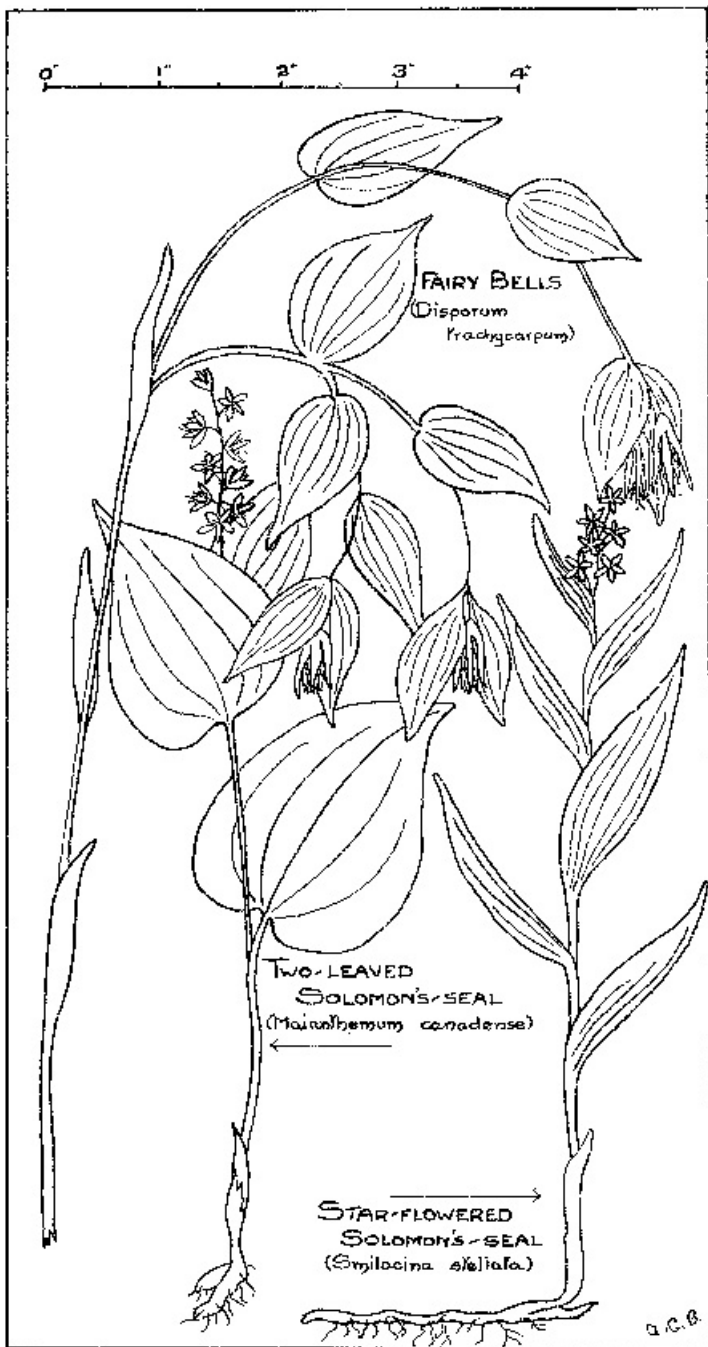
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FAIRY BELLS
(*Disporum*
fraxycarpum)

TWO-LEAVED
SOLOMON'S-SEAL
(*Maianthemum canadense*)

STAR-FLOWERED
SOLOMON'S-SEAL
(*Smitocina stellata*)

a.c.b.



FAIRY BELLS (*Disporum trachycarpum*)

TWO-LEAVED SOLOMON'S SEAL (*Maianthemum canadense*)

STAR-FLOWERED SOLOMON'S SEAL (*Smilacina stellata*)

FRITILLARIA (Fritillary) genus. 1 species.

(1) *Fritillaria pudica* (Pursh) Spreng.

YELLOW BELL

(*Ochrocodon pudicus* (Pursh) Rydb.)

A short plant, from 4 to 8 inches high, growing from a very scaly bulb, leaves about 3 inches long and up to $\frac{1}{4}$ inch wide, somewhat whorled about half way up stem. Flower, nodding and single on summit of stem, about $\frac{3}{4}$ inch long, bell-shaped and yellow or orange. Occasionally found along the south border of the western portion on moist banks but very rare.

LILIUM (Lily) genus. 1 species.

(1) *Lilium philadelphicum* L.

WOOD LILY

Very showy, erect plants growing from 6 to 24 inches in height from whitish, scaly bulblets. The leaves are linear and borne in whorls. The flowers are very showy, up to 3 inches long, with sepals and petals of a red or orange colour with black spots, and there are from 1 to 5 flowers to a plant. Found in the eastern portion of the area, but giving place more commonly to the WESTERN RED LILY, *L. philadelphicum* L. var. *andinum* (Nutt.) Ker, which has the lower leaves alternate and the upper ones whorled. The variety is found in moist meadows throughout the entire area but is becoming scarcer with the advance of settlement and much picking. The plants found in the Foothills Region have wider, lanceolate leaves and were formerly considered a separate species.

MAIANTHEMUM (Wild Lily of the Valley) genus. 1 species.

(1) *Maianthemum canadense* Desf. var. *interius* Fern.

TWO-LEAVED SOLOMON'S SEAL

Low, erect plant, 2 to 7 inches high, with two, sometimes 3, ovate, cordate based leaves, borne alternately on stem. The small, white flowers are borne in a rather dense raceme and later produce pale red, speckled berries about $\frac{3}{16}$ inch in diameter. Fairly common in rich, moister woods throughout the entire area.

POLYGONATUM (Solomon's seal) genus. 1 species.

(1) *Polygonatum commutatum* (Schultes) Dietr.

COMMON SOLOMON'S SEAL

Tall, coarse plant, from jointed rootstocks, growing to a height of from 1 to 4 feet, bearing large, alternate leaves up to 6 inches long and to 4 inches wide. The white, cylindric flowers are suspended in little bunches below the stem, and are about $\frac{5}{8}$ inch long, and later produce dark blue berries up to $\frac{1}{2}$ inch in diameter. Fairly common in open woodlands in the eastern part of the area.

SMILACINA (False spikenard) genus. 4 species.

Plants from rootstocks, with alternate, ovate to lanceolate leaves, and small, perfect, greenish-white flowers borne in racemes or panicles. The fruit are small berries.

1. Inflorescence a branched, dense panicle.

[2.](#)

Inflorescence an unbranched raceme.

[3.](#)

2. Leaf blades ovate or lanceolate, more or less clasping and without stalks.

[\(1\)](#) *S. amplexicaulis*

Leaf blades elliptic to oval, with short stalks.

[\(2\)](#) *S. racemosa*

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3. Leaves 6 to 12; berry green.

[\(3\)](#) *S. stellata*

Leaves 2 to 4; berry dark red.

[\(4\)](#) *S. trifolia*

(1) *Smilacina amplexicaulis* Nutt.

WESTERN WILD SPIKENARD

A large-leaved plant from 1 to 2 feet in height with ovate to lanceolate, stalkless leaves, which often are more or less clasping. The flowers are white, borne in a dense panicle and the fruit are light red berries about $\frac{1}{4}$ inch in diameter, with purple dots. Found in shaded woodlands in the Foothills Regions and the Cypress Hills.

(2) *Smilacina racemosa* (L.) Desf.

WILD SPIKENARD

Fairly tall, large-leaved plant from 1 to 3 feet in height. Leaves elliptic or oval, up to 6 inches long and to 3 inches wide, parallel-veined, no stalks except lower ones, which may have a very short stalk. The white flowers are borne in a dense-branched panicle at end of stem and produce red, purple specked berries up to $\frac{1}{4}$ inch in diameter. Not common but is found in moist woods throughout the eastern portion, and has been found in the

Riding Mountains.

(3) *Smilacina stellata* (L.) Desf. STAR-FLOWERED SOLOMON'S SEAL

An erect, low plant from rootstocks, growing to a height of 6 to 18 inches, with leaves arranged on opposite sides of stem, folded at base and overlapping each other in early stages, but spreading and flattening out later. The flowers are small and white and borne in a spike-like raceme on the stem. The fruits are green berries, each with 6 black stripes. Very common in moist soil, meadows, woods, and low areas throughout the entire area. Readily eaten by livestock.

(4) *Smilacina trifolia* (L.) Desf. THREE-LEAVED SOLOMON'S SEAL

A short, slender plant from a thin rootstock, growing to a height of from 2 to 12 inches, and usually bearing 3 alternate, oblong-lanceolate leaves with no stalks, but often sheathing the stem at their base. The few flowers are in a terminal raceme and later produce dark red berries up to ¼ inch in diameter. Found in wet woods and bogs and fairly common in the northern and eastern portions.

SMILAX (Carrion-flower) genus. 1 species.

Unlike the majority of monocotyledons, this genus has netted-veined leaves, but the parallel veins are much more distinct and conspicuous than the others.

(1) *Smilax lasioneura* Hook.

CARRION FLOWER

(*Nemexia lasioneuron* (Hook.) Rydb.)

A climbing plant with tendrils, which are probably modified leaf stipules. The plant grows up to 5 feet in length under favourable conditions and bears alternate, long-stalked, oval to ovate, cordate-based leaves, up to 3 inches long and to 2½ inches across. The flowers are small and of a greenish colour, borne in many-flowered umbels, and the fruit is a purplish berry. This plant derives its common name from the carrion-like odour of the flowers which attracts flies needed for cross-fertilization. It is found fairly frequently in shady, moist woodlands throughout the entire eastern and central area.

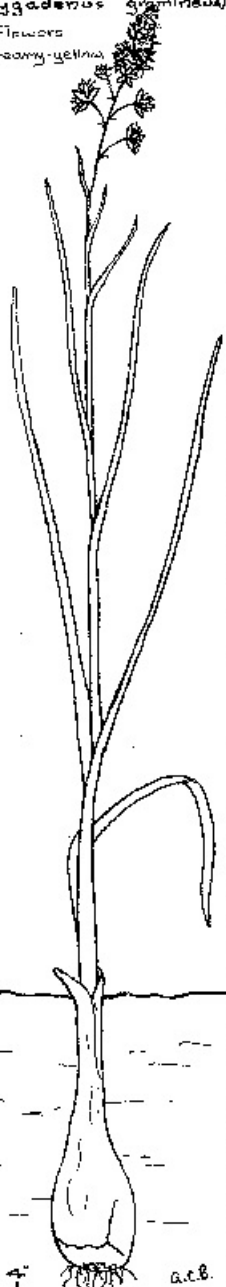
NODDING ONION
(*Allium cernuum*)

Flowers
pink.



DEATH CAMAS
(*Zygadenus gramineus*)

Flowers
creamy-yellow.



PRAIRIE ONION
(*Allium textile*)

Flowers
white or
pinkish.



NODDING ONION (*Allium cernuum*)

Flowers pink.

PRAIRIE ONION (*Allium textile*)

Flowers white or pinkish.

DEATH CAMAS (*Zygadenus gramineus*)

Flowers creamy-yellow.

STENANTHIUM genus. 1 species.

(1) *Stenanthium occidentale* A. Gray

BRONZE BELLS

A bulbous-rooted herb, with grass-like, linear, mostly basal leaves, 6 to 12 inches long. The flowers are greenish-purplish in colour, drooping, and about ½ inch long, borne in a raceme on a stem from 12 to 24 inches high. This plant is a western species and can occasionally be found in moist woods in the southern foothills.

STREPTOPUS (Twisted-stalk) genus. 1 species.

(1) *Streptopus amplexifolius* (L.) DC.

CLASPING-LEAVED TWISTED-STALK

Grows from rootstocks to a height of 3 feet and bears ovate to lanceolate leaves, which clasp the stem at their bases. Leaves from 2 to 4 inches long and 1 to 2 inches wide. The greenish-white flowers, from $\frac{1}{3}$ to $\frac{1}{2}$ inch in length are borne on long twisted stalks, usually in pairs beneath the axils of the leaves. The fruit is a red berry on a long twisted stalk, and about $\frac{3}{8}$ to $\frac{1}{2}$ inch long. Found in moist woods and is fairly common in the eastern part of the area, and in the Rocky Mountains and Foothills. Has been found in the Cypress Hills.

TOFIELDIA (Asphodel) genus. 2 species.

1. Stem not hairy, flowers singly in short raceme.

[\(2\)](#) T. palustris

Stem slightly hairy near top and with sticky glands; flowers in bunches of 3, short raceme.

[\(1\)](#) T. glutinosa

(1) *Tofieldia glutinosa* (Michx.) Pers.

STICKY ASPHODEL

Fairly common in wet places and bogs in the northern and eastern portions.

(2) *Tofieldia palustris* Huds.

BOG ASPHODEL

Fairly common in the eastern and northeastern part of area.

TRILLIUM (Wake-Robin) genus. 1 species.

(1) *Trillium cernuum* L.

NODDING WAKE-ROBIN

Plants from rootstocks, with stems 8 to 18 inches high terminating in 3 ovate, pointed, net-veined leaves, and a single flower, with 3 green sepals and 3 white or pinkish petals from ½ to 1 inch in length. The fruit is an ovoid reddish-purple pendulous berry. The flowers are usually hidden below the leaves. Found in woods in the eastern part of the area, but not very common.

UVULARIA (Bellwort) genus. 1 species.

(1) *Uvularia sessilifolia* L.

SMALL BELLWORT

A slender, smooth-stemmed plant growing from 6 to 15 inches in height, with stalkless, lanceolate-oblong leaves, from 1 to 3 inches long. The flowers are borne singly and are from $\frac{1}{2}$ to $1\frac{1}{4}$ inches long, of a pale greenish-yellow colour. The fruit is sharply three-angled, a capsule about one inch long. Very rare in the area covered but has been found in shady woodlands in the southeastern portion.

YUCCA (*Yucca*) genus. 1 species.

(1) *Yucca glauca* Nutt.

YUCCA or SOAPWEED

Coarse plants with short woody stems and stiff, narrow basal leaves with sharp hard tips. The flowers are cream-coloured or greenish-white, with petals and sepals from 1 to 2 inches long, and are borne in a raceme surmounting a stem from 6 inches to 3 feet in height. The fruit are capsules containing numerous black seeds in layers. This plant is fertilized only by a *Pronuba* moth and both plant and moth are dependent upon each other for their propagation. Found only in one locality, on a sheltered slope in the Missouri drainage area in southern Alberta.

ZYGADENUS (Camas) genus. 3 species.

Plants with an onion-like bulbous root and long, linear, grass-like leaves, somewhat flattened in cross section. The flowers are perfect, with the sepals and petals very similar, and are borne in racemes or panicles. The fruit is an ovoid capsule containing many seeds.

1. Flowers pale yellow, about $\frac{3}{16}$ inch long.

(3) *Z. gramineus*

Flowers greenish yellow or straw-coloured, about $\frac{3}{8}$ inch long.

2.

2. Petals and sepals white or straw-coloured, greenish only on midrib, not clawed.

(2) *Z. elegans*

Petals and sepals greenish, petals contracted into a broad claw.

(1) *Z. chloranthus*

- (1) *Zygadenus chloranthus* Richards.

WHITE CAMAS

(*Anticlea chlorantha* (Richards.) Rydb.)

Found in stony places. An eastern species but reported from eastern Manitoba.

- (2) *Zygadenus elegans* Pursh

SMOOTH CAMAS

(*Anticlea elegans* (Pursh) Rydb.)

Grows from 12 to 24 inches high with pale green leaves and an open raceme of greyish-white to greenish flowers. Very common in moist places, saline meadows etc., throughout the entire area.

- (3) *Zygadenus gramineus* Rydb.

DEATH CAMAS

(*Toxicoscordion gramineum* Rydb.)

A low-growing, early herb from an onion-like bulb, which is usually from 3 to 5 inches below soil surface. The leaves are linear and grass-like from 4 to 8 inches long and the pale yellow flowers are borne in a fairly dense panicle or a raceme at the head of a stem from 8 to 15 inches high. These plants are *very poisonous* to sheep and somewhat so to cattle. The species

is quite common in draws, around grassy sloughs and uplands throughout the south-central and south-west of the area covered. Because of its very early spring growth, it is sought after by livestock, and wherever dense stands occur poisoning may result.

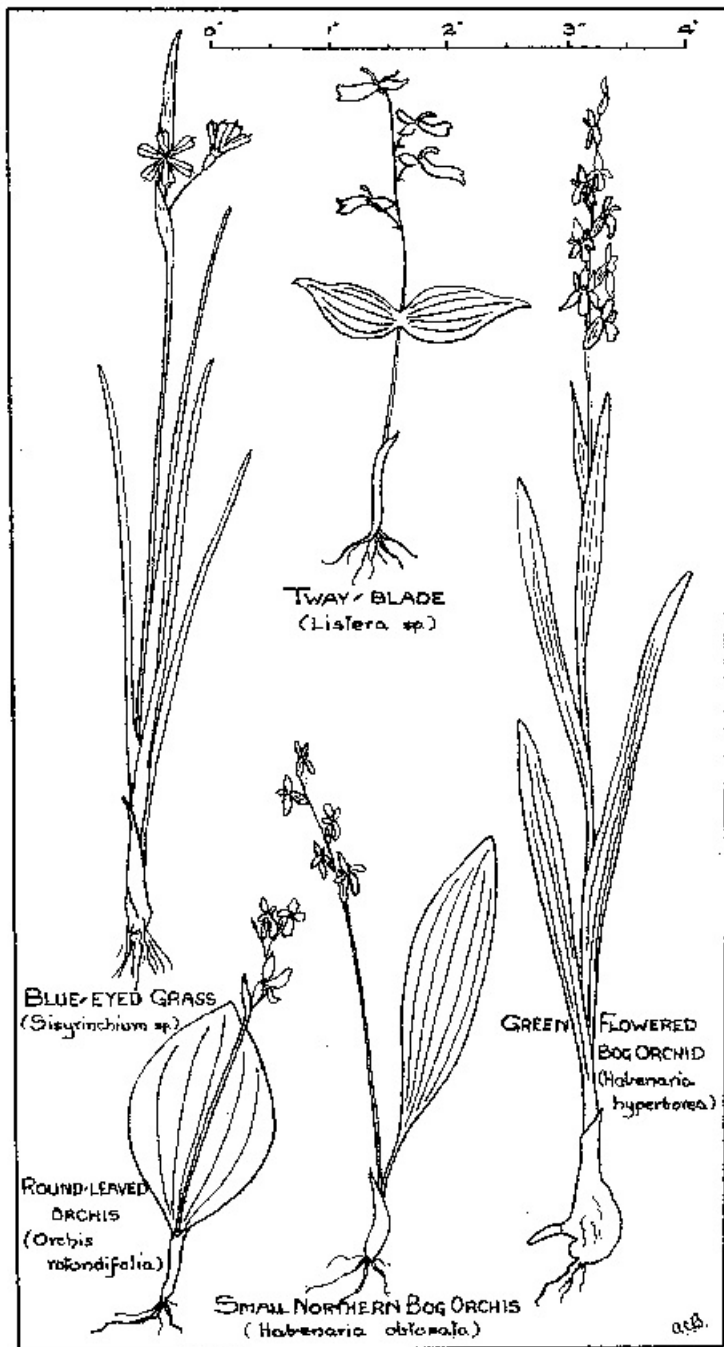
AMARYLLIDACEAE (Amaryllis Family) 1 genus.

HYPOXIS (Star-grass) genus. 1 species.

(1) *Hypoxis hirsuta* (L.) Coville

YELLOW STAR-GRASS

A plant growing from 4 to 6 inches high from a bulbous root and bearing very narrow, grass-like leaves which are slightly hairy. The flowers are perfect, borne 3 or 4 to an umbel, and have 3 sepals and 3 petals, greenish outside and yellow inside. The flowers are from $\frac{1}{4}$ to $\frac{3}{8}$ inch long, and the fruit is a narrow capsule. Found growing amongst grass in the eastern and east-central portion of the area but is not common.



TWAY-BLADE (*Listera*. sp.)

BLUE-EYED GRASS (*Sisyrinchium* sp.)

ROUND-LEAVED ORCHIS (*Orchis rotundifolia*)

SMALL NORTHERN BOG ORCHIS (*Habenaria obtusata*)

GREEN FLOWERED BOG ORCHID (*Habenaria hyperborea*)

IRIDACEAE (Iris Family) 1 genus.

SISYRINCHIUM (Blue-eyed grass) genus. 4 species.

Perennial plants from rootstocks, with two-edged stems. The leaves are narrowly linear or grass-like and borne on two sides of the stem. The flowers are perfect with 3 sepals and 3 petals, all alike, blue in colour and with sharp pointed tips. The fruit are round capsules.

1. Petals and sepals tapered to a thin point; leaves not over $\frac{1}{24}$ inch wide.

(4) *S. septentrionale*

Petals and sepals abruptly contracted at end with a sharp, protruding tip; leaves more than $\frac{1}{24}$ inch wide.

2.

2. Stems and leaves usually over $\frac{1}{16}$ inch wide; capsules $\frac{3}{16}$ to $\frac{1}{4}$ inch long.

(1) *S. angustifolium*

Stems and leaves not over $\frac{1}{16}$ inch wide; capsules less than $\frac{3}{16}$ inch long.

3.

3. Spathe or bracts smooth, its margins united at the base.

(3) *S. mucronatum*

Spathe or bract slightly rough, its margins free to the base.

(2) *S. campestre*

(1) *Sisyrinchium angustifolium* Miller

COMMON BLUE-EYED GRASS

Stem 3 inches to 12 inches high with narrow-winged edges. Flower bright blue with petals up to $\frac{3}{8}$ inch long. Quite common in meadows and moist places throughout entire area. The commonest blue-eyed grass.

(2) *Sisyrinchium campestre* Bickn.

PRAIRIE BLUE-EYED GRASS

Stem up to 8 inches high with flowers pale blue or white and fairly common on prairies in the southeastern portion.

(3) *Sisyrinchium mucronatum* Michx.

MUCRONATE BLUE-EYED GRASS

A slender, tufted species with deep purplish-blue flowers, found in wet places and meadows throughout the entire area, especially in the eastern and northern parts.

(4) *Sisyrinchium septentrionale* Bickn.

NORTHERN BLUE-EYED GRASS

Leaves and stems very narrow, and the pale rose or violet-coloured flowers with tapering sepals and petals, not abruptly contracted near tip. The stems are scarcely winged or margined. Fairly frequent in wet places in the northern portions.

ORCHIDACEAE (Orchis Family) 9 genera.

Perennial plants, generally with fleshy roots. The leaves are entire, as a rule sheathing the stems. The flowers are irregular, generally with a large lip. The Cypripedium have 2 stamens but the others have a single stamen with the pollen grains united into masses called “pollinia”, of which there are different numbers, from 4 to 8. This is a difficult, but very widely distributed family with many very pretty flowers.

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1. Saprophytic, growing on dead organic matter, no green colour and scaly leaves.

[CORALLORRHIZA](#)

Plants with some green colour.

[2.](#)

2. Plants with 1 leaf on stem.

[3.](#)

Plants with 2 leaves on stem.

[5.](#)

Plants with several leaves on stem.

[6.](#)

3. Flower solitary.

[CALYPSO](#)

Flowers in racemes or spikes.

[4.](#)

4. Leaves obovate; flowers greenish-yellow.

[HABENARIA](#)

Leaves oval and orbicular; flowers rose-coloured.

[ORCHIS](#)

5. Plants with corms; leaves basal.

[LIPARIS](#)

Plants with fibrous roots; leaves half way up stem.

[LISTERA](#)

6. Fertile stamens 2; lip of flower a large inflated sack; flowers usually

single or at most 3.

[CYPRIPEDIUM](#)

Fertile stamen 1; lip of flower not a large inflated sack; flowers many in spikes or racemes.

[7.](#)

7. Lip spurred; stem leafy.

[HABENARIA](#)

Lip not spurred; leaves mostly basal and stem leaves much reduced.

[8.](#)

8. Leaves mostly narrow, stem leaves very small, flowers in twisted spike.

[SPIRANTHES](#)

Leaves ovate, usually conspicuously veined and blotched with white.

[GOODYERA](#)

CALYPSO (Venus' slipper) genus. 1 species.

- (1) *Calypso bulbosa* (L.) Oakes
(*Cytherea bulbosa* (L.) House)

VENUS' SLIPPER

Grows from bulbous corm, with stem 3 to 6 inches high. One round-ovate leaf at base and a single pink flower from ½ to 1 inch long with large pink sac with purple lines, with tuft of yellow hairs inside. An exceedingly delicately beautiful flower. Found occasionally in cool woods in the northern and eastern areas and in the Cypress Hills.

CORALLORRHIZA (Coral-root) genus 3 species.

Plants feeding on dead and decaying organic matter. Therefore, only found in wooded areas. No green colouring matter. Scaly, pinkish, yellow stems and coral-like roots.

1. Flowers small, not over $\frac{3}{8}$ inch long.

(3) *C. trifida*

Flowers over $\frac{3}{8}$ inch long.

2.

2. Flowers very conspicuously striped; lip entire.

(2) *C. striata*

Flowers more spotted than striped; lip 3-lobed.

(1) *C. maculata*

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- (1) *Corallorrhiza maculata* Raf.

LARGE CORAL-ROOT

Stem 8 to 20 inches high, purplish, with scaly leaves. Flowers $\frac{1}{2}$ to $\frac{3}{4}$ inch long, reddish-purple, with lip white spotted with red. Found in shady woods throughout entire area. Not common, but the most abundant of the coral-roots.

- (2) *Corallorrhiza striata* Lindl.

STRIPED CORAL-ROOT

Coarse, stout stem, 8 to 20 inches high, flowers dark purple striped with darker purple lines. Found in shady woodlands in eastern part of area and in Cypress Hills. Very rare.

- (3) *Corallorrhiza trifida* Chat.

EARLY CORAL-ROOT

Small species with slender stem, 4 to 12 inches high, and small greenish flowers. Found in shaded woods throughout entire area, but not common.

CYPRIPEDIUM (Lady's slipper) genus. 3 species.

1. Sepals lanceolate, equalling or longer than lip.

2.

Sepals obovate or oval, not longer than the lip.

3.

2. Sepals not over 2 inches long; lip not over 1¼ inches long.

(1a) *C. Calceolus* var. *parviflorum*

Sepals over 2 inches long; lip over 1¼ inches long.

(1b) *C. Calceolus* var. *pubescens*

3. Lip from 1 to 1½ inches long, purple and white.

(2) *C. hirsutum*

Lip about ⅝ inches long, white or very pale purple with purple spots.

(3) *C. passerinum*

(1a) *Cypripedium Calceolus* L. Var. *parviflorum* (Salisb.) Fern.

(*C. parviflorum* Salisb.)

SMALL YELLOW LADY'S SLIPPER

A handsome plant from 8 to 15 inches high, with large yellowish flower, marked with purple lines, very fragrant. Found in rich poplar woods in the northern and eastern parts of the area but becoming increasingly rare.

(1b) *Cypripedium Calceolus* L. var. *pubescens* (Willd.) Correll

(*C. parviflorum* Salisb. var.

LARGE YELLOW LADY'S SLIPPER

pubescens (Willd.) Knight)

Similar to the preceding species but considerably larger, with flowers usually over 1¼ inches long, greenish-yellow with purple spots and streaks. Found in moist spots in the northern and eastern portions, but becoming rather rare.

(2) *Cypripedium hirsutum* Mill.

SHOWY LADY'S SLIPPER

A very showy species, growing from 12 to 24 inches high with oval to elliptic leaves from 3 to 7 inches long and covered with soft hairs. The flowers are white, with a large inflated sac-like lip from 1 to 1½ inches long variegated with reddish-purple stripes. Not common but has been found in swampy woodlands in the eastern part of the area and in the

(3) *Cypripedium passerinum* Richardson NORTHERN LADY'S SLIPPER

Differs from the previous plants by its rounder sepals and smaller flowers, the lip being about $\frac{1}{2}$ to $\frac{5}{8}$ inches long, white or pale lilac in colour, with purple spots. Found in the north and east of the area and in the Cypress Hills, in moist coniferous woods, but not common.

GOODYERA (Rattlesnake-plantain) genus. 2 species.

Plants with fleshy rootstocks and a basal clump of dark green, mottled leaves, and greenish white flowers borne on long stem.

1. Stem 4 to 8 inches high; lip of flower decidedly inflated.

[\(2\)](#) *G. repens*

Stem 8 to 15 inches high; lip of flower scarcely inflated, margins turned inwards.

[\(1\)](#) *G. decipiens*

- (1) *Goodyera decipiens* (Hook.) Hubbard

RATTLESNAKE PLANTAIN

A western, mountain species, found in woodlands. Very rare in area but has been reported from the Cypress Hills.

- (2) *Goodyera repens* (L.) R. Br. var. *ophioides* Fern.

(*G. ophioides* (Fern.) Rydb.)

LESSER RATTLESNAKE PLANTAIN

A plant of cool, mossy woodlands, Rather rare but is found in coniferous woods in the northern and eastern portions of area.

HABENARIA (Bog orchid) genus. 4 species.

1. Leaves basal.

(4) *H. obtusata*

Leaves on stem.

2.

2. Green bract below each flower several times length of flower.

(1) *H. bracteata*

Green bracts below flowers not twice length of flower.

3.

3. Flowers greenish, lip only slightly dilated at base.

(3) *H. hyperborea*

Flowers white or nearly so, lip much dilated at base.

(2) *H. dilatata*

(1) *Habenaria bracteata* (Willd.) R. Br. LONG-BRACTED ORCHID
(*Coeloglossum bracteatum* (Willd.) Parl.)

Stout, leafy stemmed plant from 6 inches to 2 feet high, with very conspicuous green bracts, the lower ones at least twice as long as the greenish coloured flowers. Found in moist meadows and open woods, especially in the northern and eastern areas.

(2) *Habenaria dilatata* (Pursh) Gray. WHITE BOG ORCHID
(*Limnorchis dilatata* (Pursh) Rydb.)

Plant with slender, leafy stem 1 to 2 feet high, with small white flowers about $\frac{5}{8}$ inch long, borne in a spike-like raceme. Found sparingly in bogs in the northern part of the area.

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(3) *Habenaria hyperborea* (L.) R. Br. GREEN-FLOWERED BOG ORCHID
(*Limnorchis viridiflora* (Cham.) Rydb.)

Fairly stout, leafy stemmed plant from 8 inches to 2 feet in height, bearing spike-like raceme of greenish flowers. Found in moist woodlands, meadows and stream banks in forests across most of the area. Fairly

common in the Cypress Hills.

(4) *Habenaria obtusata* (Pursh) Richards.

(Lysiella obtusata (Pursh.) Rydb.) SMALL NORTHERN BOG ORCHID

Slender plant with no stem leaves, from 4 to 10 inches high. Has solitary, obovate basal leaf and loose raceme of greenish yellow flowers. Fairly common locally in wet places in the northern part of the area.

LIPARIS (Tway blade) genus. 1 species.

Liparis Loeselii (L.) Rich.

TWAY BLADE

Has a strongly ribbed stem 2 to 8 inches high, with two lanceolate leaves at base of stem. Bears a few small, greenish flowers in a raceme. Found in bogs and moist woods in north and east of area, but is not common.

LISTERA (Tway blade) genus. 2 species.

Short bog or moist soil plants with 2 leaves almost opposite, about half way up stem.

1. Lip of flower cleft about half its length, oblong or linear.

[\(2\)](#) *L. cordata*

Lip of flower very slightly cleft, broadly wedge-shaped.

[\(1\)](#) *L. borealis*

- (1) *Listera borealis* Morong

NORTHERN TWAY BLADE

Stem glandular above the leaves. Plant small, about 3 to 6 inches high.

Found in moist woods and swamps in northern areas and in the Cypress Hills. Very uncommon.

- (2) *Listera cordata* (L.) R. Br.

HEART-LEAVED TWAY BLADE

Similar to preceding species but stem hairy instead of glandular above leaves, and lip of flower deeply cleft. Found in moist woods and swamps in eastern and northern portion, but very rare.

ORCHIS (Orchid) genus. 1 species.

(1) *Orchis rotundifolia* Banks

ROUND-LEAVED ORCHIS

An orchid from 8 to 10 inches high, with a single oval to almost round leaf near the base, often with one or two sheathing scales below it. The leaf is from 1½ to 3 inches long and 1 to 2 inches wide. The stem bears from 2 to 6 rose-coloured flowers from $\frac{3}{8}$ to $\frac{7}{16}$ inch long, with the lips white, spotted with purple. Found in moist woodlands, especially in the northern and eastern portions and in the Cypress Hills.

SPIRANTHES (Ladies' Tresses) genus. 3 species.

1. Flowers by twisting of stem in one spiral.

(2) *S. gracilis*

Flowers in 2 or 3 spirals.

2.

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2. Sepals and petals converging to form a hood, lip of flower decidedly constricted near the middle.

(3) *S. Romanzoffiana*

Sepals and petals not forming a hood, lip of flower only slightly constricted.

(1) *S. cernua*

(1) *Spiranthes cernua* (L.) Richard

NODDING LADIES TRESSES

An eastern species, only recorded in the area from the Riding Mountains, Manitoba.

(2) *Spiranthes gracilis* (Bigel.) Beck.

SLENDER LADIES TRESSES

Open woods in the north and east. Rare, but recorded in Riding Mountains, Manitoba.

(3) *Spiranthes Romanzoffiana* Cham.
(*S. stricta* Rydb.)

HOODED LADIES TRESSES

Found in bogs and swampy places in the northern and eastern portions of area. Not very common.

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CLASS—DICOTYLEDONEAE. 80 families

Seedlings with two seedling-leaves or cotyledons; stems with a central pith or, if woody, the wood arranged in annual layers; the leaves net-veined, and the flower parts usually in fours and fives, or multiples of four and five.

SALICACEAE (Willow Family) 2 genera

Deciduous trees or shrubs which shed their leaves in fall, not evergreen. Leaves alternate on stem. Flowers in aments (catkins) with no sepals or petals, these being replaced by glands or a cup-like disk. Male and female flowers produced on separate plants. The numerous seeds bear a tuft of hairs at the apex to aid in dissemination.

1. Winter buds covered by several scales; bracts below flowers fringed, stamens usually more than 10, cup-shaped disk below each flower.

[POPULUS](#)

Winter buds covered by one scale; bracts below flowers entire and not fringed, stamens 2 to 10, one or more glands below each flower.

[SALIX](#)

POPULUS (Poplar) genus. 8 species.

Fairly tall trees with either smooth or furrowed bark and light-coloured, soft, straight-grained wood. The leaves are usually broad and pointed, with stalks that may be as long as the leaf itself. The flowers are unisexual, each sex borne in long catkins on separate trees, and the fruit are capsules containing small seeds, each bearing a tuft of white hairs.

1. Leaf-stalks strongly flattened laterally.

Leaf-stalks not flattened laterally, circular in cross-section.

2.

4.

2. Leaf-blades rounded at base, finely toothed, glabrous; bark light green and blotched with dark brown.

(6) *P. tremuloides*

Leaf-blades broadly deltoid or cordate at base; bark usually grey and furrowed.

3.

3. Leaf-blades with from 5 to 15 teeth on each side, coarsely toothed; twigs yellowish.

(5) *P. Sargentii*

Leaf-blades with from 15 to 30 rounded teeth on each side; twigs greyish.

(8) *P. virginiana*

4. Leaf-stalks one-third or less the length of the narrow leaf-blade.

(2) *P. angustifolia*

Leaf-stalks about one-half the length of the leaf-blade or more.

5.

5. Leaves green on both sides.

(1) *P. acuminata*

Leaves paler beneath.

6.

6. Fruit without stalks (found only in the extreme southwest portion of area).

Fruit with short stalks.

7. Twigs, leaf-stalks and veins beneath leaf with fine hairs.

(4) *P. candicans*

Twigs, leaf-stalks and veins not hairy.

(3) *P. balsamifera*

(1) *Populus acuminata* Rydb.

LANCE-LEAF COTTONWOOD

A slender tree with fairly broad leaves, found occasionally along streams and rivers in southern Alberta, and perhaps in southwestern Saskatchewan.

(2) *Populus angustifolia* James

NARROW-LEAVED COTTONWOOD

Very similar to the preceding species, but has long, narrow leaves with short stalks. Found in the area only in southern Alberta and southwestern Saskatchewan along rivers and streams.

(3) *Populus balsamifera* L.
(*P. tacamahaca* Mill.)

BALSAM POPLAR

A large tree with dark green leaves, shiny on upper side and usually a rusty brown on the underside. The leaves have either flat or rounded bases, rarely cordate. The buds are very sticky. Common near water and in wet ground throughout the entire area.

(4) *Populus candicans* Michx.

BALM-OF-GILEAD

Very similar to the preceding but has fine hairs on leaf-stalks and under veins. Found associated with *P. balsamifera* throughout the entire area.

(5) *Populus Sargentii* Dode

WESTERN COTTONWOOD

A tall tree very commonly found along river bottoms and moist places in the southwestern parts of the area.

(6) *Populus tremuloides* Michx.

ASPEN POPLAR

A very common tree found throughout the entire region and the principal species of the bluffs in the parkland areas. Since prairie fires were brought under control, this tree is becoming more plentiful around sloughs and in low areas, even in the formerly treeless sections. Probably Canada's most widespread tree.

(7) *Populus trichocarpa* T. & G.

BLACK POPLAR

Found only in the southwestern corner of Alberta as far north as the Oldman River and as far east as Lethbridge. The type and the variety *hastata* are found together, the variety being found at Waterton and the type, which is much taller, being found in the river bottoms and deep coulees. This species is very difficult to distinguish from the balm-of-Gilead, which extends into the same area.

(8) *Populus virginiana* Fourg.

COTTONWOOD

A southeastern species, which is fairly common along river courses and similar sites in southern Manitoba and occasionally in southeastern Saskatchewan.

SALIX (Willow) genus. 9 common species.

The willows are a very difficult genus to work with, as the flowers or fruit of both sexes are necessary for positive identification. As there are over 40 species present in the area, it is thought advisable to select nine of the commoner and more easily distinguished species. Willows are either small trees or shrubs with slender, flexible twigs and alternate leaves.

71

1. The capsule practically hairless.

The capsule hairy.

[2.](#)

[5.](#)

2. Leaves linear or linear-lanceolate; shrubby plants spreading from rootstocks.

[\(6\)](#) *S. interior*

Leaves oval or ovate, not spreading by running rootstocks.

[3.](#)

3. Mature leaves 4 or more times longer than wide; peach-leaf shaped and tapering to a point, widest below middle.

[\(1\)](#) *S. amygdaloides*

Leaves not 4 times longer than wide.

[4.](#)

4. Bark of twigs yellowish-brown; leaves yellowish-green.

[\(7\)](#) *S. lutea*

Bark of twigs reddish-brown; leaves dark green; stipules large and persistent.

[\(9\)](#) *S. pseudomonticola*

5. Capsule not beaked; low shrub less than 3 feet in height.

[\(3\)](#) *S. brachycarpa*

Capsule beaked.

[6.](#)

6. Leaves hoary, woolly beneath, young shoots, white woolly.

[\(4\)](#) *S. candida*

Leaves not hoary, or woolly beneath.

7.

7. Leaves narrowly lanceolate.

(8) *S. petiolaris*

Leaves ovate to broadly oblanceolate.

8.

8. New twigs hairy and young leaves silky.

(2) *S. Bebbiana*

New twigs and leaves not hairy.

(5) *S. discolor*

(1) *Salix amygdaloides* Anderss.

PEACH-LEAVED WILLOW

A tree willow sometimes 60 feet high, the largest-growing willow. The leaves are from 3 to 5 inches long and about an inch wide. The leaves and catkins usually borne about the same time. Fairly common throughout the extreme southern part of the area along streams and rivers. Casual observation may confuse this species with maple trees.

(2) *Salix Bebbiana* Sarg.

BEAKED WILLOW

A large shrubby willow up to 12 feet in height with capsules tapering to a beak. The leaves are from $\frac{3}{4}$ to $1\frac{1}{2}$ inches long and about $\frac{5}{8}$ inch wide, paler on the underside. This is the common willow found around sloughs in the southern part of the area through the Foothills and common on the uplands in the northern part. The catkins usually appear before the leaves.

(3) *Salix brachycarpa* Nutt.

SHORT-CAPSULED WILLOW

A low shrub, rarely more than 3 feet in height with yellowish bark. The catkins are usually borne late in the season, and are usually very short, about $\frac{3}{4}$ inch long. This willow is grazed considerably by livestock. Fairly plentiful around sloughs in the southwestern parts of the area, but scarce in the northern parts. Is usually considered to be a mountain species.

(4) *Salix candida* Fluegge

HOARY WILLOW

A hoary shrub up to 5 feet high, easily distinguished from other species by the white, woolly appearance of the plant, woolly twigs and undersides of

leaves. Common in bogs and marsh lands in the northern and eastern parts and occasionally in the south and southwestern portions of the region.

(5) *Salix discolor* Muhl.

PUSSY WILLOW

A shrub or low tree with leaves bright green above and very pale beneath. The catkins appear much earlier than the leaves and are often found opening in the fall or during a mild spell in winter. Quite common in low places and stream banks throughout the entire area.

(6) *Salix interior* Rowlee

SANDBAR WILLOW

There are two varieties of this species and both are very common throughout the entire area. They have thin, flexible stems and long, narrow leaves, usually making dense thickets on sandbars and along the banks of streams. Their rapid spread by rootstocks makes them a dominant on the shifting sandbars in many rivers and sand regions. Very common through the whole area.

(7) *Salix lutea* Nutt.

YELLOW WILLOW

A shrub growing to 12 feet tall, with grey bark on the mature stems and yellowish bark on the young shoots. Yellowish-green leaves, which are up to 2½ inches in length. Fairly common along rivers, creek banks and also found around sloughs.

(8) *Salix petiolaris* Smith

BASKET WILLOW

A shrubby willow from 3 to 10 feet high with narrowly lanceolate leaves from 2 to 4 inches long, pointed at both ends, sharply toothed and a shining dark green colour on the upper surface. The catkins appear before the leaves and are practically hairless. Very common in the edges of sloughs and beside streams throughout the eastern and central portions of the area.

(9) *Salix pseudomonticola* Ball

FALSE MOUNTAIN WILLOW

A fairly large-leaved shrub willow with reddish-brown twigs. The leaves are ovate, about 2 to 2½ inches long and 1 to 1¼ inches wide, medium green above and pale bluish grey beneath with a prominent, often reddish,

mid-vein beneath. The leaf-like stipules at the junction of the leaf stem and twig are very conspicuous and persistent. Found fairly plentifully on moist ground and around sloughs throughout the western part of the area, particularly in the northern portion.

MYRICACEAE (Bayberry Family) 1 genus.

MYRICA (Sweet Gale) genus. 1 species.

(1) *Myrica Gale* L.

SWEET GALE OR BOG MYRTLE

A shrub growing to 3 or 4 feet in height with wedge-shaped leaves up to 2 inches long and $\frac{1}{2}$ to $\frac{3}{4}$ inch wide, which have a pleasing odour when bruised. The flowers are borne in catkins before the leaves appear, and are unisexual, the male and female inflorescence being borne usually on separate plants. Plants, which bear flowers of one sex one year, have been known to produce flowers of the opposite sex the next year. The fruit is in the form of a small nutlet, coated with a resinous wax and with two wing-like scales, and are borne in small heads. Found along stream banks and in swamps and acid soil in the eastern portion of the area.

BETULACEAE (Birch Family) 2 genera.

Trees or shrubs with unisexual flowers, both sexes being borne on the same plant. The inflorescence is in the form of catkins and the fruit borne in cone-like heads.

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1. Stamens 4.

[ALNUS](#)

Stamens 2.

[BETULA](#)

ALNUS (Alder) genus. 2 species.

1. Fruit winged; flowers developed at same time as the leaves, which are sticky beneath, with a slight hairiness on the veins: leaves 1 to 2¼ inches long, unevenly toothed.

(1) *A. crispa*

Fruit not winged; flowering before the leaves appear; leaves hairy or downy beneath: leaves 2 to 5 inches long with double teeth.

(2) *A. rugosa*

(1) *Alnus crispa* (Ait.) Pursh

GREEN ALDER

A shrub 8 to 10 feet high with oval leaves, which are often sticky on the underside. The fruit has thin wings on either side. Found fairly abundantly in dry, sandy, coniferous woods along the northern fringe of the area.

(2) *Alnus rugosa* (Du Roi) Spreng. var. *americana* (Regel) Fern.

SPECKLED ALDER

A tall shrub or small tree with elliptic leaves, dark green above and paler below, usually with some hairiness on the veins on the underside. The flowers are developed before the leaves appear and the fruit is not winged. Common along streams, river valleys and in the northern and eastern portion.

BETULA (Birch) genus. 4 species.

1. Trees with white, papery bark.

(4) *B. papyrifera*

Shrubs or small trees with reddish or brown bark.

2.

2. Wing of seed broader than body of seed; tall shrub or small tree; leaves sharply double toothed.

(3) *B. occidentalis*

Wing of seed narrower than body of seed; low bushes or shrubs.

3.

3. Young twigs and branches with scattered hairs, slightly glandular; leaves tapering at base; fruit with wing $\frac{1}{2}$ as wide as body.

(1) *B. glandulifera*

Twigs and branches not hairy, densely glandular; leaves rounded at base; fruit with very narrow wing.

(2) *B. glandulosa*

- (1) *Betula glandulifera* (Regel) Butler

SWAMP BIRCH

A shrub with leaves from $\frac{7}{8}$ to $1\frac{5}{8}$ inches in length, dark green above and yellowish or reddish-green beneath. The twigs and undersides of young leaves have very fine hairs. The seed bears a decided wing, half the width of the seed. Found around swamps and bogs in the eastern part of the area and also in the Foothills region, but not so plentiful as *B. glandulosa*. Sometimes considered *B. pumila* L. var. *glandulifera* Regel.

- (2) *Betula glandulosa* Michx.

SCRUB BIRCH

A shrub from 1 to 6 feet high with glandular twigs and small rounded leaves from $\frac{1}{2}$ to 1 inch in length. The twigs and leaves are without any hairiness, but are glandular with resinous glands. The seed bears very narrow wings, sometimes almost obscure. Fairly common in marshes, sloughs and boggy places throughout the entire area covered.

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- (3) *Betula occidentalis* Hook.
(*B. fontinalis* Sarg.)

RIVER BIRCH

A small tree or large shrub up to 30 feet high, growing in many-stemmed clumps, with ovate or almost round leaves from $\frac{3}{4}$ to 2 inches long. The inflorescence is a cylindric catkin and the fruit is borne in cylindric, cone-like heads and the seeds have broad wings. Common in low places, stream banks, depressions in sandhills throughout entire area.

(4) *Betula papyrifera* Marsh

WHITE OR CANOE BIRCH

A tree with white bark, which peels off readily, growing to a height of 50 feet in favourable locations. The leaves are ovate and pointed at the apex, dark green above, but paler and slightly hairy below. A variety *B. papyrifera cordifolia* has cordate bases to the leaves. The bark of white birch was much used for the making of birch-bark canoes, and the bark is often used for starting camp fires. A very common tree along streams and river banks, especially in the north, east and Cypress Hills regions, but rarely found in the south and southwest portions.

CORYLACEAE (Hazel Family) 1 genus.

CORYLUS (Hazel-nut) genus. 2 species.

Shrubs or small trees with much branched stems and smooth bark. Leaves broadly oval up to 4 inches long. Flowers in catkins, which are produced before leaves develop, and the slender red stigmas are quite conspicuous. The fruit is a true nut enclosed in two leaf-like bracts.

1. Bracts not much united, barely covering nut.

(1) *C. americana*

Bracts united and produced into long beak, completely enclosing nut, and extending about an inch beyond nut.

(2) *C. cornuta*

- (1) *Corylus americana* Walt.

AMERICAN HAZEL-NUT

Shrub up to 8 feet high with ovate leaves covered with pinkish hairs. The nuts are rather compressed and enclosed in two distinct leafy bracts, which are very little longer than the nut. This species is quite common throughout Manitoba and the eastern part of the area, but unusual further west.

- (2) *Corylus cornuta* Marsh.
(*C. rostrata* Ait.)

BEAKED HAZEL-NUT

Similar in growth to the preceding species, but the leaves are sometimes hairless or with flattened, sparse hairiness. The nuts, which are hardly compressed, are enclosed in the united bracts, which are produced beyond the nut for as much as an inch, forming a kind of beak. Fairly plentiful in woodlands and moist hillsides throughout the entire area.

FAGACEAE (Beech Family) 1 genus.

QUERCUS (Oak) genus. 1 species.

(1) *Quercus macrocarpa* Michx.

BUR OAK

Trees with grey, flaky bark and very hard wood, growing to a height of 50 feet in the eastern portion, but reduced to a small scrubby tree further west. The leaves are bright, shiny green above and greyish white and slightly woolly beneath, and are very deeply cut with rounded lobes. The flowers are unisexual and are borne in slender catkins. The fruit is an acorn resting in a shallow fringed cup. A very common tree in eastern Manitoba and throughout the first prairie steppe, but only found further west in the valleys of the rivers tributary to the Assiniboine River.

ULMACEAE (Elm Family) 1 genus.

ULMUS (Elm) genus. 1 species.

(1) *Ulmus americana* L.

AMERICAN ELM

A tall tree with a reddish bark and smooth twigs. The leaves are oval with soft hairs beneath and rough above, the veins being very prominent. The flowers are perfect and borne in little bunches early in spring before the leaves appear. The fruit is a one-seeded flat samara or winged fruit. A common tree in Manitoba and extends up the tributaries of the Assiniboine River as far west as Saskatchewan Beach on the Last Mountain Lake.

CANNABINACEAE (Hemp Family) 1 genus.

HUMULUS (Hop) genus. 1 species.

(1) *Humulus americanus* Nutt.

AMERICAN HOP

A perennial twining climber, often 10 to 20 feet in length, generally with large palmately 3 to 7 lobed leaves, which have cordate bases, are opposite, from 1 to 4 inches across and bear many tiny whitish or yellowish glandular spots on the undersides. The upper leaves, near the inflorescence, are often not divided, merely toothed. The stems are rough to the touch with fine, stiff, reflexed hairs. The male flowers are borne in loose panicles and are green, with 5 sepals. The female flowers, which are borne on separate plants from the male flowers, are in catkin-like or cone-like heads in the axils of the leaves, with broad greenish or yellowish imbricated bracts covering the fruits. These clusters or "hops" vary from 1 to 2 inches in length. Fairly common in moist places in the eastern half of the area covered, particularly in river valleys, and found at scattered points throughout the central part of the area. Contact with this plant causes a form of dermatitis in some individuals.

URTICACEAE (Nettle Family) 3 genera.

Plants, often with stinging hairs and greenish flowers, which are borne in clusters at the junction of the stem and the leaf stalks.

1. Plants without stinging hairs.

[PARIETARIA](#)

Plants with stinging hairs.

[2.](#)

2. Leaves alternate; sepals 5.

[LAPORTEA](#)

Leaves opposite; sepals 4.

[URTICA](#)

LAPORTEA (Wood nettle) genus. 1 species.

(1) *Laportea canadensis* (L.) Wedd.

WOOD NETTLE

A perennial with alternate and toothed leaves with stinging hairs. Fairly common in rich woodlands in the eastern portion of the area and also found in the Riding Mountains.

PARIETARIA (Pellitory) genus. 1 species.

(1) *Parietaria pennsylvanica* Muhl.

AMERICAN PELLITORY

A weak-stemmed, hairy annual plant growing from 4 to 18 inches high with opposite, lanceolate, three-nerved leaves from 1 to 3 inches long. The greenish flowers are borne in dense clusters around the leaf axils. Quite a rare plant, but has been found in the south-central part of the area.

URTICA (Nettle) genus. Probably several species.

The various nettles are difficult to distinguish, and considerable variation of names has been apparent. It is thought that at least three species are native in the area: *U. gracilis*, *U. procera* and *U. viridis*, but the distinction between them is difficult. As a general rule *U. viridis* is much stouter and coarser with a considerable variation in length of the leaves from large leaves towards the base and shorter ones towards the summit. The native nettles are perennial, but the English common nettle (*U. urens*), which is an annual, may be found in the eastern part. Because of the similarity of the species only the most common one is described.

(1) *Urtica procera* Muhl.

COMMON NETTLE

A perennial with very coarse rootstocks, which have pink off-shoots. The plants have tall, straight stems, usually square in cross-section, and with ovate to lanceolate, serrated or toothed, opposite leaves bearing stinging hairs. The greenish flowers are borne in clusters at the junction of stem and leaf stalks. Very common around sloughs, moist places, and bushes throughout the entire area covered.

SANTALACEAE (Sandal-wood Family) 2 genera.

Smooth, hairless perennials with rootstocks, partly parasitic on the roots of other plants. The flowers are perfect, with no petals, but have five sepals which are united to form a bell-like tube. The fruit is a small drupe that is a fleshy fruit with a hard nut-like seed in the centre.

1. Leaves linear or lanceolate, without stalks; flowers clustered at the summit of the stems.

[COMANDRA](#)

Leaves oval with short stalks; flowers few in axils of leaves.

[GEOCAULON](#)

COMANDRA (*Comandra*) genus. 3 species.

1. Leaves glaucous or covered with a whitish bloom; fruit ovoid with merely an indistinct neck.

(1) *C. pallida*

Leaves not glaucous; fruit globose, constricted into a distinct neck.

2.

2. Leaves thin, paler beneath, with a prominent midrib; flowers on divergent branches giving the inflorescence a rounded top.

(3) *C. umbellata*

Leaves firm, not paler beneath, veins obscure; flowers on ascending branches, giving inflorescence a flat top.

(2) *C. Richardsiana*

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(1) *Comandra pallida* A. DC.

PALE COMANDRA

An erect plant growing from a white creeping rootstock to a height of from 3 to 18 inches, usually in bunches with several plants from the same rootstock. The leaves are linear or linear-lanceolate from $\frac{1}{2}$ to 1 inch long and are borne alternately on the stems without stalks. The flowers are borne on the summit of the stems and are of a greenish-white to pinkish shade, quite small, about $\frac{3}{16}$ inch in length. The fruit is ovoid and up to $\frac{1}{3}$ inch long. Frequently this plant is attacked by a tiny gall insect, which causes small round galls, about $\frac{1}{4}$ inch in diameter, to develop and these are sometimes mistaken for the fruit. Very common, especially on dry, sandy soil and hillsides throughout the southern part of the area.

(2) *Comandra Richardsiana* Fern.

RICHARDS' COMANDRA

A perennial from running rootstocks, which are generally spreading on or near the surface of the soil. The stems are from 4 to 10 inches high and very leafy with lanceolate, ascending leaves $\frac{1}{2}$ to $1\frac{1}{4}$ inches long. The inflorescence is flat-topped and on the summit of the stems. The fruit is spherical, about $\frac{3}{16}$ inch in diameter. Found on dry and gravelly soil in the eastern part of the area but unusual west of Manitoba.

(3) *Comandra umbellata* (L.) Nutt.

UMBELLATE COMANDRA

A perennial plant very similar to the preceding, but the rootstocks are mostly underground, and the leaves are much paler on the underside than on the upper side, and have a prominent pale midrib. The inflorescence is round-topped instead of flat. Not by any means common, but can occasionally be found in dry places in the east of the area.

GEOCAULON (Comandra) genus. 1 species.

(1) *Geocaulon lividum* (Richards.) Fern.

NORTHERN COMANDRA

A slender, erect plant from 4 to 12 inches high, with oval leaves from $\frac{1}{2}$ to 1 inch long on short stalks. The flowers have no stems and are borne in the axils of the leaves. The fruit is a spherical red drupe about $\frac{1}{8}$ inch in diameter and is edible. Not very common, but is found through the northern part of the area and in the Riding Mountains Park, in moist places and bogs.

POLYGONACEAE (Buckwheat Family) 4 genera.

Herbs with alternate, entire leaves, usually with sheathing stipules called ochrea (except Eriogonum). The flowers are small with no petals, but a perianth or floral covering of from 2 to 6 more or less united sepals. The seeds are either triangular or lens-shaped achenes.

1. Leaves without stipules; a whorl of bracts below flower clusters; 9 stamens.

[ERIOGONUM](#)

Leaves with stipules; no whorl of bracts below flowers; stamens less than 9.

[2.](#)

2. Sepals 6, the three inner ones larger and enclosing the fruit.

[RUMEX](#)

Sepals 5, more or less equal.

[3.](#)

3. Seeds enclosed by somewhat enlarged calyx or, if protruding from calyx, the leaves are long and narrow.

[POLYGONUM](#)

Seeds protruding from calyx and leaves broadly arrow-shaped.

[FAGOPYRUM](#)

ERIOGONUM (Umbrella plant) genus. 3 species.

1. Flowers cream or yellowish; calyx contracted to a stalk-like base.

(2) *E. flavum*

Flowers white or rose-coloured, without stalk-like base to calyx.

2.

2. Flower heads erect, not drooping.

(3) *E. multiceps*

Flower heads drooping.

(1) *E. cernuum*

- (1) *Eriogonum cernuum* Nutt.

NODDING UMBRELLA PLANT

Low annual plants up to 12 inches in height with a whorl of small leaves near base of stem. The leaves are almost circular, about $\frac{5}{8}$ inch in diameter and white woolly beneath. The flowers are white or rose-coloured and borne in small clusters about $\frac{3}{16}$ inch wide on stems in a much branched inflorescence, and are usually drooping. Found on badlands, abandoned fields, dry and sandy soil throughout the southwestern portion. Not common as a rule but abundant locally where found.

- (2) *Eriogonum flavum* Nutt.

YELLOW UMBRELLA PLANT

A low perennial with a very coarse, scaly, dark-brown, woody, tufted root. The leaves are all basal and are usually linear-oblong, or spatulate in shape, from $1\frac{1}{4}$ to 2 inches long, green and slightly hairy above and densely white woolly beneath. The flowers are pale yellow and borne in umbel-like clusters at the head of the stems. Very common on dry and eroded hillsides, badlands and canyons throughout the southern and southwestern parts of the area.

- (3) *Eriogonum multiceps* Nees

BRANCHED ERIOGONUM

A low-growing perennial, rarely over 8 inches high with branched stems. The leaves are very narrow, up to 2 inches long, the whole plant, leaves and stem being densely white woolly. The whitish or pale pink flowers are borne in small clusters at the summits of the stems. Found on eroded banks and badlands in the extreme south of the area but uncommon.

FAGOPYRUM (Buckwheat) genus. 1 species.

(1) *Fagopyrum tataricum* (L.) Gaertn.

TARTARY BUCKWHEAT

An annual weed from 2 to 3 feet in height, with roughly triangular leaves often as broad as long, growing from 1 to 4 inches long and wide. The flowers are small and white and are borne in bunches on the flowering stems, which arise from the junction of the leaf stalks and stems. The seeds are about the size of wheat kernels. This weed, which has been introduced from Asia, is a serious pest in northern and central Alberta.

POLYGONUM (Knotweed) genus. 4 sub-genera.

1. Plants twining; leaves broad, hastate or arrow-shaped at base.

[BILDERDYKIA](#)

Plants not twining; leaves linear, lanceolate or oblong.

[2.](#)

2. Flowers solitary or in clusters in axils of leaves; leaves small.

[AVICULARIA](#)

Flowers in dense spikes, either terminal or in the axils of the leaves;
leaves large.

[3.](#)

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3. Basal leaves with long stalks, stem leaves smaller and stalkless; stem single and unbranched.

[BISTORTA](#)

Leaves all similar; stem much branched.

[PERSICARIA](#)

**(POLYGONUM) BILDERDYKIA (Wild
Buckwheat) sub-genus. 1 species.**

(1) *Polygonum Convolvulus* L.

WILD BUCKWHEAT

An annual, tap-rooted weed with weak twining stems and pale green, arrow-shaped leaves from ½ to 2 inches long and pointed at the tip. The flowers are greenish or pink and are borne in small racemes in the axils of the leaves or at the end of the stem. The seeds are black, granular, 3-angled and often enclosed in a green or brown coating, and are about ⅛ inch long. Introduced from Europe but very common in cultivated land and waste places throughout the entire area.

(POLYGONUM) BISTORTA (Bistort) sub-genus. 1 species.

(1) *Polygonum bistortoides* Pursh

WESTERN BISTORT

A perennial plant growing from a horizontal fleshy rootstock to a height of from 4 to 18 inches. The basal leaves are from 3 to 6 inches long, lanceolate to oblong in shape and borne on a stalk about as long as the blade. The stem leaves are much shorter and are without stalks. The inflorescence is a dense oblong raceme of white or pinkish flowers, borne at the head of the stem. This is a plant of swamps, stream beds and wet places and is found in the Foothill regions and also in the Cypress Hills.

(POLYGONUM) PERSICARIA (Smartweed) sub-genus. 6 species.

The smartweeds, especially the perennial species, are a rather confusing group of plants. They can have three phases, each phase somewhat differing from the others, so much so that in some instances they have been classed as different species instead of phases of the same species. The aquatic phase is found right in the water and is usually quite devoid of hairs and has broad leaves. The paludose or marshy phase is found where the water has recently receded and the plants are growing in the wet mud. The terrestrial phase is found where the soil has dried somewhat and here the leaves are usually narrow and the plant often more or less hairy. The flowers of smartweeds are borne in conspicuous racemes, usually white and pink or greenish, and the perennial species are usually the dominant plant in the location they occupy. Most species are palatable and nutritious. Heavy pasturing may cause “bighead” or “yellows” in sheep.

1. Annual plants, with tap-roots.

2.

Perennial plants with rootstocks.

4.

2. Sheathing stipules (ochrea) bristle-fringed.

(4) *P. persicaria*

Sheathing stipules (ochrea) not bristle-fringed.

3.

3. Leaves deep green on both sides and not hairy; flower spikes drooping.

(2) *P. lapathifolium*

Leaves pale beneath, with a slight scurfiness or light woolly coating; flower spikes erect.

(5) *P. tomentosum*

4. Aquatic forms with stems floating or protruding above surface of water; leaves usually elliptic or oval and without hairs.

5.

Land forms, stems erect and leafy; leaves as a rule more or less hairy.

6.

5. Flowering stems hairy; panicles of flowers cylindric, from 1¼ to 4 inches long.

(1) *P. coccineum* f. *natans*

Flowering stems not hairy; panicles of flowers ovoid, from ½ to 1⅛ inches long.

(3) *P. natans* f. *genuinum*

6. Sheathing stipules (ochrea) without a leaf-like margin.

(1) *P. coccineum* f. *terrestre*

Sheathing stipules (ochrea) with leaf-like margin.

(3) *P. natans* f. *Hartwrightii*

(1) *Polygonum coccineum* Muhl.

SWAMP PERSICARIA

This perennial species has two forms, *P. coccineum* Muhl. forma *natans* (Wiegand) Stanford being the aquatic form, the form found when the plant is growing in the water. As the water recedes, this plant is replaced by the terrestrial form, *P. coccineum* Muhl. forma *terrestre* (Willd.) Stanford. This plant is quite common in sloughs, lakes and wet places throughout the area.

(2) *Polygonum lapathifolium* L.

PALE PERSICARIA

An introduced annual of moist or wet areas. It has been found in several places, particularly in the southeast of the area, but must not be confused with *P. tomentosum*, which is very similar to a casual observer.

(3) *Polygonum natans* A. Eaton

WATER PERSICARIA

This perennial also is found in several forms, depending on the habitat. The aquatic form is *P. natans* A. Eaton, forma *genuinum* Stanford, and is fairly common throughout the entire area in ponds and sloughs. The terrestrial form, *P. natans* A. Eaton forma *Hartwrightii* (Gray) Stanford is found in muddy or even fairly dry places throughout the area. This is very common.

(4) *Polygonum Persicaria* L.

LADY'S THUMB

An annual weed introduced from Europe and occasionally to be found in moist, especially sandy soils in the southeastern portion of the area.

(5) *Polygonum tomentosum* Schrank

HAIRY PERSICARIA

A very common annual smartweed with a cobwebby or woolly hairiness on the underside of the basal leaves. The flowers are in erect spikes and are usually pale pink to whitish in colour. This is very common in low places and sometimes in cultivated fields throughout most of the area.

(POLYGONUM) AVICULARIA (Doorweed) sub-genus. 8 species.

Annual, low-growing plants, often prostrate on ground, with tough stems and alternate leaves, usually narrow. The sheathing stipules are usually fairly conspicuous and often white and translucent. The flowers are small and borne in clusters in the axils of the leaves, and have a perianth of five partly united sepals. The seeds are 3-angled achenes, black or brown. The plants appear to thrive with trampling and treading.

1. Fruit reflexed, pointing downwards on stem.

(4) *P. Douglasii*

Fruit erect on stem.

2.

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2. Calyx lobes with yellowish-green margins and green midrib; stem erect; leaves yellowish-green.

(8) *P. ramosissimum*

Calyx lobes with white or pink margins.

3.

3. Achenes conspicuously longer than calyx lobes.

(5) *P. exsertum*

Achenes not much longer than calyx lobes.

4.

4. Stems generally erect.

5.

Stems prostrate or spreading.

6.

5. Leaves linear to linear-oblong, the upper much reduced in size.

(7) *P. prolificum*

Leaves elliptic to oval, rounded at the apex, crowded, the upper ones scarcely reduced.

(1) *P. achoreum*

6. Leaves thick and prominently veined; achenes dull and granular; ochrea very conspicuous.

(3) *P. buxiforme*

Leaves thin, not prominently veined; achenes with grooves or lines; ochrea not conspicuous.

7.

7. Leaves from $\frac{1}{4}$ to $\frac{3}{4}$ inches long.

(6) *P. neglectum*

Leaves from $\frac{3}{4}$ to $2\frac{1}{2}$ inches long.

(2) *P. aviculare*

(1) *Polygonum achoreum* Blake

STRIATE KNOTWEED

An annual growing to about 15 inches high with oval to elliptic, bluish-green leaves from $\frac{1}{4}$ to 1 inch long. This plant is very common around yards and waste places, and appears to thrive with abuse such as trampling. If kept mowed it takes the place of a lawn, prevents soil erosion by wind and water to a certain extent and seems to fill a definite need in a farm yard. Very common throughout entire area in waste places and farm yards.

(2) *Polygonum aviculare* L.

DOOR WEED

A semi-prostrate annual plant, sometimes up to 2 feet long with fairly broad, oblong leaves from $\frac{3}{4}$ to $2\frac{1}{2}$ inches long, of a pale bluish-green colour. The ochrea or stipules are silvery and translucent. Very common in waste places throughout the whole area.

(3) *Polygonum buxiforme* Small

SHORE KNOTWEED

A stout annual with thick, veiny leaves from $\frac{3}{16}$ to 1 inch in length. Fairly common along lake shores, sandy or saline soil in the southwestern part of the area.

(4) *Polygonum Douglasii* Greene

DOUGLAS' KNOTWEED

An erect annual growing to 18 inches high with narrow leaves from $\frac{1}{2}$ to 2 inches long. The seeds, which are oblong and narrow, are reflexed or pendulous on the stem. Not very common, but is found in various places in the southwest portion of the area.

(5) *Polygonum exsertum* Small

LONG-FRUITED KNOTWEED

An almost erect-growing plant up to 2 feet in height, with fruit much protruding from the calyx. Not common as a rule in the area but sometimes plentiful locally.

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(6) *Polygonum neglectum* Besser

NARROW-LEAVED KNOTWEED

An introduced annual weed, which has become quite common over practically the entire area. It is very similar to *P. aviculare*, but has much smaller leaves, not over $\frac{3}{4}$ inch long. It is a very common weed in gardens, lawns and waste places and has become the most common of the knotweeds.

(7) *Polygonum prolificum* (Small) B. L. Robinson.

PROLIFEROUS KNOTWEED

An erect-growing species from 6 to 20 inches in height, generally branching and bearing dark green to reddish linear to linear-oblong leaves from $\frac{1}{2}$ to $\frac{3}{4}$ inch long, becoming smaller towards the ends of the branches. Occasionally found in dense stands on sandy soils in the extreme south-central portion of the area.

(8) *Polygonum ramosissimum* Michx.

BUSHY KNOTWEED

A yellowish-green erect plant growing from 6 inches to 3 feet in height, with a much branched stem and lanceolate to linear-oblong leaves up to $1\frac{1}{8}$ inches long. Found occasionally throughout the entire area in sandy soil, river bottoms and lake shores.

RUMEX (Dock) genus. 7 species.

Mostly perennial plants with thick roots, leaves of varying shapes and sizes. The flowers, which may be perfect or unisexual, consist of 6 sepals, the 3 inner ones enlarging and forming wings or valves, which enclose the fruit. These valves are sometimes entire and sometimes fringed with bristle-like teeth. In some species one or all three of the valves may bear a protuberance called a tubercle, and this is used as a point for identification. Docks are found throughout the entire area and are generally associated with wet or marshy habitats, but one species at least is a plant of the sandhills.

1. Leaves hastate or sagittate (spear-shaped or arrow-shaped)

[2.](#)

Leaves not spear-shaped or arrow-shaped, foliage not acid.

[3.](#)

2. Inner sepals developing wings or valves in fruit.

[\(1\)](#) R. Acetosa

Inner sepals not developing wings in fruit.

[\(2\)](#) R. Acetosella

3. Valves in fruit with spiny teeth on the margin; annuals.

[\(4\)](#) R. maritimus

Valves in fruit without spiny marginal teeth.

[4.](#)

4. Valves in fruit without any tubercles or tubercled in one valve only.

[5.](#)

Valves in fruit all tubercled.

[6.](#)

5. Valves in fruit much enlarged and red, over ½ inch in diameter; running rootstocks; plant low-growing less than 12 inches high; grows in sandy soil.

[\(7\)](#) R. venosus

Valves in fruit greenish or brown, less than ¼ inch wide; tap-rooted; leaves wavy margined; basal leaves up to 12 inches long, plant up to 5 feet in height.

[\(6\)](#) R. occidentalis

6. Leaves dark-green, crinkled and wavy-margined, from 6 to 12 inches long.

(3) *R. crispus*

Leaves pale green and not crinkled; 2 to 6 inches long.

(5) *R. mexicanus*

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(1) *Rumex Acetosa* L.

SOUR DOCK

An erect plant sometimes over 2 feet in height with broadly lanceolate, arrow-shaped leaves from 1 to 5 inches long. Used as a food plant by many people and has escaped from gardens in many parts of the area.

(2) *Rumex Acetosella* L.

SHEEP SORREL

A low-growing plant not over 12 inches high, with the leaves narrowly hastate or spear-shaped from 1 to 4 inches in length. The sepals do not enlarge in fruit in this species. An introduced weed but only rarely found in the area in dry or sandy places and on acid soils.

(3) *Rumex crispus* L.

CURLED DOCK

An introduced weed, which grows to a height of over 3 feet in favourable localities. The leaves are crinkled at the edge and the lower ones are from 6 to 12 inches long, the upper being smaller. This plant is found in moist places and is fairly common in the eastern part of the area.

(4) *Rumex maritimus* L. var. *fueginus* (Phil.) Dusen
(*R. persicarioides* L.)

GOLDEN DOCK

An annual species growing to a height of 2 feet from a very fleshy root, and very diffusely branched as a rule. The leaves are lanceolate and from 3 to 10 inches in length, and of a pale green colour. The stems are covered with very short hairs. The fruiting heads are very conspicuous, being of a golden yellow colour and very dense. The valves of the calyx have a spine-like bristly margin, which gives the heads a prickly appearance and makes this species easy to distinguish. This species is found in moist and saline places, lake flats and shores, and is often the dominating plant in such sites, sometimes being found in masses of an acre or so. Very common throughout the entire area in suitable locations.

(5) *Rumex mexicanus* Meissn.

NARROW-LEAVED DOCK

A narrow-leaved species growing either erect or sprawling in low and moist places. The leaves are pale green from 2 to 6 inches long and from ½ to 1 inch wide. The fruiting heads are narrow and usually not so dense as most Docks. Very common in moist or saline places, roadside ditches and similar sites throughout the entire area. Some authorities call this *R. triangulivalvis* (Danser) Rech. f.

(6) *Rumex occidentalis* S. Wats.

WESTERN DOCK

A tall, coarse, erect plant up to 4 feet in height with broadly oblong or lanceolate leaves up to 12 inches in length, often cordate or heart-shaped at the base. The fruiting heads are dense and very conspicuous. Western Dock is found in wet or very moist places, and is very common in such localities throughout the western part of the area.

(7) *Rumex venosus* Pursh

SAND DOCK

This is a perennial species with running, woody rootstocks and branched stems. The ochrea or sheathing stipules are whitish and papery and are very conspicuous. The leaves are pale green, from 2 to 5 inches long and nearly half as wide. The calyx valves in fruit are very conspicuous, being very large, sometimes as much as 1½ inches broad, almost round and of a bright red to pink colour. They are often picked and dried to form winter bouquets. Sand Dock is found on sandy soil, sand dunes and often on railway grades and roadsides throughout the entire southwest area. It is often an early invader of a shifting sand dune. It is a very common plant in suitable localities, becoming a dominant in some places.

CHENOPODIACEAE (Goosefoot Family) 13 genera.

A very large and varied family, consisting of both annual and perennial herbs and shrubs. The leaves are generally alternate, without stipules and are often white mealy. The flowers have no petals but 2 to 5 sepals and are sometimes perfect, sometimes unisexual. Many species are of a weedy nature and most produce vast quantities of seed. Some are edible and nearly all are palatable to livestock. One species has poisonous properties.

1. Leaves and branches opposite; fleshy stemmed plants; leaves reduced to scales and flowers sunk into tissue of stem;

[SALICORNIA](#)

Leaves alternate.

[2.](#)

2. Plants with spiny branches or spine-tipped leaves; calyx forming a wing around mature fruit.

[3.](#)

Plants neither spiny nor with spine-tipped leaves.

[4.](#)

3. Shrubs with spiny branches.

[SARCOBATUS](#)

Annual herbs with fleshy spine-tipped leaves.

[SALSOLA](#)

4. Flowers unisexual, female flowers enclosed in two bracts, which enlarge after flowering.

[5.](#)

Flowers perfect.

[8.](#)

5. Low-growing woolly shrubs with fruiting bracts covered with silvery, silky hairs.

[EUROTIA](#)

Fruiting bracts not covered with silky hairs.

[6.](#)

6. Fruiting bracts not united; seed coat often winged at apex.

AXYRIS

Fruiting bracts united, at least at base; seed coat not winged at apex.

7.

7. Female flowers with no calyx or sepals, merely the pair of bracts.

ATRIPLEX

Female flowers with 2 to 3 translucent sepals, which are much shorter than the bracts.

ENDOLEPIS

8. Only one sepal in calyx; stamens 1 to 3.

9.

Three to five sepals in calyx and equal number of stamens.

10.

9. Leaves spear-shaped, fleshy stems, flowers in clusters in axils of leaves; seed round and small.

MONOLEPIS

Leaves narrow and linear; flowers single in axils of leaf-like bracts; seeds flat and large.

CORISPERMUM

10. Leaves fleshy, linear and without stalks; grows in saline areas only.

SUAEDA

Leaves not fleshy, usually with stalks.

11.

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11. Calyx not broadly winged when mature.

CHENOPODIUM

Calyx when mature becoming broadly winged.

12.

12. Leaves flat, wavy-edged, ovate.

CYCLOLOMA

Leaves linear-filiform, turning red when mature.

KOCHIA

ATRIPLEX (*Atriplex*) genus. 4 species.

Annual or perennial plants with unisexual flowers. Male flowers usually with 3 to 5 sepals and the same number of stamens and no bracts; the female flowers usually without sepals but with a pair of bracts.

1. Plant a small shrub, with pale leaves, which are covered with small silvery scales; leaves without stalks.

(3) *A. Nuttallii*

Plant a herb, not shrubby but sometimes slightly woody at base.

2.

2. Foliage green or greenish on both surfaces (sometimes deep red) sparsely mealy and, therefore, sometimes greyish when young.

3.

Foliage grey or whitish with a fine scurfiness, at least on the lower surface.

5.

3. Bracts rounded ovate, over ¼ inch broad; two kinds of female flowers, some with bracts and no sepals, others with sepals and no bracts.

(2) *A. hortensis*

Bracts not orbicular, not over ¼ inch broad; all female flowers with bracts and no sepals.

4.

4. Leaf blades lanceolate or oblong to linear, not spear shaped.

(4) *A. patula* ssp. *typica*

Leaf blades in part triangular and spear-shaped with basal angles or lobes.

(4) *A. patula* ssp. *hastata*

5. Fruiting bracts broadest below the middle; leaves linear to oblong.

(3) *A. Nuttallii*

Fruiting bracts broadest at or above the middle; leaves usually triangular.

(1) *A. argentea*

(1) *Atriplex argentea* Nutt.

SILVERY ATRIPLEX

A bushy annual growing to a height of 18 to 30 inches but usually much smaller; stem angled. The leaves are usually deltoid or triangular from $\frac{1}{2}$ to 2 inches long and are greyish green and scurfy. The male flowers are usually in terminal spikes, and the female flowers in clusters in the axils of the leaves. Very common in saline flats and similar sites in the southwest of the area but apparently rare elsewhere.

(2) *Atriplex hortensis* L.

GARDEN ATRIPLEX

A fairly tall, erect annual plant growing up to 3 or 4 feet in height. The leaves are of various shapes from cordate to triangular and ovate. This species is peculiarly interesting, as it bears two kinds of female flowers on the same inflorescence. One kind has no calyx but has 2 large bracts which grow quite large at maturity, over $\frac{1}{4}$ inch in width. These flowers

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produce large, flat, pale brown seeds about $\frac{1}{8}$ to $\frac{3}{16}$ inch in diameter, which germinate in a very few days after being sown. The other kind of female flower has a small 3 to 5 lobed calyx but no bracts, and produces small, black, shiny seeds about $\frac{1}{12}$ inch in diameter, which will sometimes remain dormant in the soil for many months before germination. The inflorescence is often very large, sometimes up to 12 inches long. A red-leaved variety (var. *atro-sanguinea*) is often found escaped from gardens. Garden atriplex is a garden escape and has become very common around towns and cities in many parts of the area.

(3) *Atriplex Nuttallii* S. Wats.

NUTTALL'S ATRIPLEX

A perennial shrub or sub-shrub with a very deep rooting system. It may be nearly prostrate, or the branches may grow up to 30 inches in height. The leaves and stem are a pale green colour with a fine scurfiness, the leaves vary from linear-oblong to spatulate or obovate, and are from $\frac{3}{4}$ to 2 inches long. This species is almost certainly dioecious, that is the male flowers are on one plant and the female flowers on another. It is found on badlands, eroded soils and alluvial flats throughout the southwestern portion of the area. This species is readily eaten by livestock and is considered a useful pasture plant, because of its high mineral content and palatability.

(4) *Atriplex patula* L.

ORACHE

This annual species grows from 1 to 3 feet in height and has a coarse, erect stem often marked with vertical grooves or channels. There are two sub-species found in the area, the common orache and the halberd-leaved orache. *Atriplex patula* L. or common orache, has lanceolate or linear-oblong leaves with no basal lobes or angles. *Atriplex patula* L. var. *hastata* (L.) Gray or halberd-leaved orache has spear-shaped or hastate leaves with lobes or angles at the base. This is probably the commonest species in the area, but both can sometimes be found. Very common in saline meadows and waste places, particularly in the southwest of the area, and often confused with lamb's quarters.

AXYRIS (Axyris) genus. 1 species.

(1) *Axyris amaranthoides* L.

RUSSIAN PIGWEED

An erect, bushy annual weed growing up to 2½ feet high. It has a much branched stem with ascending branches. The leaves are lanceolate and of a pale green colour, up to 3 inches in length. The flowers are borne in dense, leafy clusters with the male flowers towards the ends of the stems. The whole plant turns a pale, straw colour at maturity. The seeds are of two types on the same plant, one type bearing a two-lobed membranous wing at the top and of a long oval shape, and the other type almost round with no wings. The long, winged seeds germinate very readily, but the round wingless type has a very long period of dormancy. This introduced annual is very common in shelterbelts, on cultivated fields and abandoned lands, and in waste places throughout the entire area. It can be found often amongst bushes at a great distance from any cultivated land.

CHENOPODIUM (Goosefoot) genus. 11 species.

Annual plants, generally of a weedy nature, with alternate, often farinose or mealy leaves. The flowers are perfect, with no bracts and the calyx of two to five sepals enclose the fruit.

1. Calyx very fleshy, red and globular, appearing like small strawberries.

(2) *C. capitatum*

Calyx not fleshy, red or strawberry-like.

2.

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2. Stamens 1 or 2; calyx slightly fleshy and reddish.

3.

Stamens 5; calyx not fleshy in fruit.

4.

3. Plants erect; leaves more or less toothed.

(10) *C. rubrum*

Plants prostrate; leaves entire or spear-shaped.

(6) *C. humile*

4. Leaves with large, divaricate lobes, not mealy, shiny green; seeds about $\frac{1}{12}$ inch in diameter.

(7) *C. hybridum*

Leaves entire or wavy-edged; seeds not over $\frac{1}{16}$ inch in diameter.

5.

5. Calyx lobes not keeled; panicles of flowers in axils of leaves and shorter than the leaves.

(11) *C. salinum*

Calyx lobes keeled; upper panicles of flowers longer than the leaves.

6.

6. Seeds separating very readily from their coating.

7.

Coating rather firmly attached to the seeds.

7. Leaves broadly ovate to triangular or hastate, many-nerved and not mealy.

(5) *C. Fremontii*

Leaves linear, entire, one to three-nerved and mealy.

8. Leaves mealy on both sides, thick; inflorescence dense.

(4) *C. dessicatum*

Leaves green above, mealy below, thick; inflorescence not very dense and somewhat interrupted.

(9) *C. leptophyllum*

9. Leaves more or less sinuately dentate, lobed, densely mealy; inflorescence dense.

(1) *C. album*

Leaves almost entire or else spear-shaped.

10. Plants with a close, fine mealiness and the upper leaves long, entire and pointed, lower leaves ovate or lanceolate and coarsely toothed; inflorescence long and interrupted.

(8) *C. lanceolatum*

Plants with a coarse, loose mealiness, with a slight yellowish tint and very foul scented; inflorescence in round masses.

(3) *C. dacoticum*

(1) *Chenopodium album* L.

LAMB'S QUARTERS

A rank, annual weed growing up to 2 or 3 feet in height with variable leaves, usually wavy-margined and roughly ovate with a mealy coating, and up to 3 inches in length. The stems are usually longitudinally grooved and often have reddish lines and blotches. The inflorescence is usually of a bluish tinge and in dense panicles in the leaf axils and at the summit of stem. Although this species has been introduced from Europe it is probably also a native. Lamb's quarters is one of the commonest weeds and is found in waste places, roadsides and gardens throughout the entire area. The young plants are frequently used in place of spinach and when cooked are difficult to distinguish from that plant.

- (2) *Chenopodium capitatum* (L.) Aschers. STRAWBERRY BLITE

An annual herb with stem either erect or spreading up to 18 inches high. The leaves are pale green, roughly triangular, up to 2½ inches long. The inflorescence is in the form of small, round glomerules at intervals on the stem, and turns red and then resembles small strawberries. Found on rocky or stony soil and around bluffs and woodlands throughout the entire area, particularly in the north.

- (3) *Chenopodium dacoticum* Standl. STINKING GOOSEFOOT

A very ill-scented annual growing to a height of around 12 inches, with a branched stem. The round ovate leaves, which are up to 1 inch in length, are densely mealy when young and have a pale yellowish tinge.

- (4) *Chenopodium dessicatum* A. Nels. ARID GOOSEFOOT

A low-growing species from 6 to 18 inches high, with ovate leaves from ¾ to 1 inch long, thick and mealy on both sides. Found occasionally on dry soil, especially in “burn-out” areas in the southwestern portion of the area.

- (5) *Chenopodium Fremontii* S. Wats. FREMONT’S GOOSEFOOT

This is an annual with rather slender, erect stems, usually with longitudinal dark green lines. The plant grows to a height of about 2 feet and has broadly triangular leaves up to 2 inches long, of a pale green colour on both sides. The inflorescence is open, interrupted and not dense, usually appearing rather straggly. This species is found amongst bushes and bluffs, and is very common in such habitats throughout the entire area.

- (6) *Chenopodium humile* Hook. LOW GOOSEFOOT

A prostrate plant with the fruiting calyx slightly reddish, the plant not over 8 inches high. The leaves are usually entire or spear-shaped (with a lobe near the base on either side) and vary from linear to obovate. Not common, but can be expected in the southwestern area in alkaline meadows.

- (7) *Chenopodium hybridum* L. var. *gigantospermum* (Aellen) Rouleau
MAPLE-LEAVED GOOSEFOOT

A tall annual growing up to 4 feet in height, with bright green, rather shiny

leaves up to 6 inches in length. The leaves have, as a rule, from 2 to 4 large, sharp pointed lobes on either margin and have a long pointed apex. The inflorescence is somewhat similar to that of *C. Fremontii* with which it is often associated, loose and interrupted, in long open panicles. Fairly common in shady wooded places throughout the entire area.

(8) *Chenopodium lanceolatum* Muhl. LANCE-LEAVED GOOSEFOOT

Very similar to lamb's quarters, but the leaves ovate or lanceolate and coarsely toothed, the upper leaves being long, entire and pointed. Has been reported from southern Saskatchewan but apparently not common. It is often considered merely a form of lamb's quarters, as var. *viride*.

(9) *Chenopodium leptophyllum* Nutt. NARROW-LEAVED GOOSEFOOT

A tall, erect annual with a somewhat mealy stem, striate or longitudinally grooved with alternate yellow and green lines. The leaves are linear or linear-lanceolate, pale green and mealy above and densely mealy below, usually entire and up to 1 or 1½ inches long, and up to ¼ inch wide. The inflorescence is in small spikes in the upper leaf axils and at the summit of the stem and is densely mealy. Very plentiful on dry, sandy soil in the southwest area, especially in the sandhills.

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(10) *Chenopodium rubrum* L. RED GOOSEFOOT

A tall, erect plant growing up to 2½ feet in height with ascending branches. The leaves are not mealy and are thick and dark green, pointed at both ends and coarsely toothed, and up to 3½ or 4 inches long. The flower clusters are in leafy spikes in the leaf axils and turn a dull red when in fruit. Very common in saline, moist soil throughout the entire area.

(11) *Chenopodium salinum* Standl. SALINE GOOSEFOOT

A low, prostrate plant from 4 to 18 inches in length, and with rather fleshy stem often tending to be reddish in colour. The leaves are usually small, varying from somewhat triangular to oval or oblong in shape and sinuately dentate or lobed, resembling very small oak leaves. They are from ½ to 1 inch in length and are mealy on the underside. The inflorescence is in small spikes in the axils of the leaves. This plant is very common throughout the entire area in moist, saline locations.

CORISPERMUM (Bug-seed) genus. 2 species.

Annual plants with very branched stems and narrow, linear leaves, the flowers being solitary in the axils of the leaf-like bracts and the seeds flattened, giving rise to the common name.

1. Plants not hairy; fruit with a distinct wing around it.

(1) *C. hyssopifolium*

Plants slightly hairy; fruit scarcely winged, merely acute-margined.

(2) *C. villosum*

- (1) *Corispermum hyssopifolium* L.
(*C. marginale* Rydb.)

BUG-SEED

A much-branched annual, growing about 18 inches high with narrow, linear leaves of a pale green colour and about 1½ to 2 inches long. The inflorescence is in small clusters at the axils of the leaves, each separate flower having a small leaf-like bract. The seeds are about ⅛ inch across, flat on one side and slightly convex on the other, of a medium brown colour and have a decided wing around them. This plant is not very common, but has been found on sandy soil in several places in the southwest and south-central area.

- (2) *Corispermum villosum* Rydb.

VILLOSE BUG-SEED

An annual very similar to the preceding species but the stems and leaves having fine, white stellate or star-shaped hairs. The seeds are similar to the preceding but have no wing. Fairly plentiful in sandy soil, especially the sandhills of the southwestern portion of the area. This plant is eaten by livestock and is a good sand binder.

CYCLOLOMA (Winged pigweed) genus. 1 species.

(1) *Cycloloma atriplicifolium* (Spreng.) Coulter

WINGED PIGWEED

A much branched annual from 6 to 18 inches high, sometimes with cobwebby hairiness on stem and leaves. The leaves are lanceolate with a toothed margin, and may be up to 2½ inches long. The inflorescence is borne on open panicles and each fruit has a broad membranous wing below it. When mature, the plant becomes purplish and breaks off, blowing with the wind as a “tumble weed” and scattering its seed. Quite rare but has been found on sandy soils in the southern part of the area.

ENDOLEPIS (Endolepis) genus. 1 species.

(1) *Endolepis Suckleyi* Torr.

ENDOLEPIS

A low, erect annual up to 12 inches high with short leaves from $\frac{3}{4}$ to 1 inch long, lanceolate and with 1 nerve. The stem and midrib are often a purplish colour. The flowers are in clusters on short spikes in the axils of the leaves and at the ends of the stem. Found on saline flats, eroded clay slopes and badlands throughout the southern part of the area. Not common, but quite plentiful locally.

EUROTIA (Winter-fat) genus. 1 species.

(1) *Eurotia lanata* (Pursh) Moq.

WINTER-FAT

A perennial half shrub or herb growing from 6 to 18 inches in height. The plant is covered with fine, star-like, white hairs which become reddish as the plant ages. The leaves are linear, with rolled margins and are from ½ to 2 inches long. The flowers are unisexual, both male and female flowers being on the same plant, with the male flower clusters being above the female clusters. The female flowers and fruit are enclosed in two bracts, which are united almost to the top and have 2 horns on the top. The whole female inflorescence is clothed with long, silky, white hairs, making the plants very conspicuous. This plant is much relished by stock and is an excellent forage plant. Very common on dry prairie and on heavy soils throughout the southwestern portion of the area. Very useful on winter range, because its protein and mineral content remain at a high level throughout the fall and winter.

KOCHIA (*Kochia*) genus. 1 species.

(1) *Kochia Scoparia* (L.) Roth

SUMMER CYPRESS

An annual plant, which has escaped from gardens and grows about 2 feet in height, erect and in a very regular pyramidal or ovoid shape. The leaves are linear and very closely compacted; they are pale green in colour when young but turn a purplish-red when mature. Copious quantities of seed are produced and germinate very readily, forming an almost matted mass of seedlings the following year. This plant has been used as an ornamental in gardens by reason of its symmetrical shape and its red fall colouring, but its prolific seeding habits have caused it to become a weed in the vicinity of most towns and cities in the area.

MONOLEPIS (Spear-leaf) genus. 1 species.

(1) *Monolepis Nuttalliana* (R. and S.)
Greene

SPEAR-LEAVED GOOSEFOOT

A prostrate annual with fleshy reddish stems and hastate or spear-shaped leaves, which form a rosette in the plants' early stage. This species spreads out on the soil and often the plants measure 12 inches across. The inflorescence is in small clusters in the axils of the leaves, and is produced early in the season. This plant is one of the first weeds to start in the spring on fallows and in waste places where its fleshy tap roots and its succulent stems cause a great drain on the early spring moisture reserves. It is a native which has become weedy and, while in nature its habitat is saline soils, it is now found on cultivated land throughout the entire area. Common on gopher holes.

SALICORNIA (Samphire) genus. 1 species.

(1) *Salicornia rubra* A. Nels.

RED SAMPHIRE

A low annual with no true leaves, their places being taken by scales at the nodes of the stems. The stems are circular in cross-section (terete) and are branched alternately. The flowers are very minute and are sunk into the tissue of the stems. The plant turns a bright crimson at maturity and gives a reddish colour to the saline dry sloughs in hot summer and early autumn. Very common in strongly saline sloughs throughout the entire southern and southwestern portion of the area.

SALSOLA (Glasswort) genus. 1 species.

(1) *Salsola pestifer* A. Nels.

RUSSIAN THISTLE

(*S. Kali* L. var. *tenuifolia* Tausch.)

An introduced annual weed which has become very common throughout the entire southern area. The plant grows to a height of 1 or 2 feet and has dark-green thread-like early leaves about 1 inch long. Later leaves are shorter and broader, coming to a sharp, hard point. The flowers are borne in the axils of the upper leaves and a membranous wing forms on the calyx around the seed. As the plants age they become dry and the spiny tips of the leaves and bracts harden, making the whole plant prickly. The plants usually become reddish and at maturity break off at the ground and drift across the country with the winds scattering their seeds. Very common in fields, waste places, etc., throughout the entire southern part of the area. Palatable to livestock but highly laxative.

SARCOBATUS (Greasewood) genus. 1 species.

(1) *Sarcobatus vermiculatus* (Hook.) Torr.

GREASEWOOD

A much branched shrubby perennial with spiny branches growing to a height of 5 or 6 feet in places. The stems are usually almost white and the leaves a pale yellowish green, linear and about 1 to 1½ inches long. The male flowers are borne in small cylindric spikes at the ends of the stems, while the female flowers are borne singly in the axils of the leaves. A broad membranous wing is formed on the calyx around the fruit. Greasewood is rather poisonous to livestock if eaten in large amounts, especially so to lambs during the spring and summer. It contains sodium and potassium oxalates and during dry seasons these salts occur in a concentrated form. This species is very alkali-tolerant and is found around strongly saline sloughs and flats throughout the southwestern part of the area.

SUAEDA (Sea-blite) genus. 1 species.

(1) *Suaeda depressa* (Pursh) S. Wats.

WESTERN SEA-BLITE

Low-growing annual or perennial species with very dark green rather fleshy, narrow leaves. There are two forms, the species *depressa* and its variety *erecta* or Erect Sea-blite. In the *depressa* form the plant is depressed and spreading and the leaves are from $\frac{1}{2}$ to $1\frac{1}{4}$ inches long. The variety *erecta* is erect and upright in habit with longer leaves, from $\frac{3}{4}$ to $1\frac{1}{2}$ inches in length. The flowers are dark greenish and clustered in the axils of the upper leaves. At maturity the plants turn very dark, almost black. Very common in saline areas around sloughs and saline flats throughout the entire southern part of the area. The variety *erecta* is probably a little more plentiful than the species.

AMARANTHACEAE (Amaranth Family) 1 genus.

AMARANTHUS (Amaranth) genus. 4 species.

Coarse, annual, weedy plants somewhat similar to the goosefoot family, but differing in that the flowers are enclosed in three dry and persistent bracts.

1. With a pair of stout spines at the axil of each leaf.

(4) *A. spinosus*

Without spines in the leaf axils.

2.

2. Plants tall with the upper flowers in dense terminal spikes.

(3) *A. retroflexus*

Plants low, and much branched with the flowers in small clusters in the axils of the leaves, the clusters shorter than the leaves.

3.

3. Plant erect and bushy; leaves pale green and not shiny; sepals 3, much shorter than the somewhat spine-tipped bracts.

(1) *A. albus*

Plant prostrate, with succulent reddish stems; leaves dark green and rather shiny; sepals 4 or 5, almost as long as the blunt-tipped bracts.

(2) *A. graecizans*

(1) *Amaranthus albus* L.

TUMBLE WEED

A bushy, much branched, whitish-stemmed annual growing up to 18 inches or 2 feet in height with pale green, dull, spatulate leaves from ½ to 1½ inches long. As a rule the end of the mid-vein of the leaf is projected as a tiny spine at the end of the leaf. This often can be found in the other species of amaranth, but is more pronounced in this species. The flowers are in small clusters in the leaf axils, and the seed is black and shiny, enclosed in a small utricle or envelope, the top of which falls off at maturity. This is a native plant of the area and was an early invader of new breaking,

fireguards etc. and is now a common weed of waste ground, gardens, roadsides and so on throughout the entire area. When dry this plant breaks off and blows across the prairie, dispersing its seeds. This species has generally been called *A. graecizans*, but that name was intended by Linnaeus for the prostrate amaranth.

(2) *Amaranthus graecizans* L.

PROSTRATE AMARANTH

A coarse, prostrate, weedy annual with reddish, fleshy stems, forming mats up to 2 feet in diameter. The leaves are usually spatulate, the broadest part being beyond the middle, from $\frac{1}{4}$ to 1 inch long and of a dark, shiny green colour. The flowers are borne in the leaf axils. This plant is not considered a native of the area, but has come in from the southwest, where it is a native of dry sites in the intermountain areas. It is a very common garden weed throughout the entire area. This species has hitherto been known as *A. blitoides* S. Wats.

(3) *Amaranthus retroflexus* L.

RED-ROOT PIGWEED

A very coarse, rough, erect annual with reddish coloured root. It often grows to several feet in height and has rough, angular stems somewhat hairy near the top. The leaves are usually ovate, on fairly long stalks, very rough to the touch and up to 3 or 4 inches in length. The inflorescence is very harsh and rough and borne in dense spikes in the leaf axils and in a large terminal spike at the summit of the stem. The sepals are dry and parchment-like with spiny tips and the 3 bracts around each flower are also spine-tipped, giving the inflorescence a decidedly rough appearance. The seeds are shiny, black and in a small utricle similar to the other amaranths. This species is a native of the tropical southern States but has now become a common weed over all North America. Very common in waste places, roadsides, gardens and fields throughout the entire area.

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(4) *Amaranthus spinosus* L.

SPINY AMARANTH

A weedy, erect annual up to 4 feet in height with a stem longitudinally grooved and often of a reddish colour. The ovate, slender-stalked leaves are from 1 to 3 inches long and bear a pair of stiff spines at the junction of the stem and the leaf stalk. The female flowers are usually borne in clusters in the leaf axils and the male flowers in a narrow cylindrical spike at the head of the stem. This is a native of the southern U.S.A. and has become a fairly common weed of waste places in the southeast corner of the area

covered.

NYCTAGINACEAE (Four-o'clock Family) 1 genus.

OXYBAPHUS (Umbrella-wort) genus. 4 species.

Perennial herbs with opposite, entire leaves with no stipules. The stems are usually swollen at the nodes. The flowers are regular and perfect, with no petals, but the sepals are brightly coloured and petal-like, and generally united into a bell-like or funnel-form tube. The flowers are generally in clusters of 3 to 5 with a saucer-like involucrel bract beneath them.

1. Leaves cordate, heart-shaped, with distinct stalks.

(4) *O. nyctagineus*

Leaves not cordate, but ovate-lanceolate or linear, mostly without stalks or the lower ones with short stalks.

2.

2. Stem more or less hairy, as well as sticky.

(2) *O. hirsutus*

Stem not at all hairy below, but fine, sticky haired above.

3.

3. Leaves from ovate to linear-lanceolate, usually more than $\frac{3}{16}$ inch wide.

(1) *O. albidus*

Leaves narrowly linear, less than $\frac{3}{16}$ inch wide.

(3) *O. linearis*

- (1) *Oxybaphus albidus* (Walt.) Sweet
(*Allionia albida* Walt.)

PALE UMBRELLA-WORT

An erect plant up to 2 or 3 feet in height with thick, ovate to linear-lanceolate leaves up to 3 or 4 inches long. The petal-like calyx of the flowers is pink, white or lilac. Very rare but has been found in southwest Manitoba on dry, sandy soil.

(2) *Oxybaphus hirsutus* (Pursh) Sweet
(*Allionia hirsuta* Pursh)

HAIRY UMBRELLA-WORT

A slender, erect plant from 1 to 2 feet in height, with glandular hairs on the stem. The leaves are usually lanceolate or linear-lanceolate and hairy, from 1 to 3 inches long. A form which is equally common with the typical species has the lower part of the stem and the leaves almost devoid of hair, except just under the nodes of the stem and rather narrower leaves. This form has been sometimes designated as a separate species, *Oxybaphus pilosus*. Most authorities, however, do not separate the forms. The umbrella-worts are quite common on sandy soils throughout the entire southern portion of the area.

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(3) *Oxybaphus linearis* (Pursh) Robinson
(*Allionia linearis* Pursh)

LINEAR-LEAVED UMBRELLA-WORT

This species is erect with very narrow, single-nerved leaves from ½ to 2½ inches long. It has been reported from two points in the southwestern area by the early botanist Macoun. Its range is, however, south of the area and its appearance north of the International Boundary is very unusual.

(4) *Oxybaphus nyctagineus* (Michx.) Sweet
(*Allionia nyctaginea* Michx.)

HEART-LEAVED UMBRELLA-WORT

A tall-growing, erect species up to 3 feet in height with an almost hairless stem and large cordate or heart-shaped leaves from 2 to 4 inches long and 1 to 3 inches wide. The inflorescence is usually a deep reddish colour with a greenish involucre below the flowers. This is a fairly common species in rich soils in the southeastern portion of the area, and is gradually spreading westward along the railway tracks. Several large clumps have been located on the main line of the C.P.R. in southern Saskatchewan, and where found it appears to be the dominant plant on the cinder fill of the railway grade.

PORTULACACEAE (Purslane Family) 3 genera.

Rather succulent plants with perfect flowers, 2 sepals and 5 petals. The fruit is a capsule, which opens with 2 or 3 valves at the top or else with the top falling off like a lid (circumscissile).

1. Capsule circumscissile or the top coming off at maturity; annual prostrate weed.

[PORTULACA](#)

Capsule opening by valves; plants not prostrate.

[2.](#)

2. Plants with a deeply buried tuber-like corm; stem leaves opposite; perennial.

[CLAYTONIA](#)

Plants with fibrous roots; stem leaves alternate; annual.

[MONTIA](#)

CLAYTONIA (Spring Beauty) genus. 2 species.

1. Stem leaves without stalks.

(2) *C. lanceolata*

Stem leaves with short stalks.

(1) *C. caroliniana*

(1) *Claytonia caroliniana* Michx.

CAROLINA SPRING BEAUTY

A semi-erect early spring plant from a deep corm. The stem leaves have short stalks from $\frac{1}{4}$ to $\frac{1}{2}$ inch long, and are ovate-lanceolate to lance-oblong in shape and up to 2 inches long. This species has been reported from as far west as Saskatchewan, but is very rare.

(2) *Claytonia lanceolata* Pursh

LANCE-LEAVED SPRING BEAUTY

A low-growing, early spring flowering plant, growing from a corm or tuber-like globose root about 3 inches below the soil surface. In some cases several stems arise from a single corm. Occasionally a plant will bear one or two basal, stalked leaves but they are generally absent. Two stalkless (sessile) opposite leaves are borne on the stem, lanceolate in shape and from $\frac{3}{4}$ to 2 inches long, with three distinct veins. The flowers have petals about $\frac{3}{8}$ inch long, white with pink lines or faintly pinkish. This is a western species common along the margin between the grassland and wooded areas in the Foothills, but eastward the only known collections have been made in the Cypress Hills, where it is found flowering in large masses shortly after the snow melts in the spring. It is found in the edges of woodlands and around the margins of clearings.

MONTIA (Montia) genus. 1 species.

(1) *Montia linearis* (Dougl.) Greene LINEAR-LEAVED SPRING BEAUTY

A low branching annual growing from fibrous roots to a height of 3 or 4 inches. The leaves are linear or almost thread-like from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long. The flowers are nodding, from 2 to 7 in a raceme, with pale pinkish petals about $\frac{1}{8}$ inch long. This is a western species, which is found in very early spring in higher meadows in the Cypress Hills.

PORTULACA (Purslane) genus. 1 species.

(1) *Portulaca oleracea* L.

PURSLANE

A very succulent, prostrate annual sometimes making a mat up to 18 inches in diameter. The stems are reddish and very thick, fleshy and juicy and quite hairless. The leaves are alternate, dark shiny green, spatulate or obovate from $\frac{1}{4}$ to 1 inch long and are very thick and fleshy. The flowers are borne singly, without stalks in the axils of the leaves and usually open only in bright sunshine. They are bright yellow in colour, about $\frac{1}{4}$ inch in diameter and have two sepals and five petals. The seeds are very numerous and minute, and are contained in a pointed topped capsule or pyxis, the top of which breaks off, releasing the seeds. This is an introduced weed which is very common in gardens throughout the entire area, it may be cooked as greens and is also used as pig food.

CORRIGIOLACEAE (Whitlow-wort Family) 1 genus.

PARONYCHIA (Whitlow-wort) genus. 2 species.

Low-growing perennials with woody bases and coarse, woody roots. The leaves are very short, linear with hard spiny tips, and are opposite and crowded on the stems. The flowers have no petals but have five awn-tipped sepals. There are five fertile stamens, and also five staminodia or false stamens. The fruit is a utricle or bladderly envelope containing a seed.

1. Flowers single, not in clusters; leaves hardly longer than the bracts surrounding the flowers. The plants are densely cushion-like.

(2) *P. sessiliflora*

Flowers in clusters; leaves much longer than the bracts; plant prostrate but spreading and not densely cushion-like.

(1) *P. depressa*

(1) *Paronychia depressa* Nutt.

DEPRESSED WHITLOW-WORT

Woody-stemmed, spreading, prostrate plant with branches up to three inches long, and forming a mat-like growth. The leaves are linear and spine tipped, from $\frac{3}{16}$ to $\frac{5}{16}$ of an inch long. A plant of dry, sandy hillsides but very rare in the area covered, its general habitat being considerably south of the International Boundary.

(2) *Paronychia sessiliflora* Nutt.

LOW WHITLOW-WORT

A woody based densely cushion-like perennial growing as a rule from 1 to 3 inches high and from 3 to 7 inches in diameter. The leaves are linear, spine pointed and very short, from $\frac{3}{16}$ to $\frac{1}{4}$ inch long, bright green and so closely overlapping that the stems or branches are usually hidden, the plant appearing like a bright green dense cushion. The flowers are yellow, from $\frac{1}{8}$ to $\frac{3}{16}$ inch high and dotted singly at intervals on the

plant. This species is fairly common on dry side hills and eroded places throughout the southwestern area. Casual inspection may cause confusion with Moss Phlox *P. Hoodii*, but the Moss Phlox has a more open growth habit.

CARYOPHYLLACEAE (Pink Family) 9 genera.

Herbs with stems swollen at the joints and entire, opposite leaves. Flowers usually with 4 or 5 petals, sometimes none, and four or five sepals. The fruit is a capsule opening by valves at the top. A difficult family often requiring the fruiting capsule for positive identification.

1. Sepals united part way, forming a tube.

2.

Sepals entirely separate.

5.

2. Calyx 5 ribbed, 5 toothed and 5 angled; styles 2; flowers pink.

SAPONARIA

Calyx with twice as many ribs as calyx teeth, ribs running both into teeth and into hollows between teeth; usually 10 ribs; styles more than 2.

3.

3. Sepals with long, leaf-like lobes, over $\frac{3}{4}$ inch long; styles 5, opposite the petals; flowers dark purple.

AGROSTEMMA

Lobes of sepals not over $\frac{3}{4}$ inch long; styles alternate with the petals.

4.

4. Styles usually 3; capsule usually divided into partition at base.

SILENE

Styles 5; capsule one-celled to base.

LYCHNIS

5. Plants with small, ovate, papery stipules at junction of stem and leaves and stem and branches.

6.

Plants without stipules.

7.

6. Styles 5; leaves in whorls.

SPERGULA

Styles 3; leaves opposite.

SPERGULARIA

7. Capsule opening with twice as many valves or teeth as there are styles; petals deeply 2-cleft.

8.

Capsule opening with as many entire (or later 2-cleft) valves as there are styles; petals entire or merely notched at apex.

ARENARIA

8. Capsule short, ovate or oblong, usually opening with 6 valves; styles usually 3.

STELLARIA

Capsule long, cylindric, often curved, usually opening with 10 valves; styles usually 5.

CERASTIUM

AGROSTEMMA (Corn cockle) genus. 1 species.

(1) *Agrostemma Githago* L.

PURPLE COCKLE

An erect, hairy annual plant with a tap root, growing to a height of from 1 to 2½ feet, with hairy, linear leaves up to 4 inches long. The flowers are borne singly at the head of the stems and have hairy sepals united at the base, but with long lobes often up to 1 inch in length, much exceeding the petals. The petals are purple and the flowers from 1 to 1½ inches in diameter. The seeds are about ⅛ inch in diameter, somewhat flattened, black and roughened with rows of minute protuberances. The seeds are poisonous to chickens. This is a weed introduced from Europe and occasionally found in grain fields throughout the area, but is not very common.

ARENARIA (Sandwort) genus. 4 species.

Low, tufted herbs with opposite leaves. Flowers white with 4 or 5 sepals and 4 or 5 entire or slightly notched petals.

1. Leaves oval to oblong.

Leaves linear or filiform.

[2.](#)

[3.](#)

2. Leaf blades ovate, less than $\frac{3}{8}$ inch long.

[\(4\)](#) *A. serpyllifolia*

Leaf blades thin, oval or oblong from $\frac{1}{2}$ to 1 inch long.

[\(2\)](#) *A. lateriflora*

3. Valves of capsule entire; leaves less than $\frac{1}{2}$ inch long.

[\(1\)](#) *A. dawsonensis*

Valves of capsule eventually becoming 2-cleft; leaves from $\frac{1}{2}$ to 2 inches long.

[\(3\)](#) *A. lithophila*

- (1) *Arenaria dawsonensis* Britton

DAWSON SANDWORT

An annual, branched from the base, from 4 to 12 inches high, with thread-like leaves, usually less than $\frac{1}{2}$ inch long. The petals are no longer than the sepals, which are 3-nerved and about $\frac{3}{16}$ inch long. Found on gravelly hillsides in the western edge of the area but very rare elsewhere in area.

- (2) *Arenaria lateriflora* L.

BLUNT-LEAVED SANDWORT

(*Moehringia lateriflora* (L.) Fenzl.)

An erect perennial with thin, weak slightly hairy stems and oval to oblong thin, pale green leaves. The flowers are usually borne in pairs and the petals are about twice the length of the sepals. There are sometimes 4 sepals and petals and sometimes five of each, and the flowers are about $\frac{1}{4}$ to $\frac{1}{3}$ of an inch across. Quite common in moist woodlands throughout the entire area.

- (3) *Arenaria lithophila* Rydb.

ROCKY-GROUND SANDWORT

An erect perennial growing to 12 inches in height with tufted basal leaves and a few stem leaves. The leaves are linear and thread-like from $\frac{1}{2}$ to 2 inches long. The flowers are in open clusters on the tops of the stems, with white petals from $\frac{3}{16}$ to $\frac{1}{4}$ inch long and straw-coloured sepals. Very local, but found on rocky bench land and slopes in the Cypress Hills.

(4) *Arenaria serpyllifolia* L.

THYME-LEAVED SANDWORT

A much branched annual with a slightly downy stem from 3 to 8 inches high. The leaves are small and ovate, $\frac{1}{8}$ to $\frac{1}{3}$ of an inch long. The flowers are very small, usually not $\frac{1}{8}$ of an inch across, and borne on the summit of the stems. A weed introduced from Europe and has been found in a grain field in the area but is, as yet, very rare.

CERASTIUM (Chickweed) genus. 3 species.

Low-growing annuals or perennials with opposite leaves; white flowers with cleft petals and long capsule, usually opening with 10 valves.

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1. Annual, capsule 2 to 3 times as long as sepals.

(2) *C. nutans*

Perennials, capsules once or twice as long as sepals.

2.

2. Leaves oblong oval or ovate obtuse; sepals about as long as petals.

(3) *C. vulgatum*

Leaves linear or linear-lanceolate, acute; sepals much shorter than petals.

(1) *C. arvense*

- (1) *Cerastium arvense* L.

FIELD CHICKWEED

A low-growing perennial species growing to a height of from 4 to 8 inches but often with the stems prostrate at the base. The stems are covered with reflexed hairs (pointing downwards) and the white flowers are about $\frac{3}{8}$ inch across and flower very early in the season. This is a very common spring flower on dry prairie throughout the entire western part of the area.

- (2) *Cerastium nutans* Raf.

LONG-STALKED CHICKWEED

A bright green coloured erect annual growing up to 10 inches in height, with leaves from $\frac{1}{4}$ to $2\frac{1}{2}$ inches long. The fruiting capsules are much longer than the sepals and usually decidedly curved at maturity. Fairly plentiful in moist woodlands throughout the entire area.

- (3) *Cerastium vulgatum* L.

MOUSE-EARED CHICKWEED

A biennial or perennial plant from 4 to 15 inches high with glutinous hairy stems and oblong spatulate leaves from $\frac{1}{2}$ to 1 inch long. Fairly common in woodlands and fields in the northern and eastern portion of the area.

LYCHNIS (Campion) genus. 2 species.

1. Petals large, much protruding beyond the calyx; calyx enlarging in fruit; flowers of different sexes on separate plants.

(1) *L. alba*

Petals small, hardly protruding beyond the calyx; calyx not enlarging in fruit; flowers perfect with both stamens and pistil.

(2) *L. Drummondii*

(1) *Lychnis alba* Mill.

WHITE COCKLE

A biennial or short-lived perennial, growing to a height of from 1 to 2½ feet, much branched and with many sticky-haired stems. The leaves are opposite, ovate-oblong, from 1 to 3 inches long. The flowers are white and about 1 inch in diameter, with stamen bearing or male flowers on some plants and pistillate or female flowers on others. The fruiting capsule becomes enlarged and swollen at maturity and bears 10 teeth at the top. This plant much resembles the night-flowering catchfly, which however has perfect flowers. It is becoming increasingly common in the western parts of the area.

(2) *Lychnis Drummondii* S. Wats.

DRUMMOND'S COCKLE

(*Wahlbergella Drummondii* (Hook.) S. Wats.)

A tall, slender, erect perennial growing to 2½ feet in height with a sticky, hairy stem and opposite linear leaves up to 4 inches long. The flowers are borne at the head of the stem on fairly long stalks, and are usually white or purplish and little exceeding the sepals. The sepals are about ½ inch in length and jointed to form a somewhat cylindric tube, usually pale yellow with green lines. Not particularly plentiful but very widespread on open prairie, especially on sandy soils throughout the entire area.

SAPONARIA (Soapwort) genus. 1 species.

(1) *Saponaria Vaccaria* L.
(*Vaccaria vulgaris* Host)

COW COCKLE

A smooth, hairless annual plant growing to a height of 1 to 2½ feet, with grayish green, smooth, entire, clasping leaves, borne opposite each other in pairs on the stem, ovate-lanceolate in shape and from 1 to 3 inches long. The flowers are borne in loose corymbose cymes at the head of the stem and have an ovate calyx formed by the united sepals, about ½ inch long and ⅜ inch across, with the five pale pink petals forming a flat corolla about ½ inch across. The seeds are borne in an ovoid capsule and are round, dull black and about $\frac{1}{12}$ inch in diameter. This weed has been introduced from Europe and is fairly common in grain fields and on roadsides throughout the southern part of the area. It is very often a component of the “Wild Flower Garden” packets of seeds sold by some seed houses.

SILENE (Catchfly) genus. 6 species.

Annual, biennial or perennial plants with opposite, entire leaves, perfect flowers with both sepals and petals. The seeds are contained in a capsule.

1. Annual or biennial plants.

Perennial plants.

2.

5.

2. Plants not at all sticky.

(2) S. Cserei

Plants sticky, at least around the nodes of the stem.

3.

3. Plant almost without hairs; flowers pinkish-white, about $\frac{3}{16}$ inch across.

(1) S. antirrhina

Plant sticky and hairy; flowers white and over $\frac{5}{16}$ inch across.

4.

4. Flowers borne in apparent one-sided racemes, flower stalks rarely over $\frac{3}{16}$ inch long.

(4) S. dichotoma

Flowers in cymose panicle; flower stalks more than $\frac{3}{16}$ inch long; calyx with prominent green veins.

(6) S. noctiflora

5. Calyx strongly inflated in fruit; plant erect and sturdy.

(3) S. Cucubalus

Calyx not strongly inflated in fruit; plant weak and straggly.

(4) S. Menziesii

(1) *Silene antirrhina* L.

SLEEPY CATCHFLY

An erect annual growing to a height of 18 to 20 inches, with erect branches. The stem is usually sticky near the nodes and may be slightly hairy. The leaves are lanceolate, from 1 to 2 inches long, and the flower is pink and

very small, about $\frac{3}{16}$ inch across. Not common but may be found in the eastern part of the area.

(2) *Silene Cserei* Baumgarten

SMOOTH CATCHFLY

A biennial, somewhat resembling bladder campion but with a tap root, growing from 4 to 36 inches high. The leaves are elliptic-lanceolate, stalkless, glaucous and thick, from 2 to 4 inches long and borne oppositely on the stem. The numerous flowers have a pinkish, slightly inflated calyx and white petals, cleft at the tip and are borne in whorls around the stem. At maturity the calyx is somewhat inflated and ovoid, about $\frac{1}{2}$ inch long. This weed is becoming increasingly abundant along railway grades throughout the area.

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(3) *Silene Cucubalus* Wibel
(*S. vulgaris* (Moench) Garcke)

BLADDER CAMPION

A tall, erect perennial with hairless smooth stems from 6 to 24 inches high. The leaves are opposite, lanceolate and smooth, from 1 to 3 inches long. The flowers are borne at the summit of the stem in loose open panicles and the sepals are united to form a bladder-like calyx from $\frac{3}{8}$ to $\frac{1}{2}$ inch long. The petals are white and 2-cleft and the flowers are from $\frac{1}{2}$ to $\frac{3}{4}$ inch across. This is an introduced and very persistent weed. While not very common it is generally quite plentiful locally where found.

(4) *Silene dichotoma* Ehrh.

FORKED CATCHFLY

A biennial sticky-hairy plant from 1 to 2 feet high with lanceolate to oblanceolate leaves from 2 to 3 inches long. The lower leaves are hairy stalked and the upper ones stalkless. The flowers are white with deeply cleft petals and are almost stalkless or with very short stalks and are borne in seemingly spike-like racemes. This is an introduced plant which has been found only rarely in the area but may become a troublesome weed.

(5) *Silene Menziesii* Hook.

MENZIES' CATCHFLY

A straggly, weak-stemmed perennial growing from 6 to 18 inches high, with oval to lanceolate leaves from 1 to 2 inches long. The flowers are white with cleft petals about $\frac{3}{8}$ inches long. Found sparingly along the northern border of the area and has been reported from the Cypress Hills.

(6) *Silene noctiflora* L.

NIGHT-FLOWERING CATCHFLY

A stout, very sticky, hairy, erect annual weed from 1 to 3 feet in height. The basal leaves have short stalks and are from 2 to 5 inches long, oblanceolate. The upper leaves are stalkless, lanceolate, from 1 to 3 inches long. The leaves are hairy and slightly sticky. The sepals are united to form an oval tubular calyx up to $\frac{1}{2}$ inch long, with light and dark green upright stripes. The white petals are deeply cleft and the flowers open only at night. This introduced weed is becoming increasingly plentiful in grain fields throughout the southern parts.

SPERGULA (Spurry) genus. 1 species.

(1) *Spergula arvensis* L.

CORN SPURRY

An introduced annual branching plant from 6 to 18 inches high with very narrow leaves from 1 to 1½ inches long, borne in whorls around the stem. The white flowers are about ¼ inch across and are borne in branching cymes at the end of the stems. Not common, but has sometimes been found in the western part of the area in fields and on roadsides.

SPERGULARIA (Sand-spurry) genus. 1 species.

(1) *Spergularia salina* J. and C. Presl

SALT-MARSH SAND-SPURRY

A low annual clustered plant, much branched, about 4 to 8 inches high, with small ovate stipules at the bases of the opposite, linear, fleshy leaves. The leaves are circular in cross-section and from $\frac{1}{4}$ to 1 inch long. The flowers are pink and numerous, the petals being shorter than the sepals, which are about $\frac{1}{8}$ inch long. This is a rather rare plant, but is found in the margins of saline sloughs throughout the eastern and central part of the area.

STELLARIA (Stitchwort) genus. 5 species.

Mostly low-growing or straggling plants with small white flowers, 5 petals deeply cleft, so much so as to often look like 10 petals.

1. Leaves broadly ovate, stalked.

[\(5\)](#) *S. media*

Leaves lanceolate or linear, not stalked.

[2.](#)

2. Bracts of inflorescence thin, dry and membranous.

[3.](#)

Bracts of inflorescence green and leaf-like.

[4.](#)

3. Stem weak, leaves narrowed towards base and broadest about the middle.

[\(3\)](#) *S. longifolia*

Stem erect, leaves broadest near the base.

[\(4\)](#) *S. longipes*

4. Petals as long or longer than the sepals.

[\(3\)](#) *S. crassifolia*

Petals shorter than sepals, sometimes absent.

[\(1\)](#) *S. borealis*

- (1) *Stellaria borealis* Bigel.

NORTHERN STITCHWORT

A weak stemmed, trailing plant from 6 to 18 inches long, with linear lanceolate leaves from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long. Not common but is found in shady woodlands along the northern fringe of the area and has been reported from the Cypress Hills.

- (2) *Stellaria crassifolia* Ehrh.

FLESHY STITCHWORT

A small, rather weak stemmed plant from 2 to 10 inches high with short, fleshy oblong-lanceolate leaves from $\frac{1}{4}$ to $\frac{3}{4}$ inch long. The white flowers are from $\frac{1}{8}$ to $\frac{1}{4}$ inch across and are not very numerous. Quite uncommon but may be looked for along the northern and eastern fringe of the area in wet and very shaded places.

(3) *Stellaria longifolia* Muhl.

LONG-LEAVED STITCHWORT

A weak stemmed, semi-erect plant growing from 8 to 18 inches high, with bright green opposite linear leaves, tapered at both ends, from $\frac{1}{2}$ to $2\frac{1}{2}$ inches long. There are numerous flowers from $\frac{1}{4}$ to $\frac{3}{8}$ inch across borne at the summit of the stem, the petals being deeply cleft and longer than the sepals. Fairly common in moist places, woodlands and shady places throughout the entire area.

(4) *Stellaria longipes* Goldie

LONG-STALKED STITCHWORT

An erect plant growing from 3 to 12 inches high, with short lanceolate leaves from $\frac{1}{2}$ to 1 inch long, broadest near the base and tapering upward. The flowers are few on long stalks at the head of the stem and the 2-cleft white petals are slightly longer than the sepals. The petals are not generally as deeply cleft as in the preceding species. Quite common in moist places and in woodlands throughout the entire area.

(5) *Stellaria media* (L.) Cyrill.

COMMON CHICKWEED

A prostrate-growing annual plant with reclining, trailing stems with a line of fine white hairs on the stems. The leaves are broadly ovate from $\frac{1}{4}$ to 1 inch long, on short stalks. The flowers are white, about $\frac{1}{4}$ inch across and deeply cleft. An introduced European weed which is becoming very common on lawns and in gardens throughout the entire area.

**CERATOPHYLLACEAE (Hornwort Family) 1
genus.**

CERATOPHYLLUM (Hornwort) genus. 1 species.

(1) *Ceratophyllum demersum* L.

HORNWORT

A completely submerged aquatic plant with thread-like leaves, 2 or 3 times forked, from $\frac{1}{4}$ to 1 inch long, arranged in whorls of from 6 to 9 leaves in a whorl at intervals on the stem. The flowers are unisexual and borne singly in the axils of the leaves, without any flower stalks. The fruit is an achene about $\frac{3}{16}$ inch long, with a persistent style about $\frac{1}{4}$ inch long. This plant may be confused with the water-milfoil (*Myriophyllum*), from which it is distinguished by its 2 or 3 forked leaves, the leaves of *Myriophyllum* being pinnate and not forked. Hornwort is fairly common in ponds and still water in the east of the area and may be found along the northern fringe.

NYMPHAEACEAE (Water-lily Family) 1 genus.

NUPHAR (Yellow Water Lily) genus. 1 species.

(1) *Nuphar variegatum* Engelm.

YELLOW POND LILY

Perennial aquatic plant with stout, creeping rootstock. The leaves are borne on long, slender stalks, which arise from the rootstock and extend upwards to the surface of the water where they bear a large, single, cordate leaf which floats on the surface. The leaves are from 4 to 8 inches long and from 3 to 6 inches broad. Occasionally there are entirely submerged leaves which are thin and membranous. The flowers, which protrude above the surface of the water, are borne on long stems from the rootstock, and are from 1½ to 2 inches across. The 5 or 6 sepals, which have the appearance of petals, are fleshy and about $\frac{3}{8}$ inch long and can easily be mistaken for stamens. The fruit is large, ovoid, about 1 inch long, and contains many seeds. Found in woodland lakes in the northern and eastern parts of the area.

RANUNCULACEAE (Crowfoot Family) 10 genera.

A very large and variable family, with leaves alternate, except in the clematis; sepals from 3 to 15, often coloured and resembling petals. The petals may be absent, but when present are equal in number to the sepals. There are many stamens. The fruit may be in the form of achenes, follicles (dry pods) or berries.

1. Climbing plants with opposite leaves; no petals but coloured sepals; fruit with persistent feathery style.

[CLEMATIS](#)

Not climbing plants; leaves either basal or alternate.

[2.](#)

2. Flowers irregular.

[DELPHINIUM](#)

Flowers regular.

[3.](#)

3. Fruit berry-like.

[ACTAEA](#)

Fruit dry pods or follicles.

[4.](#)

Fruit achenes.

[5.](#)

4. Sepals 5, petals 5, petals extended backward into long, hollow spurs.

[AQUILEGIA](#)

Sepals 5 to 9, no petals, kidney-shaped leaves; marsh plants.

[CALTHA](#)

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5. Petals usually present.

[6.](#)

Petals absent but sepals coloured and petal-like.

[7.](#)

6. Leaves all basal and linear; sepals spurred; fruit on long spike-like receptacle; annual marsh plants.

[MYOSURUS](#)

Leaves rarely linear; sepals not spurred; usually perennial plants.

[RANUNCULUS](#)

7. Leaves ternately decomposed (stalks dividing into 3's and ending in 3 leaflets); no involucre below flowers; flowers unisexual.

[THALICTRUM](#)

An involucre of leaves or bracts beneath the flowers; flowers perfect.

[8.](#)

8. Flowers pale blue, sepals usually $\frac{3}{4}$ inch long or more; styles persistent on seed and plumose (feathery).

[PULSATILLA](#)

Sepals not $\frac{3}{4}$ inch long; styles not plumose.

[ANEMONE](#)

ACTAEA (Baneberry) genus. 1 species.

(1) *Actaea rubra* (Ait.) Willd.

RED BANEBERRY

Erect, perennial herbs, 1 to 2 feet high, with large compound leaves and small white flowers in dense clusters at the ends of the stems. The sepals fall off when the flowers open making it appear as though there is only one floral ring. The fruits are large and berry-like, from $\frac{1}{4}$ to $\frac{3}{8}$ inch long and are clustered in a raceme. They are *poisonous* to humans and especially so to children. The fruit of the common typical species is bright red, but a white berried form is quite common. This has been named *Actaea rubra* forma *neglecta* (Gilman) Robins. or white baneberry. Both baneberries are quite common in rich woodlands and in shady, wooded ravines throughout the entire area.

ANEMONE (*Anemone*) genus. 5 species.

Perennial plants from bulb-like taproots with basal leaves long-stalked and palmately divided or dissected. The flowering stalks bear a whorl of involucreal leaves, or large bracts which resemble leaves. These are borne part way up the flowering stem. The flowers are borne at the summits of long stems and consist of 5 or 6 coloured sepals but no petals. The fruits are achenes borne in globular or cylindrical heads.

1. Achenes (fruit) woolly.

2.

Achenes not woolly but sometimes hairy.

4.

2. Involucreal leaves (those below flowers) almost or quite stalkless; leaves several times cleft into many narrow divisions.

(3) *A. multifida*

Involucreal leaves slender-stalked; leaves once cleft into from 3 to 5 fairly broad divisions.

3.

3. Head of fruit elongate, cylindric.

(2) *A. cylindrica*

Head of fruit rounded, oblong.

(5) *A. virginiana*

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4. Plants stout; achenes wing-margined; involucreal leaves without stalks; leaves appearing before flowering stems.

(1) *A. canadensis*

Plants slender; achenes not wing-margined; involucreal leaves with decided stalks; flowering stems appearing before leaves.

(4) *A. quinquefolia*

(1) *Anemone canadensis* L.

CANADA ANEMONE

A hairy stemmed plant growing to 12 inches in height with several 5 to 7 parted basal leaves. In this species the flowering stems divide, and fresh ones appear each bearing a whorl of involucreal leaves with a flower at the

end of the stem. The flowers are white and from 1 to 1¼ inches across. The fruiting head is globular. This is one of the commonest anemones and is found in large patches in the edges of woodlands, low, moist places and hollows throughout the entire area.

(2) *Anemone cylindrica* A. Gray

LONG-FRUITED ANEMONE

This species has a long slender stem from 6 to 20 inches high, branching at the involucre leaves into 2 to 6 flowering stems, each bearing a 5-sepalled greenish-white flower almost ¾ inch across. The fruiting head is long, cylindric, often an inch high and densely woolly. Quite common on moist prairie throughout the entire southern and western parts of the area.

(3) *Anemone multifida* Poir.

CUT-LEAVED ANEMONE

Erect plants, generally with several silky-haired purplish stems from 6 to 24 inches high. They bear from 1 to 7 flowering stalks, one usually having no involucre leaves. The leaves are cleft several times into very narrow lobes. The flowers vary from a reddish purple colour to white or yellowish-green and the fruiting heads are globular and very woolly. Quite common in moist spots throughout the entire area. There are two commonly recognized varieties.

1. Sepals ¼ to ⅜ inch long; colour generally red or purple.

(3a) var. *hudsoniana*

Sepals ⅜ to ⅝ inch long; colour generally whitish.

(3b) var. *Richardsiana*

(3a) *Anemone multifida* Poir. var. *hudsoniana* DC.

This short-sepalled variety seems to be the most plentiful in the area and is rarely over 12 inches high. The sepals, while generally reddish, may occasionally be yellowish or bluish in colour.

(3b) *Anemone multifida* Poir. var. *Richardsiana* Fern.

This variety has longer sepals which are generally whitish in colour but sometimes bright red. It is fairly common in moister spots throughout the area.

(4) *Anemone quinquefolia* L.

SMALL WOOD ANEMONE

A low-growing plant from 4 to 8 inches high which, like the crocus anemone, bears its flowers before the basal leaves appear. The involucrel leaves have decided stalks. The flower is white and about 1 inch across. The fruiting head is globular and not woolly, and the achenes are slightly hairy and have a small hooked tip. Fairly frequent in open woodlands in the eastern part of the area.

(5) *Anemone virginiana* L.

TALL ANEMONE

A tall-growing, erect species from 2 to 3 feet in height, with hairy stems. The flowers are greenish-white in colour with sepals about $\frac{3}{8}$ inch long. The head of the fruit is ovoid or cylindric and woolly. A very variable species, occasionally found in woods and shady places in the eastern part of the area, but very rare elsewhere. Some authorities consider the western plants to be *A. riparia* Fern.

AQUILEGIA (Columbine) genus. 3 species.

Erect, branching plants from rootstocks with slightly hairy and glandular stems. The leaves are compound and divided into 3 leaflets. The flowers have 5 sepals, which are coloured and petal-like, also 5 petals, also coloured but which are extended at the base to form a long tubular spur. The fruit is a follicle or dry capsule containing numerous seeds.

1. Blade of petals longer than the spurs; flowers blue or purple.

(1) *A. brevistyla*

Blade of petals shorter than the spurs.

2.

2. Flowers scarlet; spurs of petals nearly straight.

(2) *A. canadensis*

Flowers yellow; spurs of petals slightly hooked.

(3) *A. flavescens*

- (1) *Aquilegia brevistyla* Hook.

SMALL-FLOWERED COLUMBINE

A small plant from 6 to 18 inches high, with blue or purple nodding flowers with sepals about $\frac{5}{8}$ inch long. Found in woodlands along the northern and eastern fringe of the area. Rare in other parts.

- (2) *Aquilegia canadensis* L.

WILD COLUMBINE

A stout, erect plant from 1 to 3 feet in height with large, nodding flowers, with scarlet sepals and sometimes yellow petals. The stamens and styles are much longer than the sepals and protrude conspicuously from the flower. Found in open woodlands and is fairly common in the northern and eastern parts of the area, and has been reported from the Qu'Appelle Valley in Saskatchewan.

- (3) *Aquilegia flavescens* S. Wats.

YELLOW COLUMBINE

A slender, branching plant from 1 to 2 feet in height, with yellow or yellowish-white flowers. This is a mountain species but may sometimes be found in woodlands in the foothill regions.

CALTHA (Marsh Marigold) genus. 1 species.

(1) *Caltha palustris* L.

MARSH MARIGOLD

Stout marsh plants with smooth, hollow stems arising from coarse fleshy roots. The leaves are round or kidney-shaped and cordate (heart-shaped) at the base; the basal ones with long stalks and the upper ones stalkless. The flowers are bright yellow from 1 to 1½ inches across and have from 5 to 9 sepals but no petals. The fruit is a many-seeded follicle. Common in wet places in the east and southeast and northern parts of the area, but seems to need slightly moving water.

CLEMATIS (Virgin's Bower) genus. 2 species.

Climbing vines with more or less woody stems and opposite leaves. These plants climb by clasping the supporting plant with the stalks of their leaves and not by means of tendrils. The flowers have coloured sepals but no obvious petals, and the fruit consists of achenes with a long, persistent feathery style.

1. Flowers white and clustered; leaves 5-foliolate.

(2) *C. ligusticifolia*

Flowers blue and borne singly; leaves 3-foliolate.

(1) *C. columbiana*

(1) *Clematis columbiana* (Nutt.) T. and G. PURPLE VIRGIN'S BOWER
(*Atragene columbiana* Nutt.)

A climbing plant with opposite leaves which are divided into 3 long-stalked leaflets, each from 1 to 3 inches long, pointed at the tip. The flowers are from 2 to 4 inches across and consist of 4 (sometimes 5) pale blue sepals which are petal-like. The petals are reduced and appear like sterile stamens. The fruits are achenes, borne in clusters each with a long feathery style about 2 inches long. Found in shady woodlands in the Cypress Hills, and in the Foothills region.

(2) *Clematis ligusticifolia* Nutt. WESTERN VIRGIN'S BOWER

A climbing plant with opposite leaves divided into 5-stalked leaflets arranged pinnately on stalk, each leaflet pointed at tip and from 1 to 3 inches long. The flowers are borne in clusters, each flower being about ½ inch across with white sepals and no petals. The fruit consists of clusters of achenes, each with a persistent feathery style. This species is quite common in coulees and ravines, climbing over bushes and shrubs throughout the southwestern and south-central portion of the area.

DELPHINIUM (Larkspur) genus. 3 species.

Perennial herbs with alternate, much divided or lobed leaves. The flowers are in racemes and are perfect, irregular, with 5 petal-like, coloured sepals, the upper one being extended at the base into a spur. There are 4 petals, the upper pair extended into spurs which project into the sepal spur and the lower pair are small with short claws. The fruit is a many-seeded follicle.

1. Sepals white or merely tinged with blue.

(3) *D. virescens*

Sepals blue.

2.

2. Plants tall and erect, from 2 to 6 feet high; racemes of flowers spike-like; lower flower stalks shorter than flowers.

(2) *D. scopulorum*

Plants low from 6 inches to 2 feet high; racemes of flowers loose and spreading; lower flower stalks longer than flowers.

(1) *D. bicolor*

- (1) *Delphinium bicolor* Nutt.

LOW LARKSPUR

A perennial from a thick, fleshy fibrous root, with hairy stems from 6 inches to 2 feet in height. The leaves are finely hairy and much cleft and dissected and borne on long stalks. The flowers are dark blue with the petals pale brownish-yellow, with a long, blue spur at the rear of the flower. Flowers may vary from $\frac{3}{4}$ to $1\frac{1}{4}$ inches across, and are borne on long stalks in a loose terminal raceme. This species flowers in early spring, in May or June. The fruit is a dry follicle from $\frac{5}{8}$ to $\frac{3}{4}$ inch high, brownish, and contains many seeds. While not common, this plant is locally very abundant, and found in very large patches in openings in woodlands, hillsides, and sheltered areas on the Cypress loam soils throughout the southwest of the area, particularly in the Cypress Hills and Wood Mountains. Also found in the Foothill regions. This plant is *very poisonous* to cattle and causes some very heavy losses, but appears to be harmless to sheep.

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- (2) *Delphinium scopulorum* Gray
(*D. Brownii* Rydb.)

TALL LARKSPUR

A tall erect plant from 1 to 6 feet in height, with smooth stem and deeply cut and dissected, slightly hairy leaves. The dark blue flowers are borne on very short stalks in a long, close spike-like raceme. This species is found throughout the Foothill region and is fairly abundant there. It is *very poisonous* to cattle. It grows in association with open stands of aspen and willows. The only collection from Saskatchewan was obtained north of Prince Albert.

(3) *Delphinium virescens* Nutt.

PRAIRIE LARKSPUR

An erect perennial with hairy stem from 1 to 3 feet in height with deeply dissected leaves, and a long, close, spike-like raceme of white flowers. This species is quite rare but has been found in the southeastern part of the area. Like other larkspurs, it is *very poisonous* to cattle, but sheep graze it with little, if any, loss.

MYOSURUS (Mouse-tail) genus. 3 species.

Small, low-growing annual mud plants from fibrous roots. The leaves are all basal and linear or thread-like. The flowering scapes bear one flower with 5 sepals and 5 narrow, greenish petals. Occasionally there may be 6 or 7 sepals and petals, and in some instances the petals may be absent. The fruits are numerous small achenes crowded on a tall, narrow spike which gives the name mouse-tail to the genus.

1. Achenes (seeds) flat on back, only slightly keeled with a very short beak.

(3) *M. minimus*

Achenes definitely keeled on back, with an obvious ascending beak.

2.

2. Fruiting spike short and dense, beak more than half as long as achene.

(1) *M. aristatus*

Fruiting spike long and slender, beak very short.

(2) *M. lepturus*

- (1) *Myosurus aristatus* Benth.

AWNED MOUSE-TAIL

A mud plant which has been found in the southwest part of the area but is very rare.

- (2) *Myosurus lepturus* (A. Gray) Howell

MOUSE-TAIL

A low-growing mud plant from 1 to 3 inches high, which in some years is very plentiful in muddy slough margins in the southwestern part of the area

- (3) *Myosurus minimus* L.

LEAST MOUSE-TAIL

A small plant from 2 to 6 inches high found occasionally in muddy slough margins throughout the southern part of the area.

PULSATILLA (Pasque flower) genus. 1 species.

(1) *Pulsatilla ludoviciana* (Nutt.) Heller

CROCUS ANEMONE

A very early spring flower from a thick, woody taproot. The flower appears before the leaves on an erect, silky stem from 3 to 8 inches high. The basal leaves are very much divided, on long stalks, the involucral leaves being also cleft, but without stalks. The flowers are mauve or pale blue, sometimes white, from 1½ to 2½ inches across and are usually the first flower to appear on the prairies in spring. The fruiting stems are tall, often over 12 inches high bearing the many achenes which each have a long, persistent tail-like feathery style about 1 inch long. Very common on open prairie and hills throughout the entire southern and western portions of the area, and particularly conspicuous on burned over prairie and railway rights-of-way. Some trouble has been experienced with sheep eating this plant, as it has poisonous properties, and also impairs the digestion by the matting of the felty hairs in the digestive system. Very common on overgrazed pasture; dense stands during the early spring indicate an overgrazed condition. Sometimes listed as *Anemone patens* L. var. *Wolfgangiana* (Bess.) Koch.

RANUNCULUS (Buttercup) genus. 16 species.

A large genus, usually with alternate leaves. The flowers are perfect and regular, with 5 sepals and generally 5 petals, either yellow or white. The fruits are numerous achenes borne in a head or a short spike.

1. Aquatic plants, entirely submerged except the flowers; leaves finely dissected; flowers white; fruit ridged crossways.

[2.](#)

Land or mud plants, not usually entirely submerged; leaves various; flowers yellow; fruit not ridged crossways.

[4.](#)

2. Leaves with a definite stalk above the sheathing stipule; fruit not beaked.

[\(16\)](#) *R. trichophyllus*

Leaves without a definite stalk above the sheathing stipule; fruit beaked.

[3.](#)

3. Beak of fruit long, at least half length of fruit.

[\(7\)](#) *R. longirostris*

Beak of fruit short, not over $\frac{1}{3}$ length of fruit.

[\(15\)](#) *R. subrigidus*

4. Fruit ribbed lengthwise; plant spreading by runners; leaves small, rounded and wavy margined.

[\(4\)](#) *R. Cymbalaria*

Fruit smooth and not ribbed.

[5.](#)

5. Leaves linear, thread-like to oblanceolate, none divided or cleft.

[\(12\)](#) *R. reptans*

Some of the leaves at least, divided or cleft.

[6.](#)

6. Some of the basal leaves entire and not cleft; basal leaves elliptic or kidney-shaped.

[\(5\)](#) *R. glaberrimus*

- None of the basal leaves entire, all cleft or toothed. [7.](#)
7. Semi-aquatic or creeping mud plants with palmately lobed or dissected, cordate-based leaves. [\(11\) R. Purshii](#)
Not semi-aquatic or creeping mud plants. [8.](#)
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8. Achenes (fruit) not compressed and without margins. [9.](#)
Achenes compressed and with distinct margins. [14.](#)
9. Petals much longer than the sepals. [10.](#)
Petals scarcely longer than the sepals. [13.](#)
10. Achenes not hairy and with straight beak; petals distant from each other. [\(13\) R. rhomboideus](#)
Achenes with very fine hairiness and a short recurved beak. [11.](#)
11. Petals oblong-obovate, from $\frac{1}{8}$ to $\frac{1}{4}$ inch long; sepals sparingly hairy. [\(6\) R. inamoenus](#)
Petals broadly obovate, about $\frac{3}{8}$ inch long or else absent; basal leaves cordate or kidney-shaped; sepals densely hairy. [12.](#)
12. Basal leaves deeply divided into 5 to 7 linear divisions; petals usually absent in our plants. [\(9\) R. pedatifidus](#)
Basal leaves not deeply divided but sometimes lobed. [\(3\) R. cardiophyllus](#)
13. All leaves divided or lobed; hollow stemmed marsh plants; annuals. [\(14\) R. sceleratus](#)

Some basal leaves not divided but merely with rounded teeth; perennials.

(1) *R. abortivus*

14. Leaves palmately divided; flowers 1 inch across.

(2) *R. acris*

Basal leaves pinnately three-foliolate, the end leaflet with a stalk.

15.

15. Petals longer than the sepals.

(8) *R. Macounii*

Petals not longer than the sepals.

(10) *R. pennsylvanicus*

(1) *Ranunculus abortivus* L.

SMOOTH-LEAVED BUTTERCUP

A biennial plant growing from 6 inches to 2 feet in height with a rather fleshy, smooth stem. The basal leaves are long stalked and are generally cordate based and round with wavy margins. The stem leaves are usually 3 cleft and the upper ones without stalks. The petals are usually shorter than the reflexed (turned downwards) sepals, and the flowers are yellow and from $\frac{1}{4}$ to $\frac{3}{8}$ inch across. This species is found in open woodlands, ravines and moist places. When found on stream or slough margins and very wet spots, the inflorescence becomes very large and branched with numerous small flowers. When growing in less favourable spots, it is more erect and with fewer flowers and less branched inflorescence, and the two phases may be taken for different species. Fairly plentiful throughout the southern part of the area, but rarer towards the north.

(2) *Ranunculus acris* L.

TALL BUTTERCUP

A tall, erect, perennial, branched above with a hairy stem, growing from 1 to 3 feet in height. The basal leaves are stalked and much cleft and divided. The upper leaves are divided into 3 lobes and have short stalks. There are numerous yellow flowers from $\frac{3}{4}$ to 1 inch across, the petals being over twice the length of the sepals. The achenes are smooth and flattened with a short beak. This is a weed introduced from Europe and is found occasionally in moist places throughout the area, along railway grades, but is not generally common. It is, however, very plentiful in some irrigation areas, especially in southern Alberta.

(3) *Ranunculus cardiophyllus* Hook.

HEART-LEAVED BUTTERCUP

This is an erect, little branched, species growing to a height of from 6 to 18 inches, with basal leaves stalked, round to ovate, sometimes lobed, and usually cordate (heart-shaped) at the base. The stem leaves are very deeply lobed with narrow, almost linear lobes, and are very short-stalked. The yellow flowers are from $\frac{1}{2}$ to $\frac{7}{8}$ inch across. Found in moist places, meadows and stream banks through the southwest part of the area, but not particularly common.

(4) *Ranunculus Cymbalaria* Pursh

SEASIDE BUTTERCUP

Low perennial plants with runners and mostly basal leaves on thin stalks. The leaves are small and rounded with cordate bases, wavy margins, and from $\frac{1}{4}$ to $\frac{3}{4}$ inch long. The flowers are yellow and quite small, usually from $\frac{1}{4}$ to $\frac{1}{3}$ inch across, the petals a trifle shorter than the sepals, and a conical centre to the flower. The achenes are numerous and have longitudinal grooves. Very common on the margins of sloughs and lakes, on saline wet areas and stream banks throughout the entire area.

(5) *Ranunculus glaberrimus* Hook.

SHINY-LEAVED BUTTERCUP

A very early, low-growing, smooth stemmed, buttercup. Its basal leaves are stalked; some are entire and not lobed, while others are 3-lobed. In the type the lower leaves are usually rounded or kidney-shaped and wavy margined, but the plants usually found are the var. *ellipticus* Greene, with entire long-elliptic basal leaves. The flowers are from $\frac{3}{8}$ to $\frac{3}{4}$ inch across, yellow, with generally a lavender or purplish tinge on the backs of the sepals. Occasionally large patches of this species are found with only one floral ring. This is a very early spring flowering plant and, while local and not generally abundant, it is very plentiful in certain parts of the southwest of the area.

(6) *Ranunculus inamoenus* Greene

GRACEFUL BUTTERCUP

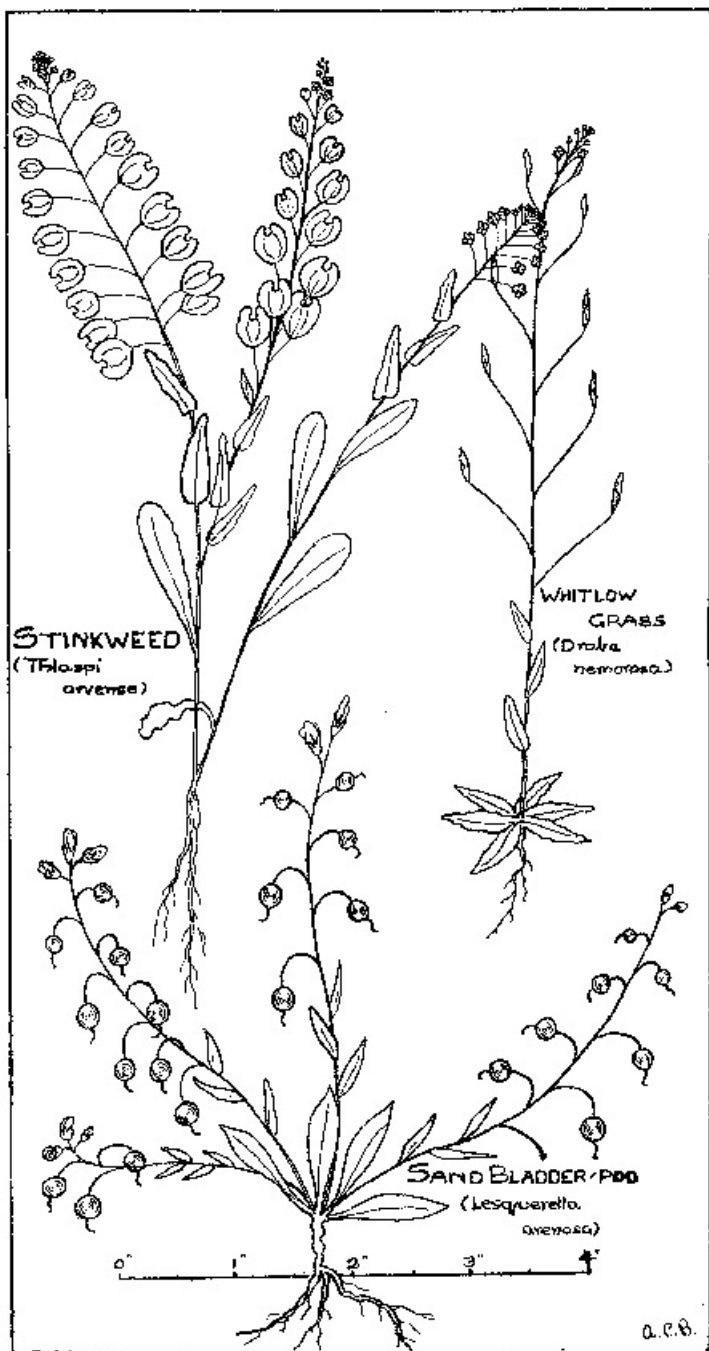
A species from 6 to 12 inches high with stalked basal leaves, varying from almost circular to fan-shaped and sometimes divided. The stem leaves are divided into three segments. The petals are small, generally less than $\frac{1}{4}$ inch long. This species is not common but has been found in the Cypress Hills.

(7) *Ranunculus longirostris* Godr. LONG-BEAKED WATER CROWFOOT

A submerged aquatic plant with dissected leaves growing from a sheathing stipule. The flowers, which are borne at the surface of the water, are white and from $\frac{3}{8}$ to $\frac{3}{4}$ inches across. The fruit are achenes about $\frac{1}{16}$ inch long with a beak at least half their length. Very rare but has been found in a running stream at the south of the Cypress Hills.

(8) *Ranunculus Macounii* Britt. MACOUN'S BUTTERCUP

A tall, branching, hairy species growing to a height of 1 to 2 feet, usually decumbent when partly grown. The leaves are divided into broad divisions and the leaf segments are usually stalked. The yellow flowers are about $\frac{1}{2}$ inch across, and the achenes have a sharp, stout beak, about $\frac{1}{4}$ length of the body. Fairly common in moist and wet places throughout the entire area.



STINKWEED
(*Tropaeolum arvense*)

WHITLOW GRASS
(*Draba nemorosa*)

SAND BLADDER/POD
(*Lesquerella arenosa*)

0 1 2 3 4

a. c. b.

STINKWEED (*Thalaspis arvensis*)

WHITLOW GRASS (*Draba nemorosa*)

SAND BLADDER-POD (*Lesquerella arenosa*)

(9) *Ranunculus pedatifidus* J. E. Smith

NORTHERN BUTTERCUP

An erect plant from 4 to 12 inches high with the basal leaves deeply dissected into linear divisions. In the typical species the flowers are about $\frac{1}{2}$ inch across with yellow petals and greenish-yellow sepals. The fruit has a slender curved beak. The type is apparently a mountain and arctic plant, but the apetalous form has been found on open prairie in the southwestern and south-central portion of the area and was formerly known as *R. apetalus* Farr. This form has only one floral ring of greenish-yellow, petal-like sepals.

(10) *Ranunculus pennsylvanicus* L. f.

BRISTLY BUTTERCUP

An erect, usually annual, species, very hairy, growing from 1 to 2 feet in height. The leaves are divided into 3-stalked segments which are again divided into 3 lobes. The yellow flowers are from $\frac{1}{4}$ to $\frac{1}{3}$ inch across and the petals are not longer than the reflexed sepals. The achenes have a sharp beak about $\frac{1}{3}$ the length of the body. Not very common but occasionally found in wet places in the eastern and northern parts of the area.

(11) *Ranunculus Purshii* Richards.

PURSH'S WATER BUTTERCUP

A semi-aquatic perennial with underwater leaves divided into very narrow, flat segments, the floating leaves having wider lobes. The petals are yellow, about $\frac{3}{16}$ inch long and the head of fruit is globose, about $\frac{3}{16}$ inch thick. Occasionally found in ponds and lakes in the northern portion of the area. This species is considered by some authorities to be a variety of *R. Gmelini* DC.

(12) *Ranunculus reptans* L. var. *ovalis* (Bigel.) T. & G.

CREEPING SPEARWORT

A low-growing, trailing plant with stems rooting at the nodes, and with linear or spatulate leaves from 1 to 2 inches long. The bright yellow flowers are about $\frac{1}{3}$ inch across, borne singly on short stems. Found on lake shores and river banks in the eastern and central portion of the area,

but quite uncommon. Some authorities consider this to be *R. Flammula* L. var. *ovalis* (Bigel.) Benson.

- (13) *Ranunculus rhomboideus* Goldie PRAIRIE BUTTERCUP
(*R. ovalis* Raf.)

A short, hairy stemmed, low-growing species from 6 to 18 inches high with rounded or oval, wavy margined basal leaves on long stalks, the stem leaves being deeply cleft or divided and without stalks. The flowers are yellow, from $\frac{1}{2}$ to $\frac{3}{4}$ inches across and the petals are rather narrow, thus appearing to be somewhat widely spaced. The fruiting head is globular and the achenes have a short beak. This is a very common species, perhaps the most common on the prairies, and is found over all the open plains portion of the area. It flowers very early in the spring, at about the same time as *R. glaberrimus*.

- (14) *Ranunculus sceleratus* L. CELERY-LEAVED BUTTERCUP

A hollow-stemmed annual plant with smooth stems from 6 inches to 2 feet high. The leaves are deeply three to five lobed and quite thick. The basal leaves have long stalks but the upper stem leaves are stalkless. The yellow flowers are small and numerous, from $\frac{1}{4}$ to $\frac{1}{3}$ inch across, the petals about the same length as the sepals. This species is very common along the shores of lakes and sloughs and is often the dominant plant of the hummocky bed of a drying slough. Found throughout the entire area. This plant has an acrid poisonous juice which will blister the skin and produced intestinal inflammation if eaten. In older countries this plant is called cursed crowfoot because of its toxic nature.

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- (15) *Ranunculus subrigidus* W. B. Drew WHITE WATER CROWFOOT

A fully submerged aquatic plant with finely dissected leaves (about $\frac{1}{2}$ to 1 inch long) growing from a sheathing stipule. The flowers are borne either floating on the water or protruding above it and are white and about $\frac{1}{2}$ inch across. The achenes have a short beak, not over $\frac{1}{3}$ length of body of achene. This is the commonest species and is found throughout the entire area in slowly moving water and in brackish pools that are not too saline.

- (16) *Ranunculus trichophyllus* LARGE-LEAVED WATER CROWFOOT
Chaix

A submerged plant very similar to the preceding species but with much larger leaves, generally over an inch long. It has a definite leaf stalk above the sheathing stipules and the fruit is not beaked. Very rare but has been found in a swiftly running stream in the Cypress Hills.

There has been such a wide divergence of opinion regarding the nomenclature of the last two species that to list any synonyms would only bewilder. The two scientific names are those used by Dr. M. L. Fernald in Gray's Manual, 8th edition.

THALICTRUM (Meadow-rue) genus. 5 species.

Perennial plants from rootstocks, with alternate leaves which are divided into 3 leaflets which are 3-lobed. The segments and the leaflets are generally stalked. The flowers are either perfect or unisexual with greenish-white sepals and no petals. The yellow stamens of the male flowers make the inflorescence very attractive, and the flowers are borne in rather open panicles. The fruits are achenes and usually ribbed and borne in small clusters.

1. Flowers perfect; achenes flat and half obovoid with a straight back. (3) *T. sparsiflorum*

Flowers unisexual. 2.

2. Stem leaves barely stalked; leaves oblong, usually longer than wide, often very finely hairy beneath; stems purplish. (1) *T. dasycarpum*

All leaves with stalks, leaflets almost round, pale and smooth beneath. 3.

3. Leaves thin, not distinctly veined; achenes equally pointed at both ends. (2) *T. occidentale*

Leaves thick and prominently veined; achenes obovoid and sharper at the upper end than the lower. 4.

4. Flower stalks long, averaging $\frac{3}{4}$ to $1\frac{1}{4}$ inch, and 3 to 5 at a node. (4) *T. Turneri*

Flower stalks averaging less than $\frac{3}{4}$ inch long and generally 2 at a node. (5) *T. venulosum*

- (1) *Thalictrum dasycarpum* Fisch. and Lall. TALL MEADOW RUE

A tall, erect, purplish stemmed plant from $1\frac{1}{2}$ to 5 feet in height with decompose leaves with long leaflets, longer than their width as a rule, with 3 pointed lobes. The leaves are dark green above and pale, prominently veined beneath, often with very fine hairiness beneath.

The flowers are borne in a long, open panicle, 12 inches long or more. This is a fairly common species of rich, moist woodland throughout the entire area. Flowers in mid-summer.

(2) *Thalictrum occidentale* A. Gray WESTERN MEADOW RUE

An erect, smooth stemmed perennial from 1 to 2 feet high with thin, pale green leaflets almost round with many lobed margins. The flowers are in an open panicle and appear fairly early in the spring. Very common in shady, moist places, woodland and coulees throughout the entire area, and is the commonest of the meadow rues.

(3) *Thalictrum sparsiflorum* Lurcz. FEW-FLOWERED MEADOW RUE

A perfect flowered species, the flowers having both male and female organs. The leaflets are glandular below and scented. Rare, but has been listed from the eastern area.

(4) *Thalictrum Turneri* Boivin TURNER'S MEADOW-RUE

A plant very similar to *T. venulosum* but much taller in growth, from 20 to 36 inches in height. It has much larger inflorescence and larger internodes and leaves. Found in shaded woodlands throughout the greater portion of the area covered. This may be a form of *T. venulosum*.

(5) *Thalictrum venulosum* Trel. VEINY MEADOW RUE

From 6 inches to 2 feet high, the leaflets rounded, bluish-green in colour and strongly veined, pale below. The panicle of flowers is narrow and dense. The achenes are ovoid. Fairly common in woodlands in the north and east of the area covered.

FUMARIACEAE (Fumitory Family) 1 genus.

CORYDALIS (Corydalis) genus. 1 species.

(1) *Corydalis aurea* Willd.

GOLDEN CORYDALIS

A much branched, low, sometimes prostrate-growing annual or biennial, with pale green, very dissected leaves. The plants sometimes spread for about 18 inches and bear racemes of narrow, golden-yellow flowers, each about $\frac{1}{2}$ inch long and with a spur at the base about half as long as the body of the corolla. The fruit are long narrow pods, $\frac{3}{4}$ to 1 inch long, containing many small, shiny seeds. Quite common in edges of woodlands, moist spots, railway grades, etc. throughout the entire area. This plant is reported to be somewhat poisonous to sheep.

CRUCIFERAE (Mustard Family) 21 genera.

Annual, winter annual, biennial or perennial plants with various shaped, alternate leaves. The flowers are perfect and regular, with 4 sepals and 4 petals, 6 stamens divided into two groups with 4 long and 2 short stamens. The fruit are pods (siliques) divided into two compartments by a thin partition and generally containing many seeds. This family contains many very troublesome weeds and also many edible plants.

1. Pods compressed at right angles to the central partition.

[2.](#)

Pods not compressed at right angles to the central partition.

[5.](#)

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2. One seed in each compartment of pod.

[3.](#)

More than one seed in each compartment of pod.

[4.](#)

3. Pods not winged or notched at top.

[CARDARIA](#)

Pods retuse or notched at apex, usually winged above.

[LEPIDIUM](#)

4. Pods more or less winged, orbicular.

[THLASPI](#)

Pods not winged, triangular.

[CAPSELLA](#)

5. Pod flattened parallel to the partition.

[6.](#)

Pod circular or four-angled in cross-section and not flattened.

[10.](#)

6. Pod short, not longer than twice its width, from orbicular to linear-oblong.

[7.](#)

Pod elongate to linear.

9.

7. Seeds many in each cell of pod.

DRABA

Seeds few in each cell of pod.

8.

8. Pods almost circular, with flat margins.

ALYSSUM

Pods short oblong.

BERTEROA

9. Leaves and stem generally with forked or starry hairs; leaves usually simple and not deeply pinnately lobed.

ARABIS

Leaves and stem hairless or with simple hairs; leaves deeply pinnately lobed.

CARDAMINE

10. Pod short, scarcely more than twice as long as broad.

11.

Pod long, several times as long as broad.

14.

11. Valves of pods with no nerves.

12.

Valves of pods with one nerve.

13.

12. Hairs on plant branched or starry; seeds flat.

LESQUERELLA

Hairs on plant simple and not starry; seeds round.

RORIPPA

13. Capsule obovoid, opening to shed seeds; many seeded.

CAMELINA

Capsule globular, remaining on seed; seeds one or rarely two per pod.

NESLIA

14. Pod with a long, distinct beak.

15.

- Pod scarcely beaked. 19.
15. Pod constricted between seeds. RAPHANUS
Pod opening by valves, no constriction between seeds. 16.
16. Beak of pod flat and sword-like, angled, containing one seed. SINAPIS
Beak of pod round and conic. 17.
17. Pod flattened; seeds more or less in two rows. DIPLLOTAXIS
Pod circular in cross-section; seeds in a single row. 18.
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18. Beak joint of capsule containing a seed. ERUCASTRUM
Beak joint of capsule seedless. BRASSICA
19. Pod circular or nearly so in cross-section. 20.
Pod four-angled in cross-section. 23.
20. Plants with forked hairs. DESCURAINIA
Plants with simple hairs or none. 21.
21. One row of seeds in each cell of pod. SISYMBRIUM
Two rows of seeds in each cell of pod. 22.
22. Valves of pod one-nerved; seeds flattened.

[ARABIS](#) (A. glabra)

Valves of pod nerveless; seeds globose.

[RORIPPA](#)

23. Stem leaves clasping by a cordate base; flowers white.

[CONRINGIA](#)

Stem leaves not clasping; flowers yellow.

[24.](#)

24. Leaf blades pinnatifid; seeds flat.

[BARBAREA](#)

Leaf blades entire or merely toothed; seeds plump.

[ERYSIMUM](#)

ALYSSUM (Alyssum) genus. 1 species.

(1) *Alyssum Alyssoides* L.

SMALL ALYSSUM

A low annual, growing from 4 to 12 inches high, covered with starry hairs and bearing linear oblong to spatulate leaves from $\frac{1}{4}$ to $\frac{1}{2}$ inch long. The creamy-white flowers are about $\frac{3}{16}$ inches across and borne in narrow racemes. The pods are yellowish, almost circular, about $\frac{1}{8}$ inch across and have a narrow flat margin around the edges. Not common but is an introduced weed which has been occasionally reported.

ARABIS (Rock-cress) genus. 5 species.

Generally annual or biennial plants with straight, erect stems. The basal leaves usually form a rosette and the stem leaves are stalkless and clasping. The flowers are generally small and in racemes, and the fruits are long, narrow pods containing many seeds.

1. Pods erect or ascending.

2.

Pods spreading or reflexed.

4.

2. Pods almost circular in cross-section.

(3) *A. glabra*

Pods flattened parallel to the partition.

3.

3. Leaves coarsely hairy; stem leaves eared at base.

(4) *A. hirsuta*

Leaves not coarsely hairy, hairs, if any, 2 to 3 forked.

(2) *A. Drummondii*

4. Pods spreading or somewhat recurved.

(1) *A. divaricarpa*

Pods definitely reflexed and pendulous.

(5) *A. Holboellii*

- (1) *Arabis divaricarpa* A. Nels.

PURPLE ROCK-CRESS

A biennial species, generally with a purplish stem from 1 to 2 feet high. The basal leaves are from $\frac{3}{4}$ to $1\frac{1}{2}$ inches long with starry, white hairs, the stem leaves stalkless and narrow-lanceolate. The flowers are white or pinkish-purple about $\frac{1}{4}$ inch across, and the pods are spreading or curved slightly downwards, from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long. Occasionally found in the Foothills region and in the Cypress Hills.

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- (2) *Arabis Drummondii* A. Gray

DRUMMOND'S ROCK-CRESS

A biennial species with a tall, smooth, erect stem, growing from 8 inches to $2\frac{1}{2}$ feet in height. The leaves are generally smooth, but the basal ones may

sometimes have a few 2-forked hairs. The stem leaves have arrow-shaped clasping bases. The pink or white flowers are borne in a terminal raceme. The pods are usually fairly erect and are from 2 to 3 inches long. Fairly plentiful on dry hillsides throughout most of the area.

(3) *Arabis glabra* (L.) Bernh.

TOWER MUSTARD

A tall biennial species with erect stems from 1 to 3 feet in height. The stem is quite smooth above but is slightly hairy near the base. The basal leaves have short stalks and are from 2 to 6 inches long and slightly hairy. The stem leaves are stalkless with an arrow-shaped base. The flowers are generally greenish-white or yellowish-white and quite small, and the pods are erect and closely pressed against the stem, from 2 to 4 inches long. Not particularly plentiful but found in waste places and fields throughout the area and quite common in the Cypress Hills.

(4) *Arabis hirsuta* (L.) Scop. var. *pyncocarpa* (Hopkins) Rollins

HIRSUTE ROCK-CRESS

An erect, simple stemmed species growing from 1 to 2 feet high, either smooth or hairy stemmed. The leaves are coarsely hairy. The basal ones forming a rosette and the stem leaves stalkless and clasping. The flowers are white or greenish-white and the fairly erect pods are from 1 to 2 inches long. Not a very plentiful species but is found on dry, rocky places throughout the entire area.

(5) *Arabis Holboellii* Hornem.

REFLEXED ROCK-CRESS

A biennial or perennial species with one or several stems from the base, usually with appressed hairs, and growing from 4 inches to 2 feet in height. The leaves are generally covered with fine hairs, the lower leaves forming a rosette and the stem leaves often clasping the stem. The flowers are purplish-pink to white and are borne in a terminal raceme. The pods are usually straight, from 1 to 2½ inches long. In var. *retrofracta* (Graham) Rydb. the stalk of the pod is almost straight but is bent abruptly downwards at its junction with the stem so that the pods are closely pressed to the stem. This variety is very common on dry hillsides throughout the entire southern portion of the area. The var. *Collinsii* (Fern.) Rollins is similar but has long spreading hairs at the base of the stem instead of appressed hairs as in the previous variety. The var. *pinetorum* (Tidestrom) Rollins has gently downward curving pod stalks so that the pods, while pendulous, are not

appressed to the stem. This variety is less common than the previous ones but has been found in various localities throughout the western part of the area.

BARBAREA (Winter-cress) genus. 1 species.

(1) *Barbarea orthoceras* Ledeb.

AMERICAN WINTER-CRESS

A smooth stemmed biennial plant from 12 to 20 inches high. The leaves are alternate and generally lyrate with one or two pairs of narrow lobes and a large terminal lobe on each leaf. This is a plant of the north and of the mountains but has been found in streams and wet places in the Cypress Hills.

BERTEROA (Hoary Alyssum) genus. 1 species.

(1) *Berteroa incana* (L.) DC.

HOARY ALYSSUM

A starry-haired plant growing from 12 to 24 inches high, with numerous lanceolate leaves from $\frac{1}{2}$ to 1 inch long. The flowers are about $\frac{1}{8}$ inch across with white, deeply notched petals. The pods are starry-hairy, broadly oval, about $\frac{1}{4}$ inch long. This is an introduced weed which has been reported at various localities across the area.

BRASSICA (Mustard) genus. 1 species.

(1) *Brassica juncea* (L.) Cosson

INDIAN MUSTARD

An annual erect, weedy plant from 1 to 4 feet in height with practically hairless, smooth stems and leaves. The lower leaves are lyrate-pinnatifid with a large end lobe, and are stalked and from 4 to 6 inches long. The upper leaves are hardly stalked and often not lobed and much smaller. The flowers are from $\frac{1}{2}$ to $\frac{3}{4}$ inch across and yellow, the pods from 1 to 2 inches long, with a conic beak. Quite common in grain fields and waste places throughout the entire area.

CAMELINA (False Flax) genus. 3 species.

Introduced annual or winter annual weeds with small yellow flowers and long stalked obovoid or pear-shaped pods containing numerous seeds, which have a very short dormant period.

1. Stems and leaves hairy, at least below; lower leaves not stalked.

(2) *C. microcarpa*

Stems and leaves smooth and hardly hairy; lower leaves with stalks.

2.

2. Lower leaves entire.

(3) *C. sativa*

Lower leaves dentate or lobed.

(1) *C. dentata*

- (1) *Camelina dentata* Pers.

FLAT-SEEDED FALSE FLAX

Stem erect and smooth, from 12 to 18 inches high, with lower leaves lobed, with winged stalks, and from 1½ to 3 inches long, the upper leaves smaller and entire. The flowers are yellow and the pod obovoid from $\frac{3}{16}$ to $\frac{3}{8}$ inch long. An introduced weed sometimes found in grain fields and waste places.

- (2) *Camelina microcarpa* Andrz.

SMALL-SEEDED FALSE FLAX

Stem erect, from 12 to 18 inches high, hairy with all the leaves stalkless and hairy, with starry hairs. The flowers are yellow and the pods ovoid up to $\frac{3}{16}$ inch long. A weed introduced and fairly common in grain fields and waste places.

- (3) *Camelina sativa* (L.) Crantz

FALSE FLAX

An introduced annual or winter annual from 1 to 3 feet high with a few hairs on lower leaves and lower part of stem. The upper leaves are stalkless and clasping, while the lower ones taper to a winged stalk. The flowers are yellow and about $\frac{1}{8}$ inch across and the pods are from $\frac{3}{16}$ to $\frac{3}{8}$ inch long, ovoid, and contain about 10 seeds. Introduced from Europe and

found occasionally as a weed in grain fields and waste places.

CAPSELLA (Shepherd's Purse) genus. 1 species.

(1) *Capsella Bursa-pastoris* (L.) Medic.

SHEPHERD'S PURSE

An introduced annual or winter-annual plant with branched stems from 6 to 20 inches high. The basal leaves form a rosette and are often deeply cut and lobed. The stem leaves are usually clasping with ears at the base. The flowers are in terminal racemes and are small and white. The seed pods are characteristic of this species and are roughly in the form of an inverted triangle with the flat base uppermost and notched. Each pod contains about 20 seeds. An introduced weed, very common in gardens and waste places throughout the entire area.

CARDAMINE (Bitter-cress) genus. 2 species.

1. Petals white, and not over $\frac{3}{16}$ inch long.

(1) *C. pennsylvanica*

Petals white or pink and from $\frac{3}{16}$ to $\frac{5}{16}$ inch long.

(2) *C. pratensis*

(1) *Cardamine pennsylvanica* Muhl.

BITTER-CRESS

A biennial or short-lived perennial plant growing to a height of from four to 24 inches. The leaves are very deeply pinnately lobed with from 2 to 8 pairs of lateral segments and a larger terminal segment. The stem generally bears a few scattered hairs and the flowers are small and white. The fruit are linear pods, from $\frac{1}{2}$ to $1\frac{1}{4}$ inches long. Quite uncommon but has been found in wet or very moist places in the northern parts of the area and in the Cypress Hills.

(2) *Cardamine pratensis* L.

MEADOW BITTER-CRESS

A hairless perennial growing from 8 to 20 inches high with deeply pinnately lobed leaves and white or pink flowers from $\frac{1}{2}$ to $\frac{3}{4}$ inch across. This is an introduced plant of bogs and swampy places but is very rare in the area.

CARDARIA (Hoary Cress) genus. 2 species.

Introduced perennial weeds spreading by seeds and by running roots, which penetrate deeply into the soil. The stem leaves are alternate and clasping, while the basal ones have a short stalk. The flowers are white in a close raceme. The seed pods vary in shape and are a distinguishing feature in separating the species.

1. Pods with downy hairs, globular and inflated.

(2) *C. pubescens*

Pods not hairy, smooth, flattened.

2.

2. Pods not inflated, heart-shaped at base.

(1a) *C. Draba*

Pods inflated somewhat, but not heart-shaped at base.

(1b) *C. Draba* var. *repens*

(1a) *Cardaria Draba* (L.) Desv.

HEART-PODDED HOARY CRESS

Perennial from deep running roots, with dense heads of white flowers and heart-shaped smooth seed pods. Found occasionally in gardens and shelterbelts throughout entire area. Introduced from Europe.

(1b) *Cardaria Draba* (L.) Desv. var. *repens* (Schrenk) O. E. Schulz

LENS-PODDED HOARY CRESS

Similar to above, but seed pods slightly inflated and almost round instead of heart-shaped. Found in similar locations. Introduced probably from Afghanistan.

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(2) *Cardaria pubescens* (Meyer) Rollins var. *elongata* Rollins

GLOBE-PODDED HOARY CRESS

Plant similar to *C. Draba*, but leaves more hoary in appearance and seed pods globular, inflated and hairy with fine, downy hairs. Becoming quite common in gardens and shelterbelts and sometimes in fields and roadsides in the southern part of the area. Apparently introduced from Asia.

CONRINGIA (Hare's Ear Mustard) genus. 1 species.

(1) *Conringia orientalis* (L.) Dum.

HARE'S-EAR MUSTARD

An introduced annual or winter annual weed with taproots and a perfectly smooth stem from 6 inches to 2 feet high. The seedling leaves are round on stalks, but subsequent leaves become clasping and elliptical, entire, eared at the base, quite smooth and the whole plant covered with a bluish bloom. The flowers are creamy-white, about $\frac{1}{4}$ inch across and the long, narrow pods are 4-angled and borne erect, from 3 to 4 inches long. A very common roadside and field weed throughout the entire area.

DESCURAINIA (Tansy Mustard) genus. 3 species.

Annuals or biennials from taproots, generally with much dissected leaves, yellow flowers and long, narrow seed pods.

1. Both upper and lower leaves twice to three times divided.

(3) *D. Sophia*

Upper leaves simply pinnate.

2.

2. Seeds in 1 row in each compartment of pod; pods erect and closely pressed to the stem; plant greyish colour.

(2) *D. Richardsonii*

Seeds in 2 rows in each compartment of pod; pods divergent from stem.

(1) *D. pinnata*

- (1) *Descurainia pinnata* (Walt.) Britt. var. *brachycarpa* (Richards.) Fern. (*Sophia brachycarpa* (Richards.) SHORT-FRUITED TANSY MUSTARD Rydb.)

Annual, erect plants from 8 to 24 inches high with a hairy and glandular stem. The leaves are dark green, the upper ones being pinnate and the lower ones often twice or three times divided, glandular. The flowers are yellow and the seed pods are somewhat club-shaped, from $\frac{3}{16}$ to $\frac{1}{2}$ inch long on stalks from $\frac{5}{16}$ to $\frac{5}{8}$ inch long. Not very common but has been found in the southern part of the area.

- (2) *Descurainia Richardsonii* (Sweet) O. E. GREY TANSY MUSTARD Schulz. (*Sophia Richardsonii* (Sweet) Rydb.)

Tall, erect, biennial plants from 1 to 3 feet in height, with pinnate leaves, sometimes doubly pinnate. The whole plant is covered with very fine hairs, giving it a greyish appearance. The flowers are small and pale yellow. The pods are small, from $\frac{3}{16}$ to $\frac{3}{8}$ inch long and are tightly compressed against the stem and crowded. Quite common in fields and waste places throughout the whole area.

(3) *Descurainia Sophia* (L.) Webb
(*Sophia multifida* Gilib.)

FLIXWEED

An annual or biennial, branched with all leaves 2 or 3 times dissected, and with some star-like hairs. The flowers are yellow and the seed pods are linear from $\frac{3}{8}$ to $1\frac{1}{8}$ inches long, on stalks from $\frac{1}{4}$ to $\frac{1}{2}$ inch long and borne at an angle from the stem. This is an introduced weed which has become very common in fields, waste places and even on prairie land throughout the entire area, and is now one of the commonest weeds in Western Canada.

DILOTAXIS (Sand Rocket) genus. 1 species.

(1) *Diploaxis muralis* (L.) DC.

SAND ROCKET

Annual plants, branched from base, growing from 1 to 2 feet in height. The stems are leafy only near the base with oblanceolate, lobed leaves from 2 to 4 inches long, usually with a slender stalk. The flowers are yellow, the pods from $\frac{3}{4}$ to 1 inch long with a short beak, on stalks from $\frac{3}{8}$ to $\frac{5}{8}$ inch long. Introduced from Europe, but occasionally found in waste places throughout the area.

DRABA (Whitlow-grass) genus. 2 species.

Low, tufted winter annual with a rosette of basal leaves and a few stem leaves. The flowers are small, white or yellow, usually in racemes and the pods are either oval or linear and flat with seeds in two rows in each cell.

1. Flowers white if petals present; pods linear and crowded near top of stem.

2.

Flowers yellow; pods oval and not crowded near top of stem.

3.

2. Pod with very fine hairs.

(1) *D. caroliniana* var. *micrantha*

Pod smooth, with no hairs.

(1) *D. caroliniana*

3. Pods hairy.

(2) *D. nemorosa*

Pods not hairy, smooth.

(2) *D. nemorosa* var. *leiocarpa*

(1) *Draba caroliniana* Walt.

CAROLINA WHITLOW-GRASS

A small plant from 1 to 5 inches high with a leafy stem. The leaves are usually entire from $\frac{3}{8}$ to $\frac{7}{8}$ inch long. The white flowers are very small up to $\frac{3}{16}$ inch across and often the petals are missing. The pods are linear, from $\frac{1}{3}$ to $\frac{1}{2}$ inch long and clustered near the top of the stem. In the species the pods are devoid of hairs. Flowers very early in June. Not common, but is reported from southern Manitoba. Recent authors call this *D. reptans* (Lam.) Fern.

Draba caroliniana Walt. var. *micrantha* (Nutt.) Gray

A western variety of the above with the pods covered with fine, stiff hairs and generally without petals. Very rare, but has been collected in the extreme southern border of Alberta.

(2) *Draba nemorosa* L.

WOOD WHITLOW-GRASS

A low plant from 6 to 12 inches high, branching from the rosette of basal leaves. The flowers are pale yellow, occasionally white when fading. The seed pods are borne on stalks from $\frac{1}{4}$ to $\frac{7}{8}$ inch long and are oval, from $\frac{1}{4}$ to $\frac{1}{3}$ of an inch in length. This species is fairly common throughout the southern part of the area.

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Draba nemorosa L. var. *leiocarpa* Lindb.
(*D. lutea* Gilib.)

YELLOW WHITLOW-GRASS

This differs from the type by the pods being smooth and devoid of hairs. It is probably the most plentiful of the two, especially in the northern and eastern parts. Both flower quite early in the spring.

ERUCASTRUM (Dog Mustard) genus. 1 species.

(1) *Erucastrum gallicum* (Willd.) O. E. Schulz

DOG MUSTARD

An annual, erect plant with stem hairs pointing downwards. Grows from 8 to 18 inches high. The leaves are deeply cut, often to the midrib making them appear pinnate, and the lobes are often deeply lobed. The leaves vary up to 10 inches in length. The flowers are a pale yellow colour, and the seed pods are from 1 to 1½ inches long, linear and circular in cross-section, on a short stalk, tipped with a slender style, and have one row of seeds in each compartment of pod. An introduced weed which is becoming more common every season in grain fields throughout the area.

ERYSIMUM (Treacle mustard) genus. 3 species.

Annual or biennial plants with leafy stems and 2-branched hairs, yellow flowers and linear, 4-angled seed pods with seeds in one row in each compartment.

1. Petals more than $\frac{3}{8}$ inch long.

(1) *E. asperum*

Petals less than $\frac{3}{8}$ inch long.

2.

2. Stalks of seed pods almost half as long as pods.

(2) *E. cheiranthoides*

Stalks of seed pods not $\frac{1}{4}$ as long as pods.

(3) *E. parviflorum*

(1) *Erysimum asperum* DC.
(*Cheirinia aspera* (Nutt.) Rydb.)

WESTERN WALL-FLOWER

A rough, generally straggling, plant from 1 to 3 feet high, often much branched and coarse, with appressed small white hairs. The flowers are pale yellow, $\frac{1}{2}$ inch or more across. The pods are from $1\frac{1}{2}$ to 4 inches long; long, narrow, rough and 4-angled with a short, thick style at the end, and a very short, stout stalk. They spread out considerably from the stem in all directions. Very common on light and sandy soil in the southern portion of the area but rare in the north.

(2) *Erysimum cheiranthoides* L.
(*Cheirinia cheiranthoides* (L.) Link)

WORMSEED MUSTARD

An erect plant from 8 inches to 2 feet in height with lanceolate or oblong-lanceolate dark green leaves from 1 to 4 inches long. Flowers yellow and small, about $\frac{1}{8}$ inch across, in dense terminal clusters about 1 inch across. The seed pods are linear, from $\frac{1}{2}$ to 1 inch long, and borne on slender stalks from $\frac{1}{3}$ to $\frac{1}{4}$ inch long. A weedy plant found in moist places and fields throughout the area, but not very common.

(3) *Erysimum parviflorum* Nutt. SMALL-FLOWERED PRAIRIE ROCKET
(*Cheirinia inconspicua* (S. Wats.) Rydb.)

An erect, grayish-green perennial from 1 to 2 feet high and not very

branching. The leaves are narrow, from 1 to 3 inches long, the lower having stalks but the upper ones are stalkless. The yellow flowers are about $\frac{1}{4}$ inch across and borne on the top of the stem, and the linear seed pods from $\frac{3}{4}$ to $2\frac{1}{2}$ inches long on a very short stalk and borne erect on the stem. Very common on dry and sandy prairie throughout the entire southern part of the area.

LEPIDIUM (Peppergrass) genus. 3 species.

1. Upper stem leaves cordate, or entirely surrounding stems; basal leaves much divided.

(2) *L. perfoliatum*

Upper stem leaves not clasping stem.

2.

2. Plants branched from near the base; petals shorter than sepals.

(3) *L. ramosissimum*

Plants simple below, branched above; petals none.

(1) *L. densiflorum*

- (1) *Lepidium densiflorum* Schrad.
(*L. apetalum* A. Gray)

COMMON PEPPERGRASS

An annual or winter annual with erect stem, much branched above, from 6 inches to 2 feet high. The stem leaves have a few coarse teeth and are lanceolate, the basal leaves often being deeply incised and divided. The flowers are minute, the petals being missing or very rudimentary. The seed pods are borne on short stalks and are very numerous on the stem, the spike of pods often being several inches long. Each pod is about $\frac{1}{10}$ inch wide, heart-shaped with a notch at the top and contains a single seed in each compartment. Very common in fields, waste places, and roadsides throughout the entire area.

- (2) *Lepidium perfoliatum* L.

PERFOLIATE PEPPERGRASS

An annual weed with a stem much branched and bushy above, growing from 8 to 18 inches high. The basal leaves are pale green and very finely dissected and divided, but subsequent leaves become more entire and the upper ones are entire with a pointed end and a cordate to entirely clasping base. The flowers are terminal in racemes and very small with yellow petals. The numerous seed pods are about $\frac{1}{8}$ inch long, oval and contain a seed in each compartment. When growing, the plants have a reddish tinge to the leaves, which with the yellow petals makes them easy to notice. This is an introduced weed which, while common in the dry areas of the Western U.S.A. is very rare in Canada. The only prairie record so far is a considerable infestation along the highway a few miles east of Swift

Current in southern Saskatchewan, but it is a plant which is liable to spread and become a weed.

(3) *Lepidium ramosissimum* A. Nels.

BRANCHED PEPPERGRASS

An annual or biennial very similar to *L. densiflorum* but branches diffusely from the base, and has white petals which are shorter than the sepals. The seed pod is rather pointed at the notched apex, whereas the *L. densiflorum* pods are more rounded. Probably fairly common throughout the southern part of the area, but the distinction between the two species is very obscure.

LESQUERELLA (Bladder-pod) genus. 6 species.

Low, tufted annual or perennial plants with clustered basal leaves and a few stem leaves. Plants with starry hairs. Flowers perfect, in racemes, yellow or purple. Seed pods inflated, globose, or oval, with from 2 to many seeds in each compartment.

1. Seed pods ovoid or ellipsoid.

Seed pods globose.

[2.](#)

[3.](#)

2. Pods distinctly compressed or acute at apex; basal leaves oblanceolate-spatulate.

[\(5\)](#) *L. spatulata*

Pods not compressed above; basal leaf blades linear-oblanceolate.

[\(1\)](#) *L. arenosa*

3. Basal leaf blades broadly oval or ovate.

[\(3\)](#) *L. Macounii*

Basal leaf blades spatulate or oblanceolate.

[4.](#)

4. Stem stout, straight and erect; stem leaves linear from $\frac{3}{4}$ to $2\frac{1}{2}$ inches long.

[\(2\)](#) *L. ludoviciana*

Stem slender; stem leaves oblanceolate, $\frac{1}{2}$ to $1\frac{1}{4}$ inches long.

[5.](#)

5. Plant not over 2 inches high; petals purple.

[\(4\)](#) *L. rosea*

Plant over 2 inches high; petals yellow.

[6.](#)

6. Stalks of seed pods ascending.

[\(6\)](#) *L. versicolor*

Stalks of seed pods recurved.

[\(1\)](#) *L. arenosa*

- (1) *Lesquerella arenosa* (Richards.) Rydb. SAND BLADDER-POD

A slender stemmed somewhat spreading and decumbent plant from 3 to 12 inches high, with linear-oblong leaves, mostly basal. The pods are globose or slightly ellipsoid, about $\frac{3}{16}$ inch long on recurved stalks. Very common on dry hillsides throughout the southern part of the area, and is the most common species of this genus.

- (2) *Lesquerella ludoviciana* (Nutt.) S. Wats. BLADDER-POD

Stems either erect or decumbent at the base, from 4 to 16 inches high. The basal leaves are linear-oblong from $\frac{1}{4}$ to 4 inches long, stem leaves linear, from $\frac{3}{4}$ to $2\frac{1}{2}$ inches long. The pods are globose $\frac{3}{16}$ to $\frac{1}{4}$ inch long. Fairly common on dry hills in the south-central part of the area.

- (3) *Lesquerella Macounii* Greene MACOUN'S BLADDER-POD

Several stemmed, prostrate from 4 to 6 inches high, with basal leaves oval or elliptic, wavy edged. The petals are pale yellow and the pods globose. Infrequent, but reported from dry plains in Alberta.

- (4) *Lesquerella rosea* Greene PINK BLADDER-POD

Very low, slender stemmed plant not over 2 inches high. Basal leaves ovate or ovate-lanceolate about $\frac{1}{2}$ inch long. Stem leaves few and stalkless. The petals are rose-purple in colour. Not common but may be looked for on the plains of the southwest.

- (5) *Lesquerella spatulata* Rydb. SPATULATE BLADDER-POD

A deep rooted perennial from 4 to 5 inches high with several stems. Numerous spatulate basal leaves from $\frac{1}{2}$ to 1 inch long and very few linear stem leaves. The flowers are yellow about $\frac{1}{8}$ inch across and the pods ovoid, very slightly compressed. Occasionally found on dry ground and hillsides in the southern parts of the area.

- (6) *Lesquerella versicolor* Greene. VARYING BLADDER-POD

Prostrate stemmed from 8 to 12 inches high with sulphur-yellow petals,

turning pinkish. Rare, but may be looked for on stony hillsides in the southern part of the area. Very likely merely a phase of *L. arenosa*.

NESLIA (Ball mustard) genus. 1 species.

(1) *Neslia paniculata* (L.) Desv.

BALL MUSTARD

A tall, erect annual or winter annual from 1 to 2 feet high with severally branched stem. The whole plant is a pale yellowish-green colour with starry hairs. The lower leaves are somewhat stalked and lanceolate, the stem leaves arrow-shaped and clasping the stems at the base. The flowers are small, orange-yellow, about $\frac{1}{8}$ inch across and clustered on the ends of the stems. The fruits are borne in long racemes and are small round pods about $\frac{1}{12}$ inch long. The pods usually contain but one seed and remain on the seed when ripe. Introduced from Europe and is a weed of crop lands and waste places throughout the entire area.

RAPHANUS (Radish) genus. 1 species.

(1) *Raphanus Raphanistrum* L.

WILD RADISH

An erect annual or winter annual weed introduced from Europe, and growing from 1 to 2½ feet high. The basal and lower leaves are deeply lobed with a large terminal lobe and are from 4 to 8 inches long. The upper leaves are smaller. The flowers are yellow with purplish veins, from ½ to ¾ inch across and the seed pods are about 1½ inches long, constricted between each seed and break readily into one-seeded sections when handled. Becoming increasingly common as a weed of abandoned fields and waste places in the eastern part of the area.

RORIPPA (Yellow Cress) genus. 4 species.

1. Creeping rooted perennials.

Fibrous rooted plants, no creeping roots; winter annual or biennial.

(2) *R. islandica*

2. Pods not more than 3 times as long as wide; leaves entire or merely toothed.

(1) *R. austriaca*

Pods 4 or more times as long as wide; leaves dissected or lobed.

3.

3. Leaves with sharply-toothed or incised divisions.

(4) *R. sylvestris*

Leaves with blunt lobes.

(3) *R. sinuata*

- (1) *Rorippa austriaca* (Crantz) Besser

AUSTRIAN CRESS

A tall-growing introduced perennial from 18 inches to 3 feet in height with running roots. The stem is smooth and the alternate leaves are almost entire or merely toothed, not dissected, the lower with stalks and the upper without. The flowers are yellow and small, in racemes, and the seed pods are small and almost globular from $\frac{1}{16}$ to $\frac{1}{8}$ inch long on stalks from $\frac{1}{4}$ to $\frac{1}{2}$ inch long. This is an introduced weed which has been found occasionally in grain fields in the area, but is very uncommon at present. It should, however, be watched for in order to prevent its spread.

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- (2) *Rorippa islandica* (Oeder) Borbas

YELLOW MARSH CRESS

Native annual or biennial branching plants growing from 1 to 4 feet in height, with deeply dissected leaves, the lower ones stalked, from 3 to 7 inches long, and the upper ones less dissected or lobed and without stalks. The yellow flowers are small, usually less than $\frac{1}{4}$ inch across. The seed pods are either globose or linear and have two rows of seed in each compartment. Authorities have split this species into several varieties, two

of which are common in the area.

Rorippa islandica var. *Fernaldiana* Butt. and Abbe, has almost or quite hairless stems and linear to linear-oblong pods from $\frac{1}{4}$ to $\frac{3}{8}$ inch long. It was formerly called *Rorippa palustris* (L.) Besser. *Rorippa islandica* var. *hispida* (Desv.) Butt. and Abbe, has the stem covered with bristly hairs and the pods are globose or oval, and not over $\frac{1}{4}$ inch long. This was formerly known as *Rorippa hispida* (Desv.) Britt. Both varieties are common on lake shores, sloughs and wet places throughout the entire area covered.

(3) *Rorippa sinuata* (Nutt.) Hitchc. SPREADING YELLOW CRESS

A native perennial with smooth stems growing from 4 to 18 inches high with cleft or divided leaves with rather obtuse lobes. The leaves are from 2 to 3 inches long. The yellow flowers are about $\frac{1}{8}$ inch across and the seed pods are from $\frac{1}{3}$ to $\frac{1}{2}$ inch long, and linear-oblong. Although not particularly common this plant has been found in several places throughout the area as far as northern Alberta.

(4) *Rorippa sylvestris* (L.) Besser CREEPING YELLOW CRESS

An introduced perennial with creeping roots, smooth stem and pinnately divided leaves with sharp toothed divisions. The yellow flowers are from $\frac{1}{4}$ to $\frac{1}{3}$ inch across and the seed pods linear from $\frac{1}{3}$ to $\frac{1}{2}$ inch long on slender stalks, with one row of seeds in each compartment. Has been found in a few isolated places in the area and is another potential pest which requires watching to prevent its spread.

SINAPIS (Charlock) genus. 1 species.

(1) *Sinapis arvensis* L.

WILD MUSTARD

An introduced annual weed from 1 to 2 feet high with scattered stiff hairs. The lower leaves are stalked, deeply lobed, from 4 to 6 inches long. The upper leaves are less divided, often entire and stalkless. The yellow flowers are about $\frac{2}{3}$ inch across, and the seed pods are rough and linear, from $\frac{1}{2}$ to $\frac{3}{4}$ inch long, slightly constricted between the seeds, and with a flattened beak which sometimes contains a seed. The seeds can remain dormant in the soil for many years before germinating. This is a very common weed of grain fields and waste places, especially on moister sites and on heavy clay soils with a high moisture holding capacity. It is found throughout the entire area where conditions are suited for its growth.

SISYMBRIUM (*Sisymbrium*) genus. 2 species.

1. Stem with spreading hairs; upper leaves with narrow, linear divisions; pod 2 to 4 inches long.

(1) *S. altissimum*

Stem with reflexed hairs; upper leaves with lanceolate divisions; pod about 1¼ inches long.

(2) *S. Loeselii*

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- (1) *Sisymbrium altissimum* L.

TUMBLING MUSTARD

An introduced annual or winter annual weed growing from 1 to 4 feet in height. The basal leaves form a rosette of pale green, soft hairy, divided leaves, but the stem leaves are of various shapes from deeply lobed or pinnate to entire. The flowers are pale yellow, about ⅓ inch across and the long, very thin seed pods are from 2 to 4 inches long and each pod may contain over 100 small, light brown seeds. At maturity the plant dries and breaks off, acting as a “tumbling weed” and rolling with the wind, leaving seeds in its wake. This is a very common weed wherever crops are grown or land broken up throughout the entire area, but more prevalent on the open plains where it has more opportunity to travel with the wind.

- (2) *Sisymbrium Loeselii* L.

TALL HEDGE MUSTARD

A tall, introduced annual weed growing from 4 to 5 feet high, and branched. The lower parts are hairy with downward pointed hairs, but the upper parts are generally smooth. The leaves are deeply lobed and the flowers bright yellow. The seed pods are linear and a little over an inch long. This plant has been found in the southern parts of the area, but is fortunately still very rare.

THLASPI (Penny-cress) genus. 1 species.

(1) *Thlaspi arvense* L.

STINKWEED

An introduced annual or winter annual weed growing from 1 to 18 inches high with hairless stems and smooth leaves. The basal leaves are stalked and oblanceolate, but soon wither and fall off. The stem leaves are oblong to lanceolate, eared at the base and clasping the stems. The flowers are small and white, about $\frac{1}{8}$ inch across in a cluster at the head of the stem. The seed pods are flat, oval and broadly winged, from $\frac{1}{3}$ to $\frac{1}{2}$ inch across and deeply notched at the top, and are borne on stalks from $\frac{1}{2}$ to $\frac{3}{4}$ inch long. They form large racemose clusters on the plants and are first bright green but turn yellow or orange when mature. The seeds are a purplish, chocolate brown colour, about $\frac{1}{16}$ to $\frac{1}{12}$ inch across and bear concentric grooves like a finger print on each side. This is a very common, unpleasant smelling weed, which when eaten by cattle taints the milk, butter and meat. It will often flower and produce seed when only 2 or 3 inches high in the early spring. Found in fields and waste places throughout the entire area, and because of its early spring growth it depletes the soil of moisture, and in dry years will sometimes cause a complete crop failure.

CAPPARIDACEAE (Caper Family) 2 genera.

1. Pods borne on a stalk about $\frac{3}{8}$ inch long above the calyx; stamens 6.

[CLEOME](#)

Pods on a very short stalk above calyx, clammy to the touch; stamens
8 to 32.

[POLANISIA](#)

CLEOME (Spider-flower) genus. 1 species.

- (1) *Cleome serrulata* Pursh SPIDER FLOWER OR PINK CLEOME
(*Peritoma serrulatum* (Pursh) DC.)

An erect, branching annual plant growing from 1 to 3 feet in height. The stem is smooth and hairless, and the leaves are trifoliate with lanceolate leaflets from 1 to 3 inches long. The flowers are usually pale pink, although white flowered plants are frequently found, and stamens protrude considerably above the flower. The seed pods are from 1 to 2 inches long, usually slightly curved and contain one compartment with a single row of large seeds. The pod is on a stipe or short stalk above the flower and this is shown by a joint in the stalk, often showing the remains of the sepals and petals. The plant has a strong and unpleasant smell and is very common along roadsides and on light soil in the southern part of the area.

POLANISIA (Clammy-weed) genus. 2 species.

1. Petals less than $\frac{1}{4}$ inch long, pink or nearly white; stamens 9 to 12, hardly longer than petals; capsule on short stipe.

(1) *P. graveolens*

- Petals more than $\frac{1}{4}$ inch long, pale yellow; stamens 12 to many, much longer than petals; capsule not sheathed.

(2) *P. trachysperma*

(1) *Polanisia graveolens* Raf.

CLAMMY-WEED

A sticky, glandular annual, branched and from 6 to 18 inches high with trifoliate leaves, the leaflets from $\frac{1}{2}$ to 1 inch long. The flowers are yellowish-white or pink, about $\frac{1}{4}$ inch long, and the pods from 1 to $1\frac{1}{2}$ inches long, glandular. Not common but is found on sandy soil throughout the southern part of the area.

(2) *Polanisia trachysperma* T. and G.

LARGE-FLOWERED CLAMMY-WEED

Very similar to the preceding species but has flowers from $\frac{1}{3}$ to $\frac{1}{2}$ inch long, which are pale yellow with the stamens much exceeding the flowers. This species is more common than the preceding and is found on rocky banks, hillsides and light soils through the southern area.

RESEDACEAE (Mignonette Family) 1 genus.

RESEDA (Mignonette) genus. 2 species.

Introduced perennials with lobed or pinnatifid, alternate leaves with small glandular stipules. The flowers are in narrow racemes, with the stamens on one side of the flower. The seeds are contained in numerous globose capsules.

1. Petals greenish-yellow, 3 or 4 of them divided.

(2) *R. lutea*

Petals white, all cleft or divided.

(1) *R. alba*

(1) *Reseda alba* L.

WHITE CUT-LEAVED MIGNONETTE

An erect, hairless plant from 12 to 18 inches in height, with deeply cut or pinnate leaves, and spikes of white flowers. Very rarely found but has been introduced in seeds in some places.

(2) *Reseda lutea* L.

YELLOW CUT-LEAVED MIGNONETTE

An erect plant, sometimes slightly hairy, from 8 inches to 2 feet high with very deeply cut leaves, which have spatulate lobes. The flowers are yellowish-green in a long spike-like raceme. Occasionally found as a weed in imported lawn grass seed.

DROSERACEAE (Sundew Family) 1 genus.

Perennial bog plants with all basal leaves, the leaves bearing glandular sticky hairs which close over insects and entrap them. The flowers are in a one-sided raceme on an elongated stem, and the numerous seeds are enclosed in a capsule.

DROSERA (Sundew) genus. 3 species.

1. Leaf blades almost round, broader than long.

(3) *D. rotundifolia*

Leaf blades longer than broad.

2.

2. Leaf blades spatulate or oblanceolate.

(2) *D. longifolia*

Leaf blades linear.

(1) *D. linearis*

- (1) *Drosera linearis* Goldie

SLENDER-LEAVED SUNDEW

In this species the leaves are linear, from $\frac{1}{2}$ to 3 inches long, and the flowers white, solitary or a few on a stem, from 1 to 4 inches high. Rare, but is found along the northern fringe of the area in bogs.

- (2) *Drosera longifolia* L.

OBLONG-LEAVED SUNDEW

A low bog plant with sticky-haired spatulate leaves from $\frac{3}{4}$ to 1 inch long and white flowers borne on a stem from $1\frac{1}{2}$ to 3 inches high. Found frequently in the north and eastern parts of the area in cold bogs.

- (3) *Drosera rotundifolia* L.

ROUND-LEAVED SUNDEW

A low bog plant with roundish leaves from $\frac{1}{4}$ to $\frac{1}{2}$ inch long and broader than long with the upper surface covered with fine glandular, insect catching hairs. The white flowers are about $\frac{1}{8}$ inch wide on a stem from 4 to 10 inches high. This is the commonest of the Sundews and can be found in moist swamps and bogs along the northern and eastern fringes of the area.

SARRACENIACEAE (Pitcher-plant Family) 1 genus.

SARRACENIA (Pitcher-plant) genus. 1 species.

(1) *Sarracenia purpurea* L.

PITCHER-PLANT

A peculiar and conspicuous bog plant with pitcher-shaped leaves from 3 to 12 inches long, erect, greenish-yellow with purple veins, with a hood-like top containing downward pointing bristly hairs which entrap insects. The hollow lower part of the leaf usually contains water in which insects drown and are absorbed by the plant. The flower is large, about 2 inches across, nodding, yellow and purple, and borne on a long stalk from 1 to 2 feet high. Not common but found occasionally in cold bogs along the northern and eastern fringes of the area.

CRASSULACEAE (Orpine Family) 1 genus.

SEDUM (Stone-crop) genus. 2 species.

Succulent or fleshy-leaved perennials with perfect flowers borne in cymes. They have 4 or 5 sepals and 4 or 5 petals and the numerous seeds are contained in follicle-like capsules. Plants of rocky places and generally associated with mountainous locations.

1. Leaves linear or oblanceolate, almost circular in cross-section.

(2) *S. stenopetalum*

Leaves lanceolate, more or less flattened.

(1) *S. Douglasii*

- (1) *Sedum Douglasii* Hook.

DOUGLAS' STONE-CROP

Perennial from a coarse branching rootstock, with erect stems from 4 to 12 inches high. The lanceolate, fleshy leaves are stalkless, flat above, keeled below, from $\frac{3}{8}$ to 1 inch long. The flowers are yellow and the fruiting follicles are widely spreading. Found on gravelly and rocky mountain slopes in the southwest area but very rare. Macoun reported it from the Cypress Hills.

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- (2) *Sedum stenopetalum* Pursh

NARROW-PETALLED STONE-CROP

A low, fleshy-leaved tufted perennial, branched and growing from 3 to 6 inches high. The leaves are round in cross-section (terete) and are from $\frac{1}{4}$ to $\frac{5}{8}$ inch long, usually crowded around the base and overlapping. The yellow flowers are borne at the head of a stem from 3 to 6 inches long and the fruiting follicles are erect and close to the stem. Found on gravelly slopes and rocky places in the southwest of the area and in the Cypress Hills.

SAXIFRAGACEAE (Saxifrage Family) 7 genera.

Either shrubs or herbs with opposite or alternate leaves with no stipules. Generally 5 sepals and 5 petals, and flowers are perfect and regular. Stamens 5 or 10. The fruit is generally, but not always, a capsule.

1. Shrubs, fruit a berry.

[RIBES](#)

Herbs.

[2.](#)

2. Petals missing; low plants.

[CHRYSOSPENIUM](#)

Petals present.

[3.](#)

3. Bundles of infertile stamens (staminodia) alternating with stamens; flowers singly on long stems.

[PARNASSIA](#)

No infertile stamens (staminodia).

[4.](#)

4. Petals white, finely lobed and filament-like.

[MITELLA](#)

Petals not finely lobed or filamentous.

[5.](#)

5. Stamens 5; leaves mostly basal from rootstock and flowers on a long stalk.

[HEUCHERA](#)

Stamens 10.

[6.](#)

6. Styles 2; capsule 2-celled and 2-beaked; petals entire.

[SAXIFRAGA](#)

Styles 3; capsule 1-celled, not beaked; petals 3 to 5 cleft.

[LITHOPHRAGMA](#)

CHRYSOSPLENium (Golden saxifrage) genus. 2 species.

1. Lower leaves opposite; flowers singly in axils of leaves.

(1) *C. americanum*

Leaves all alternate; flowers clustered near ends of branches.

(2) *C. iowense*

(1) *Chryso-splenium americanum* Schwein.

GOLDEN SAXIFRAGE

Somewhat decumbent herb from 3 to 8 inches long with lower leaves opposite, but some of upper ones may be alternate, almost round, from $\frac{3}{16}$ to 1 inch wide. The flowers have no petals but the sepals (usually 4) are yellowish or purplish inside, and the flowers are without stalks in the axils of the leaves. Quite rare but is found in wet, shady places in the north and east of the area.

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(2) *Chryso-splenium iowense* Rydb.

IOWA GOLDEN SAXIFRAGE

Stems erect, from 2 to 6 inches high with alternate round leaves from $\frac{1}{4}$ to $\frac{3}{4}$ inch wide. The flowers are mostly at the end of the stems with no petals but generally 4 sepals, orange-yellow inside. Rare but found in wet, shady places along the northern border of the area.

HEUCHERA (Alum-root) genus. 2 species.

Perennial plants from scaly rootstocks with broad, rounded cordate or reniform, stalked, all basal leaves, the flowers in a narrow panicle on a long stem. The fruits are capsules opening at the top with spreading beaks.

1. Stamens as long or longer than the sepals; leaves not cleft.

(2) *H. Richardsonii*

Stamens shorter than the sepals; leaves cleft almost half way to base.

(1) *H. flabellifolia*

(1) *Heuchera flabellifolia* Rydb.

SMALL-LEAVED ALUM ROOT

Leaves from $\frac{5}{8}$ to $1\frac{1}{4}$ inches broad and rounded cordate in general shape but deeply cleft from $\frac{1}{3}$ to $\frac{1}{2}$ way in 7 to 9 wedge-shaped lobes. The space between the lower lobes of the leaves is very narrow and the lobes frequently overlap. The flowering stalk is from 8 to 12 inches high, and the flowers are a greenish colour. Found only in the extreme southwestern part of the area, and in the Cypress Hills.

(2) *Heuchera Richardsonii* R. Br.

ALUM ROOT

A coarse-leaved perennial with all leaves basal, rounded cordate in shape with broadly ovate teeth. The leaves are from 1 to $2\frac{1}{2}$ inches across and are a dark green colour. The flowering stalks are from 12 to 18 inches high with a few glandular hairs, especially near the top. The petals are purplish and a trifle longer than the sepals. The scaly rootstocks of this plant were chewed by the Indians and early settlers as a cure for diarrhoea. Very common on the prairie, especially in lower or moister places throughout the entire southern portion of the area.

LITHOPHRAGMA (Star-flower) genus. 1 species.

(1) *Lithophragma bulbifera* Rydb.

ROCK STAR

A small, erect stemmed plant from bulblet bearing fibrous rootstocks, growing from 4 to 8 inches high, with glandular-hairy stems and small, thrice divided, stalked, leaves from $\frac{3}{16}$ to $\frac{3}{8}$ inch across. The stem leaves usually have several very tiny bulblets in the axils, the flowers are white or rose-coloured, the petals 3 to 5 cleft, from $\frac{1}{8}$ to $\frac{1}{4}$ inch long. Found on dry hills but very uncommon. This species has been found in the extreme south of the area.

MITELLA (Mitre-wort) genus. 1 species.

(1) *Mitella nuda* L.

BISHOP'S CAP

A low-growing perennial with scaly rootstocks and long stalked, mostly basal, rounded cordate leaves, from $\frac{3}{4}$ to 2 inches across. The flowers are borne in a raceme on a stalk from 2 to 7 inches high, the flowers from $\frac{3}{16}$ to $\frac{1}{4}$ inch across with 5 greenish sepals and 5 greenish white petals, which are very finely divided and branched, pinnatifid. Fairly common in cold, wet woodlands throughout the northern and eastern margins of the area and also found in the Cypress Hills.

PARNASSIA (Grass of Parnassus) genus. 3 species.

Perennials with rootstocks and stalked, entire basal leaves. Flowers singly on a long stalk with sometimes a leaf on the stalk and 5 sepals and 5 white petals with green veins. There are 5 fertile stamens, alternating with five clusters of gland tipped infertile stamens termed staminodia. The fruit is a one-celled capsule opening at the top.

1. Staminodia 5 to 7 in each group; basal leaf blades acute or tapering at the base.

(3) *P. parviflora*

Staminodia 7 to 15 in each group; basal leaf blades cordate or rounded at the base.

2.

2. Petals nearly twice as long as sepals; staminodia 9 to 15 in each group.

(2) *P. palustris*

Petals only slightly longer than sepals; staminodia 7 to 9 in each group.

(1) *P. montanensis*

- (1) *Parnassia montanensis* Fern. and Rydb.

MOUNTAIN GRASS OF PARNASSUS

Low plant with ovate leaves with partly heart-shaped base, from $\frac{3}{8}$ to $\frac{3}{4}$ inch long, with a flowering stalk up to 8 inches high bearing a single leaf part way up and a single white flower at the top, from $\frac{1}{2}$ to $\frac{5}{8}$ inch across. Found in wet, swampy places in woodlands in the southwest corner of the area, and in the Foothills region.

- (2) *Parnassia palustris* L.

NORTHERN GRASS OF PARNASSUS

This species has cordate leaves from $\frac{3}{8}$ to 1 inch wide with the flowering stalk from 4 to 12 inches high with a single clasping stem leaf and at the top the white flower, from $\frac{1}{2}$ to 1 inch across. The petals are much longer than the sepals, distinguishing this from *P. montanensis*. This is the most common of the genus and is commonly found in wet, shady places throughout the north and east of the area and less plentiful but sometimes found in favourable sites in the southern part.

(3) *Parnassia parviflora* DC. SMALL-FLOWERED GRASS OF PARNASSUS

Differs from the preceding two species by the tapering bases to the lower leaves, and the fewer staminodia in each group (fascicle). The flower is from $\frac{1}{3}$ to $\frac{3}{4}$ inch across and borne on a single leaved stalk from 4 to 12 inches high. Found in wet places throughout the area but not very common.

RIBES (Currant) genus. 10 species.

Shrubs, with palmately divided and veined leaves, and bearing regular, perfect flowers. The fruit is a globose or ovoid, pulpy berry. Some plants are armed with prickles, especially at the nodes of the stem. The fruit is edible, but sometimes not very tasty.

1. Leaf blades rolled in the bud before opening; flowers slightly irregular in shape; leaf blades 3-lobed.
Leaf blades folded fan-wise in bud. (1) *R. aureum*
2.
 2. Plants with spines at the nodes of the stems. 3.
Plants without spines at the nodes of the stems. 7.
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3. Flowering or fruiting stalks jointed just below flower; stem densely prickly; fruit black. (7) *R. lacustre*
Flowering stalks not jointed just below flower. 4.
 4. Ovary of flower, and the fruit prickly. (2) *R. cynosbati*
Ovary not prickly, sometimes with stalked glands or hairs. 5.
 5. Calyx tube (hypanthium) cylindric and longer than the sepals. (9) *R. setosum*
Calyx tube bell-shaped, not longer than the sepals. 6.
 6. Stamens twice as long as petals. (5) *R. hirtellum*
Stamens equal to petals. (8) *R. oxyacanthoides*

7. Flowers with long cylindric calyx tube; fruit black.

(3) *R. floridum*

Flowers with very short calyx tube.

8.

8. Leaves with resinous spots beneath; fruit black and glandular.

(6) *R. hudsonianum*

Leaves not resinous beneath; berries red.

9.

9. Fruit glandular and bristly.

(4) *R. glandulosum*

Fruit not glandular or bristly.

(10) *R. triste*

(1) *Ribes aureum* Pursh

GOLDEN CURRANT

(*Chrysobotrya aurea* (Pursh) Rydb.)

An erect shrub from 3 to 6 feet in height with 3 lobed leaves from 1 to 2 inches across. The flowers are bright yellow tipped with red, with a long cylindric calyx tube from $\frac{1}{4}$ to $\frac{3}{8}$ inch long, clove scented, in small racemes. The fruit is about $\frac{1}{4}$ inch in diameter and varies in colour from pale yellow, through shades of red to quite black. This is often grown as an ornamental garden shrub. It is only found in the southern part of the area and is plentiful in some localities on the southern slope of the Cypress Hills.

(2) *Ribes cynosbati* L.

WILD GOOSEBERRY

A low shrub up to 4 or 5 feet high with few, slender spines at the nodes. The leaf blades are 1 to 2 inches across, 3 to 5 lobed. The flowers are usually borne in groups of 3, and are greenish, about $\frac{1}{4}$ inch across. The fruit is a wine coloured berry, about $\frac{1}{3}$ to $\frac{1}{2}$ inch across. Found fairly frequently in rocky woodlands in the eastern and northeastern part of the area.

(3) *Ribes floridum* L'Her.

WILD BLACK CURRANT

(*R. americanum* Mill.)

A low shrub from 3 to 6 feet high with unarmed stems and 3 to 5 lobed leaves from 1 to 3 inches across, and somewhat hairy and resinous dotted

below. The flowers are greenish white with a tubular calyx $\frac{1}{8}$ to $\frac{3}{16}$ inch long, and are borne in drooping racemes. The fruit is black and from $\frac{1}{4}$ to $\frac{3}{8}$ inch across and smooth. Fairly common in moist woodlands throughout the entire area.

(4) *Ribes glandulosum* Grauer

SKUNK BERRY

A low spreading or reclining shrub about 3 feet long with no thorns or prickles. The leaf blades are 5 to 7 lobed, cordate based, hairy on the veins below, about 1 to 3 inches across and with a somewhat skunk-like odour. The flowers are in a short raceme and the fruit a red, glandular bristly berry about $\frac{1}{4}$ inch across. Common in damp woodlands throughout the north and eastern parts of the area.

(5) *Ribes hirtellum* Michx.

LOW WILD GOOSEBERRY

A shrub from 2 to 4 feet in height with the spines at the nodes often missing. The leaves are 3 to 5 lobed and from $\frac{3}{4}$ to $2\frac{1}{2}$ inches across. The sepals are green or purplish, the fruit being purple or black, $\frac{5}{16}$ to $\frac{3}{8}$ inch across. Found in open woodlands in the northern and eastern parts of the area.

(6) *Ribes hudsonianum* Richards.

NORTHERN BLACK CURRANT

An erect shrub from 3 to 5 feet high with unarmed stems and 3 lobed (occasionally 5 lobed) leaves, wider than long, from 1 to 4 inches wide, more or less hairy and resinous dotted below. The flowers are white, in racemes, and the fruit is black, from $\frac{1}{4}$ to $\frac{3}{8}$ inch in diameter. Common in shady woodland in the northern portions of the area and also found in the Cypress Hills.

(7) *Ribes lacustre* (Pers.) Poir.

SWAMP GOOSEBERRY

(*Limnobotrya lacustris* (Pers.) Rydb.)

Shrubs from 3 to 6 feet high with clusters of slender spines and the stems and branches densely bristly. The leaves are deeply 5 to 7 lobed and from $\frac{3}{4}$ to 2 inches long. The flowers are in racemes and are green or purplish and the fruit is a densely hairy, glandular reddish berry about $\frac{1}{4}$ inch in diameter. Occasionally found in swamps along the northern and eastern

fringe of the area and in the Riding Mountains.

(8) *Ribes oxycanthoides* L.

NORTHERN GOOSEBERRY

A low, bristly shrub or bush, from 1 to 3 feet high, with lobed leaves from $\frac{3}{4}$ to $1\frac{1}{2}$ inches broad and greenish-purple or white sepals and petals. The calyx tube is not longer than lobes. The fruit is a globose berry from $\frac{3}{8}$ to $\frac{1}{2}$ inch across, turning reddish-purple when ripe. Common in woodlands throughout the area, especially in the northern parts.

(9) *Ribes setosum* Lindl.

BRISTLY GOOSEBERRY

A low bush or shrub from 1 to 3 feet high with bristly branches with lobed leaves up to $1\frac{1}{2}$ inches wide. The tube of the calyx is longer than the lobes, which distinguishes this species from the preceding one. The berries are red to black, sometimes somewhat bristly, and from $\frac{1}{4}$ to $\frac{1}{2}$ inch in diameter. Very common in low places and depressions or moist spots on prairie throughout the entire southern part of the area.

(10) *Ribes triste* Pall.

SWAMP RED CURRANT

A shrub about 3 feet high, unarmed and with leaves paler beneath, usually 3-lobed, sometimes 5-lobed, from 2 to 4 inches across. The flowers are usually purplish and the fruit a smooth red berry, very similar to the garden red currant, and about $\frac{1}{4}$ inch across. Occasionally found in rich poplar woods, especially in the northern and eastern portions.

SAXIFRAGA (Saxifrage) genus. 1 species.

- (1) *Saxifraga rhomboidea* Greene RHOMBOID-LEAVED SAXIFRAGE
(*Micranthes rhomboidea* (Greene) Small)

A low plant with the leaves fleshy and basal, usually ovate and from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long, wavy margined and smooth. The flowers are borne in a branched inflorescence at the head of a glandular-haired stalk from 3 to 12 inches high. The petals are white and the flowers about $\frac{3}{16}$ inch across. The fruits are follicle-like capsules. This is really a mountain species, but can be found along the southern part of the area in the Cypress Hills.

ROSACEAE (Rose Family) 12 genera.

An extremely variable family, which includes herbs, shrubs and small trees. All have alternate leaves with stipules, while the inflorescence is either in racemes or cymes. The flowers are perfect and regular, with 5 petals and 5 sepals, and often with 5 bracts below, and alternating with the sepals. There are numerous stamens and from one to many pistils. The fruit varies, some being dry achenes, follicles, fleshy receptacles (strawberry), fleshy drupes or drupelets (raspberry) or berry-like pomes (Saskatoon).

1. Herbs.

[2.](#)

Shrubs or trees.

[7.](#)

2. Stamens 5 in a single series, opposite the petals; plants low; flowers white; leaves thrice divided two to four times.

[CHAMAERHODOS](#)

Stamens more than 5, often in series of 5 or multiples of 5; leaves entire; ternate, palmate or pinnate.

[3.](#)

3. Plants with runners, all leaves basal and ternate; flowers white.

[FRAGARIA](#)

Plants without runners (except *Potentilla anserina*, which has yellow flowers.)

[4.](#)

4. Fruit of several fleshy drupelets; plants from rootstocks or creeping stems.

[RUBUS](#)

Fruit other than fleshy drupelets.

[5.](#)

5. Flowers in long racemes; fruit a dry calyx tube with hooked prickles on top and containing 1 or 2 achenes.

[AGRIMONIA](#)

Flowers not in racemes; fruit not enclosed in a dry calyx tube.

[6.](#)

6. Style not persisting in fruit.

[POTENTILLA](#)

Style persisting in fruit, in part or wholly.

[GEUM](#)

7. Leaves simple.

[8.](#)

Leaves pinnate, or deeply palmately lobed or divided.

[11.](#)

8. Small trees or shrubs bearing thorns or spines.

[CRATAEGUS](#)

Small trees or shrubs not bearing thorns or spines.

[9.](#)

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9. Fruit a red or black fleshy drupe containing a single stony seed.

[PRUNUS](#)

Fruit other than a drupe.

[10.](#)

10. Fruit a berry-like pome containing several seeds.

[AMELANCHIER](#)

Fruit a leathery follicle; seeds 4 or more.

[SPIRAEA](#)

11. Leaves with from 3 to 5 leaflets; fruit an aggregate of many fleshy drupelets; flowers white.

[RUBUS](#)

Leaves with 3 to 7 leaflets; fruit not an aggregation of fleshy drupelets; flowers yellow. Leaves with 5 or more leaflets.

[POTENTILLA](#)

12. Leaflets 5 to 11; bushes; flowers usually pink; 1 inch or more across.

[ROSA](#)

Leaflets 11 to 17; small trees; flowers white, not over $\frac{3}{4}$ inch across.

[SORBUS](#)

AGRIMONIA (Agrimony) genus. 1 species.

(1) *Agrimonia striata* Michx.

AGRIMONY

An erect stemmed perennial herb from 1 to 2½ feet high, sometimes branched above, with soft, fine, brownish hairs. The leaves are pinnate, with from 7 to 9 leaflets, deeply indented, from 1 to 3 inches long, smooth above and softly hairy below. The small, yellow flowers are borne in a spike-like raceme and the fruiting calyx is reflexed (pointing downwards) with short hooked bristles at the top and contains two seeds. Occasionally found in small poplar woods and roadsides throughout the whole area.

AMELANCHIER (June-berry) genus. 1 species.

Small trees or bushes with simple, alternate leaves, no spines or prickles, and with white flowers in racemes. The fruit is a berry-like, sweet flavoured, several seeded pome.

(1) *Amelanchier alnifolia* Nutt.

SASKATOON BERRY

A tall shrub or small tree from 4 to 12 feet in height with smooth chocolate-brown stems and branches. The leaves are simple, rounded at the ends, from $\frac{1}{2}$ to 2 inches long and with a few serrate teeth at the apex. The white flowers are about $\frac{3}{8}$ to $\frac{1}{2}$ inch across and borne in racemes quite early in the season. The fruits are purple and berry-like, very sweet when ripe, globular, from $\frac{1}{4}$ to $\frac{1}{3}$ inch across and much used for preserves, etc. They were used by the Indians and early settlers as a constituent of "pemmican". Very common in coulees, bluffs and open woodlands throughout the entire area. This species is the only common Amelanchier in the area covered.

CHAMAERHODOS (*Chamaerhodos*) genus. 1 species.

(1) *Chamaerhodos Nuttallii* Pickering

CHAMAERHODOS

Low-growing perennial or biennial glandular herbs from 4 to 12 inches high, from a single stem, but sometimes branching above, the usual form, however, being a very narrow pyramid. The basal leaves, from a stout root, usually form a rosette and later become a small clump. The leaves are small and have 3 leaflets, each of which is again divided into 3 lobes, and sometimes these lobes are again 3 times cleft. The stem leaves are similar to the basal ones but less divided. The inflorescence is much branched and the small white flowers are about $\frac{1}{8}$ inch across and numerous. Very common on dry side hills and light soil throughout the southern part of the area.

CRATAEGUS (Hawthorn) genus. 4 species.

Shrubs or small trees with sharp thorns or spines on the stem, and alternate, sometimes lobed leaves. The flowers are white and borne in clusters and the fruit is a round berry-like pome. This is a difficult genus to definitely separate into species as there appears to be much crossing or hybridizing between species and the distinctions are not very clear cut.

1. Sepals short-triangular, acute but not attenuate; fruit black or very dark purple.

[\(3\)](#) *C. Douglasii*

Sepals attenuate, long pointed; fruit purple or red.

[2.](#)

2. Teeth of leaves not gland tipped; nutlets deeply pitted on faces.

[\(4\)](#) *C. succulenta*

Teeth of leaves gland tipped; nutlets not pitted.

[3.](#)

3. Leaf blades almost round, broadly wedge shaped at base, not deeply incised; thorns about 1 inch long.

[\(1\)](#) *C. chrysocarpa*

Leaf blades elliptic ovate, narrowly wedge shaped at base and deeply incised; thorns 1¼ to 2½ inch long.

[\(2\)](#) *C. columbiana*

(1) *Crataegus chrysocarpa* Ashe.

ROUND-LEAVED HAWTHORN

A rounded-topped shrub from 5 to 10 feet high with stout thorns on the stems and branches, usually about 1 inch long. The leaves are generally almost round, 1 to 2 inches across, sometimes lobed, but usually deeply double-toothed. The flowers are white, about ½ inch across and borne in clusters at the ends of the branches, and are followed by red, berry like fruits about ½ inch across containing several bony carpels. Fairly common throughout the entire area in coulees, stream banks and open woods.

(2) *Crataegus columbiana* Howell.

COLUMBIAN HAWTHORN

A tall shrub from 5 to 12 feet high with wedge shaped, obovate leaves from

$\frac{3}{4}$ to 2 inches long, rather deeply incised above the middle and having tiny dark glands at the tip of each tooth. The spines are from $1\frac{1}{4}$ to $2\frac{1}{2}$ inches long and the fruit red, containing smooth nutlets. Fairly plentiful in woodlands and river banks throughout most of the area, apparently being replaced by the very similar appearing *C. succulenta* in the eastern parts.

(3) *Crataegus Douglasii* Lindl.

DOUGLAS' HAWTHORN

A tall shrub or small tree from 12 to 20 feet high with short spines from $\frac{1}{4}$ to 1 inch long. The leaves are ovate to obovate, from $\frac{1}{2}$ to 2 inches long and the fruit is black or a very dark purple in colour. Occasionally found in the western part of the area and in the Cypress Hills.

(4) *Crataegus succulenta* Schrad.

LONG-SPINED HAWTHORN

A shrub very similar to *C. columbiana*, but with no dark glandular tips on the leaf teeth and with deeply pitted faces to the nutlets. Quite plentiful in the eastern parts but appears to give place to *C. columbiana* further west.

FRAGARIA (Strawberry) genus. 4 species.

Perennial, low-growing herbs, with three-foliolate basal leaves, and running stems which root at tips and produce new plants. The flowers are white with 5 petals, 5 sepals and 5 sepal-like bracts. The fruit is the enlarged, fleshy receptacle of the flower, bearing achenes on the surface and is very juicy and sweet.

1. The hairs on the stems ascending and closely pressed to stems.

The hairs on the stems spreading in various directions.

2.

3.

2. Leaflets broadly-obovate; flowers $\frac{5}{8}$ to $\frac{3}{4}$ inch across.

(2) *F. glauca*

Leaflets long, oblong and wedge-shaped; flowers $\frac{3}{8}$ to $\frac{5}{8}$ inch across.

(3) *F. pauciflora*

3. Leaflets with short stalks; seeds in deep pits on fruit.

(1) *F. canadensis*

Leaflets with no stalks; seeds on surface of fruit.

(4) *F. vesca*

(1) *Fragaria canadensis* Michx.

NORTHERN WILD STRAWBERRY

The leaflets of this species are thin and often reddish above, silky below and the stems have spreading, and divaricate hairs. The fruit is oblong or conic, about $\frac{1}{2}$ inch long with deeply sunken seeds. Fairly frequent in open woodlands in the east and northeastern portion of the area.

(2) *Fragaria glauca* (S. Wats.) Rydb.

SMOOTH WILD STRAWBERRY

Has coarsely toothed, broadly ovate leaflets, sometimes silky beneath, and stems with closely appressed, ascending hairiness. The flowers are from $\frac{5}{8}$ to $\frac{3}{4}$ inch across, white, and appear fairly early in the season. The fruit is almost round from $\frac{3}{8}$ to $\frac{5}{8}$ inch in diameter with the seeds sunk in shallow pits. Common in low spots on prairie, open woodlands and moist areas throughout the whole of the area. Probably the most common strawberry in the area.

(3) *Fragaria pauciflora* Rydb. FEW-FLOWERED WILD STRAWBERRY

Very similar to *F. glauca*, of which it may be merely a variety. The leaflets, however, are long and narrow, toothed only at the apex and it bears from 2 to 4 flowers. The fruit is round with seeds in deep pits. Found in similar locations to the preceding throughout the area.

(4) *Fragaria vesca* L. var. *americana* Porter
(*F. americana* (Porter) Britt.) AMERICAN WOOD STRAWBERRY

The leaflets have no stalks and are obovate and sharply and deeply toothed. The stems have spreading hairs and the plant produces runners very freely. The fruit is ovoid or conical with the seeds borne on the surface. Not very common but found along the northern fringe and the eastern parts of the area.

GEUM (Avens) genus. 4 species.

Perennials from stout rootstocks with lyrate or pinnate leaves, perfect, regular flowers with many achenes. The styles remain on the achenes and are long, either jointed or feathery.

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1. Styles feathery and not jointed; leaves pinnate.

(4) *G. triflorum*

Styles not feathery, but jointed; leaves lyrate pinnate.

2.

2. Sepals erect or spreading; flowers purple or flesh-coloured; upper part of style at least half as long as lower part.

(3) *G. rivale*

Sepals reflexed; flowers yellow; upper portion of style less than $\frac{1}{3}$ length of lower part.

3.

3. Upper portion of style hairy.

(1) *G. aleppicum*

Upper portion of style not hairy, or with only a few stiff hairs.

(2) *G. macrophyllum*

- (1) *Geum aleppicum* Jacq. var. *strictum* (Ait.) Fern.
(*G. strictum* Ait.)

YELLOW AVENS

A hairy, erect plant from 18 inches to 4 feet high with broad leafy stipules and basal leaves lyrate-pinnate (terminal lobe longer than others) with 5 to 7 toothed or divided leaflets and often a few very small interspersed leaflets. The stem leaves have 3 to 5 leaflets, and either very short or no stalks. The flowers are bright yellow, from $\frac{1}{2}$ to 1 inch across and followed by a fruiting head about $\frac{5}{8}$ inch in diameter with the characteristic hooked or bent styles. Very common in wet or moist spots on the prairie and in meadows and open woods throughout the entire area.

- (2) *Geum macrophyllum* Willd.

LARGE-LEAVED AVENS

Very similar to preceding species but the terminal segment of the basal

leaves is very large, often 3-lobed, and there are from 5 to 15 leaflets. The flowers are yellow and the fruiting head similar to the preceding except that the upper portion of the style on the fruit is entirely or almost hairless. The variety *perincisum* (Rydb.) Raup, which differs from the type by deeper lobes in the terminal leaflets and glandular flower stalks, appears to be as common as the type. Found in moist meadows and open woods throughout the whole area, but not so common as Yellow Avens.

(3) *Geum rivale* L.

PURPLE AVENS

An erect, simple, or little branched herb, more or less hairy, from 1 to 2 feet in height with lyrate pinnate basal leaves and thrice divided stem leaves. The sepals are not bent abruptly downwards as in the preceding two species and the flowers, which are about $\frac{3}{4}$ inch across, are flesh-coloured or purple, often with a yellowish tinge. The fruiting heads are very similar to the preceding species but the upper portion of the style is at least half as long as the lower part. Occasionally found in moist places and wet, swampy ground in the north and east of the area and in the Cypress Hills.

(4) *Geum triflorum* Pursh THREE-FLOWERED AVENS or TORCH FLOWER
(*Sieversia triflora* (Pursh) R. Br.)

Erect perennial herbs from 6 to 18 inches high from a thick, coarse, almost black rootstock, with coarse black roots. The many basal leaves are pinnate, with many wedge-shaped, lobed leaflets, often with smaller leaflets mixed with the larger ones. The flowering stem usually has a tuft of smaller leaves half way up and some thin leafy bracts at the summit, with usually three flowers, from $\frac{1}{2}$ to $\frac{3}{4}$ inch across with purplish-pink sepals and petals pink, yellowish or flesh-coloured. The fruiting head bears long, persistent, feathery styles from 1 to 2 inches long. This is a very common spring flower on the prairies, the bright green leaves being amongst the first new foliage to show in spring and the flowers are one of the very early spring blooms. Plentiful everywhere where open prairie is found.

POTENTILLA (Cinquefoil) genus. 17 species.

Generally perennial, but some species annual or biennial, with alternate leaves, either palmately or pinnately compound. The flowers are perfect with 5 sepals and 5 petals and many stamens. The fruit is a head with many achenes.

1. Flowers reddish purple; leaves 5 to 7 foliate.

[\(11\)](#) *P. palustris*

Flowers white or yellow.

[2.](#)

2. Plants shrubby, or with woody bases; achenes hairy.

[3.](#)

Plants herb-like, not woody based; achenes generally smooth.

[4.](#)

3. Shrubs 6 inches to 4 feet high; yellow flowers; pinnate leaves.

[\(6\)](#) *P. fruticosa*

Low plants, woody at base; flowers white; palmate leaves.

[\(17\)](#) *P. tridentata*

4. Low, creeping plants with runners; leaves basal and pinnate; yellow flowers singly on long stalks from base of plant.

[\(1\)](#) *P. anserina*

Plants without runners; flowers not borne singly, but in terminal cymes.

[5.](#)

5. Annual or biennial plants without perennial rootstocks; inflorescence many flowered and leafy.

[6.](#)

Perennial plants with stout rootstocks, often bearing old bases of leaf stipules.

[9.](#)

6. Lower leaves pinnate with from 5 to 11 leaflets.

[7.](#)

Lower leaves digitate with 3 leaflets.

[8.](#)

7. Lower leaves with 5 to 7 leaflets; achenes smooth, without corky enlarged side.

[\(16\)](#) *P. rivalis*

Lower leaves generally with 7 to 11 leaflets; achenes ribbed and with corky enlargement on one side.

[\(12\)](#) *P. paradoxa*

8. Plants spreading and branched from base; petals much shorter than the sepals.

[\(9\)](#) *P. millegrana*

Plants erect; stout stemmed, branched above, petals about as long as or shorter than, the sepals.

[\(10\)](#) *P. norvegica*

9. Flowers white when growing.

[\(2\)](#) *P. arguta*

Flowers yellow.

[10.](#)

[140](#)

10. Plants low and spreading, from thick, woody rootstock; 2 to 5 palmately or pinnately arranged leaflets, white woolly below.

[\(3\)](#) *P. concinna*

Plants erect, with obvious stems.

[11.](#)

11. Stamens about 30; achenes net-veined.

[\(15\)](#) *P. recta*

Stamens not over 20; achenes smooth.

[12.](#)

12. Basal leaves palmate.

[13.](#)

Basal leaves usually pinnate.

[14.](#)

13. Leaflets divided at least two-thirds of way to the midrib into linear segments; strongly discoloured.

[\(5\)](#) *P. flabelliformis*

Leaflets not divided more than half way to midrib, or if so the

segments not linear or crowded.

(7) *P. gracilis*

14. Leaflets dissected into linear or oblong divisions at least half way to midrib.

15.

Leaflets not dissected half way to midrib.

16.

15. Leaflets not, or rarely, woolly below; dissected almost to midrib.

(14) *P. plattensis*

Leaflets greyish or white woolly below.

(13) *P. pennsylvanica*

16. Leaves palmate or sub-pinnate, if pinnate having five leaflets.

(7) *P. gracilis*

Leaves strictly pinnate.

17.

17. Bractlets much shorter than sepals.

(4) *P. effusa*

Bractlets at least $\frac{3}{4}$ length of sepals.

(8) *P. Hippiana*

- (1) *Potentilla anserina* L.

SILVERWEED

A low, spreading, tufted perennial plant with runners prostrate on the ground. The leaves are pinnate from 3 to 18 inches long with from 7 to 25 leaflets, often with some smaller interspersed leaflets. In the type, the leaflets are green above and silky white woolly beneath but in *P. anserina* L. forma *sericea* (Hayne) Hayek the leaves are silvery white on both sides. Both the type and the form have been found in the same clump of plants. The flowers are bright yellow from $\frac{3}{4}$ to 1 inch across and are borne singly on a long stalk, and bloom from early in the season until fall. This species is very common in low, wet places and slough margins throughout the entire area.

- (2) *Potentilla arguta* Pursh

WHITE CINQUEFOIL

(*Drymocallis agrimonioides* (Pursh) Rydb.)

Perennial glandular, erect herbs from 1 to 3 feet high with pinnate leaves,

the lower leaflets being smaller than the upper ones. There are from 7 to 11 leaflets on the stalked basal leaves and fewer on the stem leaves. The flowers are in a rather dense inflorescence and are white petalled, and from $\frac{1}{2}$ to $\frac{3}{4}$ inch across. Quite common in moist places, slough margins etc., on the prairie throughout the entire area.

(3) *Potentilla concinna* Richards.

EARLY CINQUEFOIL

A low-growing perennial from a very coarse, woody rootstock, with 5 (rarely 7) oblong or obovate leaflets, either palmately or pinnately arranged. The leaflets are from $\frac{1}{2}$ to 1 inch long and toothed, greenish silky above and whitish below. The flowers are yellow, from $\frac{1}{4}$ to $\frac{1}{2}$ inch across, and open early in the season. Quite common on dry hillsides and prairie throughout the south central and southwest parts of the area.

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(4) *Potentilla effusa* Dougl.

BRANCHED CINQUEFOIL

Perennial from 6 to 18 inches high, branched above. The leaves are generally pinnate, with 5 to 11 leaflets, the upper leaves with 1 to 3 leaflets, and are greyish woolly on both sides. The flowers are yellow, from $\frac{1}{4}$ to $\frac{1}{2}$ inch across. Occasionally found on dry hillsides and prairie in the southwestern part of the area.

(5) *Potentilla flabelliformis* Lehm.

SILKY-LEAVED CINQUEFOIL

A perennial with a slender, upright stem from 15 to 24 inches high with digitate leaves, the leaflets cleft more than half way to the midrib, dark green above and densely white woolly below. The flowers are yellow from $\frac{3}{8}$ to $\frac{5}{8}$ inches across and borne in a many-flowered cyme. Not common but found occasionally in the southwestern portion of the area.

(6) *Potentilla fruticosa* L.

SHRUBBY CINQUEFOIL

(*Dasiphora fruticosa* (L.) Rydb.)

Much branched shrubs from branching rootstocks and growing from 12 inches to 4 feet high with pinnate leathery leaves with 5 to 7 leaflets from $\frac{1}{2}$ to 1 inch long, linear-oblong and pointed at either end. The flowers are yellow from $\frac{5}{8}$ to 1 inch across. The achenes are densely hairy. Found in great profusion on low, moist ground and particularly abundant on the Cypress bench and in the foothills region, but is found to a greater or less

degree across the entire area. This species is much used as a garden ornamental.

(7) *Potentilla gracilis* Dougl.

GRACEFUL CINQUEFOIL

A somewhat tufted species with root crowns bearing brownish remains of old stipules, with several stems growing to a height of from 12 to 24 inches. The basal leaves are long-stalked and digitate, bearing from 5 to 7 narrowly oblanceolate leaflets. The yellow flowers are from $\frac{5}{8}$ to $\frac{3}{4}$ inch across. This is a very variable plant and some varieties have often been considered as separate species. They may be distinguished by the following key.

1. Underside of leaflets densely white woolly.

(7b) var. *pulcherrima*

Underside of leaflets not densely white woolly.

2.

2. Leaves equally green on both sides, hairy but barely woolly beneath; sepals hairy.

(7a) var. *rigida*

Leaves greyish woolly and paler beneath; sepals silky, soft-hairy.

typical

The typical *P. gracilis* Dougl. is found in moist spots throughout the area.

(7a) *P. gracilis* Dougl. var. *rigida* (Nutt.) S. Wats.

(GREEN CINQUEFOIL)

is quite common in moist places across the southern part of the area. It was formerly called *P. Nuttallii* Lehm.

(7b) *P. gracilis* Dougl. var. *pulcherrima* (Lehm.) Fern.

(BEAUTIFUL CINQUEFOIL)

which has leaves densely white-woolly on the underside is found quite frequently in slough margins and moist places throughout the southern part of the area.

(8) *Potentilla Hippiana* Lehm.

WOOLLY CINQUEFOIL

A perennial from a stout rootstock with several stems growing from 1 to 2½ feet high with woolly and silky stems and mostly basal, pinnate leaves with from 7 to 11 leaflets from ½ to 2 inches long, toothed, densely silky above and white woolly below. The stem leaves are smaller with fewer leaflets. The flowers are fairly numerous and in a terminal cyme, yellow and from ¼ to ½ inch across. Found fairly frequently on prairie land and valleys in the southwestern parts of the area, but is more commonly a mountain valley species.

(9) *Potentilla millegrana* Engelm.

DIFFUSE CINQUEFOIL

A weak stemmed, diffusely branched annual with soft-hairy stems, from 6 inches to 2 feet high. The leaves are mostly stalked and bear 3 leaflets from ½ to 1½ inches long, usually narrow and toothed and somewhat hairy. The yellow flowers are about ³/₁₆ inch across and the sepals are much longer than the petals. Not very common but found around lakes, river banks and moist spots in the eastern and central portions of the area.

(10) *Potentilla norvegica* L.
(*P. monspeliensis* L.)

ROUGH CINQUEFOIL

A very coarse, hairy annual or biennial plant with erect, branched stems from 6 inches to 2 feet in height. The leaves are digitately three foliate, with leaflets from 1 to 4 inches long, obovate or elliptic and much toothed. The flowers are numerous, yellow, in a fairly dense cyme and are from ¼ to ½ inch across, the sepals being a little longer than the petals. This is a common plant of moist meadows and waste places throughout the entire area and persists as a bad weed in gardens.

(11) *Potentilla palustris* (L.) Scop.
(*Comarum palustre* L.)

MARSH CINQUEFOIL

A somewhat decumbent herb, from long, creeping, woody rootstocks and growing to a height of 8 to 18 inches. The leaves are pinnate, often purple, the lower ones long stalked, with 5 to 7 oblong or oval leaflets from 1 to 3 inches long, tapering to the base and toothed. The upper leaves are short stalked with 3 to 5 leaflets. The flowers are very conspicuous, from ½ to 1¼ inch across, purple or maroon in colour, the sepals being much longer than the petals and also purplish in colour. Found in shallow water and bogs in the northern and eastern parts of the area.

(12) *Potentilla paradoxa* Nutt.

BUSHY CINQUEFOIL

An annual, biennial or short lived perennial species, with spreading or somewhat ascending stems, growing from 8 to 20 inches high. The pinnate leaves bear from 5 to 11, almost smooth leaflets and the flowers are about ¼ inch across and borne in a leafy cluster. The achenes or fruit are ribbed lengthwise and have a corky enlargement on one side. Occasionally found in low, moister places throughout the area.

(13) *Potentilla pennsylvanica* L.

PRAIRIE CINQUEFOIL

A low-growing, tufted species with the crown generally bearing the brown remains of previous leaf stipules, and growing from 4 to 18 inches high. There are three varieties of this species found on the prairies.

1. Leaflets nearly to quite hairless on both sides, sometimes slightly glandular.

(13b) var. *glabrata*

Leaflets hairy and woolly, at least below.

2.

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2. Leaflets greyish-woolly below, divided three quarters way to midrib.

typical

Leaflets whitish-woolly below, silvery hairy above, divided almost to midrib.

(13a) var. *bipinnatifida*

The typical *P. pennsylvanica*, sometimes called *P. strigosa* Rydb. is one of the earliest plants to show fresh green leafage in the spring on the prairies, and bears a dense terminal cyme of yellow flowers from ¼ to ⅜ inches across. This is probably the most common of the cinquefoils on dry plains and hills throughout the southern parts of the area.

(13a) *P. pennsylvanica* L. var. *bipinnatifida* (Dougl.) T. & G.

(PLAINS CINQUEFOIL)

grows from 12 to 18 inches high with many pinnate leaves, incised almost to the midrib into linear divisions, greenish above and silvery white woolly below. The flowers are yellow and almost ½ inch across. Found on light soils in the southern and western parts of the area but not very

common.

(13b) *P. pennsylvanica* L. var. *glabrata* (Hook.) S. Wats.

(GLABRATE CINQUEFOIL)

is a low-growing, erect stemmed plant from 4 to 8 inches high with few or no hairs on the stems. The pinnate leaves bear from 5 to 11 leaflets, often somewhat glandular and white powdery. Rare in the area, being a mountain species, but has been found in a few locations in the southwestern part.

(14) *Potentilla plattensis* Nutt.

LOW CINQUEFOIL

A low, decumbent or spreading perennial from 4 to 8 inches high with many basal, pinnate leaves with 9 to 17 leaflets. The leaflets are light green in colour and deeply divided into oblong to nearly linear divisions. The flowers are few and in rather open, terminal cymes with yellow petals. Occasionally found in valleys in the southwestern part of the area.

(15) *Potentilla recta* L.

ROUGH-FRUITED CINQUEFOIL

A leafy stemmed, erect plant growing from 6 to 24 inches in height, with loosely hairy stems and leaf stalks. The deeply toothed leaves are digitate, generally with from 5 to 7 leaflets and are more or less hairy but paler on the underside. The flowers are borne on erect stalks and are from $\frac{5}{8}$ to 1 inch across, of a pale yellow or sulphur colour. This introduced plant has been found at various places throughout the area.

(16) *Potentilla rivalis* Nutt.

BROOK CINQUEFOIL

An erect, annual or biennial species, branching above, and with finely hairy, sometimes sticky stems from 8 to 18 inches high, with the lower leaves with 5 obovate, coarsely toothed leaflets from $\frac{3}{4}$ to 2 inches long.

The upper stem leaves have 3 leaflets. The yellow flowers are less than $\frac{3}{16}$ inch across with petals shorter than the sepals. This species and *P. millegrana* are, by many authorities, considered to be forms of the same species, but differ mainly in the number of leaflets on the basal leaves. Found occasionally in river valleys in the southwestern part of the area.

(17) *Potentilla tridentata* Ait.

THREE-TOOTHED CINQUEFOIL

(*Sibbaldiopsis tridentata* (Soland.) Rydb.)

A tufted, low-growing, woody based sub-shrub, much branched, from 4 to

12 inches high. The stems have silky, appressed hairs, and the leaves are mostly stalked with 3 narrow wedge-shaped leaflets, from $\frac{1}{2}$ to 1 inch long, dark green and shiny on the upper side and paler beneath, having 3 teeth at their apex. The flowers are borne in a cyme of from 1 to 6 white flowers about $\frac{1}{4}$ to $\frac{3}{8}$ inch across. Found in dry sandy places and fairly common in the eastern part of the area but only sparingly further west.

PRUNUS (Plum) genus. 7 species.

Shrubs or trees with bark almost black and alternate leaves; perfect, regular flowers with 5 sepals and 5 petals and the fruit a fleshy drupe with a smooth, bony stone.

1. Flowers in long racemes at the ends of the branches.

2.

Flowers in small umbels or corymbs.

3.

2. Fruit red or purplish, very astringent; leaves thin.

(3) *P. nana*

Fruit black and sweetish; leaves thick.

(7) *P. virginiana* var. *melanocarpa*

3. Stone more or less flattened, with a groove on the end.

4.

Stone not flattened or grooved.

5.

4. Teeth of leaves not very deep and tipped with a small gland; lobes of sepals toothed and glandular; fruit oval.

(4) *P. nigra*

Teeth of leaves deeper and not gland tipped; lobes of sepals not toothed or glandular; fruit round.

(1) *P. americana*

5. Tall shrubs or small trees; flowers from ½ to 1 inch across, in corymbs.

(5) *P. pennsylvanica*

Low shrubs; flowers ¼ to ½ inch across, in umbels.

6.

6. Leaves oblanceolate or spatulate.

(6) *P. pumila*

Leaves oval or obovate.

(2) *P. Besseyi*

(1) *Prunus americana* Marsh.

AMERICAN PLUM

A tree from 9 to 25 feet high with more or less thorny branches. The leaves are narrowly obovate from $1\frac{1}{2}$ to 4 inches long with double teeth and a pointed apex. The flowers, which appear before the leaves, are white and from $\frac{3}{4}$ to 1 inch across and the fruit is a red or yellow plum, almost round and from $\frac{3}{4}$ to 1 inch long. Found occasionally in moist woods and along river banks in the eastern edge of the area.

(2) *Prunus Besseyi* Bailey

WESTERN SAND CHERRY

A prostrate, spreading branched shrub from 1 to 4 feet high with elliptical to oval leaves and the flowers from $\frac{1}{4}$ to $\frac{1}{2}$ inch across borne in umbels. The fruit is round, black or mottled from $\frac{1}{2}$ to $\frac{3}{4}$ inch in diameter. Found occasionally in sandhills in the eastern part of the area.

(3) *Prunus nana* Du Roi

RED-FRUITED CHOKE CHERRY

A shrub 2 to 10 feet high with gray stems, and thin ovate leaves from 2 to 4 inches long. The flowers are white, about $\frac{1}{2}$ inch across, in loose racemes. The fruit is a red, very astringent cherry from $\frac{5}{16}$ to $\frac{3}{8}$ inch in diameter. Very common on river banks and open woodlands in the southeastern part of the area.

(4) *Prunus nigra* Ait.

CANADA PLUM

A tree or shrub from 6 to 30 feet in height with oval or obovate leaves from 3 to 5 inches long, pointed at the apex, dark green with gland-tipped teeth. The flowers are white, turning pink, about $\frac{3}{4}$ to $1\frac{1}{4}$ inches across and open before the leaves. The fruit is a yellow to orange plum, oval and from 1 to $1\frac{1}{2}$ inches long. Occasionally found in woodlands and bluffs in the southeastern part of the area.

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(5) *Prunus pennsylvanica* L. f.

PIN CHERRY

A small tree from 12 to 30 feet in height with lanceolate, finely toothed leaves from 3 to 7 inches long. The flowers are small and white on long stalks in corymbose clusters and are from $\frac{1}{4}$ to $\frac{3}{8}$ inch across, and open about the same time as the leaves. The fruit is a small, sour, bright red cherry from $\frac{3}{16}$ to $\frac{1}{4}$ inch in diameter. Fairly common in bluffs, ravines and

hill sides throughout the entire area.

(6) *Prunus pumila* L.

LOW SAND CHERRY

A low, spreading bush with stems from 1 to 6 feet long, with oblanceolate to spatulate leaves, dark green above and pale beneath. The flowers are in clusters of 2 to 4 and are white, about $\frac{3}{8}$ inch across. The fruit is a dark brown-purplish cherry from $\frac{1}{4}$ to $\frac{1}{2}$ inch across. May possibly be found in the extreme east of the area.

(7) *Prunus virginiana* L. var. *melanocarpa* A. Nels.

CHOKE CHERRY

A small tree or large shrub from 6 to 25 feet high with smooth reddish-brown stems. The leaves are obovate or oval, rather thick, from 1 to 3 inches long, smooth on both sides. The flowers are numerous, white or pale cream, about $\frac{3}{8}$ inch across, in dense racemes. The fruit is a black cherry, slightly astringent, round and from $\frac{1}{3}$ to $\frac{1}{4}$ inch in diameter. Very common in bluffs, ravines, sand hills and open woodlands throughout the entire area. Leaves of choke cherry that are injured by frost or extreme drought are reported to be *poisonous* to sheep and cattle.

ROSA (Rose) genus. 4 species.

Low shrubs or herbaceous plants to large bushes, generally with prickly stems. The leaves are odd-pinnate with small leaflets and the flowers are large and showy, generally pinkish in colour and fragrant. The fruit is a “hip” or berry-like enlarged calyx tube containing numerous achenes. The roses are a puzzling genus, the local variations in form being so varied that authorities do not agree on nomenclature and some make them into many species. The probability is that there are but 4 or so species in the area with many slight variations.

1. Plants practically unarmed, few, if any, prickles.

(3) *R. blanda*

Plants definitely prickly.

2.

2. Infrastipular prickles present (larger prickles below the stipule); prickles broad and usually flattened at the base; fruit globose without constricted neck.

(4) *R. Woodsii*

Infrastipular prickles not present; prickles usually not broad or flattened at base.

3.

3. Plant shrubby; leaflets usually 5 to 9 (9 on young shoots); flowers usually borne singly; fruit oval with distinct neck.

(1) *R. acicularis*

Plant partly shrubby, often dying back to near the ground in winter; leaflets 9 to 11.

(2) *R. arkansana*

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(1) *Rosa acicularis* Lindl.

PRICKLY ROSE

A low bushy plant from 1 to 3 feet high with the stems densely covered with straight, weak, bristly prickles. The leaves generally have from 5 to 7 hairy leaflets from $\frac{1}{2}$ to 2 inches long, elliptic or oval. The stipules are broad and usually both hairy and glandular. The flowers are usually borne singly, and are from 2 to 3 inches across. The fruit usually is ovoid with a constricted neck, and from $\frac{5}{8}$ to $\frac{3}{4}$ inch long. Very common in bluffs,

around woods, in fields and along roadsides throughout the whole of the area.

(2) *Rosa arkansana* Porter

LOW PRAIRIE ROSE

Low shrubs from 8 to 18 inches high with densely prickly stems, the stems generally dying off annually to near the root. The leaflets are from 9 to 11 in number, usually without hairiness, smooth and shiny, from $\frac{3}{4}$ to 2 inches long. The flowers are borne in corymbs of 2 or 3 flowers, and the fruit almost globular about $\frac{1}{2}$ inch across. Common on hills and sandy open prairie throughout the southwestern portion of the area.

(3) *Rosa blanda* Ait.

SMOOTH ROSE

A low bush from 2 to 4 feet high with an unarmed stem or with a very few, straight prickles. The stipules are rather broad, and the leaves bear from 5 to 7 leaflets from 1 to $1\frac{1}{2}$ inches long. The flowers are pink and generally borne singly and may be up to 3 inches across. Not at all common, but has been found in the southeast and south-central portions of the area.

(4) *Rosa Woodsii* Lindl.

WOOD'S ROSE

A fairly tall bush from 1 to 6 feet in height with stems armed with straight or slightly curved prickles, often broad and flattened at the base. The spines below the stipules are generally well defined. The leaves bear from 5 to 9 oval or obovate leaflets from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long, and the flowers are from 1 to 2 inches across. The fruit is globular without a constricted neck and about $\frac{3}{8}$ inch across. Very common in bluffs, on ravines and in the sand hills throughout the entire southern part of the area (this species includes what is called *R. Macounii*).

RUBUS (Raspberry) genus. 5 species.

Perennial or biennial, shrubby or herbaceous, from rootstocks, frequently with prickly stems. Leaves various, from simply lobed to 3 to 5 times pinnately or palmately compound. Flowers regular, unisexual, or perfect, generally with 5 sepals or 5 petals, either pink or white. Fruit a berry composed of many fleshy drupelets.

1. Stems more or less woody; prickly; leaves 3 to 5 foliate, usually pinnate.

2.

Stems herbaceous, dying down annually, not prickly; leaves with 3 leaflets or merely lobed.

3.

2. New canes sparingly bristly, hardly glandular; leaves dark green above.

(5) R. strigosus

New canes densely bristly, more or less glandular; leaves light green above.

(3) R. melanolasius

3. Leaves merely lobed; petals spreading, flowers unisexual.

(2) R. Chamaemorus

Leaves with 3 leaflets; petals erect.

4.

4. Central leaflet with rounded tip.

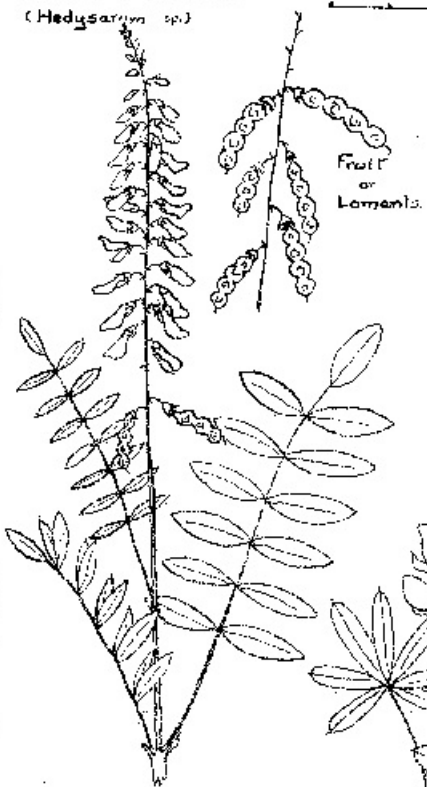
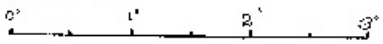
(1) R. acaulis

Central leaflet with pointed tip.

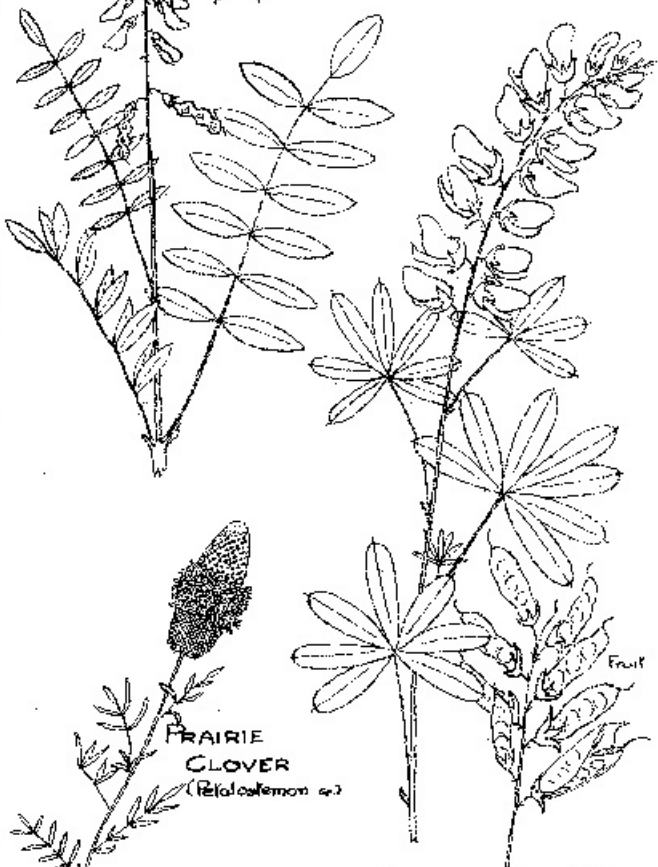
(4) R. pubescens

SWEET BROOM

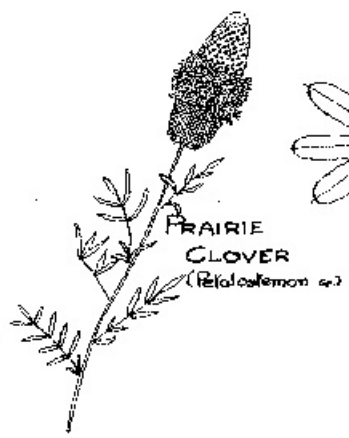
(*Hedysarum* sp.)



Fruit
or
Lomentis.



Fruit



**PRAIRIE
CLOVER**
(*Trifolium* sp.)

SILVERY LUPINE
(*Lupinus argenteus*)

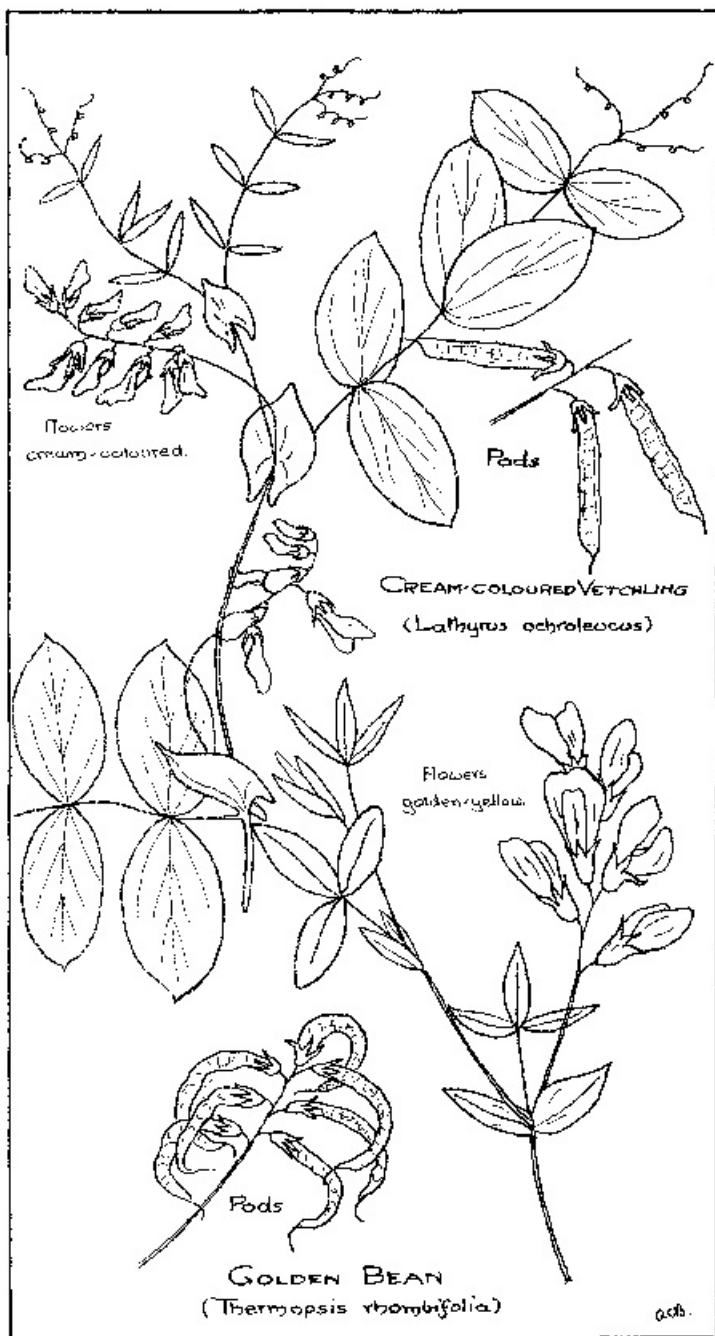
a.e.b.

SWEET BROOM (*Hedysarum* sp.)

Fruit or Lomants.

PRAIRIE CLOVER (*Petalostemon* sp.)

SILVERY LUPINE (*Lupinus argenteus*)



CREAM-COLOURED VETCHLING (*Lathyrus ochroleucus*)

Flowers cream-coloured.

Pods.

GOLDEN BEAN (*Thermopsis rhombifolia*)

Flowers golden-yellow.

Pods.

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(1) *Rubus acaulis* Michx.

STEMLESS RASPBERRY

A low, herbaceous, unarmed perennial from 3 to 10 inches high with pinnately divided leaves, with 3, broadly ovate leaflets from $\frac{3}{4}$ to $1\frac{1}{2}$ inches long. The flowers are usually borne singly and are pink in colour and the fruit red. Only found along the northern fringe of the area in bogs and meadows.

(2) *Rubus Chamaemorus* L.

CLOUDBERRY

An herbaceous perennial from 3 to 10 inches high with 2 or 3 stalked, round leaves from 1 to 3 inches across, and with from 5 to 9 rounded lobes. The flowers are borne singly, terminal, white, from $\frac{1}{2}$ to 1 inch across and the fruit reddish, turning golden yellow when ripe. Found in bogs and swamps in the northern parts of the area.

(3) *Rubus melanolasius* Focke

ROCKY MOUNTAIN RED RASPBERRY

A bush with biennial stems, growing from 2 to 3 feet high with purplish or yellowish stems, densely bristly with the new stems very glandular-bristly. The leaves are pinnately 3 to 5 foliate with ovate leaflets, light green above and white woolly beneath, from 1 to 3 inches long. The leaves of the flowering branches have only 3 leaflets and the flowers are white and from $\frac{1}{3}$ to $\frac{1}{2}$ inch across. The berries are red or purplish red. A mountain species which is occasionally found in the southwestern part of the area.

(4) *Rubus pubescens* Raf.

DEWBERRY

A trailing or climbing herbaceous plant with pinnate leaves, generally with 3 leaflets (rarely 5), ovate or rhombic from 1 to 4 inches long, sharply toothed and green on both sides. The flowers are borne in groups of 2 or 3 with white or pink petals and are from $\frac{1}{3}$ to $\frac{1}{2}$ inch across with reflexed

sepals. The fruit is a reddish purple and about $\frac{1}{2}$ inch across. Quite common in rich woods and bluffs of the park belt of the area and in the Cypress Hills.

(5) *Rubus strigosus* Michx.

WILD RED RASPBERRY

A large bush from 3 to 6 feet in height with brownish, more or less bristly stems, with pinnate leaves with 5 leaflets (the floral branches with 3 leaflets). The leaflets are ovate, the terminal one often being 3 lobed, from 2 to 4 inches long, dark green above and white woolly beneath. The new shoots are fairly bristly, but hardly ever glandular. The flowers are white, from $\frac{1}{3}$ to $\frac{1}{2}$ inch across and the fruit round, light red, about $\frac{3}{8}$ inch across. Probably the most common raspberry and found in shady, wooded places, on burnt over woodlands, bluffs, river banks, etc., throughout the entire area.

SORBUS (Rowan) genus. 1 species.

(1) *Sorbus scopulina* Greene

WESTERN MOUNTAIN ASH

A small tree from 3 to 12 feet high with pinnate leaves having from 11 to 13 elliptic-lanceolate leaflets, from 1 to 2½ inches long, bright green on both sides. The flowers are white and borne in dense terminal clusters, flowers from ¼ to ⅜ inch across, and the flower clusters up to 4 inches broad. The fruit is globose, red, about ⅓ inch across. Not by any means common but found in woodlands and ravines across the area, and in the Riding Mountains and the Cypress Hills.

SPIRAEA (Meadow-sweet) genus. 3 species.

Shrubs with simple leaves, no stipules. The flowers are perfect with 5 sepals and 5 petals and the fruit follicles opening along one side.

1. Inflorescence flat-topped.

(3) *S. lucida*

Inflorescence elongate, not flat-topped.

2.

2. Inflorescence hairy; leaves narrowly oblanceolate.

(1) *S. alba*

Inflorescence not hairy; leaves broadly obovate.

(2) *S. latifolia*

- (1) *Spiraea alba* Du Roi

NARROW-LEAVED MEADOW-SWEET

An erect shrub from 2 to 3 feet high with brown twigs and narrowly oblanceolate leaves, pointed at both ends, from 1¼ to 2½ inches long, sharply toothed and sometimes with fine hairs beneath on the veins. The flowers are small and white, the inflorescence being finely hairy in dense terminal panicles. Fairly common in moister parts of the prairie in the south-central and southeastern parts of the area.

- (2) *Spiraea latifolia* (Ait.) Borkh.

BROAD-LEAVED MEADOW-SWEET

A shrub from 1 to 6 feet high with broadly obovate leaves from 1 to 2 inches long, blunt or rounded at the apex. The inflorescence is not hairy, the flowers white in dense terminal panicles. Found in meadows and low places, but very rare in the area covered.

- (3) *Spiraea lucida* Dougl.

SHINING-LEAVED MEADOW-SWEET

A low shrub from 12 to 36 inches high, stems and branches erect, usually dying down to near the base annually. The leaves are from obovate to oval, on short stalks, shiny green above and paler below, from ¾ to 2½ inches long. The flowers are white, small, in a flat-topped panicle. This is really a mountain species, but is quite common in the Cypress Hills.

LEGUMINOSAE (Pea Family) 15 genera.

Shrubs or herbs with alternate, compound leaves with stipules. The flowers are perfect and irregular, having 5 more or less united sepals and 5 petals. The upper petal is larger than the others and termed the “standard”. The two side petals are termed the “wings” and the two lower ones are united and form what is termed the “keel”. The pistil and stamens are contained in the keel. The stamens are usually 10 in number, and are arranged in various manners, and their arrangement is one of the characters used in separating the genera of this large family. They can be entirely distinct and separate, or all joined in one group or in two groups of 9 and 1. The fruit is either a 1 or 2 compartmented pod (legume) or a pod constricted between each seed, (loment).

1. Shrubs.

[2.](#)

Herbs.

[3.](#)

2. Leaves odd pinnate; flowers with but one bluish petal; native plants.

[AMORPHA](#)

Leaves even pinnate, the terminal leaflet lacking; flowers with 5 yellow petals; introduced plants.

[CARAGANA](#)

3. Stamens or male organs separate from each other.

[THERMOPSIS](#)

Stamens joined by their stalks into 1 or 2 bundles.

[4.](#)

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4. Leaves even pinnate, the terminal leaflet replaced by a tendril.

[5.](#)

Leaves with no tendrils.

[6.](#)

5. Style slender, with a tuft of hairs at end.

[VICIA](#)

Style flat, with hairs down inner side.

[LATHYRUS](#)

6. Leaves glandular-dotted. 7.
Leaves not glandular-dotted. 9.
7. Leaves palmately divided. PSORALEA
Leaves pinnately divided. 8.
8. Stems mostly basal; flowers in dense cylindrical spikes; fruit small
and not covered with hooked prickles. PETALOSTEMON
Stems much branched; flowers in a raceme; fruit large and covered
with hooked prickles. GLYCYRRHIZA
9. Leaves palmately divided into 5 or more leaflets. LUPINUS
Leaves pinnate or with only 3 leaflets. 10.
10. Leaves with only 3 leaflets. 11.
Leaves with more than 3 leaflets, pinnate. 14.
11. Plants tufted; leaves all basal. ASTRAGALUS
Plants with definite stem. 12.
12. Flowers capitate, in dense, round or oval, terminal umbels. TRIFOLIUM
Flowers in spikes or racemes. 13.
13. Pods straight, leathery; style thread-like. MELILOTUS
Pods curved or coiled, membranous; style awl-shaped. MEDICAGO

14. Fruit constricted between each seed. (a loment)

[HEDYSARUM](#)

Fruit not constricted between each seed.

[15.](#)

15. Keel of corolla prolonged into a point.

[OXYTROPIS](#)

Keel of corolla not prolonged into a point.

[ASTRAGALUS](#)

AMORPHA (False indigo) genus. 3 species.

Shrubs with odd-pinnate leaves, the midrib projecting from end of leaflets, which are glandular-dotted. The flowers have the standard petal only, the others are missing. They are borne in long, narrow spikes. The fruit is a short, oblong, curved, 1 or 2 seeded pod.

1. Tall shrubs; leaflets 1 to 2 inches long; pod usually 2 seeded.

(2) *A. fruticosa*

Low shrubs; leaflets $\frac{1}{4}$ to $\frac{1}{2}$ inch long; pod 1-seeded.

2.

2. Flower spikes generally single; plant hairless.

(3) *A. nana*

Flower spikes generally clustered; plant finely hairy.

(1) *A. canescens*

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- (1) *Amorpha canescens* Pursh

LEAD PLANT

A bushy shrub, densely white hairy, from 1 to 3 feet high. The leaves are very dense, from 2 to 4 inches long with 21 to 51 leaflets, which are oval and each is from $\frac{1}{3}$ to $\frac{1}{2}$ inch long. The flowers are in dense, clustered spike-like racemes, from 2 to 6 inches long and are small, with a bluish-purple petal. The single seeded pods are about $\frac{1}{8}$ to $\frac{3}{16}$ inch long. Occasionally found on dry prairies in the southeastern part of the area.

- (2) *Amorpha fruticosa* L.

FALSE INDIGO

A fairly tall shrub, from 6 to 18 feet high, with stalked leaves 6 to 16 inches long, each with from 11 to 25 oval leaflets from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long. The spike-like racemes of flowers are either clustered or singly from 3 to 6 inches long, and the flowers have a violet-purple petal. Occasionally found on river banks in the extreme southeastern corner of the area.

- (3) *Amorpha nana* Nutt.

DWARF FALSE INDIGO

A low shrub usually less than 1 foot high, practically hairless with

numerous leaves from 1 to 3 inches long, each of which has 13 to 31 stiff, elliptic leaflets from $\frac{1}{4}$ to $\frac{1}{2}$ inch long. The spike-like racemes of flowers are borne singly and are from 1 to $2\frac{1}{2}$ inches long, the flowers being fragrant with a purplish petal. Quite common on moist prairie and waste places in the southeastern portion of the area.

ASTRAGALUS (Milk-vetch) genus. 21 species.

Perennial herbs with pinnate leaves (rarely only 3 leaflets) with perfect, irregular flowers which have a blunt keel. The 10 stamens are in a bundle of 9 and one single stamen. The flowers are in spikes or racemes and the fruit a pod, sometimes only one-celled and frequently appearing two-celled by reason of the ingrowth of one or both of the joints between the halves of the pods. This is a very large and somewhat puzzling genus, and in many cases positive identification is impossible without the mature fruit. Some species absorb selenium from soils where this element is present, and are then poisonous to cattle and sheep.

1. Low, tufted plants.

Plants not low, tufted.

[2.](#)

[7.](#)

2. Leaflets spine-tipped.

[\(11\)](#) *A. Kentrophyta*

Leaflets not spine-tipped.

[3.](#)

3. Flowers borne, without stalks, at base of leaf stalks on crown of plant.

[\(20\)](#) *A. triphyllus*

Plants with flower stalks.

[4.](#)

4. Leaves simple or with from 3 to 5 leaflets.

[\(5\)](#) *A. caespitosus*

Leaves pinnate with 7 or more leaflets.

[5.](#)

5. Flowers purple.

[\(13\)](#) *A. missouriensis*

Flowers yellow or cream-coloured.

[6.](#)

6. Plant densely woolly.

[\(15\)](#) *A. Purshii*

- Plant not densely woolly but silky-hairy. [\(12\)](#) *A. lotiflorus*
7. Plants prostrate. [8.](#)
Plants decumbent at base or erect. [11.](#)
8. Pods globular and fleshy. [9.](#)
Pods linear. [10.](#)
- [151](#)
9. Flowers cream or yellow with purple tinge. [\(18\)](#) *A. succulentus*
Flowers purple. [\(7\)](#) *A. caryocarpus*
10. Pods round in cross-section. [\(9\)](#) *A. flexuosus*
Pods flat in cross-section. [\(21\)](#) *A. vexilliflexus*
11. Plants decumbent at base. [12.](#)
Plants erect (*A. serotinus* sometimes decumbent) [15.](#)
12. Flowers yellow or cream-coloured. [\(14\)](#) *A. pectinatus*
Flowers purple. [13.](#)
13. Pods with appressed hairs. [\(17\)](#) *A. striatus*
Pods with spreading hairs. [14.](#)
14. Calyx black-hairy.

- (10) *A. goniatus*
- Calyx not black-hairy.
- (2) *A. agrestis*
15. Pods with two grooves on underside; pods and flowers crowded and somewhat reflexed.
- (4) *A. bisulcatus*
- Pods with one or no grooves on underside.
- 16.
16. Plant loosely long-woolly.
- (8) *A. Drummondii*
- Plant almost or quite hairless.
- 17.
17. Pods over 1 inch long, pendulous; flowers white.
- (3) *A. americanus*
- Pods not over $\frac{3}{4}$ inch long, not pendulous.
- 18.
18. Flowers in a dense thick spike, greenish-yellow; flowering stalks extending well beyond leaves.
- (6) *A. canadensis*
- Inflorescence a raceme.
- 19.
19. Flowers less than $\frac{1}{4}$ inch long, pale yellow or whitish, in a loose, spike-like raceme.
- (19) *A. tenellus*
- Flowers over $\frac{1}{4}$ inch long, whitish with a mauve or violet tinge, in somewhat elongated racemes.
- 20.
20. Fruit partly two-celled.
- (1) *A. aboriginum*
- Fruit entirely two-celled.
- (16) *A. serotinus*
- (1) *Astragalus aboriginum* Richards. INDIAN MILK-VETCH
(*Atelophragma aboriginum* (Richards.) Rydb.)

An erect, somewhat branched plant from 6 to 12 inches high, with fine appressed hairs, and 7 to 13 linear or oblong leaflets from $\frac{1}{2}$ to $\frac{7}{8}$ inch long. The flowers are white, tinged with violet, from $\frac{1}{3}$ to $\frac{1}{2}$ inch long in rather loose racemes on a stem slightly longer than the leaves. The pods are not hairy, slightly inflated, from $\frac{1}{2}$ to $\frac{3}{4}$ inch long. The roots are long and yellow and were used by the Indians for food. Occasionally found on hills throughout the southern part of the area but not common.

(2) *Astragalus agrestis* Dougl.

FIELD MILK-VETCH

A low plant with decumbent or sometimes ascending stems about 8 inches long, almost hairless. The leaflets are from $\frac{1}{4}$ to $\frac{7}{16}$ inch long and the flowers purple, from $\frac{7}{16}$ to $\frac{3}{4}$ inch long in a short, dense spike. The fruit is a hairy pod about $\frac{3}{8}$ inch long. Very similar to *A. goniatus* but the calyx is not black-hairy. Found in meadows in the southeastern part of the area but not common.

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(3) *Astragalus americanus* (Hook.) M. E. Jones
(*Phaca americana* (Hook.) Rydb.)

AMERICAN MILK-VETCH

A smooth, erect plant with seldom more than one stem, growing from 1 to 3 feet high. The leaves have from 7 to 17 oval or elliptic, fairly broad leaflets from $\frac{3}{4}$ to $1\frac{1}{2}$ inches long. The flowers are white, about $\frac{1}{2}$ inch long and borne in a short, loose raceme. The pods are about 1 inch long, membranous, somewhat inflated and are pendulous, smooth and shiny. Rather rare but found in moist places, along streams and in wet woods in the northern parts of the area and in the Cypress Hills.

(4) *Astragalus bisulcatus* (Hook.) A. Gray
(*Diholcos bisulcatus* (Hook.) Rydb.)

TWO-GROOVED MILK-VETCH

A stout, many stemmed, erect plant, growing from 1 to 3 feet in height and having a strong, distinctive odour. The leaves have from 17 to 27 elliptic leaflets from $\frac{3}{8}$ to 1 inch long, and the flowers are deep purple, about $\frac{1}{2}$ inch long and are borne in a long, dense raceme at the ends of long stems. The flowers and pods are usually somewhat reflexed (pointing downwards). The pods are from $\frac{1}{2}$ to $\frac{3}{4}$ inch long, linear, with 2 deep grooves along one side. Very common on prairie and in coulees throughout most of the southern part of the area. The heaviest stands occur on shallow soils covering shale outcrops. Depending on the selenium concentration in

the subsoil, this species contains varying amounts of that mineral which may cause selenium *poisoning* in cattle and sheep. It is also a host plant of the large blister-beetle which is so destructive to leguminous plants in the garden.

- (5) *Astragalus caespitosus* (Nutt.) A. Gray TUFTED MILK-VETCH
(*Homalobus caespitosus* Nutt.)

A small tufted plant from 2 to 6 inches high with some simple, linear leaves and some with from 3 to 5 linear leaflets, from $\frac{1}{4}$ to 2 inches long. The flowers are purple from $\frac{1}{3}$ to $\frac{1}{2}$ inch long, and borne in a short raceme of from 2 to 10 flowers on a stem from 1 to 3 inches high. The pods are narrowly oblong, about $\frac{3}{8}$ inch long. Found on dry hills and rocky hillsides in the southwestern part of the area, but very local.

- (6) *Astragalus canadensis* L. CANADIAN MILK-VETCH

An erect, fairly tall plant from 1 to 4 feet in height. The leaves bear from 15 to 31, elliptic or oval leaflets from 1 to $1\frac{1}{2}$ inches long, usually blunt at the apex. The flowering stems extend beyond the leaves and bear dense, thick spikes of greenish-yellow flowers about $\frac{1}{2}$ inch long. The pods are rather woody, oblong, from $\frac{3}{8}$ to $\frac{5}{8}$ inch long. Fairly common in moist, open spots throughout the entire area.

- (7) *Astragalus caryocarpus* Ker. LARGE-FRUITED GROUND PLUM
(*Geoprimum crassicaipum* (Nutt.) Rydb.)

A decumbent, mat-like plant, with prostrate stems from 4 to 18 inches long, the leaves bearing from 13 to 27 oblong leaflets, $\frac{1}{4}$ to $\frac{1}{2}$ inch long. The flowers are violet-purple from $\frac{1}{2}$ to $\frac{3}{4}$ inch long in a few-flowered raceme. The fruits are large, almost globular, fleshy red pods from $\frac{3}{4}$ to 1 inch across, and become very hard when dry, and difficult to split open. Fairly common on open prairie and hillsides in the southeast portion of the area, but apparently not found west of Manitoba.

- (8) *Astragalus Drummondii* Dougl. DRUMMOND'S MILK-VETCH
(*Tium Drummondii* (Dougl.) Rydb.)

An erect plant, loosely woolly-hairy, from 1 to 2 feet high, growing in

clumps. The leaves have from 19 to 33 oblong leaflets from $\frac{1}{2}$ to $\frac{3}{4}$ inch long, with soft hairiness above and almost smooth beneath. The flowers are about $\frac{3}{4}$ inch long in a raceme from 1 to 4 inches long and are yellowish-white with the keel sometimes tinged with purple. The pods are smooth and membranous, linear, from $\frac{3}{4}$ to 1 inch long. Found occasionally in hilly country in the southwestern portion of the area.

- (9) *Astragalus flexuosus* Dougl. SLENDER MILK-VETCH
(*Pisophaca flexuosa* (Dougl.) Rydb.)

A weak-stemmed, loosely spreading plant, usually trailing through the grass, with stems from 8 to 18 inches long. The leaves bear from 9 to 21, narrowly oblong leaflets, from $\frac{1}{4}$ to $\frac{1}{2}$ inch long. The flowers are purple from $\frac{1}{3}$ to $\frac{1}{2}$ inch long and borne in a loose raceme. The pods are narrow and linear from $\frac{3}{4}$ to 1 inch long and circular in cross-section. Very common on open prairie and edges of bluffs in the entire southern part of the area.

- (10) *Astragalus goniatus* Nutt. PURPLE MILK-VETCH
(*A. hypoglottis* Richards.)

A low-growing plant, either decumbent or somewhat erect, from 4 to 12 inches high, usually found in large patches. The leaves bear from 15 to 25 oblong leaflets, from $\frac{3}{16}$ to $\frac{3}{8}$ inches long. The flowers are purple (sometimes white), about $\frac{1}{2}$ inch long and borne in dense, short heads on a stem about 2 inches high. The pods are covered densely with fine, white hairs and are ovoid-oblong, about $\frac{3}{8}$ inch long. Very common on prairies, along roadsides, etc., throughout the entire area covered. They form large, showy patches in the early part of the season.

- (11) *Astragalus Kentrophyta* A. Gray PRICKLY MILK-VETCH
(*Kentrophyta montana* Nutt.)

A low, tufted, much branched plant, from 2 to 6 inches high, with spiny-tipped stipules and leaves with 5 to 7 stiff, linear, spiny-tipped leaflets, from $\frac{1}{4}$ to $\frac{1}{2}$ inch long. The flowers are yellowish-white with a pale bluish tinge from $\frac{1}{8}$ to $\frac{3}{16}$ inch long and borne in clumps of 1 to 4 in the axils of the leaves. The pods are ovoid oblong, about $\frac{1}{4}$ inch long and very short-stalked. Rare, but has been found on sand dunes and badlands in the southwestern part of the area.

(12) *Astragalus lotiflorus* Hook.

LOW MILK-VETCH

(*Batidophaca lotiflora* (Hook.) Rydb.)

A low tufted plant from 1 to 4 inches high, with almost all the stems arising from the root crown. The leaves are from 1½ to 4 inches long and bear from 7 to 15 oblong leaflets from $\frac{3}{16}$ to $\frac{1}{2}$ inch long. The flowers are yellow, about $\frac{5}{16}$ inch long and borne in short 4 to 12-flowered dense racemes at the end of the flowering stalk. The pods are oblong, from $\frac{1}{2}$ to $\frac{3}{4}$ inch long, and about $\frac{1}{4}$ inch wide and covered with fine white hairs. Not very abundant but occasionally found on dry hillsides in the southern part of the area.

(13) *Astragalus missouriensis* Nutt.

MISSOURI MILK-VETCH

(*Xylophacos missouriensis* (Nutt.) Rydb.)

A tufted, silky haired plant, from 2 to 6 inches high, branching from the base. The leaves bear from 7 to 21 elliptic leaflets, each $\frac{3}{16}$ to $\frac{5}{8}$ inch long and have greyish silky hairs. The flowers number from 5 to 15 and are purple in colour and borne in a short, loose raceme at the head of a flowering stem. The pods are oblong and about 1 inch long, with a coating of fine hairs. Very common along roadsides and on hillsides throughout the southwest portion of the area.

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(14) *Astragalus pectinatus* Dougl.

NARROW-LEAVED MILK-VETCH

(*Cnemidophacos pectinatus* (Dougl.) Rydb.)

An erect or semi-erect, much branched plant from 1 to 2 feet in height, with leaves bearing from 11 to 21 very narrow linear leaflets from $\frac{1}{2}$ to 3 inches long. The flowers are cream coloured from $\frac{3}{4}$ to 1 inch long, and borne in large loose racemes of from 5 to 20 flowers, and are very conspicuous. They flower early in the season, usually early in June. The pods are woody, oblong elliptical, from $\frac{1}{2}$ to $\frac{3}{4}$ inch long and circular in cross-section. This is a selenium indicator plant, and where found growing in dense stands indicates that vegetation within the immediate area may have a high selenium content. It is eaten only when no other fodder is available. It is also a host plant for the large blister beetle, so destructive to peas, beans and caragana in gardens and hedges. Very common on prairie and roadsides on lighter soil types throughout the southern part of the area. It is very drought tolerant as its coarse roots may penetrate 6 or more feet into

the soil to draw upon subsoil moisture supplies.

- (15) *Astragalus Purshii* Dougl. PURSH'S MILK-VETCH
(*Xylophacos Purshii* (Dougl.) Rydb.)

A low, tufted, very hairy plant, usually less than 2 inches high with leaves bearing from 9 to 15 oblong, silky haired leaflets, from $\frac{3}{8}$ to $\frac{5}{8}$ inch long. The flowers are borne in a short raceme and are cream-coloured with a purple-tipped keel and are from $\frac{3}{4}$ to 1 inch in length. The pods are ovoid and densely white-woolly, from $\frac{1}{2}$ to $\frac{3}{4}$ inch long. Found sparingly on dry plains and hills in the southwestern portion.

- (16) *Astragalus serotinus* A. Gray TIMBER MILK-VETCH
(*Homalobus serotinus* (A. Gray) Rydb.)

A species with thin stems, which are decumbent at the base, from 4 to 16 inches high. The leaves are from 3 to 6 inches long, and bear from 9 to 21 linear or linear-lanceolate leaflets from $\frac{3}{8}$ to 1 inch long, and rather distantly spaced on the main stem. The flowers are small, whitish or mauve in colour with a purple-tipped keel, and are about $\frac{1}{4}$ to $\frac{3}{8}$ inch long, and borne in an elongated, loose raceme. The pods are linear-oblong, from $\frac{1}{2}$ to $\frac{3}{4}$ inch long. This is a species very *poisonous* to milking cows and ewes in British Columbia, and although a mountain species it has been found in the Foothill areas of Alberta west of Calgary. It is a very palatable plant, despite its poisonous properties.

- (17) *Astragalus striatus* Nutt. ASCENDING PURPLE MILK-VETCH
(*A. adsurgens* Hook.)

Either erect or decumbent, from 4 to 18 inches high with rather straggling stems. The leaves have from 15 to 25 oval or linear-oblong leaflets from $\frac{2}{3}$ to 1 inch long, and the flowers are purplish, from $\frac{1}{2}$ to $\frac{2}{3}$ inch long, borne in a dense, short spike at the end of a long stem. The pods are deeply grooved along the back and are from $\frac{1}{3}$ to $\frac{1}{2}$ inch long. Very common on dry prairie, and coulees, road sides, etc., throughout the entire southern part.

- (18) *Astragalus succulentus* Richards. SUCCULENT GROUND PLUM
(*Geoprimum succulentum* (Richards.) Rydb.)

A spreading, prostrate plant, forming mats up to 2 feet across with many leaves, bearing from 17 to 25 elliptic leaflets from $\frac{1}{4}$ to $\frac{1}{2}$ inch long. The flowers are creamy white with a purple tinged keel and are from $\frac{1}{2}$ to $\frac{3}{4}$ inch long and borne in a loose raceme. The fruit is round and fleshy, from $\frac{1}{2}$ to $\frac{3}{4}$ inch across, red in colour, but becoming brown and very hard when dry. Occasionally found on dry prairie throughout the southwest. It is very palatable to cattle.

- (19) *Astragalus tenellus* Pursh LOOSE-FLOWERED MILK-VETCH
(*Homalobus tenellus* (Pursh) Britt.)

Erect, spreading, slender stemmed, very branched species from 10 to 18 inches high, the leaves bearing from 9 to 23 linear or oblong leaflets from $\frac{1}{4}$ to $\frac{1}{2}$ inch long. The flowers are yellowish-white or greenish-white, about $\frac{1}{4}$ inch long and borne in loose, spike-like racemes. The pods are papery, oblong, about $\frac{1}{2}$ inch long. Fairly common on prairie and roadsides throughout the southwest.

- (20) *Astragalus triphyllus* Pursh CUSHION MILK-VETCH
(*Orophaca caespitosa* (Nutt.) Britt.)

A low, cushion-like, early flowering species from 2 to 4 inches high, densely covered with silvery hairy, trifoliate leaves with elliptic leaflets from $\frac{1}{2}$ to $\frac{3}{4}$ inch long. The flowers are cream-coloured, occasionally with a purplish tinged keel, stalkless and are from $\frac{1}{2}$ to $\frac{3}{4}$ inch long, and borne at the base of the leaf stems or in the axils of the leaves. The pods are ovoid, silvery hairy, about $\frac{1}{4}$ inch long and enclosed by the calyx. Flowers early in the season, and is fairly common on dry hillsides and eroded hill tops in the southwestern parts of the area covered.

- (21) *Astragalus vexilliflexus* Sheld. FEW-FLOWERED MILK-VETCH
(*Homalobus vexilliflexus* (Sheld.) Rydb.)

A mat-like, dwarf plant from 4 to 8 inches high from a woody rootstock. The leaves bear from 7 to 11 oblong leaflets from $\frac{3}{16}$ to $\frac{5}{8}$ inch long and the purplish flowers are borne in a 2 to 5 flowered, small raceme. The flowers are small, about $\frac{1}{4}$ inch long. The pod is linear, silky haired, about $\frac{5}{16}$ inch long. Not common but found on hillsides in the extreme southwest corner of the area.

CARAGANA (Siberian Pea-tree) genus. 1 species.

(1) *Caragana arborescens* Lam.

COMMON CARAGANA

A bush growing to a height of 10 or 12 feet with even-pinnate leaves bearing from 8 to 12 pale green leaflets, $\frac{1}{2}$ to 1 inch long, and the leaf stem ending in a short spine. The flowers are bright yellow, from $\frac{5}{8}$ to 1 inch long, and are followed by the dark brown linear pods from $1\frac{1}{2}$ to 2 inches long. Introduced as a hedge and ornamental plant from Siberia and has become established in many places.

GLYCYRRHIZA (Wild Licorice) genus. 1 species.

(1) *Glycyrrhiza lepidota* (Nutt.) Pursh

WILD LICORICE

A coarse, erect, branching plant, from 1 to 3 feet high, from a thick, sweet tasting rootstock that has a slight licorice flavour. The leaves bear from 11 to 19 lanceolate or oblong leaflets, pale green, glandular-dotted, from $\frac{3}{4}$ to $1\frac{1}{4}$ inches long, and pointed at either end. The flowers are yellowish-white, about $\frac{1}{2}$ inch long and borne in a rather dense raceme from 1 to 2 inches long, arising from the axils of the leaves. The fruit is an oblong, reddish-brown pod, about $\frac{1}{2}$ inch long, densely covered with long, hooked prickles and containing several large seeds. Found in low spots on the prairie, slough margins, river banks and coulees throughout the entire area. Very common in the southern portion but becoming scarcer towards the north. The rootstocks were chewed by the Indians. Palatable in hay but is seldom grazed.

HEDYSARUM (Sweet Broom) genus. 5 species.

Perennial herbs with pinnate leaves; the flowers usually reflexed in long, spike-like racemes, and the pods flat and jointed or constricted between the seeds. The plants make good forage.

1. Calyx teeth very unequal, the upper nearly triangular, shorter than the calyx tube; veins of leaflets conspicuous.

2.

Calyx teeth nearly equal, linear, about as long as the calyx tube; veins of leaves not conspicuous.

3.

2. Flowers violet or pale pink.

(1) *H. alpinum*

Flowers sulphur-yellow.

(5) *H. sulphurescens*

3. Inflorescence congested; stems usually not branched above; plants 4 to 14 inches high; stipules whitish and semi-transparent; enlargements of pods—4 to 8.

(4) *H. Mackenzii*

Inflorescence elongated; stems branched above, 8 to 24 inches high; stipules dark brown; enlargements of pods—2 to 5.

4.

4. Leaflets smooth or only slightly hairy above; pods not deeply wrinkled.

(2) *H. boreale*

Leaflets and stems finely silvery hairy; pods deeply wrinkled.

(3) *H. boreale* var. *cinerascens*

(1) *Hedysarum alpinum* L. var. *americanum* Michx.

(*H. americanum* (Michx.) Britt.)

AMERICAN HEDYSARUM

An erect-growing plant from 6 inches to 2½ feet high, usually with few branches. The leaves bear from 11 to 21 oblong leaflets from ½ to 1¼ inches long. The flowers are borne on a long raceme and are pinkish or violet in colour, from ½ to ⅝ inch long and usually reflexed or pointing

downwards. The pods generally have from 3 to 5 internodes or enlargements and are quite hairless except perhaps on the margins. Very common in semi-open prairie and open woods, especially in the north central portions and in the Cypress Hills. This is the most common of the genus in the area covered, and is readily eaten by livestock. A variety with hairy pods has been found in the southwestern part of the area.

(2) *Hedysarum boreale* Nutt.

NORTHERN HEDYSARUM

Somewhat similar to the preceding species but the lobes of the calyx are longer and very narrow and the veins on the leaflets are not distinct. The leaflets are almost smooth and the flowers are reddish-purple and somewhat reflexed. The pods are not very deeply wrinkled. Found in the extreme southwestern part in woodlands and bluffs.

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(3) *Hedysarum boreale* Nutt. var. *cinerascens* (Rydb.) Rollins.

(*H. cinerascens* Rydb.)

SILVERY HEDYSARUM

An erect or semi-decumbent plant from 12 to 20 inches high, the leaves bearing from 9 to 15 oblong or broadly linear leaflets from $\frac{3}{8}$ to $\frac{3}{4}$ inch long, covered with fine, silky, smooth, silvery hairiness. The flowers are purplish in colour and very conspicuous, about $\frac{1}{2}$ to $\frac{5}{8}$ inch long. The pods are very deeply wrinkled on the 3 or 4 internodes. Fairly abundant on dry hills and roadsides in some localities of the south-central and southwestern portions of the area.

(4) *Hedysarum Mackenzii* Richards.

MACKENZIE'S HEDYSARUM

An erect, little branched species growing from 8 to 16 inches high with leaves bearing 7 to 15 elliptic leaflets from $\frac{3}{8}$ to 1 inch long, often with fine greyish hairs beneath. The flowers are rather larger than the more common species, being about $\frac{3}{4}$ inch long and rose purple in colour and borne in a short, dense raceme. Rather rare, but is occasionally found in meadow lands throughout the area.

(5) *Hedysarum sulphurescens* Rydb.

YELLOW HEDYSARUM

An erect-growing species from 12 to 20 inches high, the leaves bearing 11 to 15 oblong to oval leaflets from $\frac{3}{8}$ to $1\frac{1}{2}$ inches long. The flowers are

from $\frac{1}{2}$ to $\frac{5}{8}$ inch long, sulphur yellow in colour and borne in a long, loosely flowered raceme. This is a species readily distinguished by the flower colour and, though generally a plant of the mountain woods, it is frequently found in the Foothill regions and in the Milk River ridge in southwestern Alberta.

LATHYRUS (Vetchling) genus. 3 species.

Perennial twining vines, dying to the ground each year, and bearing pinnate leaves with a tendril taking the place of the terminal leaflet. The flowers are perfect with the stamens in a bundle of 9 and 1 separate stamen. The style, or female organ, is hairy along its inner side, and somewhat flattened, distinguishing this genus from the *Vicia* or true vetches, which have merely a tuft of hairs at the end of an unflattened style. The pods are somewhat flattened and contain several seeds. The Vetchlings or Peavines are very palatable and form a valuable native fodder in many localities. They are grazed out readily but make good growth again when protected from livestock.

1. Flowers cream or yellow.

(1) *L. ochroleucus*

Flowers purple.

2.

2. Leaflets linear or linear-lanceolate, 2 to 4 pairs per leaf; flowers 2 to 8 in each raceme.

(2) *L. palustris*

Leaflets broadly oval, 4 to 6 pairs per leaf; flowers 8 to 20 in each raceme.

(3) *L. venosus*

- (1) *Lathyrus ochroleucus* Hook.

CREAM-COLOURED VETCHLING

A slender, smooth climber up to 3 feet long, with a somewhat angled stem. The stipules are large and almost cordate. There are from 6 to 10 broad, oval leaflets on each leaf, from 1 to 2 inches long. The flowers are cream-coloured, about $\frac{5}{8}$ inch long and borne in racemes of from 5 to 10 flowers. The pods are about $1\frac{1}{2}$ inches long. Very common in bluffs, open woodlands and amongst bushes throughout the entire area.

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- (2) *Lathyrus palustris* L.

MARSH VETCHLING

A smooth climber from 1 to 3 feet long with a somewhat winged stem and leaves bearing from 4 to 8 linear or linear-oblong leaflets from $\frac{1}{2}$ to $2\frac{1}{2}$ inches long. The stipules are small and almost linear. The flowers are

purple, about $\frac{1}{2}$ inch long and borne 2 to 8 in each raceme. The pods are from $1\frac{1}{2}$ to 2 inches long. Fairly common in the northern and eastern parts of the area, in moist places and damp woodlands.

(3) *Lathyrus venosus* Muhl.

WILD PEA-VINE

A climbing plant from 2 to 3 feet in length, sometimes somewhat finely hairy. The stems are strongly 4-angled, and the leaves bear from 8 to 12, oblong-ovate, blunt-tipped leaflets, from 1 to 2 inches long. The purple flowers are from $\frac{1}{2}$ to $\frac{5}{8}$ inch long and borne from 12 to 20 in each raceme. The pods are from $1\frac{1}{2}$ to 2 inches long and are veiny. Very common around bushes and woodlands, especially in the northern and eastern areas. This is the wild pea-vine that was such a valuable source of forage and hay in the earlier days of settlement of the northern bushy lands.

LUPINUS (Lupine) genus. 5 species.

Annual or perennial showy herbs with alternate, palmate leaves, each bearing from 5 to 12 leaflets. The flowers are perfect and borne in terminal racemes. The ten stamens are united into one bundle with the anthers alternately elongated and short. The pods are flattened with two cells and contain from one to six seeds. Some species of lupines are poisonous to stock, particularly to sheep, and the seed pods are apparently the most dangerous part of the plants.

1. Annuals; low growing plants, branching near the base; loosely hairy; (4) L. pusillus
Perennials; tall growing and erect. 2.

2. Plants with spreading stem hairs. (5) L. sericeus
Plants with appressed stem hairs. 3.

3. Plants green and thinly silky. (1) L. argenteus
Plants gray or whitish; densely silky. 4.

4. Floral bracts awl-shaped, longer than the flower buds. (2) L. flexuosus
Floral bracts lanceolate, not longer than the flower buds. (3) L. leucopsis

(1) *Lupinus argenteus* Pursh

SILVERY LUPINE

A rather shrubby, much branched herb growing from 1 to 2 feet in height, the stems covered with appressed silky hairs. The leaves bear from 6 to 9 narrowly oblanceolate leaflets from $\frac{3}{4}$ to 2 inches long, sometimes silvery hairy and sometimes smooth above. The flowers vary from light violet or purplish to almost white, and are borne in long terminal racemes. The pods are densely silky-hairy, from $\frac{3}{4}$ to 1 inch long and contain up to 5 seeds. Very plentiful in the Foothills Region, on the Cypress Hills, and to a certain extent on submontane prairie throughout the southwestern part of the area.

(2) *Lupinus flexuosus* Lindl.

FLEXILE LUPINE

A branching plant from 18 inches to 2½ feet high with greyish, appressed silky hairs. The leaves bear from 6 to 10 narrowly oblanceolate leaflets from 1 to 2 inches long, densely appressed silky-hairy on both sides.

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The dark blue flowers are borne in dense terminal spikes, and the densely white-hairy pods are from ¾ to 1¼ inches long, containing from 2 to 5 seeds. A very showy species which is occasionally found in the Foothills Region and in the extreme southwest corner of the area.

(3) *Lupinus leucopsis* Argardh

BIG BEND LUPINE

A branching species from 1 to 2 feet in height, with appressed silky or hoary hairiness. The leaves bear from 5 to 12 oblanceolate leaflets, from ¾ to 1½ inches long, densely hoary-haired on both sides. Fairly common in the southern Foothill regions and in the extreme southwestern portion of the area.

(4) *Lupinus pusillus* Pursh

SMALL LUPINE

A low-growing annual plant from 4 to 8 inches high with decumbent branches and very hairy. The leaves generally bear 5 oblong leaflets, smooth above but with long hairs beneath, usually rounded at the ends and from ¾ to 1¼ inches long. The flowers are tinged with purple or rose and are sometimes almost white, and are borne in short, dense racemes on very short stalks. The pods are about ¾ inch long with 1 or 2 seeds and are constricted somewhat between the seeds. Found locally in sandhills and among sand dunes, but not by any means common.

(5) *Lupinus sericeus* Pursh

PURSH'S SILKY LUPINE

A plant growing from 18 inches to 2 feet in height, with a few slender, ascending branches, the stems densely covered with spreading hairs. The leaflets, which number from 5 to 10 per leaf, are from ¾ to 2 inches long, narrowly oblanceolate and densely hairy on both sides. The flowers are borne in loose terminal racemes and are dark blue in colour. Quite rare, but has been found in the extreme southwestern corner of Alberta.

MEDICAGO (Medick) genus. 3 species.

Annual or perennial plants, not native to the prairie, with trifoliolate leaves, toothed only beyond the centre and perfect flowers borne in racemes or spikes. The stamens are in a bundle of 9 and 1 single stamen. The pods are curved or spirally twisted.

1. Annuals; corolla yellow, very small; pods merely curved.

(2) *M. lupulina*

Perennials; corollas blue or yellow; pods spirally coiled or curved.

2.

2. Corollas violet or blue; pods spirally curled.

(3) *M. sativa*

Corollas yellow; pods merely curved.

(1) *M. falcata*

- (1) *Medicago falcata* L.

YELLOW LUCERNE

An introduced perennial, growing from 12 to 20 inches high, with linear leaflets from $\frac{1}{2}$ to 1 inch long. The flowers are yellow, about $\frac{1}{4}$ inch long, borne in a short, fairly dense raceme. The pods are more or less curved. Introduced from Europe as a fodder plant and now found along roadsides and waste places in many localities.

- (2) *Medicago lupulina* L.

BLACK MEDIC

A prostrate branched annual weed, growing from 4 to 24 inches across with trifoliolate leaves. The leaflets are obovate, toothed above the middle and from $\frac{1}{8}$ to $\frac{1}{2}$ inch long. The flowers are yellow, about $\frac{1}{8}$ inch long and are borne in a dense head-like, short raceme less than $\frac{3}{8}$ inch long. The pods are small and black, containing a single seed. Occasionally found as a weed in waste places but not common.

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- (3) *Medicago sativa* L.

ALFALFA

A fairly erect perennial from 12 inches to 3 feet high, much branched with trifoliolate leaves. The leaflets are from $\frac{3}{8}$ to $1\frac{1}{4}$ inches long, obovate and sharply toothed towards the apex. The flowers are from $\frac{1}{4}$ to $\frac{3}{8}$ inch long, purple, blue or mauve, and borne in a dense, oblong raceme from $\frac{1}{2}$ to 2

inches long. The pods are hairy and twisted into 2 or 3 spiral turns. Introduced as a fodder crop from Europe and now very common along roadsides and waste places throughout most of the area.

MELILOTUS (Sweet clover) genus. 2 species.

Annual or biennial introduced legumes with trifoliate leaves, the leaflets toothed almost to the base. The flowers are perfect, small and in elongate, spike-like racemes. The pods are short, thick and straight with one or few seeds. These plants are excellent for honey production and are much used as pasture for stock, but have become very common roadside weeds.

1. Flowers white; standard slightly longer than wing petals.

(1) *M. alba*

Flowers yellow; standard about equalling wing petals.

(2) *M. officinalis*

(1) *Melilotus alba* Desv.

WHITE SWEET CLOVER

An erect plant from 2 to 6 feet high with palmately or pinnately trifoliate leaves, the leaflets being from $\frac{1}{2}$ to 1 inch long, toothed almost to the base.

The flowers are white, about $\frac{3}{16}$ inches long and borne in long, narrow, spike-like racemes. Common along roadsides and waste places throughout the entire area. Introduced as a forage plant from Europe and Asia.

(2) *Melilotus officinalis* (L.) Lam.

YELLOW SWEET CLOVER

A plant very similar to the preceding species but leaflets somewhat narrower and the flowers yellow. Introduced as a forage plant and very common along roadsides and in waste places throughout the area.

OXYTROPIS (Loco-weed) genus. 9 species.

Perennial herbs, generally with no apparent stem (exception *O. deflexa*), with odd pinnate leaves and perfect flowers borne in a spike or a raceme. The stamens are in a bundle of 9 and 1 separate stamen, and the keel of the flower is extended to a protruding point, distinguishing this genus from the *Astragalus* genus. Several species of this genus are *poisonous* to livestock, causing the well known “loco” disease which affects the nervous system.

1. Stems well developed, leafy; pods pendulous or reflexed.

(2) *O. deflexa*

No apparent stems; flowering stalks growing from crown of plants;
pods not reflexed or pendulous.

3.

2. Leaflets in whorls; flowers purple; plant woolly.

(7a) *O. splendens*

Leaves pinnate, leaflets opposite.

3.

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3. Flowers purple, rarely white.

4.

Flowers yellow or cream-coloured, only the keel tipped with purple.

5.

4. Leaves white-silky beneath; flowers about $\frac{5}{8}$ inch long.

(1) *O. albertina*

Leaves green-silky on both sides; flowers $\frac{5}{8}$ to $\frac{3}{4}$ inch long.

(5) *O. Lambertii*

5. Plants more or less sticky, especially the calyx; calyx and pod black-hairy.

(9) *O. viscidulous*

Plants not sticky.

6.

6. Whole plant, including pod, covered with long, loose hairs, pod not black-hairy.

(8) *O. villosa*

Plant, including pod, covered with short, appressed hairs.

7.

7. Flowers $\frac{5}{8}$ to $\frac{3}{4}$ inch long; early flowering.

(6) *O. Macounii*

Flowers less than $\frac{5}{8}$ inch long.

8.

8. Calyx and pod white-hairy.

(4) *O. gracilis*

Calyx and pod with mixed black and white hairs.

(3) *O. glabrata*

(1) *Oxytropis albertina* (Greene) Rydb.

ALBERTA LOCO-WEED

A stemless plant, the leaves bearing from 15 to 29 lanceolate leaflets, broadest near the base, from $\frac{1}{2}$ to $\frac{3}{4}$ inches long, and slightly silky and light green above but densely white-silky beneath. The flowers are about $\frac{5}{8}$ inch long, white below and sky blue at the end. The pods are erect, ovoid, thin and partly 2-celled. Found in rocky places through the east and central parts of the area but very rare.

(2) *Oxytropis deflexa* (Pall.) DC.

REFLEXED LOCO-WEED

A plant from 4 to 16 inches high with branched stems, and leaves with from 25 to 41 lanceolate, green, loosely hairy leaflets from $\frac{1}{4}$ to $\frac{3}{4}$ inch long. The raceme of flowers is loose and the blossoms are a whitish colour, tipped with blue, from $\frac{1}{4}$ to $\frac{3}{8}$ inch long. The racemes lengthen considerably in fruit and the pods are reflexed or pendant about $\frac{5}{8}$ inch long. Fairly common in moist and shady places throughout the entire area.

(3) *Oxytropis glabrata* (Hook.) A. Nels.

GLABRATE LOCO-WEED

A stemless plant with leaves erect and from 3 to 4 inches long, bearing from 13 to 25 elliptic leaflets from $\frac{1}{4}$ to 1 inch long, silky hairy on both sides. The flowering stem is from 6 to 10 inches high and bears from 10 to 15 pale yellow or cream-coloured flowers from $\frac{3}{8}$ to $\frac{5}{8}$ inches long. The pods are about $\frac{3}{4}$ inch long and black-hairy. Listed as a sub-arctic species but seems to be fairly abundant in open places throughout the area, but perhaps is confused with the next species which is very similar.

(4) *Oxytropis gracilis* (A. Nels.) K. Schum. LATE YELLOW LOCO-WEED

A plant with erect leaves bearing 21 to 31 oblong-lanceolate leaflets from $\frac{3}{8}$ to 1 inch long, appressed silky-haired. The flowering stems are from 8 to 16 inches high and the flowers are cream-coloured, about $\frac{1}{2}$ inch long. The pods are about $\frac{5}{8}$ inch long, white-hairy. Fairly plentiful on hills and prairie and open woodlands in many parts of the area where conditions are not too dry.

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(5) *Oxytropis Lambertii* Pursh PURPLE LOCO-WEED

A stemless plant growing to a height of from 6 to 14 inches, usually in clumps. The whole plant is covered with fine silky appressed hairs. The leaves are from 4 to 9 inches long and bear from 9 to 19 narrowly lanceolate leaflets from $\frac{1}{2}$ to $\frac{3}{4}$ inch long. The flowers are generally a dark bluish purple but can also be yellow or yellowish-white. The pod is erect, ovoid cylindric, almost divided into 2 cells and densely hairy, from $\frac{1}{2}$ to 1 inch long. Occasionally found in the south-central portion of the area but rare.

(6) *Oxytropis Macounii* (Greene) Rydb. EARLY YELLOW LOCO-WEED

A low growing, early flowering species with leaves bearing from 7 to 21 oval leaflets, from $\frac{1}{2}$ to 1 inch long, with silky or short hairs. The flowers are from $\frac{5}{8}$ to $\frac{3}{4}$ inch long, longer than the other yellow locos, and are yellow. The pods are oblong, about $\frac{3}{4}$ inch long and short-hairy, often with some black hairs amongst the white ones. This is an early flowering species, often found blooming in May, and is very common on dry hillsides and open prairie throughout the southwestern part of the area. This loco is very *dangerous* to livestock.

(7a) *Oxytropis splendens* Dougl. SHOWY LOCO-WEED

A densely white, long silky haired plant, growing in clumps, from 6 to 12 inches high. The leaves bear many elliptic or oval leaflets from $\frac{1}{4}$ to 1 inch long, borne in whorls around the leaf stem. The flowers are from $\frac{1}{2}$ to $\frac{5}{8}$ inch long, dark blue and borne in dense hairy spikes on a stem longer than the leaves. The pods are erect, almost 2-celled and very hairy. This showy plant is fairly common in the central portion of the area on prairie and hills,

but towards the west is replaced by the variety, described in following section.

(7b) *Oxytropis splendens* Dougl. var. *Richardsonii* Hook.

WOOLLY LOCO-WEED

This variety differs from the species in the type of hairiness it exhibits. The hairs are appressed (lying flat) and silky, whereas the type has long soft spreading hairs. The flowers are dark purple, and the leaflets are lanceolate. This variety is very common in the extreme southwest part of the area, decreasing in abundance towards the east.

(8) *Oxytropis villosa* (Rydb.) K. Schum.

HAIRY YELLOW LOCO-WEED

A rather low-growing species. The whole plant is densely but rather loosely silky, with the leaves bearing from 25 to 31 lanceolate leaflets, from $\frac{3}{8}$ to $\frac{5}{8}$ inches long. The flowering stalk is about 6 inches high with a short, dense spike of cream-coloured flowers from $\frac{1}{2}$ to $\frac{5}{8}$ inches long. The pods are thin, 2-celled, white-silky, about $\frac{5}{8}$ inches long. A southern species which is sometimes but rarely found in the area.

(9) *Oxytropis viscidulous* Rydb.

VISCID LOCO-WEED

A low, spreading plant growing from very coarse woody roots. It has long whitish hairs at the base of the plant. The whole plant is somewhat sticky with small resinous glands. The leaves bear from 17 to 31 oblong leaflets, varying from $\frac{3}{16}$ to $\frac{3}{8}$ inches long. The flowers are borne in the numerous flowering stalks which are from 4 to 8 inches high and are bluish-purple with a yellowish base, about $\frac{1}{2}$ inch long in rather crowded racemes. The pods are from $\frac{3}{8}$ to $\frac{5}{8}$ inch long and finely black-hairy. Not common, but occasionally found on hillsides and river banks along the southern border of the southwestern area.

PETALOSTEMON (Prairie-clover) genus. 4 species.

Rather low-growing, often prostrate perennial plants, with odd pinnate, glandular dotted leaves. The flowers are perfect and borne in dense spikes at the head of the flowering stalks. There are 5 stamens united into one bundle. The fruit are short pods containing one or two seeds. Many authorities call this genus *Petalostemum* but either spelling is acceptable.

1. Flowers white; calyx tube smooth.

[2.](#)

Flowers rose or purple; calyx hairy.

[3.](#)

2. Bracts below flowers longer than the buds; spikes of flowers dense and cylindrical; stem little branched.

[\(1\)](#) *P. candidus*

Bracts shorter than the buds; spikes oblong and somewhat loose; stem much branched.

[\(2\)](#) *P. oligophyllus*

3. Leaflets linear or nearly so and usually 3 to 7 to each leaf; flower spikes up to 2 inches long.

[\(3\)](#) *P. purpureus*

Leaflets oblong, silky-hairy; 7 to 17 to each leaf; flower spikes up to 4 inches long.

[\(4\)](#) *P. villosus*

(1) *Petalostemon candidus* (Willd.) Michx.

WHITE PRAIRIE-CLOVER

A plant from 8 to 18 inches high with stems usually erect, the leaves bearing from 7 to 9 linear-oblong leaflets from $\frac{3}{8}$ to $1\frac{1}{4}$ inches long. The flowers are borne in a compact spike from $\frac{3}{4}$ to 3 inches long. They are white and a little under $\frac{1}{4}$ inch in length. Quite common on dry prairie and hillsides throughout the entire southern part of the area. Sometimes called *Petalostemum candidum*.

(2) *Petalostemon oligophyllus* (Torr.) Rydb.

SLENDER WHITE PRAIRIE-CLOVER

This species, which has recently been called *Petalostemum occidentale*

(Gray) Fern, is very similar in appearance to the preceding species but more often decumbent and much branched. The leaves bear from 5 to 9 linear leaflets, usually not over $\frac{7}{8}$ inches long. The oblong flowering spike is from $\frac{3}{4}$ to 3 inches long and becomes more cylindric and looser with maturity. Not very common but is found on prairies, hillsides and ravine banks towards the southwestern corner of the area.

(3) *Petalostemon purpureus* (Vent.) Rydb. PURPLE PRAIRIE-CLOVER

A several-stemmed plant, erect or decumbent, from 4 to 24 inches high, but usually prostrate. The leaves bear from 3 to 7 linear leaflets from $\frac{1}{4}$ to $\frac{3}{4}$ inch long, sparingly hairy or glabrous. The flower spikes are dense and cylindric, from $\frac{1}{2}$ to 2 inches long, with red or purple flowers. Very common on hillsides, dry banks and prairie throughout the entire southwestern area. A densely hairy form, forma *pubescens* (Gray) Fassett is sometimes found in the southwest.

(4) *Petalostemon villosus* Nutt. HAIRY PRAIRIE-CLOVER

A densely hairy plant from 1 to 2 feet in height, branching from the base, the leaves bearing from 7 to 17 closely packed leaflets, from $\frac{1}{4}$ to $\frac{1}{2}$ inch long and covered with silky hairs. The flower spikes are either single or clustered, from 1 to 4 inches long and the flowers are reddish-purple or pink. Found occasionally in the sandhills of the southeastern and south-central portion of the area.

PSORALEA (Bread-root) genus. 4 species.

A genus of perennial herbs with glandular-dotted foliage and leaves. The leaves are palmately compound with from 3 to 7 leaflets. The flowers are in spikes or racemes, perfect, with stamens in one or 2 bundles. The pods are ovoid, short, 1-seeded and do not split open at maturity, or open very irregularly. The roots of these plants were used by the Indians for food, especially those of *P. esculenta*.

1. Plants with tuberous roots, and the flowers in a short, dense spike.

(2) *P. esculenta*

Plants without tuberous roots, and flowers either in racemes or short, interrupted spikes.

2.

2. Flowers in few-flowered, interrupted spikes; leaves silvery.

(1) *P. argophylla*

Flowers with short stalks, in racemes.

3.

3. Flowers white, the keel tipped with purple, in dense, short raceme; pods globose.

(3) *P. lanceolata*

Flowers light blue, in slender, elongated raceme; pods ovoid.

(4) *P. tenuiflora*

- (1) *Psoralea argophylla* Pursh
(*Psoralidium argophyllum* (Pursh) Rydb.)

SILVER-LEAF PSORALEA

An erect, much branched plant from 1 to 2 feet high with silvery-whitish hairiness throughout. The leaves bear from 3 to 5 obovate, silvery-haired leaflets, from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long. The flowers are borne on interrupted spikes in clusters of 2 or 4. They are about $\frac{1}{4}$ inch long and a blue colour, which fades during the drying process. Quite common on prairie land, especially in somewhat favoured locations, and found throughout the southern portion of the area. The roots were used as food by the Indians.

- (2) *Psoralea esculenta* Pursh
(*Pediomelum esculentum* (Pursh) Rydb.)

INDIAN BREAD-ROOT

THERMOPSIS (Golden-bean) genus. 1 species.

(1) *Thermopsis rhombifolia* (Nutt.) Richards.

GOLDEN BEAN

An erect, branched perennial from 6 to 20 inches high, usually growing in large patches from running rootstocks. The leaves bear 3 obovate leaflets from $\frac{3}{4}$ to $1\frac{1}{4}$ inches long, with appressed silky, grey hairiness. The stipules at the junction of the stem and leaf-stalks are large and leaf-like. The flowers have 10 separate stamens and are a very bright golden-yellow. They are from $\frac{3}{8}$ to $\frac{3}{4}$ inch long and borne in rather dense racemes. The pods are from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long, curved, greyish-hairy and containing 10 to 13 seeds. This is an early blooming plant and is one of the most striking and colourful of our early spring flowers. Very common, and found in great masses along roadsides, on the edges of buffalo wallows and on hillsides throughout the entire southern part of the area, as well as in sandy areas in the northern portions. It has been reported that the milk of cows eating the flowers of this species has a peculiar odour and flavour, and a case has been reported of severe sickness in children from eating the seeds.

TRIFOLIUM (Clover) genus. 3 species.

Perennial or biennial herbs, the leaves bearing 3 leaflets and the flowers in short, very dense, head-like racemes. Flowers perfect with 9 united stamens and one separate stamen. European plants much used for forage and lawn purposes, but escaped from cultivation.

1. Flowers red, with no stalks; leaflets sparingly hairy.

(2) *T. pratense*

Flowers white or pale pink, with short stalks; leaflets not hairy.

2.

2. Plant erect or ascending; flowers rose or pink.

(1) *T. hybridum*

Plant creeping or decumbent; flowers white, sometimes tinged with pink.

(3) *T. repens*

- (1) *Trifolium hybridum* L.

ALSIKE CLOVER

An erect species from 1 to 2 feet in height with long-stalked leaves bearing 3 obovate leaflets from $\frac{3}{8}$ to 1 inch long, smooth and without hairs. The flowers are pink and in globose head-like racemes. Common in waste places and roadsides where it has escaped from cultivation, especially in the more wooded areas.

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- (2) *Trifolium pratense* L.

RED CLOVER

An erect, somewhat hairy biennial or perennial species. It has large leaflets, from $\frac{1}{2}$ to 2 inches long, often with a reddish, inverted "V" on the upper surface of the leaflets. The flowers are red in colour and in globose heads. Rarely found in the western parts, but fairly common in waste places in the eastern and northern portions of the area.

- (3) *Trifolium repens* L.

WHITE CLOVER

A creeping perennial with smooth, hairless leaflets from $\frac{1}{3}$ to $\frac{3}{4}$ inch long, and which often have a whitish or pale inverted "V" on the upper surface

of the leaflets. The flowers are white or somewhat pinkish tinged and borne in round head-like racemes. Much used for lawns and occasionally found along roadsides, in meadows and throughout forest areas where it has escaped from cultivation.

VICIA (Vetch) genus. 4 species.

Annual or perennial herbaceous vines, with even pinnate leaves, the terminal leaflet being replaced by tendrils. The flowers are perfect, the stamens being in a bundle of 9 with one separate stamen, and are borne in spikes or racemes. The vetches differ from the vetchlings in that the style or female organ is not flattened and has merely a tuft of hairs at its summit instead of down one side. The vetches provide good forage for livestock.

1. Racemes dense, 15 to 40 flowers, all on one side of the stalk; introduced.

(2) *V. Cracca*

Racemes loose, 3 to 20-flowered; native.

2.

2. Leaflets broad, elliptic or oblong; plants fairly tall.

(1a) *V. americana*

Leaflets linear or narrowly oblong; plants low.

3.

3. Leaves decidedly hairy, distinctly veined.

(4) *V. trifida*

Leaves not hairy, plant usually prostrate.

(3) *V. sparsifolia*

(1a) *Vicia americana* Muhl.

AMERICAN VETCH

A smooth, trailing or climbing plant from 2 to 3 feet long, the leaves with from 8 to 14 ovate or elliptic leaflets from $\frac{5}{8}$ to $1\frac{3}{8}$ inches long, very strongly veined. The flowers are bluish-purple from $\frac{5}{8}$ to $\frac{3}{4}$ inch long and borne in loose 3 to 9-flowered racemes. The pods are smooth, from 1 to $1\frac{1}{4}$ inches long. Very common around bluffs and shady parts of prairie throughout the entire area. The type is hard to distinguish from the var. *truncata*.

(1b) *Vicia americana* Muhl. var. *truncata* (Nutt.) Brewer OREGON VETCH
(*V. oregana* Nutt.)

Differs from the species by being somewhat hairy below, especially when

young, and having the leaflets abruptly flattened at the apex and sometimes toothed. This variety sometimes is found in the southwestern part of the area.

(2) *Vicia Cracca* L.

TUFTED VETCH

A tufted, weak-stemmed vetch from 2 to 4 feet long, the leaves bearing 8 to 24 linear-oblong leaflets. The flowers are in a dense one-sided raceme. Rarely found, but has escaped from cultivation in some localities.

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(3) *Vicia sparsifolia* Nutt.

NARROW-LEAVED AMERICAN VETCH

A prostrate, trailing plant with from 8 to 12 narrowly linear, strongly veined leaflets from $\frac{3}{4}$ to $1\frac{1}{2}$ inches long and very narrow. The racemes are 2 to 6-flowered, the flowers being almost $\frac{3}{4}$ inch long and bluish-purple in colour, and the pods a little over 1 inch long. Very common on open prairie and dry soil throughout the southern part of the area, often persisting after cultivation.

(4) *Vicia trifida* Dietr.

PUBESCENT VETCH

A low, often prostrate plant, very similar to the preceding species, *V. sparsifolia*, but the leaflets are slightly hairy and a little broader. The leaves bear from 8 to 12 linear-oblong leaflets from $\frac{1}{2}$ to 1 inch long, very strongly veined and covered with fine, appressed hairs. The racemes bear 3 to 6, bluish-purple flowers about $\frac{5}{8}$ inch long and the pod is about $\frac{3}{4}$ inch long. Fairly common in the southwest parts of the area on moist prairie, but often confused with *V. sparsifolia*.

GERANIACEAE (Geranium Family) 2 genera.

Herbs with opposite leaves and with stipules. The flowers are perfect and regular, with 5 petals and 5 sepals. Stamens either 5 or 10, sometimes with both fertile and sterile stamens. The style or female part of the flower extends into a long beak-like column with short appendages at the tip, and splits from the bottom upwards into 5 sections, each with a single seeded capsule bearing a long tail. Plants of this family are not palatable to livestock.

1. Leaves pinnately lobed or dissected; tails of capsules twisted at maturity, capsule spindle shaped.

[ERODIUM](#)

Leaves palmately lobed or divided; tails of capsules merely curved, capsule rounded.

[GERANIUM](#)

ERODIUM (Stork-bill) genus. 1 species.

(1) *Erodium cicutarium* (L.) L'Her.

STORK-BILL

A low, prostrate annual with pinnately divided leaves. The 5 sepals are somewhat awn-tipped. The flowers are pink or purplish, about $\frac{3}{8}$ inch across, and borne in clusters of from 2 to 12 on long flower stalks. There are 5 fertile and 5 sterile stamens. The style column is very long, from 1 to $1\frac{1}{2}$ inches and splits into 5 segments each with a long spirally twisted tail. Introduced from Europe, and occasionally found around towns in the southern and eastern portions of the area.

GERANIUM (Geranium) genus. 5 species.

1. Flowers not over $\frac{1}{2}$ inch across, petals scarcely longer than sepals; annuals or biennials.

2.

Flowers over $\frac{1}{2}$ inch across, petals much longer than sepals; perennials.

4.

2. Sepals without bristle-tips; seeds smooth.

(3) G. pusillum

Sepals bristle-tipped; seeds rough.

3.

3. Appendage at end of style column, not over $\frac{1}{8}$ inch long; inflorescence compact.

(2) G. carolinianum

Appendage at end of style column over $\frac{3}{16}$ inch long; inflorescence loose.

(1) G. Bicknellii

4. Petals white.

(4) G. Richardsonii

Petals rose or purple.

(5) G. viscosissimum

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(1) *Geranium Bicknellii* Britt.

BICKNELL'S GERANIUM

A fairly erect annual or biennial plant, from 6 to 18 inches high, with a loosely hairy stem. The leaves are very deeply dissected into narrow, oblong segments and are from $\frac{3}{4}$ to $2\frac{1}{2}$ inches broad. The leaf-stalks and flower stalks are hairy and glandular, and the petals are rose-coloured, about as long as the sepals. The style column when mature is about 1 inch long with a narrow beak about $\frac{1}{4}$ inch long. The inflorescence is loose. Fairly common in wooded and semi-wooded areas through the area and on pathways and roads in the Cypress Hills.

(2) *Geranium carolinianum* L.

CAROLINA WILD GERANIUM

An erect, annual species from 6 to 15 inches high with stems loosely hairy and somewhat glandular. The leaves are deeply cut into wedge-shaped lobed segments and are from 1 to 2½ inches across. The flowers are pale pink or whitish, about as long as the sepals and are borne in rather compact clusters. The style column is about 1 inch long with a very short narrow beak. Found in meadows and waste places throughout the area but not as plentiful as the preceding species.

(3) *Geranium pusillum* Burm.

SMALL-FLOWERED CRANES-BILL

A weak-stemmed annual, spreading and hairy, from 4 to 18 inches long. It has from 5 to 7 lobed leaves that are ½ to 2 inches long, the lobes either entire or 3-toothed. The sepals are not bristle-tipped and the flowers are pale purple from ¼ to ⅜ inch across with often only 5 fertile stamens. Introduced from Europe and occasionally found in waste places near towns in the eastern part of the area.

(4) *Geranium Richardsonii* Fisch. and Trautv.

WILD WHITE GERANIUM

An erect perennial species from 15 to 36 inches high, often with spreading hairs. The leaves are from 1½ to 4 inches across and deeply 3 to 5 lobed with cut and toothed segments. The flowers are white from 1 to 1½ inches across, with pink veins and the style column from ¾ to 1 inch long. A mountain valley species, very plentiful in the foothills region and in the Cypress Hills.

(5) *Geranium viscosissimum* F. and M.

STICKY PURPLE GERANIUM

An erect, branching perennial species from 1 to 2 feet in height with the stem and leaf-stalks sticky glandular. The leaves are from 1½ to 4 inches across, hairy, and 3 to 5 times cleft into sharply toothed segments. The sepals are hairy and awn-tipped and the flowers a pink-purple colour, 1¼ to 1½ inches across and very showy. Quite common in open woodlands in the foothill regions of the southwest and also on the south slope of the Cypress Hills, but very rare elsewhere in the area.

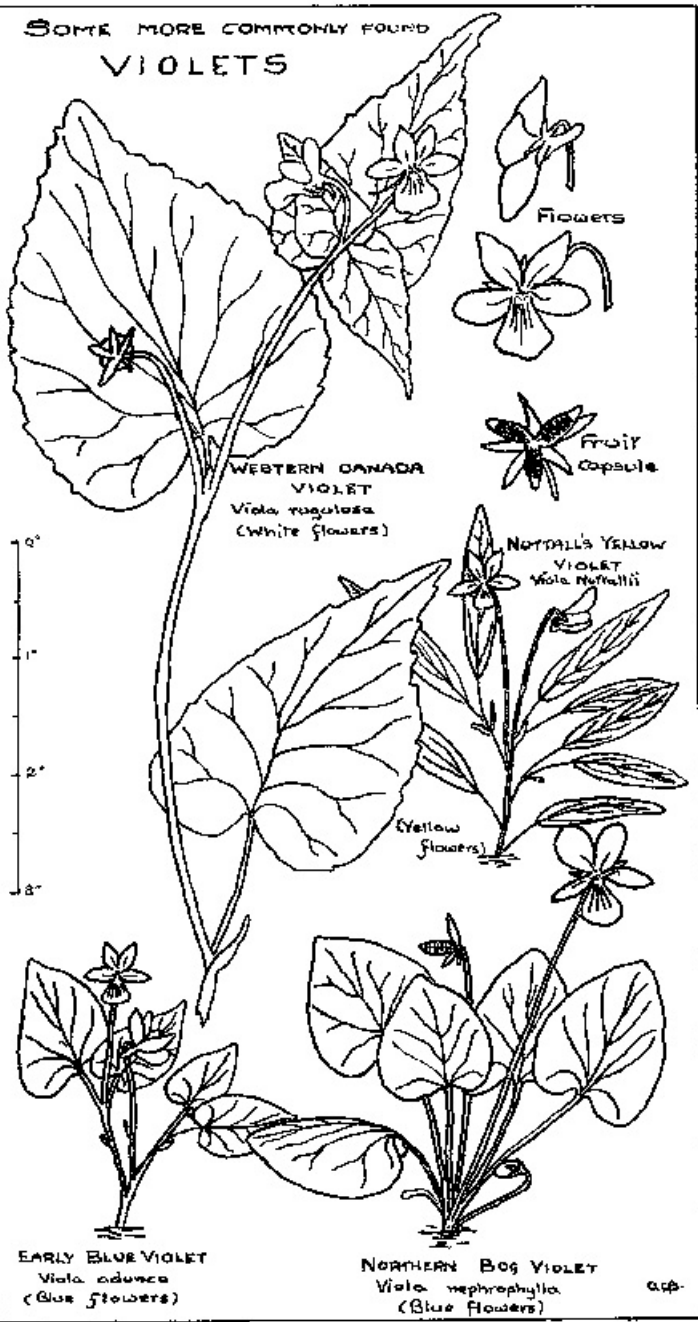
OXALIDACEAE (Wood-sorrel Family) 1 genus.

Low herbs with rootstocks, and palmately divided leaves with 3 leaflets, the leaflets broadly inverted heart-shaped, indented at the apex. The flowers are perfect and regular, with 5 petals and 5 sepals and 10 stamens. The fruit is a capsule.

OXALIS (Wood-Sorrel) genus. 4 species.

SOME MORE COMMONLY FOUND

VIOLETS



WESTERN CANADA
VIOLET
Viola rugulosa
(White flowers)

Flowers

Fruit
Capsule

NOTTALL'S YELLOW
VIOLET
Viola Nottallii

(Yellow
flowers)

EARLY BLUE VIOLET
Viola adunca
(Blue flowers)

NORTHERN BOG VIOLET
Viola nephrophylla
(Blue flowers)

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WESTERN CANADA VIOLET *Viola rugulosa* (White flowers)

Flowers

Fruit capsule

NUTTALL'S YELLOW VIOLET *Viola Nuttallii* (Yellow flowers)

EARLY BLUE VIOLET *Viola adunca* (Blue flowers)

NORTHERN BOG VIOLET *Viola nephrophylla* (Blue flowers)

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1. Plant with practically no stem; flowers pink or white.

(1) *O. Acetosella*

Plant with stems; flowers yellow.

2.

2. Stem creeping, often rooting at nodes.

(2) *O. corniculata*

Stem erect or decumbent in age, not rooting.

3.

3. Stem with appressed hairs; capsule hairy.

(4) *O. stricta*

Stem with loose spreading hairs or nearly smooth; capsule smooth.

(3) *O. europaea*

(1) *Oxalis Acetosella* L.

WHITE WOOD-SORREL

A stemless plant from 1 to 4 inches high with trifoliate, hairy leaves. The leaflets are from ½ to 1 inch across. The flowers are white or pink, with pinkish veins, petals about ½ inch long. Found in cold, damp woodlands and is very rare but may be looked for along the northern and eastern margins of the area. By recent authorities considered *O. montana* Raf.

(2) *Oxalis corniculata* L.

CREEPING WOOD-SORREL

(*Xanthoxalis corniculata* (L.) Small)

A decumbent, creeping plant, branched at the base, with sparse, loose hairiness. The leaves are trifoliate with leaflets from ⅛ to ⅜ inch broad. The petals are pale yellow, from ¼ to ½ inch long. Escaped from cultivation and occasionally found around buildings.

- (3) *Oxalis europaea* Jordan var. *Bushii* (Small) Wieg.
(*Xanthoxalis Bushii* Small) BUSH'S YELLOW WOOD-SORREL

A slender stemmed, erect plant from 4 to 8 inches high, loosely hairy. Trifoliate with leaflets $\frac{1}{4}$ to $\frac{3}{4}$ inches long, bright green. Flowers bright yellow from $\frac{3}{8}$ to $\frac{1}{2}$ inch across. The capsule is smooth, about $\frac{1}{2}$ inch long. Found in dry soil and has been reported from the northern part of the area, but very infrequent.

- (4) *Oxalis stricta* L. YELLOW WOOD-SORREL
(*Xanthoxalis stricta* (L.) Small)

A low, pale green plant somewhat decumbent, usually branched from the base. The leaves are trifoliate with leaflets from $\frac{1}{2}$ to $\frac{3}{4}$ inch wide. The flowers are pale yellow in umbel-like cymes and the petals almost $\frac{1}{2}$ inch long. The capsule is hairy, from $\frac{5}{8}$ to 1 inch long, rather abruptly pointed at the tip, and borne erect on reflexed stems. Fairly common locally along roadsides, gardens and waste places in the southern part of the area, especially in the southeast portion.

LINACEAE (Flax Family) 1 genus.

Annual or perennial plants which have simple leaves without stalks and perfect, regular flowers, with 5 sepals, 5 petals and 5 stamens. The fruit is a round capsule divided into 4 or 5 cells, each of which contains 2 flat seeds. The petals fall very readily from the plant and usually do not last more than one day.

LINUM (Flax) genus. 5 species.

1. Flowers blue; sepals without glands.

2.

Flowers yellow; inner sepals with marginal glands.

3.

2. Sepals more than $\frac{3}{16}$ inch long when mature, more than half as long as capsule.

(2) L. Lewisii

Sepals less than $\frac{3}{16}$ inch long when mature, less than half as long as capsule.

(3) L. pratense

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3. Sepals persistent; capsule not thickened at base.

(5) L. sulcatum

Sepals falling off; capsule with firm thickenings at base.

4.

4. Petals less than $\frac{3}{8}$ inch long; plant low and branched at the base.

(1) L. compactum

Petals from $\frac{3}{8}$ to $\frac{3}{4}$ inch long; plant erect and not branched at the base.

(4) L. rigidum

(1) *Linum compactum* A. Nels.

DWARF YELLOW FLAX

(*Cathartolinum compactum* (A. Nels.) Small)

A low, dull green plant from 4 to 8 inches high and branched from the base. The leaves are linear, from $\frac{1}{4}$ to 1 inch long. The flowers are yellow, the petals from $\frac{1}{4}$ to $\frac{3}{8}$ inch long and fairly numerous. Quite common on dry prairie throughout the southwestern portion of the area.

(2) *Linum Lewisii* Pursh

LEWIS' WILD FLAX

An erect perennial plant, sometimes branched from the base, growing to a height of from 8 to 24 inches, from a woody root, quite hairless throughout. The leaves are linear, from $\frac{3}{8}$ to $\frac{3}{4}$ inch long and somewhat crowded on the

stem. The flowers are blue, from $\frac{3}{4}$ to $1\frac{1}{2}$ inches across, the petals soon falling off. The capsules are round, almost $\frac{1}{4}$ inch in diameter. Very common on dry prairies throughout the entire southern portion of the area covered.

(3) *Linum pratense* (Norton) Small

MEADOW WILD FLAX

Very similar to the preceding species, except that the sepals are less than $\frac{3}{16}$ inch long and less than half as long as the capsule and the flowers are smaller, from $\frac{3}{4}$ to 1 inch across. Occasionally found on dry prairie in the southern part of the area but not common.

(4) *Linum rigidum* Pursh

LARGE-FLOWERED YELLOW FLAX

(*Cathartolinum rigidum* (Pursh) Small)

An erect, pale green species, growing to a height of from 6 to 18 inches high, the stem being simple below and somewhat branched above. The leaves are few, linear, from $\frac{1}{3}$ to 1 inch long and very easily knocked off. The flowers are yellow, from $\frac{3}{4}$ to 1 inch across. Very common locally in sand hills and sandy or very light soils throughout the southern portion of the area. Not generally common but very plentiful where found.

(5) *Linum sulcatum* Riddell

GROOVED YELLOW FLAX

(*Cathartolinum sulcatum* (Riddell) Small)

An annual, growing from 2 to 18 inches high, the stem angled and somewhat winged, simple below but much branched above. The leaves are linear, from $\frac{1}{2}$ to 1 inch long, soon falling off. The flowers are yellow, about $\frac{1}{2}$ inch across. Not common, but found occasionally in dry, sandy soils towards the eastern portion of the area.

BALSAMINACEAE (Touch-me-not Family) 1 genus.

Somewhat succulent herbs with simple leaves with no stipules. The flowers are perfect, but irregular. There are 3 sepals, 2 of them small and green, but the other large, petal-like, and extended back into a bag-like pouch terminating in a nectar-filled spur. There are, by union of 2 pairs, only 3 apparent petals, and 5 stamens. The fruit is a 5-celled capsule which springs open at maturity, forcibly expelling and distributing the seeds. These are plants of moist places.

IMPATIENS (Touch-me-not) genus. 2 species.

1. Spur curved a half turn, $\frac{1}{3}$ or more the length of the pouch; pouch longer than broad; flowers orange, thickly spotted with reddish-brown spots.

(1) *I. biflora*

Spur at right angles to pouch, $\frac{1}{4}$ or less the length of the pouch; pouch as broad as long; flowers pale yellow and little dotted.

(2) *I. pallida*

(1) *Impatiens biflora* Walt.

SPOTTED TOUCH-ME-NOT

An annual, branched, rather succulent plant, from 2 to 4 feet high, the stems often tinged with red, and the leaves ovate, from $\frac{3}{4}$ to 4 inches long, green or purplish in colour. The petals and the large pouch-like sepal are orange in colour, copiously dotted with reddish-brown or purplish spots, and the flower is from $\frac{3}{4}$ to 1 inch long. Found on banks of rivers and lakes throughout the eastern and northern wooded areas and also in the Cypress Hills. Recently listed as *I. capensis* Meerb.

(2) *Impatiens pallida* Nutt.

PALE TOUCH-ME-NOT

A tall, annual, branched plant very similar to the preceding but larger, growing to a height of 3 to 6 feet. The leaves are thin, pale green from 1 to 6 inches long, ovate. The pouch-like sepals and petals are pale sulphur yellow and little or not spotted. The flowers are from 1 to $1\frac{1}{4}$ inches long and the spur is merely bent at right angles instead of being recurved as in the preceding species. Occasionally found in shady woodlands and lake shores in the eastern portion of the area but not as common as *I. biflora*.

POLYGALACEAE (Milkwort Family) 1 genus.

Herbs with simple leaves and no stipules. The irregular flowers have 5 sepals, two of which are large, coloured and petal-like, and either 3 or 5 more or less united petals, the keel petals have a fringed crest.

POLYGALA (Milkwort) genus. 3 species.

1. Flowers showy, rose-purple in colour.

(2) *P. pauciflora*

Flowers white.

2.

2. Leaves linear or linear-oblong; inflorescence conic.

(1) *P. alba*

Leaves lanceolate to ovate; inflorescence oblong, cylindrical.

(3) *P. Senega*

- (1) *Polygala alba* Nutt.

WHITE MILKWORT

An erect plant with several stems growing from the same base, from 6 to 15 inches high, with alternate linear leaves, from $\frac{1}{4}$ to 1 inch long. The flowers are borne in spike-like racemes from 1 to 2 inches long and are white or somewhat green tinged. Occasionally found in dry ground along the extreme southern border of the area but its natural habitat is further south than the area covered.

- (2) *Polygala pauciflora* Willd.

FRINGED MILKWORT

An erect plant, from 4 to 7 inches high, usually branched, with small leaves near the lower part of the stem and larger ones above, the upper leaves being oval from $\frac{3}{8}$ to $1\frac{1}{4}$ inches long. The flowers are few, 3 or 4, and are rose-purple or pink in colour, from $\frac{3}{8}$ to $\frac{3}{4}$ inches long, while the keel of the corolla has a fringed crest. Occasionally found in moist woodlands in the north and eastern parts of the area.

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- (3) *Polygala Senega* L.

SENECA SNAKEROOT

An erect plant with several stems growing from a thick rootstock, to a height of from 4 to 20 inches. The leaves are numerous on the stems and are lanceolate, from 1 to 2 inches long. The flowers are greenish-white, borne in terminal spike-like racemes, from 1 to $2\frac{1}{2}$ inches long. Fairly common around edges of bluffs and in semi-wooded prairie throughout all but the extreme drier south portion of the area. The roots are used for medicinal purposes.

EUPHORBIACEAE (Spurge Family) 1 genus.

Herbs, either erect or prostrate. The plants contain an acrid, milky juice. They are annual or perennial with simple, entire, opposite or alternate leaves. The flowers are unisexual (both sexes being on the same plant), and the sepals are reduced to a minute scale. The flowers consist of an involucre, which resembles a calyx; and on it are numerous male flowers consisting of a single stamen and a minute bract, and a solitary female flower consisting of a 3 lobed ovary, which, when fertilized, extends upwards on a thin stalk and bears the capsule containing the seeds. In some cases there are stalks arising from the involucre and bearing still more involucre and flowers and thus form a large, branched inflorescence.

EUPHORBIA (Spurge) genus. 3 species.

1. Perennials; erect plants with much branched inflorescence; introduced weed.

(1) *E. Esula*

Annuals; prostrate, mat-like plants; native.

2.

2. Seeds strongly ridged; leaves pale green.

(2) *E. glyptosperma*

Seeds pitted and only faintly ridged; leaves usually with a red midrib.

(3) *E. serpyllifolia*

(1) *Euphorbia Esula* L.

LEAFY SPURGE

An erect, bluish-green perennial growing from running roots, to a height of from 6 to 24 inches. There are a few scattered, linear or oblong, stem leaves, from $\frac{1}{2}$ to $1\frac{3}{4}$ inches long. Below the inflorescence is a whorl of narrow leaves. The inflorescence is somewhat umbel-like, the flowers being borne on a pair of pale yellowish-green leaf-like bracts, with many inconspicuous male flowers and a female flower to each pair of bracts. The female flowers extend upwards on a short stalk to form the 3-seeded capsules. The capsules burst and expel the seeds, sometimes for a considerable distance from the parent plant. This is a very pernicious weed, extremely difficult to eradicate, as it spreads by creeping underground rootstocks and also by seed. It is becoming very plentiful in many localities, especially in the eastern parts of the area, and new outbreaks are being reported from all sections of the area. It is an introduced plant originating in Europe.

(2) *Euphorbia glyptosperma* Engelm.

RIDGE-SEEDED SPURGE

(*Chamaesyce glyptosperma* (Engelm.) Small)

An annual, growing prostrate in a mat on the ground, from 2 to 15 inches across, with small, oblong leaves from $\frac{1}{8}$ to $\frac{1}{2}$ inch long, opposite and pale green. The inflorescence is minute, in the axils of the leaves and the seeds are ashy white and strongly wrinkled. A very common native plant, found in waste places, around buildings and on gravelly railway grades throughout the entire area.

(3) *Euphorbia serpyllifolia* Pers.
(*Chamaesyce serpyllifolia* (Pers.) Small)

THYME-LEAVED SPURGE

A native annual, usually prostrate and forming mats from 2 to 18 inches across, smooth as a rule, with somewhat reddish stems. The leaves are opposite, small and from $\frac{1}{8}$ to $\frac{1}{2}$ inch long, dark green, generally with a conspicuous red line down the centre. The flowers are inconspicuous in the leaf axils and the seeds pitted and faintly wrinkled. The variety *hirtella* is more or less hairy, but the type is quite smooth. Quite common on dry soil and in yards and waste places throughout the entire area and apparently more plentiful on gravelly railway grades than *E. glyptosperma*.

CALLITRICHACEAE (Water-Starwort Family) 1 genus.

Small, slender stemmed perennial, aquatic plants with opposite entire leaves. Leaves linear but some floating leaves obovate or spatulate. The flowers are unisexual (both sexes borne on the same plant), growing either singly or in groups of 2 or 3 in the axils of the leaves. The male flower is a single stamen and the female flower a 4-celled ovary with 2 stigmas or style branches. The fruit is small, nut-like and pendulous, and is divided into 4 single-seeded sections.

CALLITRICHE (Water-Starwort) genus. 3 species.

1. All leaves submersed, linear and one-nerved.

(1) *C. autumnalis*

Upper floating leaves obovate or spatulate, 3-nerved, but submerged leaves linear and one-nerved.

2.

2. Fruit oval, not as wide as high, longer than the styles.

(3) *C. palustris*

Fruit ovoid, as wide as high, not longer than the styles.

(2) *C. heterophylla*

(1) *Callitriche autumnalis* L.

NORTHERN WATER-STARWORT

A completely submerged aquatic perennial with stems from 4 to 16 inches long. The leaves are opposite, linear from $\frac{1}{4}$ to $\frac{3}{4}$ inches long. They are usually rather crowded on the stem and sometimes slightly indented at the apex. Occasionally found in flowing water throughout the entire area but more frequent in the northern portion. Some authorities have recently classified this as *C. hermaphroditica* L.

(2) *Callitriche heterophylla* Pursh

LARGER WATER-STARWORT

A perennial growing in water or in mud with stems from 1 to 4 inches long. The submersed leaves are linear, but the floating leaves are broadly spatulate and crowded at the ends of the stems. Occasionally found in shallow water or mud in the extreme eastern part of the area.

(3) *Callitriche palustris* L.

VERNAL WATER-STARWORT

An aquatic perennial, generally with floating stems from 1 to 12 inches long. The submerged leaves are stalkless, one nerved, up to $\frac{3}{4}$ inch long with a single nerve, the floating leaves obovate. Sometimes plants are found with all leaves submerged and linear. Occasionally found in ponds and ditches throughout the entire area.

ANACARDIACEAE (Sumach Family) 1 genus.

Small trees, shrubs or very low shrubs, with a somewhat acrid sap. The leaves bear from three to many leaflets. There are both perfect and imperfect flowers, with five sepals, five petals and five stamens. The fruit are drupes.

RHUS (Sumach) genus. 3 species.

1. Leaves with from 13 to 31 leaflets.

(1) *R. glabra*

Leaves with three leaflets.

2.

2. Low, single stemmed shrubs; leafing before flowering; leaflets 1¼ to 4 inches long.

(2) *R. radicans*

Large shrubs; flowering before leaves appear; leaflets not over 1¼ inches long.

(3) *R. trilobata*

(1) *Rhus glabra* L.

SMOOTH SUMACH

A low shrub growing up to 18 inches in height, with odd-pinnate leaves bearing from 13 to 31 lanceolate leaflets, dark green above but paler beneath. The flowers, which are borne in terminal clusters, are bright green in colour. The bright red fruits are borne in dense clusters. Occasionally found on hillsides and dry soils in the eastern part of the area.

(2) *Rhus radicans* L. var. *Rydbergii* (Small) Rehder
(*Toxicodendron Rydbergii* (Small) Greene)

POISON IVY

A single stemmed, erect shrub from a creeping rootstock, growing from 4 to 12 inches high with a rather woody stem. The leaves have three large, bright green, strongly veined leaflets, from 1¼ to 4 inches long. The flowers are whitish-yellow, in dense panicles from the axils of the leaves, and the fruit are somewhat globose berries of a dull whitish colour, about ¼ inch in diameter. This plant causes severe dermatitis to human beings and dogs, but cattle appear to eat it with impunity. The pollen, sap and even exhalations from the plant affect susceptible persons and cause severe skin eruptions and other troubles. Found in ravines, shady woodlands, etc., throughout the entire area.

(3) *Rhus trilobata* Nutt.

SKUNK BUSH

A shrub from 3 to 7 feet high, very branched and generally flowering

before the leaves appear. The leaves are 3 foliate with dark green leaflets, somewhat paler beneath, often 3 cleft, and from $\frac{1}{2}$ to $1\frac{1}{4}$ inches long. The flowers are yellowish-green and minute and grow in clusters. The fruit is a red, globular drupe about $\frac{1}{4}$ inch in diameter. Occasionally found in coulees, thickets and open wooded places throughout the southern part of the area. Although the bush has an unpleasant odour, there are no records that it is poisonous.

ACERACEAE (Maple Family) 1 genus.

Small trees with a sweet sap, and opposite lobed or pinnately compound leaves. The flowers are either perfect or unisexual, and are sometimes borne before the leaves. The fruit consists of 2 carpels, united below and winged (samaras).

ACER (Maple) genus. 2 species.

1. Leaves not pinnate, merely 3-lobed; flowers perfect or else both sexes on same tree.

(2) *A. spicatum*

Leaves pinnate with 3 to 5 leaflets; flowers unisexual, the sexes on different trees.

(1) *A. Negundo*

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- (1) *Acer Negundo* L. var. *interius* (Britt.) Sarg.

(*Negundo interius* (Britt.) Rydb.) MANITOBA MAPLE or BOX ELDER

A tree, occasionally 30 feet high, with a rough greyish bark. The leaves bear 3 to 5 lanceolate or ovate, toothed leaflets, pale green in colour, from 2 to 5 inches long, each with a short stalk. The flowers appear slightly in advance of the leaves and are unisexual, the male and female flowers being on separate trees. The female flowers are in small racemes and are very small and greenish. The male flowers consist of 4 or 5 very small sepals and 4 or 5 stamens. They are reddish in colour and borne in drooping clusters. The fruit is a samara or winged fruit, consisting of 2 oval carpels about $\frac{1}{2}$ inch long, joined at the base and each terminating in a broad, membranous wing about 1 inch long and $\frac{3}{8}$ inch wide. Found along streams, ravines and woods in valleys throughout the entire area.

- (2) *Acer spicatum* Lam.

MOUNTAIN MAPLE

A shrub or small tree, with thin, smooth greenish bark. The leaves are from 3 to 5 inches long, medium green above and paler beneath, with 3 definite lobes and occasionally two obscure lobes low on the leaf blade. The flowers appear after the leaves and the samaras or winged fruits are about $\frac{3}{4}$ inch long. Fairly common in rocky woodlands in the extreme southeastern portion. It is found also in the Riding Mountains of Manitoba and in the sandy region east of Elbow, Saskatchewan, but rarely found elsewhere in the area.

RHAMNACEAE (Buckthorn Family) 1 genus.

RHAMNUS (Buckthorn) genus. 1 species.

Shrubs with unarmed twigs, alternate, simple leaves and flowers with no petals. The fruit is a berry-like drupe.

(1) *Rhamnus alnifolia* L'Her.

ALDER-LEAVED BUCKTHORN

A small shrub from 3 to 6 feet in height with greyish, very finely hairy branches. The leaves are ovate or elliptical, very strongly veined, from 2 to 4 inches long. The flowers are either singly or in umbels of 2 or 3 on short stalks in the axils of the leaves, and are very small and greenish. The fruit is berry-like and black, about $\frac{5}{16}$ inch in diameter. Fairly common in moist woodlands and swamps in the northern and eastern fringes of the area.

VITACEAE (Grape Family) 2 genera.

Woody vines, climbing by means of tendrils. The leaves are alternate, either lobed or palmately divided. The flowers are borne in panicles and generally unisexual or sometimes both perfect and unisexual flowers. The fruit is a several seeded berry.

1. Leaves simple, lobed.

[VITIS](#)

Leaves palmately compound with from 5 to 7 leaflets.

[PARTHENOCISSUS](#)

PARTHENOCISSUS (Virginia creeper) genus. 2 species.

1. Leaves dull above, paler beneath; tendrils adhesive with disks; berry about $\frac{1}{4}$ inch in diameter.

(2) *P. quinquefolia*

Leaves glossy above scarcely paler beneath; tendrils not adhesive, without disks; berry from $\frac{5}{16}$ to $\frac{3}{8}$ inch in diameter.

(1) *P. inserta*

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- (1) *Parthenocissus inserta* (Kerner) Fritsch

(*Psedera vitacea* (Knerr) Greene) LARGE-TOOTHED VIRGINIA CREEPER

A straggling vine with smooth bark and long tendrils. The leaves bear 5 or 6 lanceolate leaflets from $1\frac{1}{2}$ to 4 inches long, large toothed, glossy on the upper side and turning red in the fall. The tendrils are branched with few, if any, adhesive disks at the ends. The berries are a bluish-black colour. Found in moist woods and shady banks in the eastern portion of the area as far north as the Riding Mountains, but not very common.

- (2) *Parthenocissus quinquefolia* (L.) Planch.

VIRGINIA CREEPER

(*Psedera quinquefolia* (L.) Greene)

A tall, climbing vine, generally with rather warty branches. The tendrils bear an adhesive disk at the end. The leaves generally have 5 ovate, dull green leaflets, from 2 to 6 inches long and coarsely toothed. The fruit is blue with a slight bloom. Occasionally found in moist woodlands in the southeastern corner of the area.

VITIS (Grape) genus. 2 species.

1. Leaves with long lobes, tapering to a point; berries black or dark purple without bloom.

(1) *V. palmata*

Leaves with medium lobes, not with tapering point; berries blue with copious bloom.

(2) *V. vulpina*

(1) *Vitis palmata* Vahl.

CATBIRD GRAPE

A climbing plant with bright red branches, and dull, dark green 3 to 5 lobed leaves. The lobes taper to a narrow point, and the hollows at the base of the leaf-blades are broad and shallowly rounded. The inflorescence is loose and the berries are almost black, about $\frac{3}{8}$ inch in diameter and without bloom. Found, rather rarely, in rocky places and along river banks in the extreme eastern edge of the area.

(2) *Vitis vulpina* L.

COMMON WILD GRAPE

A climbing or trailing vine with greenish and somewhat angled branches. The leaves are usually somewhat 3 lobed, with the hollows at the base of the leaf-blades deep and rather acute. The inflorescence is a fairly compact panicle; the berries are blue, about $\frac{3}{8}$ inch in diameter and covered with a copious bloom. Found in moist woods in the eastern portion of the area, as far north and west as the Riding Mountains. More frequently found than the preceding species.

MALVACEAE (Mallow Family) 2 genera.

Herbs, with alternate, lobed or dissected, sub-orbicular (nearly round) leaves. The flowers are perfect, regular and either singly or in clusters in the axils of the leaves. They have 5, partly united sepals and 5 petals, united at the base. There are numerous stamens and the fruit a many-segmented capsule.

1. Branches of style thread-like: flowers in axils of leaves.

[MALVA](#)

Branches of style ending in a small head-like stigma: flowers in terminal spikes or racemes.

[MALVASTRUM](#)

MALVA (Mallow) genus. 3 species.

1. Petals scarcely exceeding length of sepals.

(3) *M. parviflora*

Petals about twice as long as sepals.

2.

2. Plant decumbent, prostrate; carpels smooth.

(2) *M. neglecta*

Plant erect; carpels net-veined.

(1) *M. crispa*

- (1) *Malva crispa* L.

CRISP MALLOW

An erect annual from 1 to 5 feet high with almost circular or kidney-shaped leaves from 2 to 8 inches across, wavy and lobed at the edges. The flowers are purplish or white, from $\frac{3}{8}$ to $\frac{5}{8}$ inches across. Occasionally found where it has escaped from cultivation. Originally from Europe.

- (2) *Malva neglecta* Wallr.

ROUND-LEAVED MALLOW

A prostrate annual weed with lobed, wavy-margined leaves, roughly kidney-shaped, from 1 to 3 inches across. The flowers are blue, lilac or whitish and are from $\frac{3}{8}$ to $\frac{5}{8}$ inch across the petals about twice the length of the sepals. The fruit consists of a circular series of from 12 to 15 smooth carpels. This plant, originating in Europe, is becoming an increasingly abundant weed of gardens and roadsides.

- (3) *Malva parviflora* L.

SMALL-FLOWERED MALLOW

A prostrate, mat-forming annual weed with many branches. The leaves are from $\frac{3}{4}$ to $2\frac{1}{2}$ inches across and are roughly kidney-shaped in outline, with about seven wavy-margined lobes. The flowers are pink or lilac, about $\frac{3}{8}$ inches across with the sepals almost as long as the petals. The fruit consists of a series of 8 to 11 carpels or small capsules arranged in a circle. Introduced from Europe, but becoming a common weed of roadsides and waste places throughout most of the area. This is apparently the most plentiful of the mallows.

MALVASTRUM (False Mallow) genus. 1 species.

(1) *Malvastrum coccineum* (Pursh) A. Gray
(*Sphaeralcea coccinea* (Pursh) Rydb.)

SCARLET MALLOW

A native perennial plant, which has a woody base and running rootstocks. It grows from 4 to 10 inches high, often forming large patches along roadsides and in disturbed prairie. The leaves are roughly round in outline and divided to the base into wedge-shaped, lobed and cleft leaflets; they are covered with fine, white, star-shaped hairs, which gives the plant a greyish appearance. The flowers are borne in dense, short, raceme-like inflorescence and are brick-red in colour, a shade rarely found in prairie flowers, and are from $\frac{1}{2}$ to $\frac{3}{4}$ inch across. Very common on dry prairie in the lighter soil zones throughout the entire southern portion of the area. While it is very common on virgin prairie, it is not generally noticed, as it does not flower profusely there or form large clumps, but on disturbed soil or roadside cuts it often takes full possession of large areas and blossoms very freely.

ELATINACEAE (Waterwort Family) 1 genus.

ELATINE (Water wort) genus. 1 species.

(1) *Elatine americana* (Pursh) Arn.

MUD PURSLANE

A tufted annual plant growing in either mud or water, rooting along the stems, which are from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long. The leaves are obovate from $\frac{1}{16}$ to $\frac{1}{4}$ inch long, while the minute flowers are singly in the leaf axils. Neither the leaves nor flowers are stalked, but are attached directly to the stem. Occasionally found along the margins of ponds or slow moving streams in the northern part of the area covered.

CISTACEAE (Rock-rose Family) 1 genus.

HUDSONIA (False Heather) genus. 1 species.

(1) *Hudsonia tomentosa* Nutt.

SAND HEATHER

A low, densely tufted, shrubby plant from 4 to 8 inches high. The leaves are less than $\frac{1}{8}$ inch long, oval and densely imbricated (overlapping like shingles) and are almost scale-like, pale greyish hoary. The flowers are small, yellow, about $\frac{3}{16}$ inch across and borne near the ends of the branches. Found occasionally on sandy shores and pine lands in the northern and eastern parts of the area.

VIOLACEAE (Violet Family) 1 genus.

VIOLA (Violet) genus. 17 species.

Perennial (rarely annual) herbs with either basal or alternate, simple leaves, with stipules. The flowers are of two kinds; those having an early spring growth are showy and cross-fertilized; and the summer flowers do not open and are self-fertilized (such types are called “cleistogamous” flowers). The spring flowers are perfect, but irregular in shape, having 5 sepals and 5 petals, the lowest of which is prolonged into a spur. The fruit is an ovoid or cylindrical capsule containing from 20 to 60 obovate seeds.

1. Annual plants; leafy stemmed; stipules leaf-like and much lobed.

[2.](#)

Perennial plants.

[3.](#)

2. Upper leaves and middle lobe of stipules with rounded teeth; petals usually shorter than the narrow sepals.

[\(2\)](#) *V. arvensis*

Upper leaves and middle lobe of stipules not toothed; petals nearly twice the length of the sepals.

[\(13\)](#) *V. Rafinesquii*

3. Plants without stems; leaves and flowering stalks all growing from crown of root.

[4.](#)

Plants with leafy stems and flower stalks arising from axils of leaves.

[9.](#)

4. Rootstock slender; plant generally with stolons, (basal branches rooting at the nodes).

[5.](#)

Rootstock thick, without stolons.

[6.](#)

5. Petals pale lilac; plant without hairs. (9) *V. palustris*
Petals white, the lower 3 with purple lines; plant often somewhat hairy. (14) *V. renifolia*
6. All petals beardless; cleistogamous flowers absent. (10) *V. pedata*
Some petals usually bearded; cleistogamous flowers present. 7.
7. Blades of lower leaves palmately cleft to near the base. (11) *V. pedatifida*
Blades of leaves not cleft, merely wavy or toothed margins. 8.
8. Spurred petal not at all hairy or bearded; mature leaves sharp-pointed at apex. (5) *V. cucullata*
Spurred petal with fine hairs; mature leaves rounded or blunt at apex. (7) *V. nephrophylla*
9. Petals yellow. 10.
Petals not yellow except at base. 13.
10. Stems usually short, first flowers and leaves from near base of plant. 11.
Stems not leafy from base, flowering stalks from axils of leaves. 12.
11. Basal leaves narrowly ovate or elliptic, blunt at apex. (17) *V. vallicola*
Basal leaves lanceolate, somewhat pointed. (8) *V. Nuttallii*
12. Plants conspicuously fine hairy; usually with no basal leaves. (12) *V. pubescens*
Plants not conspicuously fine hairy; usually from one to three basal leaves.

[\(6\)](#) *V. eriocarpa*

13. Stipules entire, the lower ones dry and not green; spur of flower short.

[14.](#)

Stipules leaf-like with bristle-like teeth; spur of flower elongate.

[15.](#)

14. Plants with running rootstocks; leaves with fine hairs on lower side.

[\(15\)](#) *V. rugulosa*

Plants without running rootstocks or stolons; leaves almost devoid of hairs.

[\(3\)](#) *V. canadensis*

15. Leaves and stems covered with fine hairs.

[\(16\)](#) *V. subvestita*

Leaves and stems almost hairless.

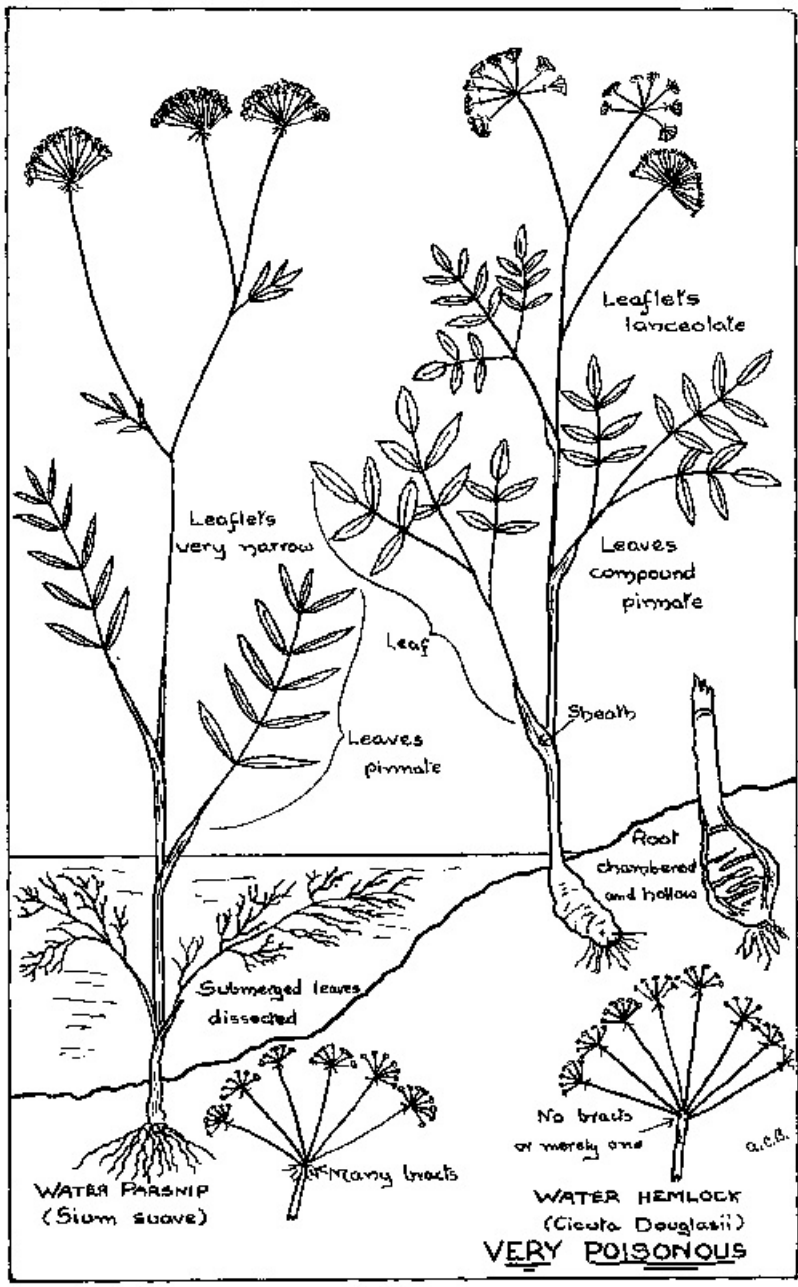
[16.](#)

16. Leaf blades almost round.

[\(4\)](#) *V. conspersa*

Leaf blades ovate.

[\(1\)](#) *V. adunca*



WATER PARSNIP
(*Sium suave*)

WATER HEMLOCK
(*Cicuta Douglasii*)
VERY POISONOUS

G.C.B.

WATER PARSNIP (*Sium suave*)

Leaflets very narrow
Leaves pinnate
Submerged leaves dissected
Many bracts

WATER HEMLOCK (*Cicuta Douglasii*)

VERY POISONOUS

Leaflets lanceolate
Leaves compound pinnate
Leaf
Sheath
Root chambered and hollow
No bracts or merely one

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(1) *Viola adunca* J. E. Smith

EARLY BLUE VIOLET

A plant growing to a height of 1½ to 12 inches, from a woody rootstock, which generally shows the remains of previous seasons growth of foliage. The leaves are ovate with somewhat cordate bases. They are from ½ to ¾ inch wide. The flowers are violet or purple, from ⅜ to ⅝ inch long, with somewhat bearded side petals and spur almost as long as petals. Fairly common on prairie that is not too dry, and in shady places throughout the whole area. Blooms early in May.

(2) *Viola arvensis* Murr.

WILD PANSY

An irregularly branched annual with leafy stems from 4 to 12 inches high. The leaf blades vary from ovate or round lower leaves to oblong or oblanceolate upper ones. The stipules are large, toothed and leaf-like, and the leaves and centre sections of the stipules are round-toothed at the apex. The flowers are pale yellow, with the upper petals sometimes violet tipped. Introduced from Europe and has been found as a field weed around Canora and near Wilkie, Saskatchewan.

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(3) *Viola canadensis* L.

CANADA VIOLET

This species, which is very common in the eastern provinces has been

reported formerly from the west but all records so far have been found to be based on *Viola rugulosa*, a very similar species but differing by being stoloniferous with many running roots and is also a larger plant.

(4) *Viola conspersa* Reichenbach AMERICAN DOG VIOLET

A low-growing plant, from 1½ to 6 inches high, often much branched. The lower leaves are round, heart-shaped, from ¾ to 1½ inches wide, wavy margined. The flowers are pale violet, sometimes almost white, and bloom very early in the season. Frequently found in shady, moist places in the southeastern part of the area. Somewhat similar to *V. adunca* which has, however, more ovate and pointed leaves and a darker violet or purple flower.

(5) *Viola cucullata* Ait. MARSH BLUE VIOLET

A species without stems, the leaf stalks and flower stalks arising from the root crown. The leaves, except the earliest ones, are broadly ovate to kidney-shaped, heart-shaped at the base and up to 3 inches wide, quite smooth, with a finely wavy toothed margin. The flowers are a violet-blue colour, darker in the throat, and the side petals somewhat bearded but the lower, spurred petal quite smooth and hairless. Found in wet places in the southeast corner of the area.

(6) *Viola eriocarpa* Schwein. SMOOTH YELLOW VIOLET

A species generally with both basal and stem leaves. The plants are smooth, the only hairiness being at the upper part of the stem and the underside of the leaf-veins. The leaves are ovate to kidney-shaped, often heart-shaped at the base, and rather blunt at the apex. The stem leaves are borne only on the upper part of the stem. The flowers are yellow, the side petals being bearded. Very similar to *V. pubescens* except for lack of hairiness. Occasionally found in open woodlands in the southeast corner of the area.

(7) *Viola nephrophylla* Greene NORTHERN BOG VIOLET

A stemless species with all leaves basal. The earliest leaves are round, but later ones are broadly ovate to reniform, heart-shaped at the base, wavy margined and from 1½ to 2½ inches across. The flowers are fairly large and violet coloured, the side petals are bearded and the spurred petal is

hairy. This is probably the most common of the blue violets. It is found in moist places on the prairies, woodlands, slough margins and bogs throughout the entire area. It blooms from mid-May until late July.

(8) *Viola Nuttallii* Pursh.

NUTTALL'S YELLOW VIOLET

A somewhat hairy species with many basal leaves and also some stem leaves. The leaves are mostly lanceolate, tapering to the stalk, and are somewhat wavy-margined. The flowers are yellow and petals are occasionally somewhat bearded. Very common on open prairie and hillsides throughout the southern portion of the area and very early flowering.

(9) *Viola palustris* L.

MARSH VIOLET

A stemless species growing from creeping rootstocks. It has smooth, hairless stalks and leaves, with leaf blades broadly ovate or heart-shaped that are from 1 to 2½ inches wide. The flowers are pale lilac, occasionally nearly white, with darker veins. The side petals may be somewhat bearded and the spur is short and thick. Found in cold bogs and along stream banks in the extreme northern and eastern fringe of the area; quite rare.

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(10) *Viola pedata* L.

BIRD'S-FOOT VIOLET

A stemless plant from a short, erect rootstock. The leaves are all basal and the blades are deeply cleft almost to the base into from 3 to 5 divisions, which are again toothed or cleft. The flowers are from ¾ to 1½ inches across, with the upper petals dark violet and the lower ones lilac-purple in colour and all petals quite beardless. There are no cleistogamous, or self-fertilized closed flowers, on this species. Found occasionally in dry fields in southern Manitoba.

(11) *Viola pedatifida* G. Don.

CROW-FOOT VIOLET

A plant with all leaves basal and the leaf-blades cleft almost to the base into 3 divisions, which are again cleft into from 2 to 4 lobes. The leaves vary up to 4 inches wide, and are slightly hairy on the margins. The flowers are violet in colour and very showy. Found on prairies and exposed banks throughout the entire area but nowhere very abundant.

(12) *Viola pubescens* Ait.

DOWNY YELLOW VIOLET

A stout stemmed species covered with soft, downy hairs and growing to a height of 8 to 12 inches. There are rarely some basal leaves and a few stem leaves near the top of the stem. The leaf-blades are broadly ovate with heart-shaped bases and the stipules are fairly large and ovate-lanceolate. The flowers are bright yellow, growing on stalks from the axils of the stem leaves, with bearded side petals and a short spur. Found frequently in moist woodlands in the eastern portion of the area.

(13) *Viola Rafinesquii* Greene

FIELD PANSY

A slender stemmed annual from 3 to 8 inches high, frequently branched from the base. The leaves are small, from ¼ to ½ inch across, almost round and smooth and rounded at the apex. The stipules are much divided into segments and the flowers small with cream-coloured to bluish-white petals. Very rare in the area covered, being an eastern species but some plants have been found in a grain field in the northern part of the area.

(14) *Viola renifolia* A. Gray

KIDNEY-LEAVED VIOLET

A low-growing plant with running rootstocks and kidney-shaped, wavy-margined leaves, with heart-shaped bases. The flowers are white and without bearded petals. The cleistogamous flowers are purple, on horizontal stalks. Found in cold woodlands and forests, swamps, etc., along the northern fringe of the area and also in the Cypress Hills. Flowers very early in spring.

(15) *Viola rugulosa* Greene

WESTERN CANADA VIOLET

A tall woodlands species with stems from 8 to 24 inches high that grow from numerous stolons or running rootstocks. The cordate or heart-shaped leaves are pointed at the apex, borne on long stalks, and often up to 4 inches across, although becoming smaller towards the top of the stems. They are often densely hairy beneath. The flowers are white with pinkish or purplish veins, although sometimes the entire flower is pale pink. Very common in shady woodlands throughout the entire area. It is the common white violet of woodlands throughout Western Canada. Its closely allied species, *V. canadensis*, never enters the western provinces. This species transplants well into a garden, but spreads rapidly by means of its underground stolons.

(16) *Viola subvestita* Greene

SAND VIOLET

This is a rather spreading, semi-decumbent plant with several finely-hairy stems from 2 to 6 inches long. The ovate leaves are from $\frac{1}{2}$ to 1 inch long, often heart-shaped at the base. The flowers are violet in colour with a spur about $\frac{1}{4}$ inch long. Very similar to *V. adunca* but differs in having fine hairiness on the stems. Fairly plentiful on light sandy soil, prairies and southern slopes throughout the southern portion of the area.

(17) *Viola vallicola* A. Nels.

YELLOW MEADOW VIOLET

A low-growing species with elliptic basal leaves and ovate to lanceolate stem leaves, rounded at the apex. The elliptic basal leaves distinguish it from *V. Nuttallii*, which has basal lanceolate leaves that taper to the stalk. The flowers are yellow with the upper petals often tinged with purple. Found in moist and shady grasslands at the margins of bluffs and in meadows throughout the central part of the area.

LOASACEAE (Loasa Family) 1 genus.

MENTZELIA (Sand Lily) genus. 1 species.

(1) *Mentzelia decapetala* (Pursh) Urban and Gilg.
(*Nuttallia decapetala* (Pursh) Greene)

EVENING STAR

Stout, erect, biennial plants growing from 6 to 24 inches high with rough pale gray stems. The leaves are alternate, oblanceolate to lanceolate, from 2 to 6 inches long, the lower ones with short stalks but the upper ones stalkless. The blades are sharply and coarsely toothed and covered with tiny white stiff bristles, making them very rough to the touch. The flowers are borne singly or in clusters of 2 or 3 at the ends of the stems or branches. They have sharp pointed sepals about 1 inch long and creamy white petals 1½ to 2 inches long that are narrow and pointed at the apex. There are only 5 petals but appear to be 10, the inner ones being petal-like, sterile stamens. The flowers open only in the evening. The fruit is an oblong capsule about 1½ inches long and up to ½ inch thick that opens at the top and contains many seeds. There is occasionally a leafy bract attached to the base of the capsule. Found on eroded hillsides in badlands and on clay banks across the southern portion of the area. Quite plentiful where found, but not generally common.

CACTACEAE (Cactus Family) 2 genera.

Practically leafless perennial plants with the stems fleshy, thickened and succulent and covered with spines. The flowers are perfect and regular with many sepals and petals. The fruit is a fleshy berry that is relished by antelope and sheep.

1. Globose or cushion-like plants; flowers red or purple.

[MAMILLARIA](#)

Branching or jointed plants; stems flattened; flowers large, yellow or orange.

[OPUNTIA](#)

MAMILLARIA (Ball cactus) genus. 1 species.

(1) *Mamillaria vivipara* (Nutt.) Haw.

PURPLE CACTUS

(*Neomamillaria vivipara* (Nutt.) Britt. & Rose)

A cushion-like cactus from 1 to 3 inches high and from 1 to 8 inches across, covered with somewhat cone-shaped tubercles each bearing a cluster of from 3 to 8 reddish-brown spines from $\frac{1}{2}$ to $\frac{3}{4}$ inch long. The flowers are borne between the tubercles and are from $1\frac{1}{2}$ to 2 inches across with numerous purple or dark red narrow petals, and with a yellow centre of many stamens. The fruit is a pale green, fleshy berry about $\frac{1}{2}$ inch long, turning brown with age, and very sweet and edible when ripe. Very common on open prairie and hillsides throughout the southern portion of the area.

OPUNTIA (Prickly Pear) genus. 2 species.

Cacti with flattened stems which are jointed and divided into somewhat plate-like sections called “internodes”. They often bear small, scale-like reddish leaves which soon fall off. The spines are long and have a tuft of barbed bristles at the base. The flowers are very showy with large waxy petals. The fruit is quite sweet and edible.

1. Internodes very fleshy, often circular in cross-section, and from 1½ to 2 inches long, the terminal one easily breaking loose.

(1) *O. fragilis*

Internodes never circular in cross-section, from 2 to 4 inches long, always broader than thick.

(2) *O. polyacantha*

(1) *Opuntia fragilis* (Nutt.) Haw.

BRITTLE PRICKLY PEAR

A low-growing, decumbent cactus, often found in very large mats, often red or reddish-green in colour. The spines are in divaricate groups and from ½ to ¾ inch long. The flowers are pale yellow, about 2 inches across, and the fruit a fleshy berry about 1 inch long. Very common on dry prairie throughout the drier parts of the southwestern area.

(2) *Opuntia polyacantha* Haw.

PRICKLY PEAR

A prostrate, bright green plant, growing in large clumps. The internodes are large and much flattened, from 2 to 4 inches long with reddish-brown spines from ½ to 2 inches long. The flowers are very showy, yellow to pinkish-orange in colour and 2 to 3 inches across. The fruit is a prickly berry from 1 to 1¼ inches long, containing numerous seeds. Very common on dry prairies and light soils throughout the more arid portions of the southern area.

ELAEAGNACEAE (Oleaster Family) 2 genera.

Shrubs or small trees with silvery, scurfy leaves. The flowers are either perfect or unisexual, sometimes both kinds on the same plant and sometimes each sex on a different plant. There are 4 sepals but no petals, and 4 or 8 stamens. The fruit is drupe-like.

1. Leaves alternate; flowers generally perfect; with 4 stamens.

[ELAEAGNUS](#)

Leaves opposite; flowers unisexual, the sexes being on different plants, with 8 stamens.

[SHEPHERDIA](#)

ELAEAGNUS (Oleaster) genus. 1 species.

(1) *Elaeagnus commutata* Bernh.

SILVER-BERRY or WOLF WILLOW

A shrub from 2 to 12 feet high with brown, scurfy twigs. Its alternate leaves are silvery, scurfy on both sides, oblong or elliptic and from 1 to 4 inches long. The flowers are borne in clusters of 2 or 3 in the axils of the leaves and are yellowish and very fragrant. The fruit is oval, drupe-like, silvery in colour, about $\frac{3}{8}$ inch long, and contains a large, stony seed. Very common on lighter soils (where moisture is plentiful) throughout the entire area. It spreads rapidly in overgrazed pastures throughout the Park belt. In sparse stands the plant is kept grazed and does not spread.

SHEPHERDIA (Buffalo-berry) 2 species.

1. Leaves oblong, silvery on both sides; shrub or small tree bearing long thorns.

(1) *S. argentea*

Leaves oval, green above, silvery below; low undershrub without thorns.

(2) *S. canadensis*

(1) *Shepherdia argentea* Nutt.

BUFFALO BERRY

A thorny shrub from 4 to 15 feet high, with whitish branches. The leaves are oblong, from 1 to 2 inches long and densely silvery-scurfy on both sides. The flowers are unisexual, all the flowers on a plant being of the same sex. They are brownish in colour and borne in small clusters at the nodes of the preceding season. The fruit is rounded, almost $\frac{1}{4}$ inch across, of an orange colour and very sour, but after a hard frost is a good jelly fruit. Very common around sloughs, and in coulees throughout the southern part of the area.

(2) *Shepherdia canadensis* (L.) Nutt.

CANADA BUFFALO BERRY

An unarmed undershrub from 1 to 8 feet in height with brown, scurfy branches. The oval or ovate leaves are from 1 to $1\frac{1}{2}$ inches long, with green upper surface, but with silvery star-shaped hairs on the underside. The flowers are yellowish and are borne at the leaf nodes. The female plant produces round or oval fruit, about $\frac{1}{4}$ inch long, reddish or yellowish and insipid to taste. Fairly common in wooded places and river banks throughout the outer sections of the region, as well as in the Cypress Hills, along the South Saskatchewan River breaks and adjacent areas.

ONAGRACEAE (Evening-primrose Family) 4 genera.

Annual or perennial herbs with either opposite or alternate leaves and no stipules. The flowers are perfect and generally regular, with usually 4 sepals and 4 petals, and with as many, or twice as many, stamens as sepals. The style is slender, either knobbed or 4 lobed at the summit. The fruit is either a capsule or a small nut, and in some genera the seeds are silky tufted.

1. Parts of flowers in twos; fruit covered with hooked bristles; leaves opposite; plants with rootstocks.

[CIRCAEA](#)

Sepals 4; stamens 4 to 8; fruit not covered with hooks.

[2.](#)

2. Fruit not splitting open when mature, 1 to 4 seeded; short and ribbed.

[GAURA](#)

Fruit splitting open either at sides or summit when mature.

[3.](#)

3. Seeds provided with a tuft of silky hairs.

[EPILOBIUM](#)

Seeds without tuft of hairs.

[OENOTHERA](#)

CIRCAEA (Enchanter's Nightshade) genus. 1 species.

(1) *Circaea alpina* L.

SMALL ENCHANTER'S NIGHTSHADE

A slender plant from 3 to 8 inches high with opposite, stalked, heart-shaped leaves that are coarsely toothed and from 1 to 2 inches long. The flowers are borne in a terminal raceme and are very small and white, borne on slender stalks. They have 2 sepals and 2 notched white petals, with 2 stamens. The fruit is an ovoid or club-shaped capsule a little over $\frac{1}{16}$ inch long, covered with fine hooked hairs. Found in moist woodlands in the northern and eastern fringes of the area covered.

EPILOBIUM (Willow-herb) genus. 6 species.

Flowers generally in spikes or racemes, with 4 sepals and 4 petals. Leaves opposite or alternate, often with lobed blades. The fruit is a long, linear nearly four-angled capsule that splits lengthwise at maturity. It contains many seeds, each of which bears a tuft of silky hairs at the upper end.

1. Flowers large, over ½ inch across.

2.

Flowers small, less than ½ inch across.

3.

2. Flower spikes not leafy; leaves with a vein running lengthwise near the margin making a series of cells; bracts small.

(2) *E. angustifolium*

Flower spikes very leafy; no veins lengthwise near leaf margin; bracts leafy.

(4) *E. latifolium*

3. Annuals with a more or less shreddy, straw-coloured bark; stigma 4-cleft.

(1) *E. adenocladon*

Perennials; stigma entire or merely notched.

4.

4. Leaves lanceolate; inflorescence glandular.

(3) *E. glandulosum*

Leaves linear.

5.

5. Leaves and stem with fine curled hairs.

(5) *E. lineare*

Leaves and lower part of stem not hairy.

(6) *E. wyomingense*

(1) *Epilobium adenocladon* (Haussk.) Rydb.

ANNUAL WILLOW-HERB

An annual plant with a pale, straw-coloured, somewhat shreddy stem, erect branched and from 10 to 20 inches high. The leaves are linear or linear-

lanceolate, from $\frac{3}{4}$ to $1\frac{1}{2}$ inches long. The flowers are pink and about $\frac{3}{8}$ inch across, at the end of a tube-like ovary about $\frac{3}{8}$ inch long. The capsule is from $\frac{1}{2}$ to 1 inch long and opens to release the seeds which bear a tuft of white silky hairs. Very common on light and sandy soil throughout the southwestern part of the area.

(2) *Epilobium angustifolium* L.

FIREWEED

(*Chamaenerion spicatum* (Lam.) S. F. Gray)

An erect, fairly stout perennial plant from 2 to 5 feet tall, with alternate, very short-stalked entire lanceolate leaves which are from 2 to 6 inches long. The venation of the leaves of this species is interesting, as there are lateral veins near the margins of the leaves. The leaves are a little paler in colour below them on the upper side. The flowers are from pink to purple and are borne in a long terminal raceme, with a small bract below each flower stalk. Each flower is from $\frac{2}{3}$ to $1\frac{1}{4}$ inches across. The fruit is a long, linear, somewhat 4-angled capsule from 2 to 3 inches long, which splits lengthwise to release the numerous tufted seeds. Very common in woodlands, edges of forest, burnt-over forests throughout the entire area, also found occasionally along roadsides and in waste, moist places on the open prairie. This is one of the most ubiquitous of plants, being found over most of the northern hemisphere, from coast to coast in America and from sea level to the higher altitudes. It is a good source of honey, and it is fairly palatable to livestock, the upper and more tender tips being eaten.

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(3) *Epilobium glandulosum* Lehm. var. *adenocaulon* (Haussk.) Fern.

(*E. adenocaulon* Haussk.)

NORTHERN WILLOW-HERB

An erect perennial plant from 1 to 3 feet high, sometimes rather sticky to the touch. The leaves are mostly opposite and are lanceolate or ovate-lanceolate, from 1 to $2\frac{1}{2}$ inches long. The flowers are pink, usually nodding in their early stage, and are about $\frac{1}{4}$ inch across, with a long ovary tube beneath the flower. The fruit is many-seeded, from $1\frac{1}{2}$ to 2 inches long, and the seeds with a white tuft of hairs. Common in sloughs and wet places throughout the entire area.

(4) *Epilobium latifolium* L.

BROAD-LEAVED FIREWEED

(*Chamaenerion latifolium* (L.) Sweet.)

An erect or somewhat decumbent perennial plant, usually fairly branched,

from 6 to 18 inches high. The leaves are ovate to ovate-lanceolate, entire, from 1 to 2 inches long, some opposite, some alternate. The flowers are large and showy, purple in colour, from 1 to 2 inches across, and borne in short leafy racemes, leaves intermixed with the flowers. Found along banks of streams in the Foothill regions of Alberta.

(5) *Epilobium lineare* Muhl.

LINEAR-LEAVED WILLOW-HERB

An erect, branched perennial plant with curled hairs, growing from 1 to 2 feet high. The leaves are very narrow and linear, from 1 to 2 inches long, also covered with curled hairs, too fine to be seen without a small lens. The flowers are few, pink or whitish, about $\frac{1}{4}$ inch across. The fruit is a capsule, from $1\frac{1}{2}$ to 2 inches long; and the seeds bear a dingy white tuft of hairs. Found in wet places and swamps throughout the entire area but nowhere very common.

(6) *Epilobium wyomingense* A. Nels.

SLENDER WILLOW-HERB

Almost identical with the preceding species, but the leaves and lower parts of the stems are not hairy. Found in bogs and along stream banks and may be expected along the southwestern area.

GAURA (Butterfly weed) genus. 2 species.

Perennial, branching herbs with alternate, narrow leaves. The flowers have a long calyx tube, with 4 reflexed sepal lobes, 4 petals and 8 stamens. The fruit is a nut-like capsule, containing from 1 to 4 seeds, without hairy tufts.

1. Plants more or less covered with fine hairs.

(1) *G. coccinea*

Plants almost entirely hairless.

(2) *G. glabra*

- (1) *Gaura coccinea* Pursh

SCARLET GAURA

A perennial plant, decumbent to erect, growing from 4 to 12 inches high. It is almost entirely covered with a fine greyish hairiness. The leaves are numerous, oblong or lanceolate, alternate, without stalks, sometimes wavy-margined or shallowly toothed, and from $\frac{3}{8}$ to $1\frac{1}{4}$ inches long. The flowers are borne in terminal racemes. They are white when they emerge, but become scarlet in a few hours. Each is about $\frac{3}{8}$ inch across. The capsule is about $\frac{1}{4}$ inch long and contains from 1 to 4 seeds. Very common on dry prairies and hillsides throughout the entire southern portion of the area.

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- (2) *Gaura glabra* Lehm.

SMOOTH SCARLET GAURA

Practically the same as the preceding species, but is quite hairless, except for the basal parts of the flowers. The range is very much the same as the species, of which some authorities consider it merely a variety (var. *glabra* (Lehm.) Torr. and Gray).

OENOTHERA (Evening Primrose) genus. 6 species.

A very variable genus, some species being tall and erect, others low and stemless. The flowers have the tube of the calyx extended beyond the ovary, with 4 lobes, which are reflexed or turned downwards, 4 petals and 8 stamens. The flowers vary much in colour and size, and the fruit is a capsule opening at the top with 4 lobes and containing many seeds, which do not bear a hairy tuft.

1. Plants distinctly stemmed.

Plants stemless or nearly so.

2.

4.

2. Much branched perennials with brown, woody stems; flowers yellow; stigma not deeply 4-cleft.

(6) *O. serrulata*

Plants without brown woody stems; stigma deeply 4-cleft.

3.

3. Flowers white or pinkish; stems white with shreddy bark, generally much branched.

(5) *O. Nuttallii*

Flowers yellow; plant generally much branched.

(1) *O. biennis*

4. Stigma not 4-cleft.

(2) *O. breviflora*

Stigma divided into 4 linear lobes.

5.

5. Flowers yellow, turning pink with age; petals less than 1 inch in length; capsule narrowly winged at angles.

(4) *O. flava*

Flowers white, turning pink with age; petals usually more than 1 inch long; capsule with double crests at angles.

(3) *O. caespitosa*

(1) *Oenothera biennis* L.

YELLOW EVENING PRIMROSE

An erect biennial growing from a taproot to a height of from 1 to 6 feet. The leaves are lanceolate or ovate-lanceolate, from 1 to 6 inches long, stalkless except for short stalks on the lower leaves. The flowers are yellow, from 1 to 2 inches across and open in the evening. They are borne in a leafy, terminal spike. The capsules are from $\frac{3}{4}$ to $1\frac{1}{4}$ inches long, finely hairy and open at the top when mature. The type species is fairly common in the southeastern portion of the area where it is an introduced weed. However, the common forms found over almost the entire area are the varieties *canescens*. T. & G. or *hirsutissima* Gray.

- (1a) *Oenothera biennis* L. var. *canescens* T. & G.
(*O. strigosa* (Rydb.) Mack. WESTERN YELLOW EVENING PRIMROSE
& Bush)

Very similar to the species, but generally distinguished by the length of the free tips or lobed portions of the sepals, which are $\frac{1}{8}$ inch or more in the species, but just over $\frac{1}{16}$ inch in the variety. Very common on lighter soils throughout the southwestern portion of the area and occasionally found in the north.

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- (2) *Oenothera breviflora* T. & G. TARAXIA
(*Taraxia breviflora* (T. & G.) Nutt.)

A stemless perennial growing from a taproot. It has finely hairy, deeply incised leaves that are from 2 to $4\frac{1}{2}$ inches long. The yellow flowers turn reddish when dried. Each is almost $\frac{1}{2}$ inch across with 4 sepals, 4 petals and 8 stamens. The stigma or female portion of the flower is knobbed at the end and not divided into 4 linear lobes. The fruit is a 4-winged capsule about $\frac{5}{8}$ inch long. Very rare, but has been found on heavy soil on a slough margin in the southwestern part of the area.

- (3) *Oenothera caespitosa* Nutt. GUMBO EVENING PRIMROSE
(*Pachylophus caespitosus* (Nutt.) Raim.)

A low, stemless perennial from a thick woody root. The leaves are oblanceolate to lanceolate and from 3 to 8 inches in length, growing from short, winged stalks, and are sometimes toothed and sometimes wavy-margined. The sweet scented white flowers open in early morning, but soon fade to a pale pink colour. They are from $1\frac{1}{2}$ to 3 inches across and

are borne on stalks from the root crown. The capsules are about 1¼ inches long, without stalks, and grow in a cluster on the crown of the root. Found on dry hillsides with gumbo or clay soil and sometimes on gumbo flats throughout the southern part of the area.

- (3a) *Oenothera caespitosa* Nutt. var. *montana* (Nutt.) Durand.
(*Pachylophus montanus* (Nutt.) A. Nels.)

Similar to the species but the flowers are smaller, the capsules are only about ¾ inch long, and the wavy-margined leaves have a fine white hairiness around their margins. Found more frequently than the species on clay hillsides in the southwestern part of the area. It flowers very early in the season. One of the sweetest smelling flowers on the prairie, it makes a good garden plant.

- (4) *Oenothera flava* (A. Nels.) Munz. YELLOW LAVAUXIA
(*Lavauxia flava* A. Nels.)

A low-growing, stemless, perennial plant from a fleshy taproot. The leaves are long and narrow, oblong-lanceolate and very deeply incised, medium green, from 6 to 10 inches long, the midrib being very prominent on the underside. The flowers are yellow, turning pink, and the petals are from ½ to ¾ inch long. The capsule is winged at the 4 angles and from ¾ to 1¼ inches long. Not common, but found occasionally in valleys, slough margins and drainage channels in the southwestern part of the area covered.

- (5) *Oenothera Nuttallii* Sweet WHITE EVENING PRIMROSE
(*Anogra Nuttallii* (Sweet) A. Nels.)

An erect, often branched perennial growing to a height of 1 to 3 feet from a white, fleshy rootstock. The stems are white, somewhat shiny and with a shreddy bark. The leaves are entire, linear, from 1 to 4 inches long, pale green in colour and with wavy margins. The unpleasantly scented flowers are borne from the axils of the upper leaves, are white but turn pinkish as they fade, and are about 1½ inches across. As a rule they open in the morning. The capsules are narrow, somewhat curved, 4-angled and about 1 inch in length. This species is very common on roadsides in light soil areas, and on sandy land in the southern part of the area; it persists in cultivated fields.

(6) *Oenothera serrulata* Nutt.
(*Meriolix serrulata* (Nutt.) Walp.)

SHRUBBY EVENING PRIMROSE

An erect or decumbent, woody crowned, brown, shrubby perennial, growing to a height of from 4 to 18 inches. The leaves are alternate, from spatulate to linear-oblong or linear, from $\frac{1}{2}$ to 2 inches long, often entire but sometimes with small teeth, and are of a pale green colour. The flowers are bright yellow, from $\frac{1}{2}$ to 1 inch across, with an almost disk-like summit to the stigma. The capsule is from $\frac{5}{8}$ to $\frac{3}{4}$ inch long. Frequently found on dry prairie and hillsides throughout the southern portion of the area.

HALORAGACEAE (Water-milfoil Family) 2 genera.

Perennial aquatic or marsh plants with creeping roots. The leaves are alternate, or in whorls, and the inconspicuous flowers are borne in the axils of the leaves. The petals are 4 or else absent, while the fruit is a nutlet with 2 or 4 single-seeded sections.

1. Leaves entire and in whorls; flowers perfect, with 1 stamen and a pistil.

[HIPPURIS](#)

Submerged leaves dissected; flowers perfect or unisexual, with 2 to 8 stamens.

[MYRIOPHYLLUM](#)

HIPPURIS (Mare's tail) genus. 1 species.

(1) *Hippuris vulgaris* L.

MARE'S TAIL

An aquatic plant with creeping rootstocks growing to a height of from 8 to 20 inches, with simple unbranched stems. The leaves are in whorls of from 6 to 12 around the stem, linear, from $\frac{1}{2}$ to 1 inch long. Those under water are soft and flaccid whilst those above water are firm. The flowers have neither sepals nor petals, but are generally perfect, and are borne in the axils of the leaves. Very common in streams and sloughs, both in the water and in the mud along the banks. Found throughout the entire area.

MYRIOPHYLLUM (Water Milfoil) genus. 2 species.

1. Leaves all in whorls; stamens 8; floral leaves shorter than flowers, and usually entire.

(1) *M. exalbescens*

Some leaves alternate; stamens 4; floral leaves longer than flowers, and toothed.

(2) *M. scabratum*

- (1) *Myriophyllum exalbescens* Fern.
(*M. spicatum* L.)

SPIKED WATER MILFOIL

An aquatic perennial with branched stems, from 12 to 48 inches long, and leaves in whorls. The leaves are from $\frac{1}{2}$ to $1\frac{1}{4}$ inches long and divided into many thread-like divisions. The flowers are purplish in colour, small, with 4 petals and 8 stamens, and are borne in whorls on a spike from 1 to 3 inches long, which protrude above the water. Very common in streams, sloughs and lakes throughout the entire area.

- (2) *Myriophyllum scabratum* Michx.
(*M. pinnatum* (Walt.) B.S.P.)

PINNATE WATER MILFOIL

A smaller aquatic perennial from 4 to 8 inches high, with whorled submerged leaves divided into 3 to 5 pairs of thread-like divisions. The floral leaves are longer than the flowers and toothed. The male flowers have 4 stamens, are purplish in colour, and borne on spikes 4 to 8 inches long. A southern species which has been found in the extreme southern part of the area, but very uncommon.

ARALIACEAE (Ginseng Family) 1 genus.

ARALIA (Wild Sarsaparilla) genus. 1 species.

(1) *Aralia nudicaulis* L.

WILD SARSAPARILLA

A perennial plant from a creeping rootstock, generally with a single leaf which has a stalk from 6 to 12 inches high. This stalk divides into 3 parts, each of which is again divided into from 3 to 5 leaflets. The leaflets are oval, pointed at the apex, from 2 to 5 inches long, finely toothed on the margins, dark green above and very pale green below. The flowers are generally borne in 3 umbels on a flowering stalk, from 4 to 12 inches high, and which grows from the rootstock. The umbels of flowers are from 1 to 2 inches across, the flowers being greenish in colour. The fruit is globular, purplish-black and about $\frac{1}{4}$ inch long. Common in shady, rich woodlands and deep wooded ravines throughout the entire area.

UMBELLIFERAE (Parsley Family) 14 genera.

Hollow stemmed herbs with alternate leaves which are generally divided. The bases of the leaf stalks are usually enlarged and sheathing the stem. The flowers are small and borne in umbels, either simple or compound. The sepals are minute, and there are 5 petals, 5 stamens and 2 styles. The fruit is called a “mericarp” and consists of 2 single-seeded carpels united into one capsule, generally ribbed and sometimes winged. This is a large and widespread family, often difficult to identify positively without the fruit.

1. Fruit with hooked spines; flowers greenish-white in irregularly compound, globose umbels.

[SANICULA](#)

Fruit not spiny. (sometimes bristly-ribbed in *Osmorhiza*)

[2.](#)

2. Fruit linear-lanceolate, length more than twice width.

[3.](#)

Fruit oblong or orbicular, length not twice width.

[4.](#)

3. Fruit with bristly hairs.

[OSMORHIZA](#)

Fruit without hairs.

[CRYPTOTAENIA](#)

4. Fruit flattened, with winged margins or ribs.

[5.](#)

Fruit not flattened.

[9.](#)

5. Ribs on back of fruit winged as well as margins.

[CYMOPTERUS](#)

Ribs on back of fruit not winged.

[6.](#)

6. Plants with leaf-bearing stems short.

[7.](#)

Plants with leaf-bearing stems tall and stout.

7. Side wings of fruit thin, not corky; low plants.

LOMATIUM

Side wings of fruit thick and corky; tall plants.

LEPTOTAENIA

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8. Stems woolly; leaves large and ternately divided.

HERACLEUM

Stems smooth; leaves pinnately compound.

ANGELICA

9. Flowers yellow.

10.

Flowers white.

12.

10. Leaves pinnately divided, with narrow segments; plants low, decumbent and almost stemless.

MUSINEON

Leaves ternately compound, with broad segments; plants erect with a definite stem.

11.

11. Ribs of fruit winged.

THASPIUM

Ribs of fruit not winged.

ZIZIA

12. Leaves more than once pinnately compound; root crowns divided into transverse sections.

CICUTA

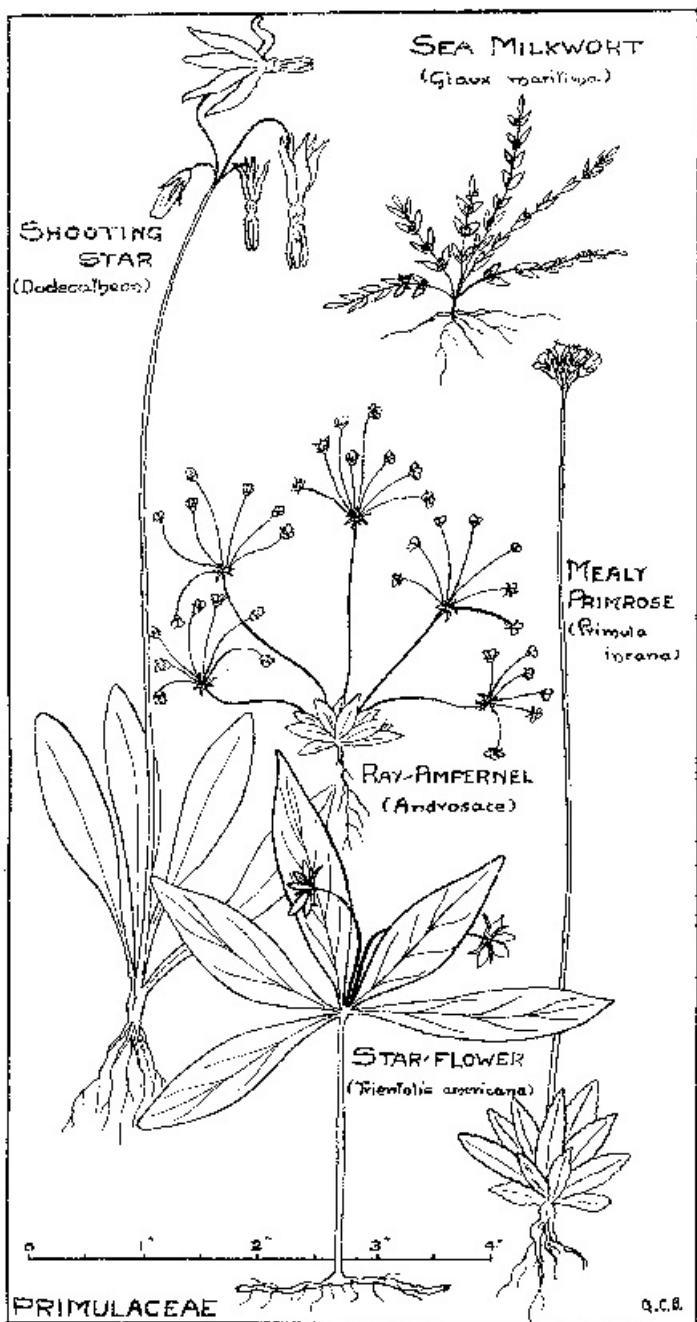
Leaves once pinnate; root crowns solid.

13.

13. Leaflets 7 to 17, narrow; found in wet places.

SIUM

Leaflets 3 to 11, almost thread-like, linear; found on submontane prairie; roots clustered and tuberous.



PRIMULACEAE

SEA MILKWORT (*Glaux maritima*)

SHOOTING STAR (*Dodecalbeon*)

MEALY PRIMROSE (*Primula incana*)

RAY-PIMPERNEL (*Androsace*)

STAR-FLOWER (*Trientalis americana*)

ANGELICA (*Angelica*) genus. 1 species.

(1) *Angelica Lyallii* S. Wats.

LYALL'S ANGELICA

A tall, stout and smooth stemmed plant from 2 to 5 feet high, with a woody root. The leaves are several times pinnately compound, with ovate to lanceolate leaflets from 1 to 4 inches long, with toothed margins. The flowers are white in large, compound umbels. The fruit is oblong and smooth, from $\frac{3}{16}$ to $\frac{1}{4}$ inch long, and often of a reddish or purplish colour, which makes the fruiting plant very conspicuous. The whole plant has a pleasing odour. Only found in the extreme west of the Foothill Region of southwest Alberta in wet meadows and along mountain streams.

CICUTA (Water Hemlock) genus. 3 species.

Marsh plants with smooth stems and pinnately compound leaves, growing from stout, often tuberous, rootstocks. The flowers are white, in compound umbels and the fruit oblong and slightly flattened. All species are very poisonous. This genus contains some of Canada's most poisonous plants, and as yet no antidote is known. Although all parts of the plant contain toxic substances, the heaviest concentration occurs in the root. Humans as well as livestock are affected.

1. Leaflets very narrow; the axils of the upper leaves bearing bulblets.

(1) *C. bulbifera*

Leaflets lanceolate; no bulblets in axils of leaves.

2.

2. Fruit constricted at the join between the two carpels; side ribs about equal in width to ribs on back of fruit; fruit not over $\frac{1}{8}$ inch long; rootstock divided into chambers.

(2) *C. Douglasii*

Fruit not constricted at the join between carpels; side ribs larger than those on back of fruit; fruit just over $\frac{1}{8}$ inch long; roots several, tuberous and chambered.

(3) *C. maculata*

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(1) *Cicuta bulbifera* L.

BULB-BEARING WATER-HEMLOCK

An erect, rather slender plant from 1 to 3 feet high with a few fleshy, tuberous roots. The leaves are two or three times pinnate with the leaf segments very narrowly linear, from $\frac{3}{4}$ to 2 inches long and sparsely toothed. The axils of the upper leaves bear bulblets. The few fruits are orbicular and less than $\frac{1}{8}$ inch long. Common in swamps and wet meadows in the eastern and the northern parts of the area, and *very poisonous* to all forms of livestock and to human beings.

(2) *Cicuta Douglasii* (DC.) Coult. & Rose
(*C. occidentalis* Greene)

WESTERN WATER-HEMLOCK

A stout-stemmed plant from a swollen, bulbous rootstock, which is divided horizontally into chambers. The plants grow from 1 to 6 feet in height and

are often much branched. The leaves are twice pinnate with lanceolate to linear-lanceolate leaflets from 2 to 3½ inches long, and sharply toothed. The base of the leaf-stalk is swollen and sheaths the stem. The flowers are small and white and born in compound umbels from 1 to 4 inches across. The seeds are oval, a little less than ¼ inch long, yellow with dark brown ribs and slightly grooved between the two carpels. Quite common in wet and marshy places, stream banks and lake shores throughout the western portion of the area. *Very poisonous* to any class of stock and human beings.

(3) *Cicuta maculata* L.

WATER HEMLOCK

Very similar to the preceding species. The leaves are two or three times pinnate with narrowly lanceolate to linear-lanceolate leaflets from 2 to 8 inches long and sharply toothed. The fruit is a trifle over ¼ inch long and not indented between the carpels, and the side ribs are larger than those on the back. Common in marshes, swamps and wet places in the eastern portion of the area, being replaced by *C. Douglasii* further west. *Very poisonous* to all livestock and human beings.

CRYPTOTAENIA (Honestwort) genus. 1 species.

(1) *Cryptotaenia canadensis* (L.) DC.

HONEWORT

A branching, erect plant from 1 to 3 feet in height with the lower leaves long stalked, bearing three thin, incised leaflets from 1 to 4 inches long. The small white flowers are borne on unequal stalks in compound umbels, with neither bracts nor bractlets. The fruit is narrowly oblong, from $\frac{3}{16}$ to $\frac{1}{4}$ inch long. Quite scarce but has been found in woodlands in the southeastern part of the area.

CYMOPTERUS (*Cymopterus*) genus. 1 species.

(1) *Cymopterus acaulis* (Pursh) Raf.

PLAINS CYMOPTERUS

A very low plant growing from a deep, thick root, with a short stem rarely more than 1 inch high. The leaves are bright green, usually ascending, from pinnate to twice pinnate and from 3 to 8 inches long. The flowers are white and borne in an umbel that is up to 1 inch across. The fruit is oval, about $\frac{1}{4}$ inch long with winged ribs on side and back. Fairly common on dry prairie and hillsides throughout the southwestern portion of the area.

HERACLEUM (Cow Parsnip) genus. 1 species.

(1) *Heracleum lanatum* Michx.

COW PARSNIP

A tall, coarse plant with somewhat woolly or hairy stem growing to 6 or 8 feet in height. The leaves are stalked, divided into three broad segments, very hairy below, and range from 3 to 6 inches broad. The flowers are white and borne in large, flat umbels from 6 to 12 inches across. The fruit is oval, from $\frac{1}{3}$ to $\frac{1}{2}$ inch long, with very fine hairs and a pale tawny colour when mature. Very common in shady woodlands and moist places throughout the entire area. It can be easily distinguished from *Cicuta* or *Sium* by its broad leaves and unpleasant odour. It has been known to cause dermatitis in human beings. Recently called *H. maximum* Bartr.

LEPTOTAENIA (Wild Parsnip) genus. 1 species.

(1) *Leptotaenia multifida* Nutt.

MOUNTAIN WILD PARSNIP

A plant with a thick, knobby, spindle-shaped root, growing from 12 to 36 inches high. Its leaves are in two or three sections of several times divided leaflets, the ultimate divisions being linear. The flowers are yellow and borne in a large umbel, and are followed by flattened fruits from $\frac{5}{16}$ to $\frac{1}{2}$ inch long with thickened corky side wings. Found occasionally in the Foothills Region of southwestern Alberta.

LOMATIUM (Prairie Parsley) genus. 5 species.

Very short-stemmed perennial plants growing from a thickened, tuberous root, with ternately or pinnately dissected somewhat hairy leaves, and yellow, purple or white flowers. There are no bracts below the head of flowers but usually small bractlets below the separate small umbels making up the head. The roots were used as food by the Indians. The plants are covered with fine grey hairs.

1. Flowers yellow.

Flowers white or pinkish.

2.

4.

2. Leaves much dissected into numerous small divisions; many bractlets.

(5) *L. villosum*

Leaves simply or doubly ternate with long, narrow divisions; few bractlets.

3.

3. Wings of fruit as broad or broader than body of fruit.

(3) *L. simplex*

Wings of fruit narrower than the body.

(4) *L. triternata*

4. Bractlets translucent margined; fruit not over $\frac{1}{4}$ inch long.

(2) *L. orientale*

Bractlets not translucent margined; fruit $\frac{3}{8}$ inch long or more.

(1) *L. macrocarpum*

- (1) *Lomatium macrocarpum* (Nutt.) Coult. and Rose

(*Cogswellia macrocarpa* (Nutt.) M. E. LONG-FRUITED PARSLEY
Jones)

A semi-decumbent plant growing from a thick, deep taproot. Usually very short stems. The leaves and leaf stalks are covered with fine greyish hairs. The leaves are 3 or 4 times pinnately divided. The flowers are white and borne in compound umbels. The flattened fruit is about $\frac{3}{8}$ or more long, with broad, creamy-white wings almost as wide as the body of the fruit. Occasionally found on dry and rocky hillsides in the southern part of the

- (2) *Lomatium orientale* Coult. & Rose WHITE-FLOWERED PARSLEY
(*Cogswellia orientalis* (Coult. & Rose) M. E. Jones)

Very similar to the preceding species but has either white or pinkish flowers, translucent margined bractlets and fruit not over ¼ inch long. Quite rare, but has been reported from dry hillsides in southern Manitoba.

- (3) *Lomatium simplex* (Nutt.) Macbr. WESTERN WILD PARSLEY
(*Cogswellia simplex* (S. Wats.) Rydb.)

A fairly tall-growing species from 12 to 24 inches high with doubly ternate leaves, the leaflets being long, narrow and from 2 to 4 inches long. The yellow flowers are borne in a compound umbel with no bracts but usually a few bractlets. The fruit is winged and hairless in the type, but a hairy fruited variety is found, var. *leptophyllum* (Hook.) Matthias. Both the type and the variety are found on hillsides in the southern Foothills Region of Alberta.

- (4) *Lomatium triternatum* (Pursh) Coult. & Rose
(*Cogswellia triternata* (Pursh) M. E. Jones) NARROW-FRUITED WESTERN WILD PARSLEY

Very similar to the preceding species, but leaves twice or three times ternate, and fruit narrowly winged. Quite rare, but has been found on hillsides in the southern part of the Albertan Foothills Region.

- (5) *Lomatium villosum* Raf. HAIRY-FRUITED PARSLEY
(*Cogswellia villosa* (Raf.) Schultes)

A low, generally prostrate finely hairy plant from an enlarged taproot. The leaf stalks are usually short and the leaves finely dissected and greyish fine hairy. The flowers are yellow and borne in compound umbels, coming into bloom very early in the season. The fruit is flattened, about ¼ inch long and finely hairy. Very common in the southern portion of the area, particularly on heavier soils. A species with smooth, hairless fruit has been reported by Macoun from the Cypress Hills and Moose Mountains, but is very rare.

MUSINEON (*Musineon*) genus. 2 species.

Low-growing plants with long, thickened roots, and much dissected bright green leaves. The flowers are yellow in compound umbels, and the fruit is not flattened as in *Lomatiums*. This genus differs also from *Lomatium* by having no hairiness on the stem and leaves.

1. Fruit practically hairless; fruit just over $\frac{1}{8}$ inch long.

(1) *M. divaricatum*

Fruit strongly roughly fine haired; fruit not over $\frac{1}{8}$ inch long.

(2) *M. trachyspermum*

- (1) *Musineon divaricatum* (Pursh) Coult. & Rose

LEAFY MUSINEON

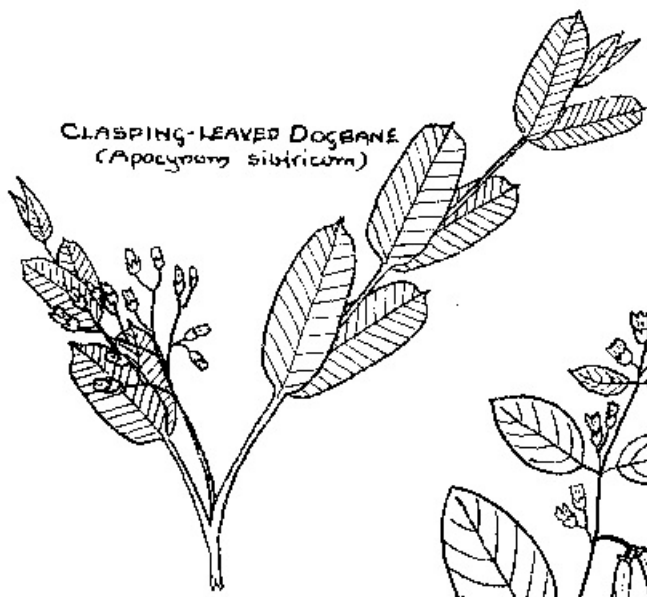
A low-growing plant from 4 to 8 inches high with doubly pinnate, bright green leaves, and yellow flowers in compound umbels from 1 to 2½ inches across. The fruit is smooth and about $\frac{1}{8}$ inch long. Found on dry ground throughout the southern part of the area, and fairly common.

- (2) *Musineon trachyspermum* Nutt.

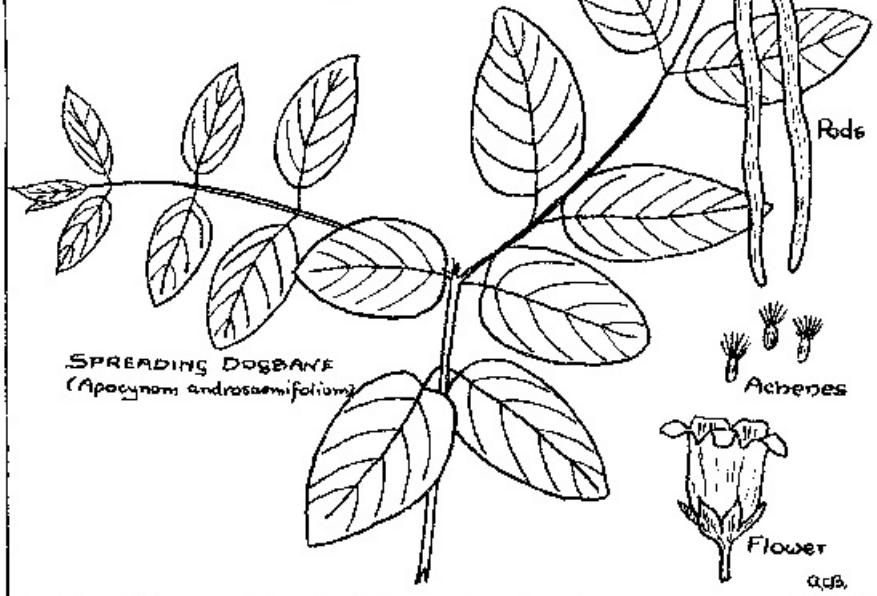
ROUGH-SEEDED MUSINEON

A very low-growing plant with deep, thick roots, and doubly pinnate leaves. The flowers are yellow in compound umbels and the fruit is roughened and just under $\frac{1}{8}$ inch long. Occasionally found on dry hills in the southwestern part of the area.

CLASPING-LEAVED DOGBANE
(*Apocynum sibiricum*)



SPREADING DOGBANE
(*Apocynum androsaemifolium*)



CLASPING-LEAVED DOGBANE (*Apocynum sibiricum*)

SPREADING DOGBANE (*Apocynum androsaemifolium*)

Pods

Achenes

Flower

OSMORHIZA (Sweet Cicely) genus. 2 species.

Perennial herbs growing from thick, sweet-scented roots. The stems are tall and leafy with white flowers and narrow, linear, bristly ribbed, long stalked fruit.

1. Several small green bracts at the base of each secondary umbel; fruit pointed at apex.

(1) *O. longistylis*

None, or only one bract at base of secondary umbels; fruit blunt at apex.

(2) *O. obtusa*

(1) *Osmorhiza longistylis* (Torr.) DC.

SMOOTH SWEET CICELY

Plants from 1 to 3 feet high that grow from thick, rough, fleshy roots. The species has smooth stems; its leaf stalks are twice or three times divided into threes, ending in lanceolate or ovate leaflets from 1 to 2½ inches long that are pointed at the apex and coarsely toothed. The flowers are small, white and in compound umbels, with green, leaf-like bracts at base of each umbellet or terminal small umbel. The fruit is about 1 inch long, pointed at the apex and borne on a long stalk. Fairly common in shady moist woodlands throughout the southern portion of the area.

(2) *Osmorhiza obtusa* (Coult. & Rose) Fern.

BLUNT-FRUITED SWEET CICELY

This species grows from fleshy roots. It has a stem from 12 to 20 inches high, sometimes with a little hairiness. The leaves are similar to those of the preceding species but often more deeply cleft. There are usually no bracts at the umbellets; the fruit is blunt at the apex, from ½ to ¾ inch long, and borne on very long stalks. Occasionally found throughout the entire area in moist, shady woodlands, and is the common species in the Cypress Hills and at other sites in higher altitudes.

PERIDERIDIA (Squaw-root) genus. 1 species.

(1) *Perideridia Gairdneri* (H. & A.) Matthias

SQUAW-ROOT

(*Atenia Gairdneri* H. & A.) and (*Atenia montana* (Blankinship) Rydb.)

A narrow, erect plant growing from 12 to 36 inches high. It has fleshy tuberous roots, often with a fascicle or cluster of tubers. The leaves are pinnate with very narrow leaflets from 1½ to 6 inches long. The flowers are very small, white and borne in compound umbels from 1 to 3½ inches across. The fruit is somewhat flattened, brown, and a little over $\frac{1}{16}$ inch long. Found in meadows and edge of woodlands in the Foothill region and in the Cypress Hills. The roots were used by the Indians for food.

SANICULA (Snake-root) genus. 1 species.

(1) *Sanicula marilandica* L.

SNAKE ROOT

An erect plant growing from 1 to 3 feet high. It has long-stalked basal leaves, and stalkless upper leaves. The leaves have 5 or 7 palmately arranged leaflets, oblanceolate, sharply toothed and from 1½ to 5 inches long. The flowers are greenish-white and borne in compound umbels of several almost globular umbellets, each from ¼ to ½ inch in diameter. The fruit is about ¼ inch long, densely covered with fine hooked bristles. Quite common in moist, rich woodlands throughout the entire area.

SIUM (Water Parsnip) genus. 1 species.

(1) *Sium suave* Walt.

WATER PARSNIP

(*Sium cicutaefolium* Schrank.)

Tall, erect marsh plants from stout rootstocks, growing from 2 to 6 feet in height, with smooth, hollow stems. There are two kinds of leaves, the early under-water leaves being twice or three times pinnate with thread-like leaflets, while the later growing above-water leaves are singly pinnate with linear or narrowly-lanceolate sharply-toothed leaflets from 1½ to 4 inches long. The flowers are white and borne in compound umbels from 2 to 3 inches across. The fruit is about ⅛ inch long, ovate and somewhat compressed, bearing prominent ribs. Very common in sloughs and wet places throughout the entire area. This plant is thought to have slight poisonous properties but is by no means as dangerous as the Water Hemlock, which it much resembles. It is eaten readily by all classes of livestock without losses resulting. Water parsnip has singly pinnate leaves with narrow leaflets and many small bracts at the base of the compound flower umbel, whilst Water Hemlock has compound pinnate leaves, with lanceolate leaflets and usually no bracts at the base of the umbel. Both species have bracts at the base of each separate umbellet or single portion of the compound umbel.

THASPIUM (Meadow Parsnip) genus. 1 species.

(1) *Thaspium trifoliatum* (L.) Gray

MEADOW PARSNIP

A plant growing from 8 inches to 2 feet high. It has cordate basal leaves, but its stem leaves consist of 3 ovate leaflets. The flowers are purple or yellow and are borne in umbels from 1 to 2 inches across. The fruit has winged ribs, distinguishing this plant from Alexanders, which it much resembles. Found in woodlands in the eastern part of the area.

ZIZIA (Alexanders) genus. 2 species.

Smooth, shiny plants that grow up to about 2 feet tall. The leaves are either simple or divided into broad serrated leaflets. The flowers are yellow with no bracts except at the base of the umbellets.

1. Basal leaves simple and cordate.

(1) *Z. aptera*

All leaves divided into 3 leaflets.

(2) *Z. aurea*

- (1) *Zizia aptera* (Gray) Fern.
(*Z. cordata* (Walt.) Koch)

HEART-LEAVED ALEXANDERS

An erect plant from 1 to 2 feet high, which has long-stalked cordate basal leaves and thrice divided stem leaves with ovate leaflets. The flowers are bright yellow in compound umbels. It is very common in moist places throughout the entire area, and flowers early in season.

- (2) *Zizia aurea* (L.) Koch

GOLDEN ALEXANDERS

Very similar to the preceding, but all the leaves are twice or three times divided into leaflets. Fairly common in meadows and woodlands in the eastern part of the area.

CORNACEAE (Dogwood Family) 1 genus.

CORNUS (Dogwood) genus. 4 species.

Herbs, shrubs or small trees with simple leaves and perfect flowers with the floral parts in fours. The fruit is a small drupe with a two-seeded stone.

1. Low herbs with four large petal-like bracts surrounding minute heads of flowers.

(2) *C. canadensis*

Shrubs or small trees with cymes of flowers not surrounded by bracts.

2.

2. Leaves alternate; fruit bluish.

(1) *C. alternifolia*

Leaves opposite; fruit white.

3.

3. Leaves mostly lanceolate; branches and inflorescence practically hairless; pith of young branches tawny; bark greyish.

(3) *C. racemosa*

Leaves mostly ovate; branches and inflorescence with appressed hairs and often woolly; pith of young branches white; bark reddish or reddish-brown.

(4) *C. stolonifera*

- (1) *Cornus alternifolia* L. f.

ALTERNATE-LEAVED DOGWOOD

A shrub or small tree from 6 to 20 feet in height with the branches green, striped with white. The leaves are borne alternately on the stems and are ovate, from 2 to 5 inches long and pale beneath. The white flowers are followed by bluish fruit. Very rare but has been found in the southeastern parts of the area.

- (2) *Cornus canadensis* L.

BUNCH-BERRY

(*Chamaepericlymenum canadense* (L.) Ashe. & Graebn.)

Low-growing herbs from a horizontal, slender rootstock with woody based stems from 3 to 6 inches high. There are a pair of small leaves about the middle of the stem and an apparent whorl of ovate leaves from 1 to 3 inches long, near the head of the stem. There are 4 petal-like, white involucral bracts, from $\frac{1}{2}$ to $\frac{2}{3}$ inch long at the head of the stem, surrounding a cluster of tiny greenish flowers. The fruit are bright red drupes, about $\frac{1}{4}$ inch across and borne in a cluster. Very common in shady woodlands throughout the area.

(3) *Cornus racemosa* Lam.

PANICLED DOGWOOD

A shrub from 6 to 10 feet high with smooth grey bark. The leaves are usually lanceolate, opposite and from $1\frac{1}{2}$ to 4 inches long. The flowers and fruit are white, the stone of the fruit being slightly grooved. Not common but has been found in woodlands and along streams in the southeastern part of the area.

(4) *Cornus stolonifera* Michx.
(*Svida stolonifera* (Michx.) Rydb.)

RED OSIER DOGWOOD

A shrub from 3 to 6 feet high with bright reddish coloured twigs and opposite leaves. The leaves are generally ovate, with rounded base and pointed apex, from 1 to 3 inches long, paler beneath and with a few short, appressed hairs. The small white flowers are borne in flat-topped clusters from 1 to 2 inches across. The plants flower in early June and produce globular, white fruit about $\frac{1}{4}$ inch in diameter. Quite common in woodlands and coulees throughout the entire area and very conspicuous in winter because of its reddish branches. The variety *Baileyi* (Coult. & Evans) Drescher, differs from the species by the undersides of the leaves becoming woolly at maturity. This variety is common in the eastern portion of the area.

PYROLACEAE—MONOTROPACEAE— ERICACEAE—VACCINIACEAE

Most modern authorities place these four families as sub-families of ERICACEAE, but for the purposes of this publication, it has been deemed more convenient to treat them as separate families.

PYROLACEAE (Wintergreen Family) 3 genera.

Perennial, generally evergreen, herbs that have long rootstocks. The leaves are thick and leathery. The flowers are perfect, are borne in racemes or corymbs, and have 4 to 5 sepals and 4 to 5 petals, with twice as many stamens as there are petals. The fruit is a capsule.

1. Plants with leafy stems and corymbose inflorescence.

[CHIMAPHILA](#)

Plants with leaves in a basal rosette; the flowers either singly or in a raceme.

[2.](#)

2. Flowers borne singly.

[MONESES](#)

Flowers in a raceme.

[PYROLA](#)

CHIMAPHILA (Prince's Pine) genus. 1 species.

(1)*Chimaphila umbellata* (L.) Bart. var. *occidentalis* (Rydb.) Blake

PIPSISSEWA

A low perennial herb with decumbent stems, growing from 4 to 8 inches in height with whorled, oblanceolate leaves from 1 to 4 inches long, dark green and shiny above, but paler beneath. The flowers are pinkish white in colour, borne 4 to 7 in a cyme. Found in forested areas on dry soil throughout the northern and eastern borders of the area and has also been found in the Cypress Hills.

MONESSES (One-flowered Wintergreen) genus. 1 species.

(1) *Moneses uniflora* (L.) A. Gray

ONE-FLOWERED WINTERGREEN

A decumbent based herb growing to a height of from 3 to 6 inches from slender rootstocks. The leaves are round to ovate, from $\frac{1}{2}$ to 1 inch long and are borne in 1 or 2 pairs or in whorls near the base of the stem. The flowers are solitary and nodding at the head of the short stem. Each flower generally has 5 waxy white petals, is fragrant and is from $\frac{1}{2}$ to $\frac{7}{8}$ inch across. There are two stamens to each petal and a straight style with a knobbed summit. Found in cool, moist woodlands in the northern and eastern margins and in the Cypress Hills.

PYROLA (Wintergreen) genus. 5 species.

Low-growing evergreen herbs from slender creeping rootstocks, with round or oval stalked basal leaves. The inflorescence is a long, narrow raceme of perfect, regular, nodding flowers, generally with a protruding style or female organ. The fruit is a small, round capsule.

1. Style not protruding conspicuously from flower, and straight.

(4) *P. minor*

Style conspicuously protruding from flower.

2.

2. Flowers crowded on to one side of the stem (secund); style straight.

(5) *P. secunda*

Flowers not all on one side of stem; style curved.

3.

3. Petals pink or purplish in colour.

(1) *P. asarifolia*

Petals white or greenish.

4.

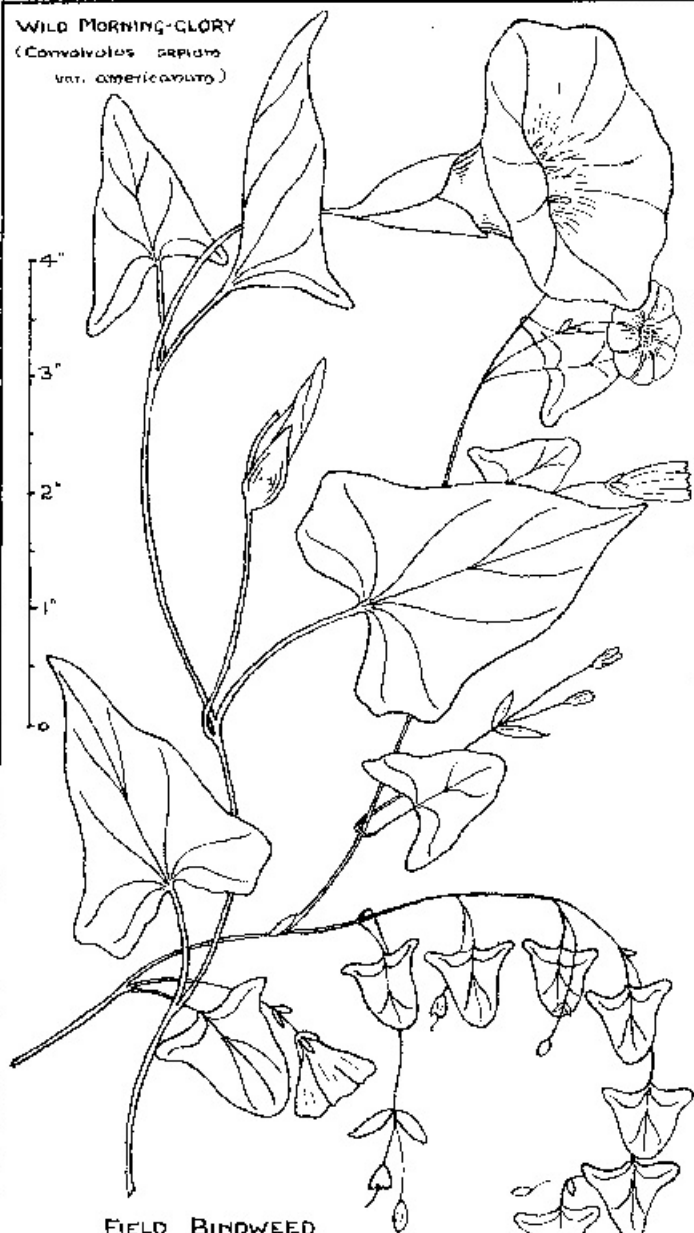
4. Leaf blades round, usually shorter than leaf stalks.

(2) *P. chlorantha*

Leaf blades oval, usually longer than stalks.

(3) *P. elliptica*

WILD MORNING-GLORY
(*Convolvulus sepium*
var. *americanus*)



FIELD BINDWEED
(*Convolvulus arvensis*)

a. e. b.

WILD MORNING-GLORY (*Convolvulus sepium* var. *americanum*)

FIELD BINDWEED (*Convolvulus arvensis*)

(1) *Pyrola asarifolia* Michx.

PINK WINTERGREEN

A plant from 6 to 15 inches high with leathery, shiny, basal leaves, cordate at the base and from 1 to 2 inches wide. The flowers, from 7 to 15 in number, are pinkish, up to ½ inch across when fully opened, and have 5 sepals, 5 petals and a protruding style. They are borne in an open raceme and are usually nodding. Fairly common in moist woods throughout the area. The variety *P. asarifolia* Michx. var. *incarnata* Fern. differs from the type by having leaf blades rounded or tapering at the base in place of being cordate; it is found in similar localities.

(2) *Pyrola chlorantha* Sw.

GREENISH-FLOWERED WINTERGREEN

This species has round or broadly oval basal leaves rounded at the apex. The leaves are thick and dull surfaced and grow on rather long stalks; the blades are from ⅜ to 1½ inches wide. The flowers are greenish white, about ½ inch across when opened, and borne racemously on a stem from 4 to 12 inches high. There are from 3 to 10 flowers in an inflorescence. Found in moist coniferous forest areas.

(3) *Pyrola elliptica* Nutt.

COMMON SHINLEAF

This species is similar to *P. chlorantha* but the leaf blades are oval, pointed at the apex and with stalks shorter than the leaf blades. The leaves are much longer, from 1½ to 3 inches in length. The flowers are very similar to *P. chlorantha* and are generally from 7 to 15 in an inflorescence. Fairly common in rich woods, particularly in the northern and eastern portions.

(4) *Pyrola minor* L.

LESSER WINTERGREEN

(*Braxilia minor* (L.) House)

A small species with thin, dark green, oval or rounded leaves that are from ⅜ to 1¼ inches long, and which grow on fairly long basal stalks. The flowers are small, about ¼ inch across, white or faintly pinkish, and are borne in a rather crowded raceme on a stem from 2 to 8 inches high.

Occasionally found in woodlands in the northeastern part of the area and in the Riding Mountains and Cypress Hills.

(5) *Pyrola secunda* L.
(*Orthilia secunda* (L.) House)

ONE-SIDED WINTERGREEN

A rather small species, generally growing in colonies from a much branched rootstock. The leaf blades are thin, oval to lanceolate, pointed at either end and from 1 to 2½ inches long. The flowers are small, about ¼ inch across and crowded on to one side of the short stem, which is from 3 to 10 inches high. Fairly common in woodlands and bluffs throughout the whole area.

MONOTROPACEAE (Indian Pipe Family) 2 genera.

Plants parasitic on the roots of other plants or feeding on dead organic matter (saprophytic). There is no green colouring matter in the leaves, which are reduced to scales. The flowers are perfect, generally drooping, with from 6 to 12 stamens. The fruit is a single celled capsule with numerous seeds.

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1. Petals united; stem sticky with an enlarged bulb-like base

[PTEROSPORA](#)

Petals distinct; stem not enlarged and bulb-like at base, not sticky.

[MONOTROPA](#)

MONOTROPA (Pine-sap) genus. 2 species.

1. Flowers solitary at summit of stem.

(2) *M. uniflora*

Flowers several in a raceme.

(1) *M. hypopitys*

(1) *Monotropa hypopitys* L. var. *latisquama* (Rydb.) Kearney & Peebles

(*Hypopitys latisquama* Rydb.)

PINE SAP

A pinkish or yellowish stemmed plant from 6 to 12 inches high with drooping flowers about ½ inch long. There are no leaves but merely small stalkless scales on the stem. Found in rich soil in forests but quite rare. They have been found in the Cypress Hills.

(2) *Monotropa uniflora* L.

INDIAN PIPE

Plants from 4 to 12 inches high with scaly white stems and a single drooping flower. These plants turn black during drying. They are found in damp woodlands in the northern and eastern parts of the area.

PTEROSPORA (Pine Drops) genus. 1 species.

(1) *Pterospora Andromedea* Nutt.

PINE DROPS

Tall-growing sticky stemmed plants with enlarged bases, growing from a rounded mass of roots. The stems grow from 6 inches to 3 feet high, often over an inch in diameter. They are usually of a pinkish or purplish colour. The leaves are reduced to numerous narrow scales. The flowers are borne in an open raceme, are whitish in colour and from $\frac{1}{4}$ to $\frac{3}{8}$ inch across, containing numerous small seeds. Found in rich coniferous woodlands in the Foothills Region and in the Cypress Hills.

ERICACEAE (Heath Family) 4 genera.

Perennial plants, generally shrubby, with perfect flowers. The fruit is usually a capsule but sometimes a berry or drupe. The Ericaceae differ from the Vacciniaceae in having the calyx free from the ovary. Therefore, the calyx is below the fruit.

1. Prostrate trailing shrub; evergreen leaves; fruit a berry.

[ARCTOSTAPHYLOS](#)

Not a prostrate shrub; fruit a capsule.

[2.](#)

2. Petals not united.

[LEDUM](#)

Petals united.

[3.](#)

3. Margins of leaves slightly toothed; flowers in a one-sided raceme.

[CHAMAEDAPHNE](#)

Margins of leaves smooth and not at all toothed, usually somewhat rolled; flowers in terminal umbels.

[ANDROMEDA](#)

ANDROMEDA (Bog Rosemary) genus. 1 species.

(1) *Andromeda polifolia* L.

BOG ROSEMARY

A shrub from 1 to 4 feet in height with linear-oblong leaves, the margins generally rolled towards the underside, dark green above and white below, from 1 to 2 inches long. The inflorescence is a few-flowered umbel of pinkish white urn-shaped flowers each about $\frac{1}{4}$ inch long. Found in swamps in the extreme northern and the eastern parts of the area.

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ARCTOSTAPHYLOS (Bearberry) genus. 1 species.

(1) *Arctostaphylos Uva-ursi* (L.) Spreng.

BEARBERRY

A prostrate, trailing shrub forming large mats on the ground. The leaves are spatulate, entire margined, evergreen and shiny dark green in colour, and from $\frac{1}{2}$ to 1 inch long. There are usually a number of brown or reddish leaves inter-mixed. The flowers are pinkish-white, urn-shaped, about $\frac{3}{16}$ inch long and borne in short, few-flowered racemes. The fruit is a bright red berry from $\frac{1}{4}$ to $\frac{3}{8}$ inch in diameter. Common in woodlands on sandy hills and eroded slopes throughout the entire area.

CHAMAEDAPHNE (Leather-leaf) genus. 1 species.

(1) *Chamaedaphne calyculata* (L.) Moench.

LEATHER-LEAF

Branching shrubs from 4 inches to 5 feet high, with oblong or obovate, slightly toothed, scurfy leaves from $\frac{1}{2}$ to 2 inches long. The flowers are white, somewhat urn-shaped, about $\frac{1}{4}$ inch long and borne in one-sided racemes. The fruit is an angular, round capsule about $\frac{3}{16}$ inch across. Found in swamps and bogs in the northern and eastern parts of the area.

LEDUM (Labrador Tea) genus. 2 species.

Branching evergreen shrubs with alternate, entire-margined leaves, which have rolled edges and are covered on the underside with rusty coloured woolly hairiness. The flowers have 5 white petals, and are borne in umbels or short corymbs. The fruit is an oblong or ovate, many seeded capsule.

1. Leaves linear, up to $\frac{1}{4}$ inch wide; stamens about 10; capsule oval to obovoid.

(1) *L. decumbens*

Leaves oblong to oval, $\frac{1}{4}$ inch wide or more; stamens 5 to 7; capsule oblong.

(2) *L. groenlandicum*

- (1) *Ledum decumbens* (Ait.) Lodd. NARROW-LEAVED LABRADOR TEA

A depressed shrub from 4 to 18 inches high with narrow leaves, from $\frac{1}{2}$ to $\frac{3}{4}$ inch long, dark green above and rusty brown beneath, with strongly rolled margins. The white flowers are from $\frac{1}{4}$ to $\frac{1}{2}$ inch across with 10 stamens. Found occasionally in the northeastern parts and in the Riding Mountains.

- (2) *Ledum groenlandicum* Oeder

LABRADOR TEA

A shrub growing from 1 to 4 feet high, with oblong or oval leaves, from $\frac{1}{2}$ to 2 inches long, strongly rolled at the margins, dark green above and rusty woolly below. The white flowers are about $\frac{1}{3}$ inch across and borne in terminal umbels or corymbs. Common in bogs and swampy woodlands in the extreme northern and eastern parts of the area. The leaves were used as tea in the far north and the plant thus gained its common name.

VACCINIACEAE (Huckleberry Family) 2 genera.

Generally shrubs or shrubby plants with alternate leaves. This family differs from Ericaceae in the fact that the calyx is above the ovary so that the fruit is crowned by the remains of the calyx.

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1. Berry snow-white; flowers solitary in axils of leaves; plant a low trailing shrub.

[CHIOGENES](#)

Berry red, blue or black.

[VACCINIUM](#)

CHIOGENES (Snowberry) genus. 1 species.

(1) *Chiogenes hispidula* (L.) T. & G.

CREEPING SNOWBERRY

Prostrate evergreen shrub with slender creeping stems from 4 to 12 inches long. The leaves are oval, dark green above and paler below, from $\frac{1}{4}$ to $\frac{1}{2}$ inch long. The flowers are white, less than $\frac{1}{8}$ inch long, and borne in the axils of the leaves, and the fruit a white berry about $\frac{1}{4}$ inch in diameter. Found in cold, wet woods and bogs in the north and eastern margins of the area.

VACCINIUM (Blueberry) genus. 4 species.

1. Petals appearing separate and turned backwards; dwarf plants with creeping stems and red berries.

(3) *V. oxycoccus*

Petals united into urn-shaped or bell-shaped tube.

2.

2. Stem creeping, but branches erect; leaves with black dots on underside; berry red.

(4) *V. Vitis-Idaea*

Plants erect; berry blue.

3.

3. Very low shrubs with flowers either singly or from 2 to 4 together.

(1) *V. caespitosum*

Flowers in dense clusters or short racemes.

(2) *V. myrtilloides*

- (1) *Vaccinium caespitosum* Michx.

DWARF BILBERRY

A very low shrub from 2 to 12 inches high, bearing thin obovate to oblanceolate leaves from $\frac{1}{2}$ to 1 inch long, green and shiny on both sides.

The flowers are pink or white, ovoid, about $\frac{3}{16}$ inch long and borne either singly or in groups of 3 or 4. The fruit is an edible blue berry with a bloom, about $\frac{1}{4}$ inch in diameter. Found in pine woods in the northern portion of the area and also in the Cypress Hills.

- (2) *Vaccinium myrtilloides* Michx.

CANADA BLUEBERRY

(*Cyanococcus canadensis* (Rich.) Rydb.)

A low shrub from 12 to 24 inches high with elliptic leaves from $\frac{3}{4}$ to $1\frac{1}{2}$ inches long, softly short hairy beneath. The flowers are greenish-white, about $\frac{1}{4}$ inch long and borne in small clusters. The fruit is a sweet tasting blue berry about $\frac{1}{4}$ inch in diameter, covered with a whitish bloom. Found in moist pine woods through the northern and northeastern parts of the area.

- (3) *Vaccinium oxycoccus* L.

SWAMP CRANBERRY

(*Oxycoccus palustris* Pers.)

A dwarf, creeping plant with slender trailing stems from 4 to 16 inches long, bearing small ovate leaves, from $\frac{1}{8}$ to $\frac{5}{16}$ inch long, green above and whitish below. The flowers, which are in terminal umbels, are pink about $\frac{1}{3}$ inch across, and the petals soon turn backwards (reflexed). The fruit is a small berry, from $\frac{1}{4}$ to $\frac{3}{8}$ inch in diameter, red in colour and often dark spotted when young. Fairly common in cold bogs and swamps in the northern parts.

(4) *Vaccinium Vitis-Idaea* L. var. *minus* Lodd. DRY-GROUND CRANBERRY
(*Vitis-Idaea punctata* Moench.)

A low shrub from 4 to 12 inches high, with erect branches growing from a trailing stem. The leaves are obovate with rolled edges, dark green and shiny above, paler with black dots beneath, from $\frac{1}{2}$ to $1\frac{1}{4}$ inch long. The bell-shaped flowers are pink or white, about $\frac{1}{3}$ inch long and are borne in small terminal clusters. The fruit is a dark red, acid berry about $\frac{1}{4}$ inch in diameter. Common in swamps and muskegs, and sandy woodlands throughout the northern and eastern margins of the area.

PRIMULACEAE (Primrose Family) 7 genera.

Herbs with simple leaves; flowers perfect and regular, generally with 5 sepals and 5 petals. There are as many stamens as there are petals and borne opposite them.

1. Leaves all basal (but leafy bracts below umbels of flowers in Androsace).

2.

Leaves not all basal.

4.

2. Sepals and petals reflexed (turning backwards).

DODECATHEON

Sepals and petals not reflexed.

3.

3. Tube of corolla as long as, or longer than, calyx; flowers pink or lilac; perennials.

PRIMULA

Tube of corolla shorter than calyx; flowers small and white; annuals.

ANDROSACE

4. Leaves mostly alternate, the lower ones sometimes opposite.

CENTUNCULUS

Leaves opposite or in whorls.

5.

5. Petals missing, flower pink; low-growing plant of saline areas.

GLAUX

Petals present.

6.

6. Plants with scale-like lower stem leaves, upper leaves in a whorl below flowers; usually with sepals, petals, and stamens in sevens.

TRIENTALIS

Normal stem leaves; flowers yellow.

LYSIMACHIA

ANDROSACE (Ray-Pimpernel) genus. 2 species.

1. Bracts below inflorescence elliptic, ovate, and more or less oblong.

(1) *A. occidentalis*

Bracts below inflorescence lanceolate to awl-shaped.

(2) *A. septentrionalis*

(1) *Androsace occidentalis* Pursh

WESTERN RAY-PIMPERNEL

A very small species, generally with few flowering stems. Found on dry, sandy soil throughout the southern part of the area, but quite uncommon.

(2) *Androsace septentrionalis* L.

RAY-PIMPERNEL

A common species with several varieties.

1. Flowering stems few, generally only one well developed.

(2c) species

Flowering stems many, usually of almost equal length

2.

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2. Calyx densely fine hairy.

(2b) var. *puberulenta*

Calyx almost free from hairiness.

(2a) var. *diffusa*

(2a) *Androsace septentrionalis* L. var. *diffusa* (Small) Knuth.

Occasionally found in the eastern parts and in the Riding Mountains.

(2b) *Androsace septentrionalis* L. var. *puberulenta* (Rydb.) Knuth.
(*A. puberulenta* Rydb.)

A very common species found on eroded and dry soils and very plentiful on stubble fields and cultivated land in early spring. A very common plant but so small that it is not generally noticed.

(2c) *Androsace septentrionalis* L.

The type species has been reported by Macoun from gravelly ridges in the Cypress Hills.

CENTUNCULUS (Chaffweed) genus. 1 species.

(1) *Centunculus minimus* L.

CHAFFWEED

A small depressed annual from 1 to 6 inches high, with obovate to spatulate leaves, almost stalkless and from $\frac{1}{8}$ to $\frac{5}{16}$ inch long. The tiny pink flowers are borne in the axils of the leaves and are about $\frac{1}{8}$ inch across. Very rare but has been found in wet places and lake edges in the southern part of the area.

DODECATHEON (Shooting-star) genus. 3 species.

Perennial herbs with basal leaves. The nodding flowers are very showy with reflexed petal lobes, and are borne in a small umbel at the head of the leafless stem. The five stamens are very prominent and are united at the base and bear long purple anthers. The fruit is a cylindrical capsule containing many minute seeds.

1. Leaves finely hairy.

(1) *D. Cusickii*

Leaves smooth and hairless.

2.

2. Capsule opening by top falling off like a lid.

(2) *D. cylindrocarpum*

Capsule opening by splitting open at top.

(3) *D. pauciflorum*

- (1) *Dodecatheon Cusickii* Greene

CUSICK'S SHOOTING-STAR

An early flowering species growing from 4 to 8 inches high with finely hairy leaves which have winged stalks. It is not common but has been found in the extreme southwestern corner of the area.

- (2) *Dodecatheon cylindrocarpum* Rydb.

MOUNTAIN SHOOTING-STAR

An early flowering, rather low-growing species with oblanceolate or spatulate leaves from 1½ to 4 inches long, pale green, and hairless. The flowers, numbering from 1 to 5, are borne in umbel form on a long stem from the base. They vary in colour from purple to white, but are generally pink, and the petals are reflexed showing the prominent purple stamens, borne on orange filaments. The petals often have a yellowish inner base with a zig-zag purple line, making the flower very handsome when closely examined. In the white phase, which is not unusual, the anthers and petals are white with no contrasting colours. This species is very common in the Cypress Hills and vicinity.

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- (3) *Dodecatheon pauciflorum* (Dur.) Greene

SHOOTING-STAR

A mid-season flowering species with long, spatulate, hairless basal leaves

from 1 to 3 inches long. The flowers are pink or lilac with a yellowish throat, often with a purple wavy line, and are borne from 1 to 12 in an umbel on a stem from 4 to 12 inches high. Some authorities divide this into two species, calling one *D. salinum*, but the distinction hardly warrants the division. Fairly common in wet or saline sloughs and often associated with *Primula incana*.

GLAUX (Sea Milkwort) genus. 1 species.

(1) *Glaux maritima* L.

SEA MILKWORT

A low-growing, rather succulent, leafy perennial, from a creeping rootstock. The leaves are opposite, stalkless, from oval to linear-oblong in shape and from $\frac{1}{8}$ to $\frac{1}{2}$ inch long. The small, pinkish flowers are borne in the axils of the leaves and are about $\frac{1}{8}$ inch long. If closely examined they will be seen to have no petals, merely one floral ring. Fairly common in moist, saline areas throughout most of the area.

LYSIMACHIA (Loosestrife) genus. 3 species.

1. Flowers in short crowded spikes in axils of leaves.

(3) *L. thyrsoiflora*

Flowers borne on separate stalks in axils of leaves.

2.

2. Leaves mostly lanceolate, rounded or almost cordate at base; flowers $\frac{3}{4}$ to $1\frac{1}{4}$ inches across.

(1) *L. ciliata*

Leaves linear-lanceolate, tapering to base; flowers $\frac{5}{8}$ to $\frac{3}{4}$ inch across.

(2) *L. hybrida*

- (1) *Lysimachia ciliata* L.

FRINGED LOOSESTRIFE

(*Steironema ciliatum* (L.) Raf.)

An erect plant from 1 to 3 feet high with opposite leaves, from 2 to 6 inches long, pale green in colour, pointed at apex and rounded at the base, borne on stalks from $\frac{1}{4}$ to $\frac{1}{2}$ inch long with a row of hairs on one side of stalk. The flowers are from $\frac{3}{4}$ to $1\frac{1}{4}$ inches across with 5 yellow petals, somewhat unevenly pointed at the tips, and are borne in twos or threes in the upper leaf axils. There are 5 stamens and 5 infertile stamens (staminodia). The fruit is a many-seeded ovoid capsule. Fairly common in woodlands and in moist spots throughout the entire area covered.

- (2) *Lysimachia hybrida* Michx.

LANCE-LEAVED LOOSESTRIFE

(*Steironema hybridum* (Michx.) Raf.)

Very similar in most respects to the previous species, but the leaves are short-stalked and narrower, tapering to the base. Found occasionally in moist meadows but not nearly so common as the preceding species.

- (3) *Lysimachia thyrsoiflora* L.

TUFTED LOOSESTRIFE

(*Naumburgia thyrsoiflora* (L.) Duby)

An erect plant from 8 inches to 2 feet high with lanceolate to linear-lanceolate stalkless leaves, from 2 to 4 inches long. The small flowers,

which are about $\frac{1}{4}$ inch or less in diameter, are borne in dense spike-like racemes in the axils of the leaves about half way up the stem. Common in swamps and moist places to the north and east of the area, but scarce in other portions.

PRIMULA (Primrose) genus. 3 species.

1. Leaves with sulphur-yellow mealiness on the undersides; flowering stems generally more than 4 inches high

(1) *P. incana*

Leaves green on both sides; flowering stems rarely over 4 inches high.

2.

2. Flower deep blue in colour; sepals $\frac{2}{3}$ as long as tube of corolla.

(2) *P. MacCalliana*

Flower pink or pale purple; sepals $\frac{1}{2}$ as long as tube of corolla.

(3) *P. mistassinica*

(1) *Primula incana* M. E. Jones

MEALY PRIMROSE

A low plant with a basal rosette of spatulate to oval leaves from 1 to 4 inches long, tapering at base to a stalk and blunt at the apex. The upper sides are green and the underside covered with a sulphur-yellow mealiness. The flowers are pale lilac with a yellow centre, and are about $\frac{1}{4}$ inch across, borne in an umbel-like cluster at the head of a leafless stem from 4 to 12 inches high. Occasionally found growing in the grass in saline meadows and moist spots throughout the entire area.

(2) *Primula MacCalliana* Wiegand.

MACCALLA'S PRIMROSE

(3) *Primula mistassinica* Michx.

DWARF CANADIAN PRIMROSE

No. 2, is rare, in northwest portion of area and No. 3 found occasionally in northern & eastern portion.

TRIENTALIS (Star Flower) genus. 1 species.

- (1) *Trientalis borealis* Raf.
(*T. americana* Pursh)

STAR FLOWER

A perennial from horizontal, creeping roots which send up simple stems from 3 to 9 inches high, bearing a whorl of from 5 to 10 lanceolate leaves from 1½ to 4 inches long and tapering at either end. The few flowers are from ¾ to ½ inch across, white, with 7 pointed petals, and are borne on slender stalks from the centre of the leafy whorl. Found occasionally in damp woodlands throughout the northern and eastern parts of the area.

OLEACEAE (Olive Family) 1 genus.

FRAXINUS (Ash) genus. 3 species.

Hardwood trees with pinnate leaves. The inconspicuous flowers are generally unisexual and appear about the same time as the leaves. The fruit is borne in pendulous clusters and consists of a seed with a long membranous, yellowish-green wing, the whole being called a "samara".

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1. Body or seed of the samara flattened, the wing extending to the bottom of the seed.

(2) *F. nigra*

Body or seed of the samara almost circular in cross-section, the wing extending half way down the body of the seed.

2.

2. Leaflets with definite stalks; wing of samara from 1½ to 2 inches long.

(3) *F. pennsylvanica*

Leaflets with practically no stalks; wing of samara not more than 1¼ inches long.

(1) *F. campestris*

(1) *Fraxinus campestris* Britton

GREEN ASH

A small tree growing to a height of 30 feet. Its pinnate leaves generally bear 7 leaflets from 1½ to 4 inches long that are occasionally hairy on the underside. Found commonly along the southern part of Manitoba in valleys and hillsides. It may be merely a western form of *F. pennsylvanica*.

(2) *Fraxinus nigra* Marsh.

BLACK ASH

A tall tree with pinnate leaves, bearing from 7 to 11 leaflets, the difference between the wing and the body of the samara being rather indistinct. Found in the southeastern part of Manitoba.

(3) *Fraxinus pennsylvanica* Marsh. var. *lanceolata* (Borkh.) Sarg.
(*F. lanceolata* Borkh.) LANCE-LEAVED ASH

A fairly tall tree, the pinnate leaves bearing from 5 to 7 leaflets, each from 2 to 8 inches long, and lanceolate to elliptic in shape. Found along rivers and streams in the eastern half of the area covered. This is the species generally distributed for shelterbelt purposes as Manitoba Green Ash.

GENTIANACEAE (Gentian Family) 4 genera.

Mostly low herbs with a bitter sap and, with one exception, opposite, simple and stalkless leaves. The flowers are regular and perfect, with a tubular corolla, generally with 4 to 5 lobes at the mouth, with as many stamens as corolla lobes. The fruit is a capsule opening by valves and containing many seeds.

1. Perennial bog plants with trifoliate leaves (three leaflets).

[MENYANTHES](#)

Plants with simple opposite leaves.

[2.](#)

2. Flowers with four hollow spurs at base

[HALENIA](#)

Flowers not spurred at base.

[3.](#)

3. Corolla campanulate or bell-shaped.

[GENTIANA](#)

Corolla rotate.

[PLEUROGYNE](#)

GENTIANA (Gentian) genus. 12 species.

1. Flowers with plaits or folds between the lobes of the corolla. 2.
Flowers without plaits or folds between the lobes of the corolla. 6.

2. Mouth of corolla almost or quite closed; corolla lobes absent or very minute. (3) G. Andrewsii
Mouth of corolla open; corolla lobes distinct. 3.

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3. Corolla cylindric, not bell-mouthed, yellowish-green; the anthers joining at tops into a ring. (6) G. flavida
Corolla campanulate, bell-shaped at mouth; anthers distinct from each other. 4.

4. Stem and leaves rough to the touch and sometimes with fine hairs on midribs of leaves. (11) G. puberula
Stem and leaves smooth and hairless. 5.

5. Flower clusters dense, the stalks and branches very short. (2) G. affinis
Flower clusters loose, the stalks and branches long. (7) G. interrupta

6. Lobes of corolla fringed or toothed; flowers usually an inch or more long; flower parts generally in fours. 7.
Lobes of corolla not fringed; flowers usually less than an inch long; flower parts generally in fives. 10.

7. Leaves lanceolate, rounded or almost cordate at base; petal lobes deeply fringed at summit.

(4) *G. crinita*

Leaves linear or linear-lanceolate; petal lobes either very slightly fringed or toothed at summit.

8.

8. Stalks of stamens hairy in middle.

(8) *G. Macounii*

Stalks of stamens without hairs.

9.

9. Stem leaves linear-lanceolate; flowers 1¼ to 2 inches long, petal lobes fringed along the sides.

(10) *G. procera*

Stem leaves linear; flowers 1 to 1¼ inches long, petal lobes only slightly fringed along the sides.

(5) *G. detonsa*

10. Flowers numerous and crowded, with very short stalks, generally yellowish in colour.

(12) *G. strictiflora*

Flowers comparatively few, with distinct stalks, and generally blue or purplish.

11.

11. Upper stem leaves long-lanceolate.

(9) *G. plebeia*

Upper stem leaves ovate or ovate-lanceolate.

(1) *G. acuta*

(1) *Gentiana acuta* Michx.
(*Amarella acuta* (Michx.) Raf.)

NORTHERN GENTIAN

An annual plant growing from 6 to 18 inches high. Its upper leaves are lanceolate and rather sharp pointed, with lower ones generally spatulate or obovate and blunt at the apex. The flowers are blue; from $\frac{3}{8}$ to $\frac{5}{8}$ inch long and borne in clusters in the upper leaf axils. Found in moist places and woodlands, common in the northern and eastern parts of the area but rarely found in the drier southern parts, being more a plant of mountain meadows.

(2) *Gentiana affinis* Griseb.

OBLONG-LEAVED GENTIAN

(*Dasystephana affinis* (Griseb.) Rydb.).

A leafy stemmed perennial species from 6 to 12 inches high, often prostrate, generally with several stems from a deep tap-root. The leaves are oblong to lanceolate from $\frac{1}{2}$ to $1\frac{1}{4}$ inches long. The flowers are dark blue or purple, from 1 to $1\frac{1}{4}$ inches long, and borne in raceme like, dense clusters on the upper end of the stems. Sometimes merely one or a few flowers are found to a stem. Fairly common in sandy areas and moist meadows, even saline ones, throughout most of the area, except perhaps in the northern fringe.

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(3) *Gentiana Andrewsii* Griseb.

CLOSED GENTIAN

(*Dasystephana Andrewsii* (Griseb.) Small)

An upright, rather sturdy perennial herb growing from 1 to 2 feet high. It has ovate to lanceolate leaves from 2 to 5 inches long, with from 3 to 7 veins. The flowers are blue with whitish folds, or sometimes all white, about 1 inch long, generally closed at the mouth and borne in clusters at the end of the stem or in the axils of the upper leaves. Found in wet meadows and among bushes in the eastern part of the area covered.

(4) *Gentiana crinita* Froel.

FRINGED GENTIAN

(*Anthopogon crinitus* (Froel.) Raf.)

An annual species from 6 to 18 inches high with somewhat clasping lanceolate leaves from 1 to 2 inches long. The flowers are large, almost 2 inches long, sky blue in colour with a conspicuous fringe around the four lobes, and are borne at the end of the stems. Fairly frequent in moist woods or low areas in the eastern portion of the area.

(5) *Gentiana detonsa* Rottb. var. *tonsa* Lunell

BOG GENTIAN

(*Anthopogon tonsus* (Lunell) Rydb.)

An upright species growing to a height of from 12 to 16 inches. Its linear stem leaves are from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long, while the basal leaves are shorter and broader. The flowers are blue or purple, from $1\frac{1}{4}$ to $1\frac{1}{2}$ inches long with the edges of the lobes slightly ragged. Fairly common in swamps and bogs in the northern parts of the area.

- (6) *Gentiana flavida* A. Gray YELLOWISH GENTIAN
(*Dasystephana flavida* (A. Gray) Britt.)

A stout erect perennial from 1 to 3 feet high, which has ovate-lanceolate leaves from 2 to 5 inches long. The flowers are from 1¼ to 2 inches long, greenish or yellowish-white in colour, and are borne in a cluster at the head of the stem. Frequently found in moist woods in the eastern portion of the area covered.

- (7) *Gentiana interrupta* Greene INTERRUPTED GENTIAN
(*Dasystephana interrupta* (Greene) Rydb.)

A species somewhat resembling the oblong-leaved gentian, but the flower clusters are much less compact with long flower stalks and longer stem spaces between the pairs of leaves. While a species of the mountains, it has been reported from prairie points but very rarely.

- (8) *Gentiana Macounii* Holm. MACOUN'S FRINGED GENTIAN
(*Anthopogon Macounii* (Holm.) Rydb.)

A branched plant from 2 to 12 inches high with linear stem leaves about 1 inch long and short spatulate basal leaves. The flowers are deep blue from ⅝ to 1¼ inches long, toothed at the summit, and fringed along the sides of the lobes. The stalks of the stamens are hairy about the middle. Quite an unusual plant in the area, but may be looked for in gravelly soil and marshes around the northern edges.

- (9) *Gentiana plebeia* Cham. FEW-FLOWERED GENTIAN
(*Amarella plebeia* (Cham.) Greene)

An annual species, very similar to Northern Gentian, but has long-lanceolate upper stem leaves. The basal leaves are smaller, being from ½ to 1¼ inches long. The flowers are borne in the axils of the upper leaves and are of a bluish or rarely greenish-yellow colour. A submontane species which may be found in the Foothills area and has been recorded in the Cypress Hills.

- (10) *Gentiana procera* Holm. SMALL FRINGED GENTIAN
(*Anthopogon procerus* (Holm.) Rydb.)

An annual species somewhat similar to the fringed gentian but smaller, with linear stem leaves. The flower is blue, from 1 to 1¾ inches long with lobes toothed at the summits and fringed along the sides. Found in wet meadows in the eastern and northeastern parts of the area and found in rather moister situations than *G. crinita*.

- (11) *Gentiana puberula* Michx. DOWNY GENTIAN
(*Dasystephana puberula* (Michx.) Small)

This perennial species generally has a single stem from 8 to 18 inches high, often covered with minute hairs. The leaves are lanceolate and generally rough or minutely hairy on the edges and midrib. The flowers are blue, about 1½ inches long and borne in the upper leaf axils. Very rare in the area, its general distribution being further south.

- (12) *Gentiana strictiflora* (Rydb.) A. Nels. MANY-FLOWERED GENTIAN
(*Amarella strictiflora* (Rydb.) Greene)

An erect annual species from 8 to 16 inches high with spatulate basal leaves and lanceolate, 3 to 5 ribbed stem leaves from ¾ to 2 inches long. The flowers are crowded on a short stalk at the head and in the upper leaf axils of the plant, and are from $\frac{5}{16}$ to ½ inch long, generally greenish-yellow, but occasionally bluish or white. A fairly common species of meadows and open woods throughout the central and western parts of the area.

HALENIA (Spurred Gentian) genus. 1 species.

(1) *Halenia deflexa* (Smith) Griseb.

SPURRED GENTIAN

An annual plant with slender, upright stems from 6 to 18 inches high. The basal leaves are spatulate or obovate and the stem leaves oblong to ovate, from 1 to 2 inches long. The flowers are borne in clusters at the head of the stems and in the axils of the upper leaves and are about $\frac{1}{4}$ inch long, purplish to greenish or yellowish-white in colour. They are distinguished from the gentians by four hollow spurs projecting downwards from the base of the flowers. Fairly common in moist woodlands in the northern and eastern wooded portions of the area.

MENYANTHES (Buck-bean) genus. 1 species.

(1) *Menyanthes trifoliata* L.

BUCK-BEAN

A perennial bog plant arising from a thick, scaly rootstock. The leaves are trifoliate with three elliptic leaflets from 2 to 4 inches long, and are borne on long basally sheathed stems from 2 to 8 inches long. The flowers are clustered in a raceme at the head of a separate stalk and are whitish or pinkish purple, about ½ inch long. The fruit is an ovoid capsule containing a few shiny seeds. Commonly found in bogs and wet swampy places along the northern and eastern boundaries of the area.

PLEUROGYNE (Marsh Felwort) genus. 1 species.

- (1) *Pleurogyne rotata* (L.) Griseb.
(*Lomatogonium rotatum* (L.) Fries)

MARSH FELWORT

An erect slender annual growing from 4 to 15 inches high with spatulate basal leaves and linear to lanceolate stem leaves from $\frac{1}{2}$ to 2 inches long. The white or bluish flowers are $\frac{1}{2}$ to $\frac{3}{4}$ inch across, the corolla deeply cleft into 4 to 5 segments, and are borne singly or in clusters in the axils of the leaves. Rare, but occasionally reported from marshy land throughout the area.

APOCYNACEAE (Dogbane Family) 1 genus.

Perennial herbs with acrid, milky sap, and entire, opposite leaves. The flowers are regular, perfect and bell-shaped with 5 sepals and 5 partly united petals. The fruit are long, narrow follicles, borne in pairs and containing many seeds, each seed bearing a tuft of hairs.

APOCYNUM (Dogbane) genus. 4 species.

1. Petals fully twice as long as sepals; stem leaves drooping or spreading.

2.

Petals less than twice as long as sepals; stem leaves ascending.

3.

2. Petals three times as long as sepals; clusters of flowers both at end of stems and in axils of leaves.

(1) *A. androsaemifolium*

Petals twice as long as sepals; flower clusters at end of stems only.

(3) *A. medium*

3. Leaves tapering at the base and distinctly stalked.

(2) *A. cannabinum*

Leaves blunt or rounded at base and very short stalked or stalkless.

(4) *A. sibiricum*

(1) *Apocynum androsaemifolium* L.

SPREADING DOGBANE

A somewhat bushy perennial from a horizontal rootstock, growing from 1 to 4 feet in height. The plant is very branched and stems when broken exude a milky sap. The leaves are opposite, ovate or oval in shape, somewhat paler and often slightly hairy on the lower sides, and are from 1 to 3 inches long. The flowers are borne in clusters at the ends of the branches and in the axils of the leaves, are pink, from $\frac{1}{4}$ to $\frac{1}{3}$ inch in length, and with the petal lobes spreading and often curved downwards. The fruit are pairs of long, narrow follicles or pods, up to 4 inches in length and tubular, containing numerous hairy tipped seeds. Quite common in woodlands and on light sandy soil across the entire area.

(2) *Apocynum cannabinum* L.

INDIAN HEMP

A deep-rooted perennial from 18 inches to 3 feet high, with fairly erect branches. It has lanceolate-oblong or ovate-oblong leaves, pale green above and often somewhat whitened beneath, from $1\frac{1}{2}$ to 4 inches long, and narrowed at either end. The flowers are greenish-white about $\frac{1}{8}$ to $\frac{3}{16}$ inch long and borne in clusters at the ends of the branches and in the leaf axils.

The fruit is very similar to the preceding species. Occasionally found in thickets in the eastern parts of the area, and in the northwestern portion.

(3) *Apocynum medium* Greene

INTERMEDIATE DOGBANE

This species is very similar to spreading dogbane for which it is often mistaken, but has a shorter flower, about $\frac{1}{4}$ inch or less in length, generally greenish or white with a pink tinge. The flower clusters are only borne at the ends of the branches and not in leaf axils. Not common in the area, but has been found in the extreme southwest corner of the Foothill Region of southern Alberta.

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(4) *Apocynum sibiricum* Jacq.

CLASPING-LEAVED DOGBANE

An erect perennial from tough running rootstocks, growing to a height of from 1 to 2 feet. The leaves are generally oblong to ovate, from 1 to 3 inches long, pale green in colour and with a rounded, blunt base, sometimes with a very short stalk and sometimes clasping the stem. The stem, like all dogbanes, contains a milky sap. The numerous flowers are greenish-white, about $\frac{1}{4}$ inch long and borne in clusters at the ends of the stems. The fruit is the typical double follicle of this genus. Very common in moist, sandy soils and banks of creeks throughout the entire southern part of the area, and often a very persistent weed in gardens and cultivated land, and locally in the northwestern portion.

ASCLEPIADACEAE (Milkweed Family) 2 genera.

Perennial herbs generally with milky juice, and flowers borne in umbels. The flowers are rather complicated, but have 5 corolla lobes with a 5-lobed crown joining the stamens and the corolla lobes. The corolla lobes are generally reflexed or turned downwards. The fruit is a large and conspicuous follicle or large pod which opens down one side to release the numerous seeds, each of which bears a tuft of silky hairs. The pollen grains in this family are united into masses or pollinia, which are pear-shaped and attached in pairs. The peculiar structure of the flower causes these pairs of pollinia to adhere to visiting insects and be thus transferred to other flowers to ensure cross fertilization.

1. Hoods of the crown of flower without an incurved horn within.

[ACERATES](#)

- Hoods of the crown of flower with an incurved horn within.

[ASCLEPIAS](#)

ACERATES (Green milkweed) genus. 3 species.

Perennial herbs with a milky sap, and either opposite or alternate leaves. The flowers are borne in umbels and are generally greenish or purplish in colour and the hoods of the crown do not have an incurved horn. The fruits are large and borne upright on the plant, are sometimes slightly downy but have no tubercles.

1. Plant hairy throughout with a solitary stalked umbel of flowers at end of stem.

(2) *A. lanuginosa*

Plant only slightly hairy, umbels of flowers both terminal and in axils of leaves, with very short or no stalks.

2.

2. Leaves oval to linear; flower hoods not toothed at apex.

(3) *A. viridiflora*

Leaves narrowly linear; flower hoods 3-toothed at apex.

(1) *A. angustifolia*

- (1) *Acerates angustifolia* (Nutt.) Dec.

NARROW-LEAVED MILKWEED

A plant from 1 to 2 feet high with several stems, somewhat hairy above but hairless below. The leaves are either opposite or alternate, narrowly linear and from 2 to 5 inches long. The flowers are greenish with white hoods. Very rare but has been reported from sandhills in western Manitoba.

- (2) *Acerates lanuginosa* (Nutt.) DC.

WOOLLY MILKWEED

An erect, simple, hairy plant from 6 to 18 inches high with ovate-lanceolate leaves from 1 to 4 inches long and a solitary umbel of greenish flowers with purple hoods. Very rare in the area but has been reported from Manitoba.

- (3) *Acerates viridiflora* (Raf.) Eat.

GREEN MILKWEED

A perennial herb with stems sometimes reclining at base, from 1 to 3 feet high. The leaves are generally ovate-lanceolate, from 1 to 5 inches long. A variety, var. *linearis* A. Gray has linear leaves. The flowers are borne in

umbels at the head of the stem and also in the leaf axils and are greenish-yellow to dull purple with purple hood. Found occasionally in dry or sandy soil in the eastern and south-central parts of the area.

ASCLEPIAS (Milkweed) genus. 5 species.

Coarse perennial herbs with deep taproots, all in the area with a white milky juice. Leaves opposite or whorled. The petals and sepals are reflexed (turned downwards), and the crown of the flower bears an incurved horn on each of the five hoods. The fruit is a large pod or cornucopia containing many seeds, each with a tuft of white silky hairs.

1. Leaves linear and in whorls.

(5) *A. verticillata*

Leaves broader and opposite.

3.

2. Flowers rose or red in colour; plant practically hairless.

(1) *A. incarnata*

Flowers purplish or greenish in colour; plants hairy or downy.

3.

3. Leaves ovate or lanceolate, tapering to base; pods without tubercles.

(2) *A. ovalifolia*

Leaves blunt or almost cordate at base, oblong or oval; pods with soft tubercles.

4.

4. Hoods of corolla long and lanceolate, three times as long as stamens.

(3) *A. speciosa*

Hoods of corolla short and blunt, not much longer than stamens.

(4) *A. syriaca*

- (1) *Asclepias incarnata* L.

SWAMP MILKWEED

A tall, slender stemmed perennial, from 2 to 4 feet high, almost devoid of hairiness, with lanceolate opposite leaves from 3 to 6 inches long. The small flowers are usually rosy red in colour but may be paler and borne in numerous, many-flowered umbels. The pods of seed are borne upright, generally in pairs and are from 2 to 3½ inches long and almost smooth. Fairly common in swamps, wet spots and roadside ditches throughout the southeastern part of the area.

(2) *Asclepias ovalifolia* Dene.

DWARF MILKWEED

A low-growing species from 1 to 2 feet in height with ovate to lanceolate leaves narrowing or tapering to the base, from 2 to 3 inches long. The flowers are greenish-white and borne on long stalks in umbels. Found occasionally on moist prairie throughout the southeast section of the area extending slightly further north and west than the previous species.

(3) *Asclepias speciosa* Torr.

SHOWY MILKWEED

A stout, erect perennial from 1 to 2½ feet high, usually found in large colonies. The leaves are broad and oval, from 3 to 6 inches long, rounded or somewhat heart-shaped at base, and with a whitish downiness. The flowers are flesh coloured or pinkish purple, from ⅓ to ½ inch across and are borne in very dense, almost globular umbels from 2 to 3 inches in diameter. The inflorescence has a strong, sweet smell which has somewhat soporific properties. The nectar also appears to have a stupefying effect on insects which may often be found in a drowsy condition below the plants. The seed pods are borne on recurved stalks, are from 3 to 4 inches long, densely white woolly and covered with soft tubercles. The commonest milkweed and found in moist places throughout the southern portion of the area covered.

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(4) *Asclepias syriaca* L.

SILKY MILKWEED

Very similar to the preceding species but with elliptic leaves, which are rounded and not somewhat heart-shaped at the base. The flowers differ in having a short blunt hood on the corolla. Fairly common on moist sandy soil and river banks in the southeastern corner of the area.

(5) *Asclepias verticillata* L.

WHORLED MILKWEED

A slender stemmed plant from 1 to 2 feet high with very narrow, linear leaves from 1½ to 3 inches long, borne in whorls of twos or fours up the stem. The small flowers are greenish-white and borne in small umbels. Occasionally found on dry soil in the extreme southeastern portion.

CONVOLVULACEAE (Convolvulus Family) 2 genera.

1. Leafy twining plants with large funnel-like flowers.

[CONVOLVULUS](#)

Parasitic twining plants with leaves reduced to scales.

[CUSCUTA](#)

CONVOLVULUS (Morning-glory) genus. 2 species.

Twining or climbing perennials from creeping roots. The leaves are alternate and generally arrow or spear-shaped. The flowers are usually large and funnel or bell-shaped with 5 stamens. The fruit is a several seeded capsule.

1. Calyx not enclosed in two large bracts.

(1) *C. arvensis*

Calyx enclosed in two large bracts.

(2) *C. sepium*

- (1) *Convolvulus arvensis* L.

FIELD BINDWEED

A deep-rooted perennial with a very extensive system of white rootstocks and slender twining stems. The leaves are from 1 to 1½ inches long, somewhat bluntly triangular with hastate bases. The flowers vary from pink to white, from ¾ to 1 inch across and are borne either singly or 2 to 4 in a bunch. The fruit is a round 2-celled capsule containing 3 or 4 large, dark brown angular seeds. This is an introduced weed often found in gardens and very difficult to eradicate.

- (2) *Convolvulus sepium* L.

HEDGE BINDWEED

A perennial plant, in nature twining on bushes and shrubs, but with cultivation practices often becoming a creeping field weed. The roots are white and creeping, sending up many shoots. The leaves vary in size and shape but are roughly triangular with hastate or sagittate bases. There are two large green bracts which enclose the sepals and lower portion of the flower, and the large funnel-shaped flowers vary from pink to pure white. The fruit is a capsule containing several large angular brown or black seeds. Three varieties are to be found in the area.

The species (*Convolvulus sepium* L.) has the lobes of the leaves directed downwards and the leaves 2 to 5 inches in length. The flowers are from 1¾ to 2 inches long and up to 2½ inches across. Found around bushes and waste places, especially in the eastern part of the area, probably introduced from Europe or Asia. The distinguishing features between the species and var. *americanus* are the spreading lobes of the latter. The following key separates the two varieties.

1. Leaves with the basal lobes spreading sideways; hairless or only slightly hairy.

(2a) var. *americanus*

Leaves with rounded or arrow-shaped, downward pointing basal lobes; stems and leaves covered with dense, fine hairs.

(2b) var. *pubescens*

- (2a) *Convolvulus sepium* L. var. *americanus* Sims WILD MORNING-GLORY
(*C. americanus* (Sims) Greene)

A native twining perennial with broadly hastate leaves and either pink or white funnel-like flowers. Commonly found climbing on bushes along water courses and in moist areas throughout the entire area. When the area on which they grow is brought under cultivation, the roots are spread by tillage throughout the land and the plant thus spreads rapidly by both root portions and by seed, often taking full control of large areas and choking out the crops. When growing in large masses, the size of the leaves and flowers often becomes much smaller, almost to suggest a different species. The seeds have a long dormant period and may remain viable in the soil for many years even under good germination conditions.

- (2b) *Convolvulus sepium* L. var. *pubescens* (Gray) Fernald
(*C. interior* House) INLAND BINDWEED

A low-growing twining or crawling perennial with leaves from 1 to 1½ inches long, rounded at the angles and arrow-shaped or heart-shaped at the base, and covered with fine downy hairs beneath. The flowers are white, and about 1½ inches long. Found occasionally on sandy soils throughout the southern part of the area covered.

CUSCUTA (Dodder) genus. 4 species.

Parasitic annual plants with leaves absent or reduced to scales, found twining on host plants. The dodders grow from seed and, after becoming fastened to the host plants by aerial roots and suckers, the root and basal portion of the stem decays and their sustenance is entirely derived from their host plant. The flowers are pinkish or whitish and borne in clusters with a bell-shaped or almost globular corolla of 4 to 5 overlapping lobes, and with small scales inside the throat, alternating with the lobes. The fruit are somewhat globular capsules borne in clusters, and contain from 2 to 4 seeds each. This is a rather difficult genus to identify, as the small flowers need to be closely examined for differing characteristics.

1. Stigmas not knobbed at summit; the top of the capsule falling off when mature.

(4) *C. planiflora*

Stigmas knobbed at summit; capsule breaks open irregularly when mature.

2.

2. Lobes of corolla turning inwards at tips.

(3) *C. pentagona*

Lobes of corolla erect or spreading outwards.

3.

3. Scales in corolla throat abruptly flattened at tip and two cleft; style $\frac{1}{4}$ to $\frac{1}{3}$ as long as ovary.

(1) *C. curta*

Scales in corolla throat ovate and neither flattened at tip nor two cleft; style $\frac{1}{3}$ to $\frac{1}{2}$ as long as ovary.

(2) *C. Gronovii*

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(1) *Cuscuta curta* (Engelm.) Rydb.

SHORT-SCALED DODDER

A slender stemmed species, very similar to common dodder for which it is often mistaken. Has been found in low areas and river flats in the south-central portion of the area. Sometimes regarded as a variety of *C. Gronovii*, and by Fernald called *C. magalocarpa* Rydb.

(2) *Cuscuta Gronovii* Willd.

COMMON DODDER

An orange or yellow stemmed species found twining on various coarse herbs and shrubs. Reported from the southeastern part of the area.

(3) *Cuscuta pentagona* Engelm.

FIELD DODDER

A yellow stemmed species which climbs on various herbs and low shrubs. Found sparingly in the southeastern part of the area.

(4) *Cuscuta planiflora* Tenore

CLOVER DODDER

This species has thin, reddish stems and may occasionally be found parasitic on alfalfa or clover wherever these crops are grown. Not common, but can be carried as seed to various localities.

POLEMONIACEAE (Phlox Family) 6 genera.

Generally low-growing annual or perennial herbs. The flowers are perfect, generally regular, with 5 partly united sepals and 5 united petals. As a rule the flowers are funnel-like or salver-form (with a long tube, abruptly flattened out at the end). The fruit is a three-celled capsule containing the seeds.

1. Leaves compound with many small leaflets.

Leaves simple.

[POLEMONIUM](#)

[2.](#)

2. Leaves not cleft or divided.

Leaves divided or pinnately cleft.

[3.](#)

[4.](#)

3. Leaves opposite.

Leaves alternate.

[PHLOX](#)

[COLLOMIA](#)

4. Leaves opposite.

Leaves alternate.

[LINANTHUS](#)

[5.](#)

5. Calyx spine tipped, and as long as corolla tube.

[NAVARRETIA](#)

Calyx not as long as corolla tube.

[GILIA](#)

COLLOMIA (Collomia) genus. 1 species.

(1) *Collomia linearis* Nutt.

NARROW-LEAVED COLLOMIA

An erect, annual herb from 3 to 18 inches high, somewhat sticky-hairy. The leaves are alternate, lanceolate or linear-lanceolate, entire and from 1 to 2½ inches long. The lower leaves are generally shorter than the upper ones. The flowers are very small, pink or pale purple and are borne in a dense head-like leafy cluster at the top of the stem. Common on dry soils and sandy places throughout almost the entire area.

GILIA (*Gilia*) genus. 2 species.

1. Flowers generally red, about 1 inch long, and borne in a panicle-like cluster.

(1) *G. aggregata*

Flowers white, less than $\frac{3}{8}$ inch long, borne in head-like clusters.

(2) *G. congesta*

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- (1) *Gilia aggregata* (Pursh) Spreng.

SCARLET GILIA

An erect perennial from 12 to 20 inches high, generally little branched. The leaves are pinnately divided into narrow segments and are from 1 to 3 inches long. The red or scarlet flowers are very conspicuous and borne in a large loose narrow cluster. They are generally from 1 to $1\frac{1}{2}$ inches long with petal lobes about $\frac{3}{8}$ inch long. Very rare in the area covered but has been reported in the south-central portion and may be expected in the southwestern part, but its true habitat is further west.

- (2) *Gilia congesta* Hook.

CLUSTERED GILIA

A basally branched perennial from 4 to 6 inches high, generally covered with cobwebby hairs. The leaves are pinnately cleft and the white flowers borne in head-like clusters. Very rare in the area, but may possibly be found on dry, sandy soil in the southwest portion.

LINANTHUS (Linanthus) genus. 1 species.

(1) *Linanthus Harknessii* (Curran) Greene

LINANTHUS

A much branched, very fine stemmed annual growing from 2 to 12 inches high. The leaves are divided to the base into very narrow thread-like segments, about $\frac{1}{4}$ to $\frac{1}{2}$ inch long making them appear clustered. The white flowers are about $\frac{1}{8}$ inch long and borne on long, fine stalks. Very rare, but has been found on a sandy roadside in the extreme south-central portion of the area.

NAVARRETIA (*Navarretia*) genus. 1 species.

(1) *Navarretia minima* Nutt.

SMALL NAVARRETIA

A low-growing, depressed annual with much branched stems, from 1 to 3 inches high. The leaves are from 1 to 1½ inches long and deeply divided into needle-like segments. The flowers are about ¼ inch long, white, and almost hidden in round clusters of leaves and spiny sepals. Locally abundant on bottom lands, sandy places and slough margins throughout the southwestern portion of the area.

PHLOX (Phlox) genus. 3 species.

1. Stem erect; leaves linear to lanceolate.

(3) *P. pilosa*

Stem decumbent or tufted; leaves short and awl-shaped, usually not more than $\frac{1}{2}$ inch long.

2.

2. Leaves with cobwebby hairs; tube of corolla less than $\frac{1}{2}$ inch long, barely longer than calyx.

(2) *P. Hoodii*

Leaves without cobwebby hairs; tube of corolla more than $\frac{1}{2}$ inch long, much longer than calyx.

(1) *P. alyssifolia*

- (1) *Phlox alyssifolia* Greene

BLUE PHLOX

A stout stemmed, prostrate plant with oblong or linear leaves from $\frac{1}{4}$ to $\frac{1}{2}$ inch long, with sharp pointed tips. The flowers are few, purplish or bluish in colour with a tube about $\frac{5}{8}$ inch long. Found occasionally on dry bench land in the southwestern portion of the area.

- (2) *Phlox Hoodii* Richards

MOSS PHLOX

Low, tufted, mat-forming plant with coarse woody roots. The leaves are awl-shaped, sharp-pointed and somewhat imbricated or overlapping, from $\frac{1}{8}$ to $\frac{3}{8}$ inches long. The flowers are white or occasionally pale blue or purple, about $\frac{3}{8}$ inch across with 5 petal lobes, and are borne very freely in early spring. They are one of the most conspicuous of the early spring prairie flora, forming large masses of white on the plains and hillsides. After flowering the plants are rather inconspicuous but form a large proportion of the ground cover, especially on eroded areas and where the soil is shallow. Very common on open prairie throughout the entire southern portion of the area.

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- (3) *Phlox pilosa* L.

DOWNY PHLOX

An erect species from 1 to 2 feet high, usually with soft, downy hairs. The leaves are linear or lanceolate, from 1 to 4 inches long and stalkless. The

flowers are purplish-pink or white with a tube about $\frac{1}{2}$ inch long, and are borne in a cymose cluster at the summit of the stem. Found occasionally in sandy places in the eastern portion of the area.

POLEMONIUM (Jacob's Ladder) genus. 1 species.

(1) *Polemonium occidentale* Greene

WESTERN PHLOX

A leafy stemmed erect perennial plant from 1 to 3 feet high, somewhat glandular-hairy above. The leaves bear from 15 to 27 ovate to lanceolate leaflets from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long. The flowers are bell-shaped, violet or blue, from $\frac{3}{8}$ to $\frac{1}{2}$ inch long and borne in a narrow cluster. May occasionally be found in open woodlands and valleys in the western parts of the area but is not common.

HYDROPHYLLACEAE (Waterleaf Family) 2 genera.

Mostly hairy, annual herbs with a watery sap. The leaves are lobed or pinnatifid and the flowers perfect with 5 more or less united sepals and a 5-lobed, bell-shaped corolla. The fruit is a capsule.

1. Flowers borne singly on stalks opposite the axils of the leaves.

[ELLISIA](#)

Flowers borne in a scorpioid (curled) inflorescence at head of stems.

[PHACELIA](#)

ELLISIA (Ellisia) genus. 1 species.

(1) *Ellisia nyctelea* L.

WATER-POD

A low-growing plant from 4 to 12 inches high, with scattered hairs. The leaves are opposite or alternate, pinnatifid with toothed segments and are from 1 to 4 inches long. The flowers are bluish-white from $\frac{1}{4}$ to $\frac{5}{16}$ inch across and are borne on stalks opposite the leaf axils. The calyx lobes (sepals) enlarge as the fruiting capsule forms. The fruit is a globular capsule about $\frac{1}{4}$ inch in diameter. Found on river flats, shady spots, lake margins throughout the southern part of the area, but not very common.

PHACELIA (Scorpion-weed) genus. 3 species.

1. Stamens shorter than corolla; plant glandular.

(2) *P. glandulifera*

Stamens as long as corolla; plant not glandular.

2.

2. Leaves deeply cleft into numerous toothed divisions; eastern species.

(1) *P. Franklinii*

Leaves entire or cleft into linear divisions; western species.

(3) *P. linearis*

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(1) *Phacelia Franklinii* (R. Br.) A. Gray FRANKLIN'S SCORPION-WEED

A hairy, erect stemmed annual from 6 to 18 inches high. The leaves are from 1½ to 3 inches long and pinnately divided into linear-oblong, toothed segments. The flowers are borne in a dense coiled or scorpioid raceme and are blue or bluish white, about $\frac{5}{16}$ inch long. Fairly common on dry, sandy soil in the north and northeastern part of the area and in the Riding Mountains.

(2) *Phacelia glandulifera* Piper GLANDULAR SCORPION-WEED

An annual with the stem branched from the base, growing from 2 to 12 inches high. The whole plant is covered with whitish glandular hairiness. The leaves are pinnatifid with oblong lobes and are from ½ to 1½ inches long. The flower is light blue with a paler tube and the corolla is about as long as the calyx, approximately ¼ inch. This is really a plant of the dry intermountain plains of Washington and Idaho, but has been found along the southern boundary of Saskatchewan.

(3) *Phacelia linearis* (Pursh) Holz. LINEAR-LEAVED SCORPION-WEED

An annual from 4 to 16 inches high with leaves from ¾ to 2 inches long, entire or divided into linear segments. The flowers are bright blue, about ¾ inch long, and borne in a scorpioid panicle. Found occasionally in valleys, on hillsides and on light soil in the southwestern corner of the area.

BORAGINACEAE (Borage Family) 12 genera.

Entire leaved herbs with perfect, usually regular flowers, with 5-lobed calyx and corolla. The stamens are attached at their base to the inside of the corolla tube. There is a united style and the fruit generally consists of 4 nutlets.

1. Ovary of flower merely grooved and style at summit of the ovary.

[HELIOTROPIUM](#)

Ovary deeply divided into 4 lobes with style arising from the centre.

[2.](#)

2. Nutlets with hooked prickles.

[3.](#)

Nutlets with no prickles or, if prickly, the prickles not hooked.

[5.](#)

3. Nutlets prickly all over and spreading horizontally.

[CYNOGLOSSUM](#)

Nutlets prickly on edges as a rule and borne vertically.

[4.](#)

4. Annuals with inconspicuous flowers; fruiting stalks erect, bracted.

[LAPPULA](#)

Biennials or perennials with conspicuous flowers; fruiting stalks reflexed, not much bracted.

[HACKELIA](#)

5. Flowers white or yellowish only in throat.

[6.](#)

Flowers blue or yellow.

[8.](#)

6. Biennials or perennials with flowers in short, compact, leafy clusters at head of stem.

[OREOCARYA](#)

Annuals with flowers scattered up stem and appearing axillary.

[7.](#)

7. Low plants with lower leaves often opposite; plants not conspicuously white or gray with short bristly hairs.

[ALLOCARYA](#)

Plants with all leaves alternate and conspicuously white or gray with short bristly hairs.

[CRYPTANTHA](#)

8. Flowers yellow or greenish white.

[9.](#)

Flowers blue, purple or purplish-yellow.

[10.](#)

9. Corolla salver-form or funnel-like with rounded, spreading lobes.

[LITHOSPERMUM](#)

Corolla tubular with erect, pointed lobes.

[ONOSMODIUM](#)

10. Nutlets attached just above their bases.

[MERTENSIA](#)

Nutlets attached by their bases.

[11.](#)

11. Corolla regular; perennial.

[SYMPHYTUM](#)

Corolla irregular, throat slanting and lobes unequal; annual.

[LYCOPSIS](#)

ALLOCARYA (Allocarya) genus. 1 species.

(1) *Allocarya californica* (F. & M.) Greene

CALIFORNIA ALLOCARYA

A low, spreading, much branched annual herb, with linear leaves, from ½ to 2 inches long, the lower ones sometimes opposite but the upper alternate. The flowers are white, very small, and borne in a small scorpioid inflorescence, and also in the axils of the leaves. The fruits consist of 4 nutlets, rough on the back. Fairly common locally in slough margins and sandy places and moist bottom lands throughout the southwestern parts of the area.

CRYPTANTHA (*Cryptanthe*) genus. 2 species.

1. Leaves oblanceolate to linear-spatulate; nutlets, one smooth and 3 with tubercles.

(1) *C. crassisepala*

Leaves linear; nutlets all smooth.

(2) *C. Fendleri*

- (1) *Cryptantha crassisepala* (T. & G.) Greene

THICK-SEPALED CRYPTANTHE

An annual with short bristly hairs and linear-spatulate to oblanceolate leaves from ½ to 1½ inches long. The flowers are small and white in scorpioid spikes with sepals very strongly thickened on back when in fruit. The fruit consists of one large smooth nutlet and 3 smaller tuberculate ones. Rare, but has been found in the southern part of the area, and in the Cypress Hills.

- (2) *Cryptantha Fendleri* (A. Gray) Greene

FENDLER'S CRYPTANTHE

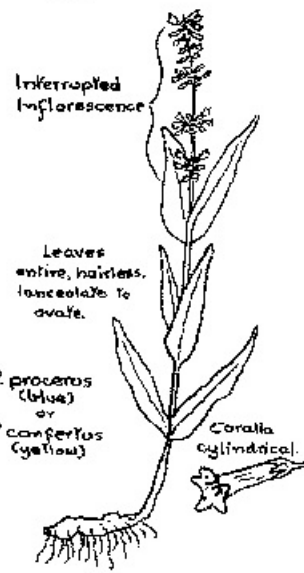
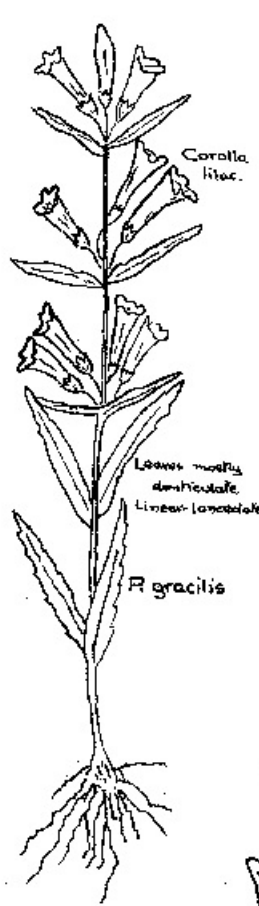
A very hairy, gray or whitish annual with linear leaves from 1 to 2½ inches long. The plant may grow to a height of 18 inches but is generally crowded and short. The flowers are small and white and borne at the ends of the branches in scorpioid clusters. The fruit are 4 smooth, shiny, brown nutlets. Very common on sand dunes in the southwestern part of the area, sometimes forming ground cover on considerable areas.

CYNOGLOSSUM (Hound's tongue) genus. 1 species.

(1) *Cynoglossum officinale* L.

HOUND'S-TONGUE

A softly hairy biennial plant with erect, leafy stems from 1½ to 3 feet high. The lower leaves are oblong-lanceolate, from 6 to 12 inches long, with slender stalks. The upper leaves are stalkless or clasping, and lanceolate. The flowers are borne in scorpioid racemes at the ends of the branches, and are reddish-purple in colour and about ¼ to ⅜ inch across. The fruit is a pyramid of 4 nutlets almost ½ inch across. An introduced weed occasionally found in pastures and waste places in the southeastern portion of the area.



SOME PRAIRIE PENTSTEMONS.

Typical flower

Seed capsule

P. gracilis

Corolla lilac.

Leaves mostly denticulate, Linear-lanceolate.

P. procerus (blue) or *P. confertus* (yellow)

Interrupted Inflorescence.

Leaves entire, hairless, lanceolate to ovate.

Corolla cylindrical.

P. nitidus

Leaves entire, oblanceolate, upper broadly ovate.

Corolla funnel-form.

HACKELIA (Stickseed) genus. 2 species.

1. Flowers not over $\frac{1}{8}$ inch across; nutlets with a few prickles on back.

(1) *H. americana*

Flowers $\frac{3}{16}$ inch or more across; nutlets with no prickles on back.

(2) *H. floribunda*

(1) *Hackelia americana* (Gray) Fern.

NODDING STICKSEED

(*Lappula americana* (A. Gray) Rydb.)

Biennial, with downward pointing hairs, growing from 1 to 3 feet in height. The leaves are oblong-lanceolate, the lower ones stalked and the upper sessile (stalkless), from 2 to 6 inches long. The inflorescence is generally not leafy and the pale blue flowers are borne on reflexed stalks in a slender raceme. Found occasionally in moist, shady woodlands throughout the area.

(2) *Hackelia floribunda* (Lehm.) Johnst.

LARGE-FLOWERED STICKSEED

(*Lappula floribunda* (Lehm.) Greene)

A rough, hairy biennial or perennial growing to a height of from $1\frac{1}{2}$ to 4 feet. The oblong-lanceolate or linear-lanceolate leaves are from 2 to 4 inches long, the lower stalked and the upper stalkless. The pale blue flowers are borne in numerous, erect racemes. Fairly common in moist woodlands throughout the south-central and southwestern portion of the area.

HELIOTROPIUM (Heliotrope) genus. 1 species.

(1) *Heliotropium curassavicum* L. var. *obovatum* DC

(*H. spathulatum* Rydb.)

SPATULATE-LEAVED HELIOTROPE

A perennial growing from thick, fleshy, white, running roots to a height of from 1 to 12 inches. The plants are smooth with a slight bloom, giving them a somewhat waxy appearance. The leaves are fleshy and spatulate, from $\frac{3}{4}$ to 2 inches long with the nerves very indistinct. The flowers are white or faintly bluish tinged, about $\frac{1}{4}$ inch across, and borne in several scorpioid spikes, from $\frac{1}{2}$ to 4 inches long at the ends of the branches. Not generally common but very plentiful where found. Found in saline slough margins in the southwestern portion of the area.

LAPPULA (Blue-bur) genus. 2 species.

1. Marginal prickles of nutlets in two rows; introduced weed.

(1) *L. echinata*

Marginal prickles of nutlets in a single row; native plant.

(2) *L. Redowskii*

(1) *Lappula echinata* Gilib.

BLUE-BUR

A hairy, annual or winter annual weed from 6 to 24 inches high, much branching. The leaves are from 1 to 3 inches long, the lower ones only being stalked. The flowers are pale blue, about $\frac{1}{8}$ inch across and borne on erect, leafy bracted racemes at the ends of the branches. The fruit consists of 4 nutlets with two rows of hooked prickles around the margins. The whole plant has a strong smell like a mouse infested building. Found on waste places in cultivated fields and in overgrazed pastures throughout the whole area. Introduced from Europe but is now very common and widespread.

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(2) *Lappula Redowskii* (Hornem.) Greene var. *occidentalis* (Wats.) Rydb.

(*L. occidentalis* (S. Wats.) Greene)

WESTERN BLUE-BUR

An annual native species from 4 to 18 inches high, hairy. The leaves are spatulate to linear-oblong, from $\frac{3}{4}$ to $1\frac{1}{2}$ inches long. The flowers are generally less than $\frac{1}{8}$ inch across, pale blue or white, and borne in leafy bracted racemes. The nutlets have a single, marginal row of hooked prickles. A fairly common native plant of sandhills, light, dry soils and railway grades throughout the southwestern portion of the area.

LITHOSPERMUM (Puccoon) genus. 4 species.

Perennial herbs with narrow, hairy, alternate leaves. The flowers are perfect, regular, generally bright yellow in colour, and funnel-form or salver-form with rounded, spreading lobes. The fruit consists of four or less, very hard, white, shiny nutlets.

1. Corolla tube not longer than calyx; flowers white or pale yellow. (3) *L. officinale*

Corolla tube longer than calyx. 2.

2. Lobes of corolla either fringed or toothed. (1) *L. angustifolium*

Lobes of corolla entire, neither fringed or toothed. 3.

3. Leaves lanceolate, plant very leafy; flowers crowded and dull greenish-yellow in colour. (4) *L. ruderale*

Leaves linear to oblong, plant not very leafy; flowers bright yellow or orange. (2) *L. canescens*

- (1) *Lithospermum angustifolium* Michx. NARROW-LEAVED PUCCOON
(*L. linearifolium* Goldie)

A deep tap-rooted perennial often decumbent. The leaves are linear, from ½ to 2 inches long, covered with short stiff hairs. The early flowers are stalked, bright yellow with a tube about an inch long and fringed spreading lobes. The later flowers are smaller and are self-fertilized while in the bud and are very fertile. The nutlets are about ⅛ inch high and are white, shiny, with minute pits, and are very hard. Very common on dry prairie land throughout the entire southern portion of the area. Recent authorities call this species *L. incisum* Lehm.

- (2) *Lithospermum canescens* (Michx.) Lehm. HOARY PUCCOON

A softly hairy, somewhat hoary perennial growing erect to a height of 6 to

18 inches. The leaves are linear-oblong, from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long and without stalks. The flowers are orange-yellow in colour, the tube about $\frac{1}{2}$ inch long, and are without stalks but borne in a rather compact cluster at the summit of the plant. The smooth, white nutlets are about $\frac{1}{8}$ inch high. Fairly common in the bluffy country and park lands of the eastern and central portion of the area.

(3) *Lithospermum officinale* L.

GROMWELL

A finely haired perennial from 6 inches to 2 feet high. The leaves are ovate to ovate-lanceolate, from $\frac{1}{2}$ to 3 inches long. The flowers are pale yellow or yellowish-white, few, solitary in the leaf axils, and with a tube almost as long as the calyx. The shiny nutlets are about half as long as the sepals. An eastern weed, introduced from Europe, but has been found in the southeastern part of Manitoba.

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(4) *Lithospermum ruderale* Lehm.

WOOLLY GROMWELL

A coarse, hairy perennial from thick roots with several erect stems, densely leafy. The leaves are lanceolate with a prominent mid-vein, from 2 to 4 inches long, stalkless and crowded on the stem. The numerous dull, greenish-yellow flowers are crowded at the top of the stem in a leafy cluster. The white, shining, ovoid nutlets are about $\frac{1}{8}$ inch high. Fairly common in the southwestern corner of the area and also found in the Cypress Hills.

LYCOPSIS (Bugloss) genus. 1 species.

(1) *Lycopsis arvensis* L.

SMALL BUGLOSS

An annual rough hairy plant from 1 to 2 feet high. The lanceolate, alternate leaves are from 1 to 2 inches long. The flowers are crowded into somewhat scorpioid terminal racemes and are bluish, up to $\frac{1}{4}$ inch across. The tube of the corolla is slightly curved or bent, and the throat closed with stiff, fine hairs. The 4 nutlets are shorter than the calyx. An introduced weed which has been found in the south-central part of the area, but very unusual.

MERTENSIA (Lungwort) genus. 3 species.

Perennial plants with alternate leaves and fairly large blue or purple, funnel-form flowers with the lobes hardly spreading. The fruit consists of erect, wrinkled nutlets.

1. Plants usually less than 16 inches high, merely the mid-vein showing distinctly.

(1) *M. lanceolata*

Plants usually more than 16 inches high, the leaves distinctly feather veined.

2.

2. Stem only sparingly hairy; corolla less than ½ inch long.

(2) *M. paniculata*

Stem densely hairy; corolla over ½ inch long.

(3) *M. pilosa*

(1) *Mertensia lanceolata* (Pursh) DC.

LANCE-LEAVED LUNGWORT

A plant from 6 to 16 inches high with linear to lanceolate leaves, 3 to 4 inches long. The leaves are generally hairless, but may occasionally be somewhat short-hairy on the upper side. The blue flowers are from ½ to 1 inch long and borne in few-flowered panicles at the ends of the branches. Not common, but found occasionally on open prairie and hillsides through the area.

(2) *Mertensia paniculata* (Ait.) G. Don

TALL LUNGWORT

An erect species growing to a height of 18 inches to 3 feet. The leaves are lanceolate, from 2 to 5 inches long, and somewhat hairy on both sides. The flowers are borne in few flowered clusters at the ends of the stems and are purplish-blue in colour and almost ½ inch long. Fairly common in woodlands, and shady stream banks throughout the entire area.

(3) *Mertensia pilosa* (Cham.) DC.

HAIRY LUNGWORT

A densely hairy stemmed species from 12 to 18 inches high. The leaves are lanceolate and very hairy beneath. The flowers are borne at the ends of the branches in few-flowered clusters and are about ⅝ inches long.

Found in moist woodlands and wet places throughout the area.

ONOSMODIUM (False Gromwell) genus. 1 species.

(1) *Onosmodium occidentale* Mack.

WESTERN FALSE GROMWELL

An erect, coarse perennial from 1 to 2 feet in height, with rough hairy stems. The leaves are lanceolate to ovate-lanceolate, from 2 to 3 inches long, coarsely appressed, hairy, with the venation very prominent on the under surfaces. The flowers are yellowish-white or greenish, from $\frac{1}{2}$ to $\frac{3}{4}$ inch long, and borne in leafy, terminal, scorpioid spikes. Occasionally found on low prairie lands in the southeastern portion of the area. There is a very similar species, the ROUGH FALSE GROMWELL *Onosmodium hispidissimum* Mack. which has spreading hairs and a constriction around the lower part of the nutlets. This species may possibly be found in the southeastern part of the area, but really belongs further south.

OREOCARYA (*Oreocarya*) genus. 3 species.

Biennial or perennial plants from thick woody roots, and basal or alternate narrow leaves. The white or cream-coloured flowers are borne in leafy bracted cymose clusters, and the flowers have tiny crests or appendages in the throat.

1. Inflorescence broad and round topped, the branches being generally again branched.

(1) *O. aperta*

Inflorescence narrow and almost spike-like, the branches not being rebranched.

2.

2. Basal leaves spatulate or broadly oblanceolate.

(2) *O. glomerata*

All leaves linear or linear-lanceolate.

(3) *O. Macounii*

(1) *Oreocarya aperta* Eastwood

LOOSE-FLOWERED OREOCARYA

A low species up to 8 inches high, much branching and hairy, with spatulate or oblanceolate basal leaves from $\frac{3}{4}$ to $1\frac{1}{2}$ inches long. The stem leaves are oblanceolate, up to 1 inch long. The flowers, which are white and about $\frac{1}{4}$ inch long, are borne in a much branched terminal cluster. This species has been reported from dry hillsides in the south-central part of the area but is very unusual, its general range being in Montana and Colorado.

(2) *Oreocarya glomerata* (Pursh) Greene

CLUSTERED OREOCARYA

A low, erect species from 4 to 12 inches high, with the lower leaves spatulate and the upper ones linear. The basal leaves are from 1 to 2 inches long, the upper ones often shorter. The whole plant is covered with white, bristly short hairs, often giving a greyish appearance. The white flowers are about $\frac{1}{4}$ inch across and borne in compact spike-like clusters at the ends of the branches. Very common on dry hillsides and prairies throughout the entire southern portion of the area covered. *Cryptantha Bradburiana* Payson of some authorities.

(3) *Oreocarya Macounii* Eastwood

MACOUN'S OREOCARYA

Very similar to the preceding species but more slender with a slender tap root, and all the leaves linear. The plant is apparently very sparingly hairy. Found on dry plains, but very unusual in the southern part of the area.

SYMPHYTUM (Comfrey) genus. 1 species.

(1) *Symphytum officinale* L.

COMFREY

A large, coarse, hairy perennial plant from 2 to 3 feet high. The leaves are lanceolate to ovate-lanceolate, from 3 to 10 inches long, the lower with stalks and the upper sessile or stalkless. The flowers are purplish or yellowish, from $\frac{1}{2}$ to $\frac{3}{4}$ inch long and borne in dense, terminal, scorpioid clusters. The fruit consists of shiny, brown, somewhat wrinkled nutlets. This is an introduced European plant which may have escaped from gardens. It appears to be established in a few places in the eastern part of the area.

VERBENACEAE (Vervain Family) 1 genus.

VERBENA (Vervain) genus. 2 species.

Perennial hairy herbs with 4-sided stems and opposite leaves. The flowers are purplish or blue, tubular with 5 somewhat irregular lobes. There are 4 stamens, one pair being longer than the other pair. The fruit consists of 4 linear nutlets.

1. Leaves more or less incised or divided; flowering spikes dense with bracts longer than the flowers; plant generally decumbent.

(1) *V. bracteata*

Leaves lanceolate, sometimes lobed at base; flowering spikes slender with bracts shorter than flowers; plants erect.

(2) *V. hastata*

- (1) *Verbena bracteata* Lag. & Rodr.
(*V. bracteosa* Michx.)

BRACTED VERVAIN

A prostrate or decumbent perennial much branched plant with a 4-sided stem. The plants range from 1 to 3 feet across and form mats on the ground. The leaves are from 1 to 2 inches long, roughly spatulate in form and pinnately incised. The purplish-blue flowers are about $\frac{1}{16}$ inch across and are borne on dense spikes from 2 to 4 inches long, with very conspicuous bracts about $\frac{1}{4}$ inch long. Not generally common, but locally abundant on prairie and waste places throughout the entire southern part of the area.

- (2) *Verbena hastata* L.

BLUE VERVAIN

A tall, erect perennial with a 4-sided stem growing to a height of from 2 to 5 feet. The leaves are opposite, lanceolate, sharply toothed, from 2 to 6 inches long, the lower leaves being sometimes hastately lobed at the base. The bluish-white flowers are borne on numerous terminal spikes from 2 to 4 inches long, the fruit later being densely overlapping on spikes. Fairly common in woodlands and river valleys in the eastern part of the area.

LABIATAE (Mint Family) 16 genera.

Generally scented plants with square stems. The leaves are simple, opposite or whorled, generally with small glandular pits. The flowers are perfect, generally irregular in shape with two lips to the corolla. The stamens are generally 4, one pair longer than the other, and sometimes only one pair bearing anthers. The fruit consists of 4 nutlets.

1. Anther-bearing stamens 2.

Anther-bearing stamens 4.

[2.](#)

[5.](#)

2. Plants with flowers terminal, in head-like clusters or spikes.

Plants with flowers clustered in leaf axils.

[3.](#)

[4.](#)

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3. Flowers large, rose or pink, in round head-like clusters; calyx with 5 almost equal teeth. Plants very aromatic.

[MONARDA](#)

Flowers small, violet-blue, in long, narrow spikes; calyx with two lower teeth longer than the upper ones.

[SALVIA](#)

4. Tall perennial plants of moist places; corolla with 4 practically equal lobes.

[LYCOPUS](#)

Low annual plants of dry areas; corolla and calyx 2-lipped.

[HEDEOMA](#)

5. Nutlets attached by their sides and not bases; ovary of 4 united nutlets.

[TEUCRIUM](#)

Nutlets attached by their bases; ovary of 4 distinct nutlets.

[6.](#)

6. Calyx (sepals) with a helmet or skullcap shaped protuberance on the upper lip.

[SCUTELLARIA](#)

Calyx without protuberance on upper lip.

[7.](#)

7. Corolla nearly regular, 4 or 5-toothed; stamens equal in length.

[MENTHA](#)

Corolla bilabiate (2-lipped).

[8.](#)

8. Upper pair of stamens longer than lower pair.

[9.](#)

Upper pair of stamens shorter than lower pair.

[12.](#)

9. Bracts of flowering spikes spiny, with awned teeth; one of calyx lobes longer than others.

[MOLDAVICA](#)

Bracts of flowering spikes not spiny; calyx lobes equal.

[10.](#)

10. Creeping plants with almost round leaves and flowers in leaf axils.

[GLECOMA](#)

Erect plants with ovate leaves and terminal inflorescence.

[11.](#)

11. Plant densely hairy; flowers white or pale purple with dark spots.

[NEPETA](#)

Plant scarcely hairy; flowers blue; plant scented.

[AGASTACHE](#)

12. Calyx deeply two-lipped.

[PRUNELLA](#)

Calyx five-toothed.

[13.](#)

13. Calyx membranous; nerves very faint.

[DRACOCEPHALUM](#)

Calyx not membranous; nerves distinct.

[14.](#)

14. Calyx teeth spiny pointed.

Calyx teeth not spiny pointed.

15.

15. Lower lip of corolla entire or with one or two small teeth at each side; introduced plants.

LAMIUM

Lower lip of corolla three-lobed; side lobes reflexed; native plants.

STACHYS

AGASTACHE (Giant Hyssop) genus. 1 species.

(1) *Agastache anethiodora* (Nutt.) Britton

GIANT HYSSOP

An erect branched perennial, with smooth or minutely hairy stems, from 1 to 3 feet high. The leaves are ovate or triangular ovate, green above and pale below, from 1 to 3 inches long, with short stalks. The flowers are blue, from $\frac{1}{4}$ to $\frac{3}{8}$ inch long and borne in a dense spike, sometimes interrupted, from 1 to 4 inches long and from $\frac{1}{2}$ to $\frac{3}{4}$ inch thick at the ends of the stems. The plant has a pleasant, anise-like odour. Common in open woodlands and semi-open prairie throughout the entire area. Recently called *A. Foeniculum* (Pursh) Ktze.

DRACOCEPHALUM (False Dragon-head) genus. 1 species.

(1) *Dracocephalum Nuttallii* Britton
(*Physostegia parviflora* Nutt.)

FALSE DRAGON-HEAD

An erect, rarely branched perennial, from 1 to 3 feet in height. The leaves are generally narrowly lanceolate, from 3 to 4 inches long and stalkless, with short sharp teeth. The flowers are borne in terminal spikes and are purple in colour, and about ½ inch long. Fairly common locally along stream banks and moist places in the eastern portions, but very local elsewhere in the area.

GALEOPSIS (Hemp Nettle) genus. 1 species.

(1) *Galeopsis Tetrahit* L.

HEMP NETTLE

A coarse, rough, hairy, weedy annual, growing from 1 to 3 feet in height. The stems are generally swollen below the nodes where the leaves and axillary flower clusters join. The leaves are ovate, coarsely toothed, from 2 to 4 inches long. The flowers are borne in both terminal and axillary clusters and have sharp, needle-pointed calyx teeth. The corolla is from $\frac{5}{8}$ to 1 inch, purple or pink variegated with white, and the seeds are greyish-brown, egg-shaped and about $\frac{1}{8}$ inch long, somewhat similar to a common hemp seed. Introduced from Europe, but has become a field weed in various parts of the northern and eastern portions of the area where conditions are moist enough to be favourable.

GLECOMA (Ground Ivy) genus. 1 species.

(1) *Glecoma hederacea* L.

GROUND IVY

A creeping perennial, rooting at the nodes with thin, dull, greenish-purple stems from 12 to 18 inches long. The leaves are ovate-rounded, cordate at the base, from $\frac{1}{2}$ to $1\frac{1}{2}$ inches across, often with a purplish tinge. The flowers are from $\frac{5}{8}$ to $\frac{3}{4}$ inch long, light blue and borne in clusters of 2 or 3 in the leaf axils. An introduced plant, which has become common in waste places in the eastern part of the area, and is often found as a garden weed in other parts.

HEDEOMA (Mock Pennyroyal) genus. 1 species.

(1) *Hedeoma hispida* Pursh

ROUGH PENNYROYAL

A low-growing annual from 4 to 8 inches high, with erect branched stems. The leaves are narrowly linear, entire, from $\frac{1}{2}$ to 1 inch long. The numerous flower clusters are borne in the leaf axils all up the stems, the flowers being bluish-purple and about $\frac{1}{4}$ inch long. Found occasionally on sandy soil and abandoned fields along the southern border of the southwestern part of the area.

LAMIUM (Dead Nettle) genus. 2 species.

1. Leaves all stalked, ovate; flowers white; perennial.

(1) *L. album*

Upper leaves not stalked, roughly circular; flowers red or purplish;
annual or biennial.

(2) *L. amplexicaule*

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(1) *Lamium album* L.

WHITE DEAD NETTLE

A perennial plant arising from creeping rootstocks and growing to a height of from 12 to 18 inches. The leaves are ovate, sometimes somewhat cordate at the base, slightly hairy and from 1 to 3 inches long. The pure white flowers are about 1 inch long and borne in clusters of 7 to 8 in each leaf axil. An introduced plant, which has been found in a garden in the area but is, as yet, very rare.

(2) *Lamium amplexicaule* L.

HENBIT

A sparingly hairy annual or biennial plant with slender stems, branched from the base, often somewhat decumbent, and growing to a height of from 6 to 18 inches. The leaves are almost round with rounded teeth and, while the lower ones have slender stalks, the upper ones are generally stalkless and somewhat clasping the stem. They are from $\frac{1}{2}$ to 2 inches across. The flowers are red or purplish, with spots on the middle lower lobe, and are from $\frac{1}{2}$ to $\frac{5}{8}$ inch long, borne in few-flowered axillary and terminal clusters. This is an introduced plant, and has been found at various spots throughout the entire area, but is still quite uncommon.

LYCOPUS (Water Horehound) genus. 3 species.

Perennial plants of swamps and wet places with the flowers borne in dense axillary clusters.

1. Leaves more or less deeply incised or pinnatifid.

(1) *L. americanus*

Leaves toothed but not deeply incised.

2.

2. Calyx lobes narrow and acute, longer than nutlets.

(2) *L. asper*

Calyx lobes ovate and blunt, not as long as nutlets.

(3) *L. uniflorus*

- (1) *Lycopus americanus* Muhl.

WATER HOREHOUND

An erect perennial growing from 1 to 3 feet in height. The leaves are borne very regularly on the stem, generally almost horizontally, giving the plant an open and regular appearance difficult to describe but easily recognized. The leaves are from 1 to 4 inches long, lanceolate and short stalked, and with the exception of the upper ones are deeply cut or incised. The bluish-white flowers are about $\frac{1}{8}$ inch across and are borne in dense clusters around the stem at the axils of the leaves. Fairly common in moist places, stream banks, and swamps throughout the entire area.

- (2) *Lycopus asper* Greene

WESTERN WATER HOREHOUND

A perennial growing from 1 to 3 feet high, with narrowly lanceolate leaves, from 1 to 3 inches long, with small-toothed margins. The leaves are either stalkless or with a very short stalk. The tiny flowers are borne in close clusters in the leaf axils. Very common in wet places, swamps in the western part of the area, but comparatively scarce towards the eastern part.

- (3) *Lycopus uniflorus* Michx.

NORTHERN WATER HOREHOUND

An erect perennial, from 6 to 30 inches in height, with somewhat toothed margined lanceolate leaves, from 1 to 3 inches long. The flowers are about $\frac{1}{8}$ inch long and borne in the axils of the leaves. Rare, but is found in wet areas on the northern fringe of the area.

MENTHA (Mint) genus. 1 species.

Various authorities have split the mints into several species using the hairiness of the leaves or the length of the leaf stalks in relation to the size of the flower clusters as distinguishing characteristics. It would appear, however, that the mints of the area should at present be considered as a variety of one species.

(1) *Mentha arvensis* L. var. *glabrata* (Benth.) Fern.

WILD MINT

Erect perennial herbs with a strong but pleasant mint odour, growing to a height of from 4 to 18 inches. The square stems have a line of hairs running down each angle. The leaves are practically hairless, but have minute glandular dots on both surfaces. They are ovate to lanceolate in shape and from $\frac{1}{2}$ to 2 inches long, sometimes long and sometimes short-stalked. The flowers are pink, about $\frac{1}{8}$ inch long and borne in crowded whorls around the stems at the leaf axils. Very common in sloughs and wet places, often growing in the water, and found throughout the entire area.

MOLDAVICA (American Dragonhead) genus. 1 species.

(1) *Moldavica parviflora* (Nutt.) Britton
(*Dracocephalum parviflorum* Nutt.)

AMERICAN DRAGONHEAD

An erect, generally branched, annual or biennial herb with a finely-hairy stem growing to a height of 1 to 2 feet. The leaves are oblong to lanceolate from 1 to 2 inches long, stalked, and with rather large, pointed teeth. The flower clusters are dense and at the ends of the branches, generally from 1 to 2 inches long and from 1 to 1¼ inches wide. The calyx is membranous, stiff and spiny, giving the heads a prickly stiffness and the light blue corollas are scarcely longer than the calyx. Found throughout the entire area in openings in woodlands and old pastures. Locally abundant but not generally common.

MONARDA (Wild Bergamot) genus. 1 species.

(1) *Monarda fistulosa* L.

WILD BERGAMOT

Erect perennial plants with a strong but pleasant odour, growing to a height of from 2 to 3 feet. The leaves are lanceolate or ovate-lanceolate, rounded or somewhat cordate based, and from 1 to 4 inches long. In the type species the leaves are only slightly hairy and have stalks from $\frac{1}{2}$ to 1 inch in length. The inflorescence is terminal and head-like, in clusters from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches across. The calyces (plural of calyx) are narrow green tubes with small purplish teeth. The corollas are hairy and from $\frac{3}{4}$ to 1 inch, protruding far above the calyces, pink or lilac in colour, and very conspicuous. Fairly common on hillsides, thickets, and in shady places in the eastern part of the area, being replaced further west by the variety.

(1a) *Monarda fistulosa* L. var. *menthaefolia* (Graham) Fern.

(*M. menthaefolia* Graham)

WESTERN WILD BERGAMOT

The variety, which is much more common than the species, differs by having very short leaf-stalks—less than $\frac{1}{4}$ inch long and leaves that are often downy hairy. This variety is very common in edges of woods, along shady creek banks and coulees, and in the shelter of shrubby patches on the prairies throughout almost the entire area. Occasionally white-flowered specimens are found.

NEPETA (Catnip) genus. 1 species.

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(1) *Nepeta Cataria* L.

CATNIP

A very hairy, branching perennial from 1 to 2½ feet high, with ovate, stalked leaves, cordate based, from 1 to 3 inches long. The flowers are white or pale purple with dark spots and hairy. They are about ½ an inch long and borne in fairly dense terminal heads, appearing at first glance somewhat similar to American dragonhead. An introduced plant which has been found, though rarely, in the eastern part of the area.

PRUNELLA (Self-heal) genus. 1 species.

(1) *Prunella vulgaris* L.

SELF-HEAL

An introduced perennial plant growing from running rootstocks, from a few inches to a foot in height. The leaves are ovate lanceolate, rather blunt at the apex, and from 1 to 4 inches long. The flowers are borne in short, dense terminal spikes, and are violet-purple in colour, from $\frac{1}{3}$ to $\frac{1}{2}$ inch long. Occasionally found in woodlands and moist places in the southeastern part of the area and also in the Foothills Region.

SALVIA (Sage) genus. 1 species.

(1) *Salvia sylvestris* L.

WOOD SAGE

Coarse, densely downy perennial plants growing to a height of from 1 to 2½ feet. The leaves are oblong to ovate-lanceolate, from ½ to 4 inches long. The lower leaves have stalks but the upper ones are stalkless. The flowers are borne in long, terminal, narrow spikes from 2 to 6 inches long and from ½ to ¾ inch thick. The corollas are deep violet-blue in colour, and from ⅜ to ½ inch long. Introduced in alfalfa seed and has been found on two or three occasions in very widely scattered spots throughout the whole area.

SCUTELLARIA (Skullcap) genus. 2 species.

Perennial herbs with the few flowers generally borne in the leaf axils. The corolla has an arched upper lip and is much longer than the calyx, which has a crest-like protuberance on the upper lip.

1. Flowers about $\frac{5}{8}$ inch long and borne singly or in pairs in the axils of the leaves.

(1) *S. epilobifolia*

Flowers not over $\frac{3}{8}$ inch long and borne in several flowered axillary or terminal racemes.

(2) *S. lateriflora*

(1) *Scutellaria epilobifolia* Hamilton

MARSH SKULLCAP

An erect stemmed perennial from creeping roots, growing from 1 to 3 feet in height. The leaves are oblong-lanceolate to oblong, wavy margined and from 1 to 2½ inches long, the lower ones short-stalked and the upper ones stalkless. The flowers are borne either singly or in pairs at the axils of the leaves and are blue in colour and from $\frac{5}{8}$ to $\frac{3}{4}$ inch long. Fairly common in wet places and along stream banks over almost the entire area.

(2) *Scutellaria lateriflora* L.

BLUE SKULLCAP

Very similar to the preceding species, with ovate leaves. The flowers are only about $\frac{1}{4}$ to $\frac{3}{8}$ inch long and are borne in loose, several-flowered racemes at the leaf axils and occasionally at the end of the stem. Fairly frequent in the eastern portion of the area along stream banks, in swamps and wet places.

STACHYS (Hedge Nettle) genus. 1 species.

(1) *Stachys palustris* L.
var. *pilosa* (Nutt.) Fern.

MARSH HEDGE NETTLE

A hairy branched perennial, generally erect, but occasionally decumbent, growing from 1 to 4 feet in height. The leaves are somewhat coarse, hairy, lanceolate to oblong-lanceolate, from 1 to 5 inches long, generally rounded at the base. They may have very short stalks but generally have none. The flowers are pale purplish with darker spots, from $\frac{3}{8}$ to $\frac{1}{2}$ inch long and are borne in axillary clusters in the top portion of the plant, sometimes appearing as a leafy spike. Very common in moist places and along stream banks throughout the entire area.

TEUCRIUM (Germander) genus. 2 species.

1. Plant with appressed hairiness; flowers over $\frac{1}{2}$ inch long; calyx with obtuse upper lobes.

(1) *T. canadense*

Plant with long spreading hairs; flowers not over $\frac{1}{2}$ inch long; calyx with acute upper lobes.

(2) *T. occidentale*

(1) *Teucrium canadense* L.

AMERICAN GERMANDER

A perennial from 8 inches to 2 feet high, erect and with appressed hairiness. The leaves are lanceolate, short-stalked, and from $1\frac{1}{2}$ to 5 inches long. The flowers are pink, from $\frac{5}{8}$ to $\frac{3}{4}$ inch long and borne in a terminal spike-like raceme. Occasionally found in moist places in the southeastern corner of the area.

(2) *Teucrium occidentale* A. Gray

HAIRY GERMANDER

A very hairy, branching perennial that grows from 1 to 3 feet in height. It has ovate-lanceolate to lanceolate, short-stalked leaves, which are from 1 to 3 inches long and white hairy beneath. The purplish flowers are from $\frac{1}{4}$ to $\frac{3}{8}$ inch long and borne in a spike-like terminal raceme. Very scarce, but has been reported from east-central Saskatchewan.

SOLANACEAE (Potato Family) 4 genera.

Herbs or vines with alternate leaves without stipules. The flowers are perfect, and with one exception, regular. The corolla varies from funnel-like and bell-shaped to rotate (wheel-shaped), and there are 5 stamens. The fruit is either a berry or a capsule. Most of this family have either narcotic or poisonous properties, although some members are edible in part.

1. Corolla rotate (wheel-shaped).

[SOLANUM](#)

Corolla bell-shaped or funnel-shaped.

[2.](#)

2. Fruit a berry often enclosed in inflated bladder-like calyx.

[PHYSALIS](#)

Fruit a capsule.

[3.](#)

3. Capsule prickly.

[DATURA](#)

Capsule not prickly, top falling off when mature.

[HYOSCYAMUS](#)

DATURA (Stramonium) genus. 1 species.

(1) *Datura Stramonium* L.

JIMSON-WEED

An annual weedy plant with stout, smooth green to purplish stems, growing from 1 to 5 feet in height. The leaves are simple, ovate and irregularly toothed, from 3 to 8 inches long. The flowers are funnel-form, white or purplish, from 2 to 5 inches long and about 2 inches across with slender tipped lobes, and are borne in the axils of the leaves. The fruit is a large, prickly, capsule from 1½ to 2½ inches long, which breaks into four segments to release the many seeds. A weed which has been found in two or three places throughout the area and probably escaped from gardens.

HYOSCYAMUS (Henbane) genus. 1 species.

(1) *Hyoscyamus niger* L.

BLACK HENBANE

Sticky, hairy, evil smelling biennial plants growing from 1 to 3 feet in height from a spindle-shaped root. The leaves are roughly ovate or oblong, irregularly toothed or lobed, the upper ones clasping the stem, and from 3 to 9 inches long. The flowers are funnel-shaped, about $\frac{3}{4}$ inch long and 1 to $1\frac{1}{2}$ inches across, greenish-yellow with purplish veins, with purple anthers. They are borne on one side of the stem, crowded at the head of the stem. The fruit is a capsule almost $\frac{1}{2}$ inch long enclosed in the swollen calyx. An introduced poisonous plant found in waste places and around gardens in several spots throughout the area, but fortunately still rare.

PHYSALIS (Ground-cherry) genus. 2 species.

1. Annual; corolla white, over 1 inch across; fruit not entirely enclosed in calyx.

(1) *P. grandiflora*

Perennial; corolla dull yellow, less than $\frac{3}{4}$ inch across; fruit entirely enclosed in inflated calyx.

(2) *P. lanceolata*

- (1) *Physalis grandiflora* Hook. LARGE WHITE GROUND-CHERRY
(*Leucophysalis grandiflora* (Hook.) Rydb.)

A tall, erect annual plant with hairy and somewhat sticky stems from 18 inches to 3 feet in height. The large ovate to lanceolate leaves are entire and stalked, and are from 4 to 8 inches long, somewhat hairy and sticky. The bell-shaped flower is white with a yellowish centre and from $1\frac{1}{4}$ to $1\frac{1}{2}$ inches across. The fruit is a berry enclosed in the persistent calyx. Found in rich woodlands in the northeastern parts of the area.

- (2) *Physalis lanceolata* Michx. PRAIRIE GROUND-CHERRY

Perennial from creeping rootstocks, growing to a height of about 18 inches and somewhat hairy. The leaves are oblanceolate to spatulate, entire margined and stalked, from 1 to 2 inches long. The bell-shaped flowers are dull yellowish with a brownish centre, and are about $\frac{5}{8}$ inch across. The fruit is a yellow or greenish berry entirely enclosed in the inflated, bladder-like ovoid calyx. Found, but rarely, on sandy prairies and plains in the eastern part of the area.

SOLANUM (Nightshade) genus. 4 species.

1. Climbing perennial vines with deep purple flowers.

[\(1\)](#) *S. Dulcamara*

Non-climbing annual herbs with white or yellow flowers.

[2.](#)

2. Plants prickly; flowers yellow.

[\(3\)](#) *S. rostrata*

Plants not prickly; flowers white.

[3.](#)

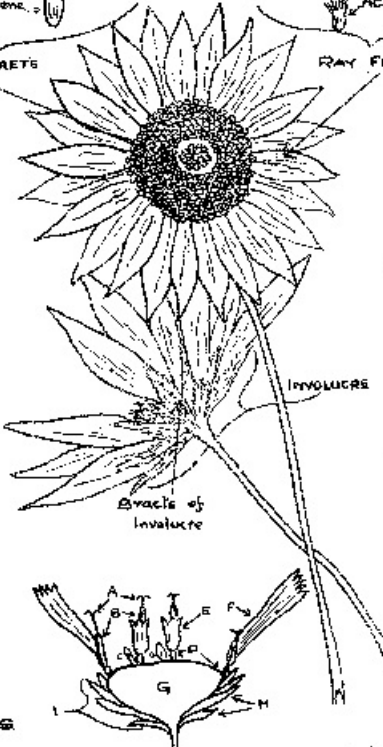
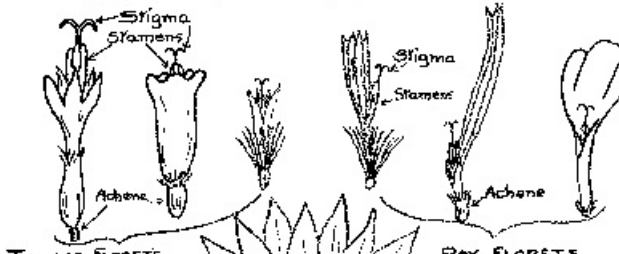
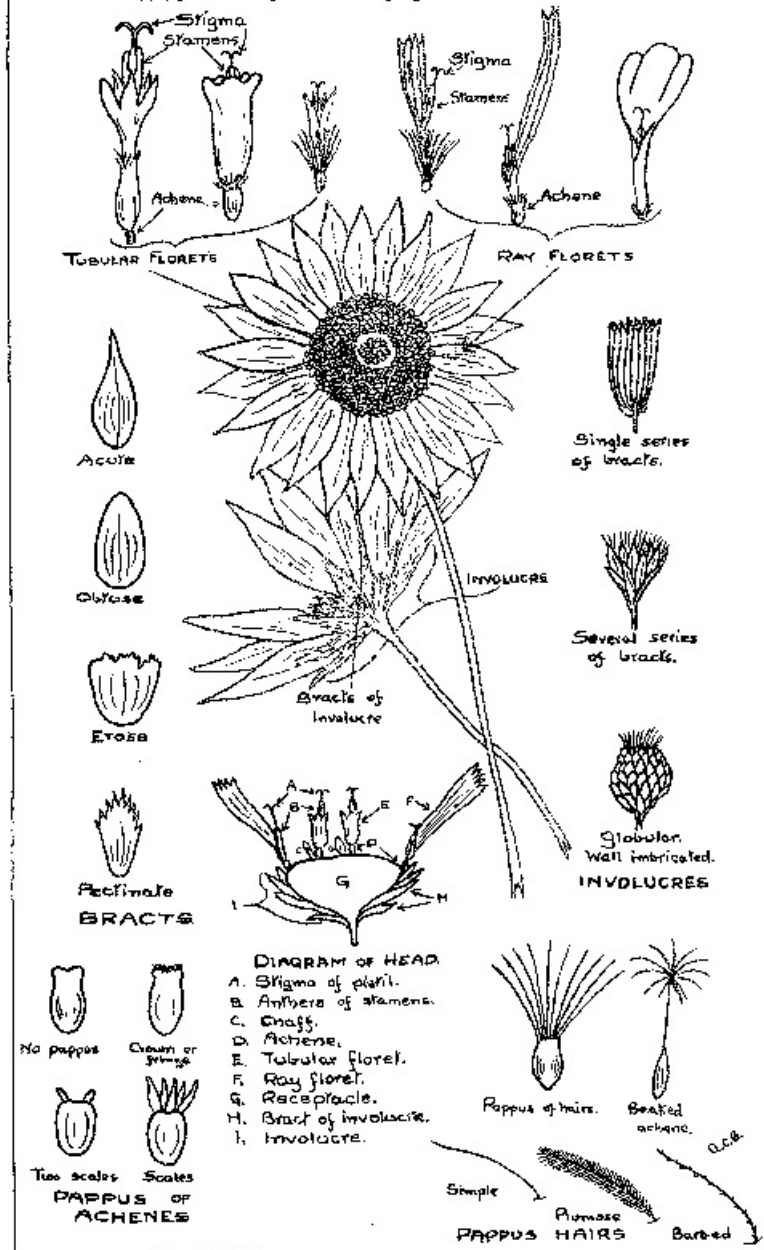
3. Leaves entire or merely wavy margined; erect plants.

[\(2\)](#) *S. nigrum*

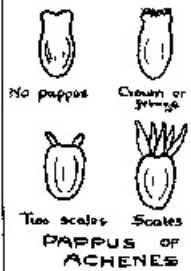
Leaves pinnatifid or incised; very branched and decumbently spreading.

[\(4\)](#) *S. triflorum*

DIAGRAMS OF COMPOSITAE.



- DIAGRAM OF HEAD**
- A. Stigma of pistil.
 - B. Anthers of stamens.
 - C. Chaff.
 - D. Achene.
 - E. Tubular floret.
 - F. Ray floret.
 - G. Receptacle.
 - H. Bract of involucre.
 - I. Involucre.



DIAGRAMS OF COMPOSITAE.

TUBULAR FLORETS

Stigma

Stamens

Achene

RAY FLORETS

Stigma

Stamens

Achene

INVOLUCRE

Bracts of Involucre

BRACTS

Acute

Obtuse

Erose

Pectinate

INVOLUCRES

Single series of bracts.

Several series of bracts.

Globular. Well imbricated.

DIAGRAM OF HEAD.

A. Stigma of pistil.

B. Anthers of stamens.

C. Chaff.

D. Achene.

E. Tubular floret.

F. Ray floret.

G. Receptacle.

H. Bract of involucre.

I. Involucre.

PAPPUS OF ACHENES

No pappus

Crown or fringe

Two scales

Scales

Pappus of hairs.

Beaked achene.

PAPPUS HAIRS

Simple
Plumose
Barbed

(1) *Solanum Dulcamara* L.

BITTERSWEET

A woody based perennial climbing or twining vine with branches several feet in length. The upper leaves are ovate, cordate based and pointed at the apex, and the lower ones frequently have 3 lobes, a large ovate middle one and two small basal side lobes. The leaves are from 2 to 4 inches long. The flowers are borne in panicles or on compound cymes opposite a leaf stalk, and are somewhat rotate or wheel-shaped with separate corolla lobes. The corolla is purple with the yellow anthers erect and pyramidal around the female organ in the centre of the flowers. The flowers are about $\frac{1}{2}$ inch across and are succeeded by the oval or globose berries, which are red and about $\frac{3}{8}$ inch long. This introduced plant is *very poisonous*, and the only records as yet in the area appear to be at Morden, Manitoba, and Edmonton, Alberta.

(2) *Solanum nigrum* L.

BLACK NIGHTSHADE

An erect annual weed growing to a height of from 4 to 12 inches with entire margined, ovate leaves, from 1 to 3 inches long. The white flowers are rotate, about $\frac{1}{2}$ inch across and borne in clusters of from 3 to 10 flowers. The fruit are green berries about $\frac{3}{8}$ inch across turning black when ripe. An introduced species which has become a fairly common weed of gardens and waste places across the entire area.

(3) *Solanum rostratum* Dunal
(*Androsera rostrata* (Dunal) Rydb.)

BUFFALO-BUR

An annual, yellowish hairy, prickly annual growing from 4 inches to 2 feet in height. The leaves are lobed and pinnatifid, from 2 to 4 inches long and yellowish hairy. The bell-shaped flowers are yellow and about 1 inch across, and the fruit a berry enclosed in a prickly calyx. Occasionally found as a straggler from further south in the southern part of the area.

(4) *Solanum triflorum* Nutt.

WILD TOMATO

A low, spreading annual forming mats from 6 inches to 2 feet across. The leaves are deeply lobed, oblong or ovate in outline, from 1 to 3 inches long, with scattered hairs. The flowers are white, rotate, from $\frac{1}{4}$ to $\frac{3}{8}$ inch across and generally borne in clusters of three. The fruit is a smooth green berry about $\frac{1}{2}$ inch in diameter. This is a native plant found on disturbed areas on the southern prairies such as gopher and badger mounds. With cultivation it persists as a very bad garden weed. If pulled and turned upside down it will develop rootlets along the stems and continue to grow. While used for preserves by some folk, it caused violent sickness when eaten by others.

SCROPHULARIACEAE (Figwort Family) 18 genera.

Herbs with opposite, alternate or whorled leaves with no stipules. The flowers are perfect, but generally irregular in shape, with the petals partly united into a tube and mostly two-lipped. There are generally 4 stamens and frequently only 2 or 4 are fertile and anther-bearing. The fruit is a many-seeded capsule.

1. Five anther-bearing stamens; flowers rotate, yellow, almost regular and borne in dense spike-like racemes.

[VERBASCUM](#)

Only 2 or 4 stamens anther-bearing, others sterile or else absent.

[2.](#)

2. Corolla spurred at the base.

[3.](#)

Corolla not spurred at the base.

[4.](#)

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3. Flowers axillary, blue; low slender annuals.

[CHAENORRHINUM](#)

Flowers in terminal racemes, yellow; perennials.

[LINARIA](#)

4. Four anther-bearing stamens and one long sterile stamen.

[PENTSTEMON](#)

Two or four anther-bearing stamens and no sterile stamen.

[5.](#)

5. Anther-bearing stamens 2, any others are sterile.

[6.](#)

Anther-bearing stamens 4.

[9.](#)

6. Sepals and petal lobes 5.

[GRATIOLA](#)

Sepals and petal lobes 4.

7.

7. Petals absent; inflorescence very hairy.

BESSEYA

Petals present.

8.

8. Corolla rotate; stamens not protruding.

VERONICA

Corolla short-tubular; stamens protruding; inflorescence a very long, narrow spike-like raceme.

VERONICASTRUM

9. Floral leaves or bracts brightly coloured, generally red or yellow, or shades of these colours.

CASTILLEJA

Floral leaves or bracts generally green, but may be brownish in *Pedicularis*.

10.

10. Leaves pinnately lobed or cleft.

PEDICULARIS

Leaves simple, neither pinnately lobed nor cleft.

11.

11. Leaves alternate.

ORTHOCARPUS

Leaves opposite, whorled or basal.

12.

12. Leaves in a basal rosette; stem leafless; flower solitary; annuals of mud or water.

LIMOSELLA

Stems leafy; flowers not solitary.

13.

13. Flowers large and showy, from 1 to 1½ inches long.

MIMULUS

Flowers not over ½ inch long.

14.

14. Calyx membranous, veiny, and inflated in fruit.

[RHINANTHUS](#)

Calyx not membranous nor much inflated in fruit.

[15.](#)

15. Upper leaves stalkless, clasping the stem.

[COLLINSIA](#)

Flowers blue, about ¼ inch long; leaves with stalks.

[16.](#)

16. Leaves sharply and coarsely toothed; flowers in terminal panicle-like cyme.

[SCROPHULARIA](#)

Leaves barely toothed; flowers solitary in the upper leaf axils.

[MELAMPYRUM](#)

BESSEYA (Kitten-tails) genus. 1 species.

(1) *Besseya wyomingensis* (A. Nels.) Rydb.

KITTEN-TAILS

Softly-hairy perennial plants from 4 to 12 inches high, often with reddish tinged leaves. The basal leaves are stalked, ovate or oblong, whilst the stem leaves are without stalks, alternate and reduced in size. The inflorescence is a dense terminal spike, from 1 to 2 inches long in flower and lengthening to from 2 to 5 inches in fruit, very hairy and generally with a purplish tinge. The flowers bear two protruding stamens but not petals, and the fruit are many-seeded capsules. Found on open hillsides in the Foothills Region and also on bench land in the Cypress Hills.

CASTILLEJA (Indian Paint-brush) genus. 8 species.

Annual, biennial or perennial plants, generally partly parasitic on the roots of other plants. The stem is generally simple or with a few branches above and the leaves are stalkless, alternate, lobed or entire. The bracts, or the leaves of the inflorescence are usually red or yellow in colour. The flowers are in terminal spikes with a two-lipped corolla, the upper lip being arched and called the galea, and the lower one with three lobes.

1. Bracts green; corolla 1½ to 2 inches long, longer than the bracts. [\(7\)](#) *C. sessiliflora*
Bracts reddish or yellow; corolla less than 1½ inches long. [2.](#)
2. Bracts tinged with yellow. [3.](#)
Bracts red or pink. [5.](#)
3. Leaves mostly lobed; plant hairy. [\(4\)](#) *C. lutea*
Leaves entire or only the uppermost lobed. [4.](#)
4. Stem quite hairless. [\(1\)](#) *C. acuminata*
Stems with very fine hairiness. [\(8\)](#) *C. sulphurea*
5. Leaves deeply cleft into narrow segments. [\(2\)](#) *C. coccinea*
Leaves entire and not cleft. [6.](#)
6. Bracts with acute lobes, occasionally entire but acute. [\(5\)](#) *C. mineata*
Bracts entire, obtuse and broad, occasionally three lobed but then the centre lobe broad. [7.](#)

7. Corolla about 1¼ inches long; bracts red.

(6) *C. rhexifolia*

Corolla ¾ to 1 inch long; bracts pale pink or yellowish-green.

(3) *C. lauta*

(1) *Castilleja acuminata* (Pursh) Spreng. LANCE LEAVED PAINT-BRUSH

A smooth-stemmed perennial species growing to a height of from 6 to 24 inches. The leaves are from 2 to 4 inches long, the lower narrower than the upper ones, and have from 3 to 5 nerves. The yellowish, greenish-white or purple bracts are oblong, oval or obtuse, sometimes with small teeth, and are about as long as the flower. The corolla is from ½ to ¾ inch long, the upper lip from 2 to 4 times as long as the lower. Fairly abundant in open woodlands in the southeastern portion of the area.

(2) *Castilleja coccinea* (L.) Spreng. SCARLET PAINT-BRUSH

An annual or biennial species with hairy slender stems from 12 to 24 inches high. The basal rosette leaves are entire but the stem leaves are deeply divided into from 3 to 5 linear divisions. The bracts, which are crimson tipped, are 3 to 5 lobed and generally about as long as the flowers. The corolla is greenish-yellow, the tube shorter than the calyx and the upper lip much longer than the lower. Fairly common in meadows and open woods in the eastern and southeastern part of the area.

(3) *Castilleja lauta* A. Nels. ELEGANT PAINT-BRUSH

A perennial species with clustered stems from 16 to 20 inches in height, and with entire, lanceolate, smooth leaves from 1 to 2 inches long. The inflorescence is loosely hairy, and the bracts vary from deep to pale crimson, to pinkish-white or yellowish-green with a pink tinge. The corolla is from ½ to ¾ inch long with the upper lip ¼ inch long and a very short lower lip. This species has been found along streams and in moist meadows in the southwestern corner of the area.

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(4) *Castilleja lutea* Heller YELLOW PAINT-BRUSH

A hairy, simple-stemmed perennial species growing from 8 to 12 inches high and very leafy. The leaves are from 1 to 1¾ inches long, hairy, and 3 to 5 ribbed. The lower leaves are lanceolate and entire, but the upper ones are broader and 3 to 5 cleft at the tip. The broad, pale sulphur-yellow

bracts are about as long as the flowers. The calyx is from $\frac{1}{2}$ to $\frac{3}{4}$ inch long and the corolla rarely protrudes beyond the calyx. Occasionally found in the extreme southwestern corner of the area covered.

(5) *Castilleja mineata* Dougl. RED INDIAN PAINT-BRUSH

A perennial growing to a height of from 18 to 24 inches, the stem generally without hairiness below the inflorescence, and sometimes branched above. The linear, pointed leaves are from 1 to 2 inches long. The bracts are broader than the leaves, of a scarlet or bright red colour and the lower ones usually have a pair of 5 teeth near the summit. The flowers are longer than the bracts and are green with red margins and the lip is a little shorter than the tube. Found in open pine woods in the Foothills Region and also in the Cypress Hills.

(6) *Castilleja rhexifolia* Rydb. COMMON INDIAN PAINT-BRUSH

This species is a perennial, from 1 to 2 feet in height, with the stem generally smooth but hairy above. The leaves are oblong to ovate, from 1 to 2 inches long, with from 3 to 5 nerves. The bright red or flesh coloured bracts are generally entire. The corolla is about $1\frac{1}{4}$ inches long, finely downy, and of a green colour tinged with crimson or scarlet. The upper lip is much longer than the lower. Common in open woods and park lands throughout the central and western parts of the area.

(7) *Castilleja sessiliflora* Pursh DOWNY PAINT-BRUSH

A perennial, pale, ashy-grey, downy haired species from 4 to 12 inches high. The leaves are from 1 to $1\frac{1}{2}$ inches long, the lower generally linear and entire but the upper cleft into narrow, spreading segments. The bracts are green and shorter than the flowers. The corolla is from $1\frac{1}{2}$ to 2 inches long, of a yellowish-white colour, the upper lip being about twice as long as the three lobed lower lip. Occasionally found on dry hills and prairies throughout the southeastern and south-central parts of the area and in the Cypress Hills.

(8) *Castilleja sulphurea* Rydb. SULPHUR-COLOURED PAINT-BRUSH

A perennial species with clumps of downy, often branched stems from 12 to 20 inches high. The leaves are lanceolate, 3 ribbed, from 1 to 2 inches long, generally entire but the uppermost may be lobed, and finely hairy. The

broadly ovate bracts are light yellow and 3 to 5 lobed. The corolla is greenish, about 1 inch long, with the upper lip about $\frac{1}{2}$ inch long and the lower less than $\frac{1}{4}$ inch. Plentiful in submontane grasslands in the southwestern corner of the area.

CHAENORRHINUM (Small Snapdragon) genus. 1 species.

(1) *Chaenorrhinum minus* (L.) Lange

SMALL SNAPDRAGON

A low, glandular-hairy, annual, growing from 5 to 12 inches high, and usually branched. The leaves are alternate, linear to linear-spatulate, from $\frac{1}{2}$ to 1 inch long. The flowers are blue, from $\frac{1}{4}$ to $\frac{5}{16}$ inch long, with a short spur, and are borne on short stalks in the axils of the leaves. Not by any means a common plant, but is an introduced plant occasionally found on or in the vicinity of railroad grades throughout the area.

COLLINSIA (Blue-lips) genus. 1 species.

(1) *Collinsia parviflora* Dougl.

BLUE-EYED MARY

A low, much branched, spreading annual with very slender purplish stems from 4 to 12 inches long. The leaves are linear to lanceolate, from $\frac{1}{2}$ to 1 inch long, opposite or the upper leaves in whorls of 3 or 5. The flowers are blue, about $\frac{1}{4}$ inch long and borne either singly or in clusters, on stalks in the axils of the upper leaves. Found in shady woods or openings in woodlands throughout the southern part of the area. Not common, but quite plentiful locally. Very plentiful on roadways in the Cypress Hills Park.

GRATIOLA (Hedge Hyssop) genus. 1 species.

(1) *Gratiola neglecta* Torr.

CLAMMY HEDGE HYSSOP

Annual or perennial herbs, from 4 to 8 inches high, somewhat sticky-hairy. The leaves are opposite, linear to oblong-lanceolate, from $\frac{1}{2}$ to 2 inches long and without stalks. The flowers are pale yellow to whitish, from $\frac{1}{4}$ to $\frac{3}{8}$ inch long, and borne singly on long stalks in the axils of the leaves. Found occasionally in mud or shallow water throughout the southern part of the area, and in the northwestern parts.

LIMOSELLA (Mudwort) genus. 1 species.

(1) *Limosella aquatica* L.

MUDWORT

A very low-growing annual with stems which root at the nodes, growing to 3 or 4 inches high. The leaves are linear or spatulate, from $\frac{1}{4}$ to $1\frac{1}{4}$ inches long on long stalks from the plant crown. The white or purplish flowers are solitary on short stalks from the base of the plants, and are about $\frac{1}{8}$ inch long. Found occasionally rooted in mud or floating in shallow water around lakes and in streams throughout most of the area.

LINARIA (Toadflax) genus. 1 species.

(1) *Linaria vulgaris* Hill

YELLOW TOAD-FLAX

A perennial growing from creeping rootstock to a height of from 8 inches to 2 feet. The leaves are linear without stalks, alternate and from $\frac{3}{4}$ to 3 inches long. The flowers are pale yellow with orange lips and a long spur at the base, and the mouth of the flower is closed. The entire flower is from 1 to $1\frac{1}{4}$ inches long, and they are borne in dense terminal racemes. Found as a weed of waste places, gardens and fields occasionally across the entire area and introduced from Europe.

MELAMPYRUM (Cow-Wheat) genus. 1 species.

(1) *Melampyrum lineare* Desr.

COW-WHEAT

Annual plants growing from 6 to 18 inches in height with lanceolate to linear-lanceolate leaves, from 1 to 2½ inches long. The lower leaves are entire margined, but the upper floral leaves are more ovate and often bear bristle-pointed teeth. The flowers are from $\frac{5}{16}$ to $\frac{1}{2}$ inch long, generally whitish with a yellowish lower lip. They are borne either solitary in the upper leaf axils or in a terminal leafy spike. Fairly common on dry, sandy soil in woodlands along the northern and eastern fringe of the area.

MIMULUS (Monkey-flower) genus. 3 species.

Perennial herbs of streams and very wet places, with large, showy flowers. The calyx is angled, and the corolla is open-throated with the upper lip spreading or reflexed.

1. Calyx inflated in fruit; flowers yellow.

(1) *M. guttatus*.

Calyx not inflated in fruit; flowers not yellow.

2.

2. Plant sticky hairy; leaves with several ribs from the base; flowers red or crimson.

(2) *M. Lewisii*

Plant not hairy; leaves feather veined; flowers blue or violet.

(3) *M. ringens*

- (1) *Mimulus guttatus* DC.
(*M. Langsdorfii* Don)

YELLOW MONKEY-FLOWER

Perennial plants growing from basal branches which root at the nodes. The stems are from 4 to 24 inches high and bear opposite, ovate or rounded leaves, from ½ to 2 inches long, the lower ones stalked and the upper ones generally clasping the stem. The conspicuous flowers are from ¾ to 1¼ inches long, bright yellow with an open mouth, somewhat hairy inside the lower lip. The calyx inflates somewhat at maturity to contain the many-seeded capsule. Found in running streams in the southwestern part of the area and in the Cypress Hills. Not a common plant but plentiful locally.

- (2) *Mimulus Lewisii* Pursh

LEWIS' MONKEY-FLOWER

A somewhat sticky-hairy perennial growing from 12 to 24 inches high. The leaves are lanceolate to oblong, from 1½ to 3 inches long. The crimson or reddish flowers are from 1 to 2 inches long and somewhat hairy inside the open throat. Found along stream banks in the extreme western section of the Foothills.

- (3) *Mimulus ringens* L.

BLUE MONKEY-FLOWER

A hairless perennial growing from rootstocks to a height of from 1 to 3 feet.

The leaves are lanceolate to oblong, opposite, from 2 to 4 inches long, without stalks. The flowers are blue or violet, from 1 to 1¼ inches long, with a narrow throat. Fairly common in swamps, along streams and lakes in the eastern portion of the area.

ORTHOCARPUS (Owl's clover) genus. 1 species.

(1) *Orthocarpus luteus* Nutt.

OWL'S CLOVER

A short, erect annual, from 6 to 18 inches high, sometimes with erect growing branches. The leaves are from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long, linear or narrowly lanceolate, crowded and ascending. The yellow flowers are from $\frac{3}{8}$ to $\frac{5}{8}$ inches long and borne on very leafy, narrow terminal spikes, and are followed by the numerous many-seeded capsules. Very common on open, dry prairie, throughout the entire southern, central and western portion of the area.

PEDICULARIS (Lousewort) genus. 5 species.

Annual or perennial herbs with pinnately cleft or lobed leaves and flowers in dense terminal spikes or racemes.

1. Galea or upper lip of corolla prolonged into a long recurved beak making flower resemble a miniature elephant's head.

(3) *P. groenlandica*

Beak of upper corolla lip, if present, not prolonged.

2.

2. Leaves divided to the midrib into toothed divisions.

(1) *P. bracteosa*

Leaves not divided to the midrib into divisions.

3.

3. Annual or biennial; stem much branching; flowers in leaf axils as well as in terminal spikes.

(5) *P. parviflora*

Perennial; stem not much branching; flowers in dense head-like terminal spikes.

4.

4. Upper lip of corolla little longer than lower lip; flowering in late summer.

(4) *P. lanceolata*

Upper lip of corolla much longer than lower lip; flowering in spring and early summer.

(2) *P. canadensis*

(1) *Pedicularis bracteosa* Benth.

WESTERN LOUSEWORT

A perennial species with an erect stem from 12 to 36 inches high. The leaves are alternate, from 4 to 12 inches long, and divided so deeply into toothed leaflets as to appear pinnate. The flowers are pale yellow, about $\frac{3}{4}$ inch long and borne in a dense terminal spike from 3 to 12 inches long. The bracts of the inflorescence are almost as long as the flowers, but a shorter bracted variety has been named *P. montanensis* by some authorities. Found fairly plentifully among bushes and in moist places in the Foothills Region

of Alberta.

(2) *Pedicularis canadensis* L.

COMMON LOUSEWORT

A somewhat hairy erect perennial herb growing to a height of from 6 to 18 inches. The oblong leaves are deeply incised or lobed and are from 3 to 5 inches long. The flowers are from $\frac{3}{4}$ to 1 inch long, yellow or reddish, and borne in a dense spike at the head of the stem. Fairly common in woodlands in the eastern portion of the area.

(3) *Pedicularis groenlandica* Retz.

ELEPHANT'S HEAD

An erect, hairless perennial from rootstocks, growing to a height of 8 to 24 inches. The leaves are lanceolate and very deeply incised, the lower stalked, and from 2 to 6 inches long. The flowers are borne on a terminal spike from 2 to 6 inches long, and are generally purple or deep red in colour and about $\frac{3}{8}$ inch long. The upper lip of the corolla is long and curved downwards and then upwards making the flowers resemble small red elephant's heads. Found in swampy places and stream banks in the northern part of the area and in the western Foothills Region.

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(4) *Pedicularis lanceolata* Michx.

SWAMP LOUSEWORT

A practically hairless perennial with stout, erect stem, from 1 to 3 feet high. The leaves are both alternate and opposite, lanceolate, from 2 to 5 inches long, with short marginal lobes. The yellow flowers are from $\frac{3}{4}$ to 1 inch long with little difference between the lengths of the upper and lower lips. They are borne in a short, dense, terminal spike. Not by any means common, but has been found in swamps in northern Manitoba.

(5) *Pedicularis parviflora* Smith

PURPLE LOUSEWORT

An annual or biennial species growing to a height of from 6 to 18 inches, much branched. The leaves are from 1 to $1\frac{1}{2}$ inches long and deeply divided. The flowers are about $\frac{1}{2}$ inch long, purple, with the galea or upper lip rounded at the apex. Uncommon, but has been found in marshlands and bogs in the most northern part of the area.

PENTSTEMON (Beard-tongue) genus. 8 species.

Perennial herbs with opposite leaves and irregular, entire flowers. There are 4 fertile stamens with anthers and one sterile stamen that is generally more or less bearded. The fruit is an ovoid, many-seeded capsule. Some authorities use the generic name of *Penstemon* or *Pentastemon* for this genus.

1. Corolla tube distinctly funnel-form, with the tube widening decidedly towards the throat.

2.

Corolla tube almost cylindrical and only slightly widening towards the throat.

5.

2. Plants without hairiness on stems or leaves.

3.

Plants with some hairiness on stems or leaves, and the inflorescence glandular.

4.

3. Sterile stamen yellow bearded only at tip; corolla $\frac{3}{4}$ inch long.

(1) *P. acuminatus*

Sterile stamen yellow bearded its whole length; corolla about $\frac{5}{8}$ inch long.

(6) *P. nitidus*

4. Flowers white; sterile stamen slightly bearded.

(2) *P. albidus*

Flowers purple; sterile stamen densely woolly.

(4) *P. eriantherus*

5. Flowers about $\frac{3}{8}$ inch long; inflorescence interrupted but generally in dense clusters; calyx not glandular.

6.

Flowers about $\frac{5}{8}$ to $\frac{3}{4}$ inch long; inflorescence open; calyx and inflorescence glandular.

7.

6. Flowers yellow.

A somewhat hairy stemmed, erect species from 6 to 18 inches high. The upper portion of the stem is sticky-hairy and glandular. The lower leaves are stalked, oblong to spatulate and the upper ones are often somewhat clasping, acute, from $\frac{3}{4}$ to $2\frac{1}{2}$ inches long. The flowers are red or purple, about 1 inch long with the sterile stamen densely hairy. The inflorescence is a fairly dense, leafy, terminal raceme. Occasionally found along the southern boundaries of the area.

(5) *Pentstemon gracilis* Nutt.

LILAC-FLOWERED BEARD-TONGUE

A slender erect species growing to a height of from 6 to 18 inches. The leaves are linear-oblong to linear-lanceolate, slightly toothed at the margins and from 1 to 3 inches long. The flowers are borne in clusters of 2 to 3 in the axils of the upper leaves, forming an open panicle; they are pale purple or lilac in colour, and from $\frac{3}{4}$ to 1 inch in length. This species generally flowers in mid-June. Fairly common on moist prairie, slough margins, etc., throughout the southern and central portion of the area.

(6) *Pentstemon nitidus* Dougl.

SMOOTH BLUE BEARD-TONGUE

A stout stemmed, often branching, hairless species growing to a height of from 8 to 12 inches. The lower leaves are lanceolate to oblanceolate, from 1 to 2 inches long, the upper ones smaller and ovate. The inflorescence is a fairly dense, somewhat leafy raceme. The flowers are about $\frac{3}{4}$ inch long, generally a deep blue, but great variations of colour are found, from purple, through all shades of red and pink to pure white. The earliest of the *Pentstemons*, flowering in May, it is very common on dry hills, eroded areas and banks throughout the entire south-central and southwestern part of the area.

(7) *Pentstemon procerus* Dougl.

SLENDER BEARD-TONGUE

A slender stemmed, low-growing perennial from 4 to 12 inches in height, the stems frequently being decumbent at base. The basal leaves are stalked and generally oblanceolate. The stem leaves are not stalked and are oblong to lanceolate, from 1 to 3 inches long. The inflorescence is a dense terminal spike, often interrupted, and the flowers are crowded on the stem. The corolla is dark blue, about $\frac{3}{8}$ inch long. This species generally flowers from the end of May until early August. It is usually found in large colonies around slough margins, in the shelter of shrubs, and in openings in woodlands. It is common over all the southern and central parts of the area.

(8) *Pentstemon puberulentus* Rydb.

PUBERULENT BEARD-TONGUE

A branching perennial with densely fine hairy stems, growing to a height of from 12 to 15 inches high. The leaves are linear-lanceolate, from $\frac{3}{4}$ to 2 inches long, generally with the margins rolled and with a fine hairiness on either side. The flowers are in an open raceme and are about $\frac{3}{4}$ inch long, and the inflorescence is somewhat glandular-hairy. Very rare, but has been reported from the south-central parts adjacent to the International Boundary. The general distribution is in Idaho and Oregon.

RHINANTHUS (Yellow-rattle) genus. 1 species.

(1) *Rhinanthus Crista-galli* L.
(*R. Kyrollae* Chab.)

YELLOW-RATTLE

Somewhat branching annual plants growing from 12 to 24 inches high. The leaves are opposite, linear to lanceolate, from 1 to 2 inches long, with finely toothed margins. The flowers are pale yellow, from $\frac{1}{4}$ to $\frac{1}{2}$ inch long, with a hairy, greenish-yellow calyx, and are borne either in the upper leaf axils or in a one-sided leafy, terminal spike. The calyx is compressed and is membranous and at maturity becomes inflated enclosing the capsule. Not by any means common, but has been found at widely scattered points throughout the southern part of the area in moist places and open woodlands.

SCROPHULARIA (Figwort) genus. 1 species.

(1) *Scrophularia lanceolata* Pursh

HARE FIGWORT

An erect plant growing from 2 to 6 feet in height with stems and inflorescence somewhat glandular. The leaves are ovate to lanceolate, coarsely toothed, from 1 to 6 inches long, with short stalks and borne oppositely on the stem. The greenish flowers are about $\frac{1}{3}$ to $\frac{1}{2}$ inch long and borne on stalks in a tall terminal inflorescence. Rare, but has been found in the south-central part of the area on moist ground.

VERBASCUM (Mullein) genus. 1 species.

(1) *Verbascum Thapsus* L.

COMMON MULLEIN

A tall, erect, woolly, biennial plant growing from 1 to 6 feet in height. The stems are very stout and straight, and bear large, densely woolly spatulate to elliptic leaves, from 4 to 12 inches long. The flowers are yellow, almost regular, with 5 lobes and from $\frac{3}{4}$ to 1 inch across. They are borne on a dense, woolly spike, from 4 to 24 inches high, the lower flowers generally opening first. Very rarely found in the area covered, but has been noticed at very widely separated points throughout the southern portion, on railway grades and waste places. Its scarcity is rather surprising as in British Columbia and the east it is a common roadside weed appearing to thrive best in dry, dusty and exposed locations.

VERONICA (Speedwell) genus. 6 species.

Annual or perennial herbs, generally associated with wet places. The leaves are opposite and the flowers perfect, four-lobed, rotate and slightly irregular. There are 2 stamens and the fruit is a several seeded capsule.

1. Flowers solitary in the axils of leaves; annuals.

2.

Flowers in axillary or terminal racemes; perennials.

3.

2. Flower stalks shorter than leaves.

(3) *V. peregrina*

Flower stalks as long or longer than the leaves.

(4) *V. persica*

3. Flowers in loose terminal racemes.

(6) *V. serpyllifolia*

Flowers in axillary racemes.

4.

4. Leaves ovate to oblong, all with short stalks.

(1) *V. americana*

Leaves linear to lanceolate, those of the flowering shoots without stalks.

5.

5. Leaves broadly lanceolate; fruit not much flattened, its stems less than twice as long as fruit.

(2) *V. connata*

Leaves linear to linear-lanceolate; fruit much flattened, its stems several times as long as fruit.

(5) *V. scutellata*

(1) *Veronica americana* (Raf.) Schwein.

AMERICAN SPEEDWELL

An aquatic or semi-aquatic, rather weak stemmed plant from 4 to 20 inches long. The leaves are all stalked and are oblong-lanceolate to ovate, from 1 to 3 inches long. The flowers are blue or white, from $\frac{1}{8}$ to $\frac{3}{16}$ inch across

and borne in long, loose racemes in the axils of the leaves. Found in streams and around springs in the northern part of the area and in the Cypress Hills, but is not common.

- (2) *Veronica connata* Raf. ssp. *glaberrima* Pennell. WATER SPEEDWELL
(*V. catenata* Pennell)

A branched species from 8 to 30 inches long with stalkless, and often clasping lanceolate leaves from $\frac{3}{4}$ to 3 inches long. The flowers are blue, almost $\frac{3}{16}$ inch across and borne in loose axillary racemes. Quite uncommon, but has been found in wet places and along rivers in the northern part of the area, and in the Cypress Hills.

- (3) *Veronica peregrina* L. var. *xalapensis* (H. B. K.) St. John and Warren
(*V. xalapensis* H. B. K.) HAIRY SPEEDWELL

A glandular-hairy, erect species growing from 4 to 12 inches in height. The leaves are spatulate to linear, from $\frac{1}{2}$ to 1 inch long. The flowers are whitish, about $\frac{1}{8}$ inch across and borne singly in the axils of the leaves. Not common but has been found on moist, sandy soils and in low areas across the entire area.

- (4) *Veronica persica* Poir. BIRD'S-EYE

A low spreading, very branching, finely hairy, annual with oval, short-stemmed leaves from $\frac{1}{2}$ to 1 inch long and coarsely toothed. The flowers are blue, about $\frac{1}{4}$ inch across and borne singly on long stalks from the axils of the leaves. An introduced plant becoming increasingly abundant as a garden weed.

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- (5) *Veronica scutellata* L. MARSH SPEEDWELL

A species with decumbent or ascending stems from 4 to 20 inches high. The leaves are linear to linear-lanceolate, sharp pointed, from 1 to 3 inches long. The flowers are about $\frac{1}{4}$ inch across, blue and borne in long loose racemes in the axils of the leaves. Fairly common in moist meadows, swamps and around springs across the entire area.

- (6) *Veronica serpyllifolia* L. THYME-LEAVED SPEEDWELL

A slender stemmed perennial much branched from the base, growing from 2 to 8 inches high. The leaves are ovate to oblong, or almost orbicular, from $\frac{1}{4}$ to $\frac{5}{8}$ inch long. The flowers are white or pale blue, about $\frac{1}{8}$ inch across and borne in short, narrow, leafy, terminal racemes. An eastern species which is very rare, but has been found in the Cypress Hills in low, swampy ground.

VERONICASTRUM (Culver's-root) genus. 1 species.

(1) *Veronicastrum virginicum* (L.) Farwell

CULVER'S-ROOT

A coarse, erect, leafy stemmed perennial growing from 1 to 5 feet high, with opposite or whorled leaves. The leaves are oblong to lanceolate, 3 to 6 inches long and vary from two to seven at a node. The flowers are white with prominent protruding stamens, from $\frac{3}{16}$ to $\frac{1}{4}$ inch long and crowded on to very long, narrow terminal racemes from 3 to 9 inches long. An eastern plant which is quite rare in the west, but has been found on a roadside or in meadows in the southeastern corner of the area.

LENTIBULARIACEAE (Bladderwort Family) 2 genera.

Small plants of water or wet places, the leaves being basal. These are carnivorous or insectivorous plants, catching small insects and aquatic life by means of sticky leaves or submerged bladders. The flowers are irregular, perfect, with 2 stamens.

1. Calyx with 5 sepals; plants not submerged; leaves entire, basal; flowers solitary.

[PINGUICULA](#)

Calyx with 2 sepals; plants floating on, or submerged in water; leaves dissected, bearing small bladders; flowers several in a raceme above water.

[UTRICULARIA](#)

PINGUICULA (Butterwort) genus. 2 species.

1. Lower corolla lip over $\frac{1}{2}$ inch long; flower dark purple with a straight spur.

(1) *P. macroseras*

Lower corolla lip less than $\frac{1}{2}$ inch long; flower pale purple with slightly recurved spur.

(2) *P. vulgaris*

(1) *Pinguicula macroceras* Willd.

WESTERN BUTTERWORT

A low bog plant with a basal rosette of sticky leaves. The flower is dark purple and borne on a stalk from 2 to 4 inches high. Not common, but found occasionally in bogs and swamps in the Foothills Region.

(2) *Pinguicula vulgaris* L.

BUTTERWORT

A low plant with leaves in a basal rosette. The leaves are oval or elliptic with a sticky secretion, and are from $\frac{3}{4}$ to 2 inches long, usually somewhat rolled at the edge. The single, pale purple flower is borne on a stalk from 1 to 4 inches high. Very rare, but has been found in bogs and cold swampy lands in the extreme northern parts of the area and in the western foothills.

UTRICULARIA (Bladderwort) genus. 3 species.

1. Stems either submerged or floating; flowers $\frac{1}{2}$ to $\frac{3}{4}$ inch long.

(3) *U. vulgaris*

Stems creeping on bottom in shallow water; flowers from $\frac{1}{8}$ to $\frac{1}{2}$ inch long.

2.

2. Flower stalks ascending; flower $\frac{3}{8}$ inch long.

(1) *U. intermedia*

Flower stalks recurved; flower less than $\frac{3}{8}$ inch long.

(2) *U. minor*

(1) *Utricularia intermedia* Hayne

FLAT-LEAVED BLADDERWORT

An aquatic plant creeping on the mud in shallow water with somewhat floating branches from 3 to 6 inches long. The leaves are scattered and very finely dissected into thread-like segments. There are leafless branches bearing several bladders from $\frac{1}{8}$ to $\frac{3}{16}$ inches long. The flowers are yellow with a large lower lip, and are about $\frac{3}{8}$ inch long, borne in a one to four-flowered raceme on a leafless upright stem. Occasionally found in bogs and shallow water in the extreme northern and eastern fringe of the area, and in the Cypress Hills.

(2) *Utricularia minor* L.

LESSER BLADDERWORT

A small, submerged plant with alternate leaves which have a few thread-like divisions and are very minute, less than $\frac{1}{4}$ inch in size. The bladders are not much more than $\frac{1}{16}$ inch long and are not very numerous. The pale yellow flowers are less than $\frac{3}{8}$ inch long and borne on curved stalks on an upright flowering stem. Very rare but has been found in bogs and shallow water in the extreme northern parts of the area.

(3) *Utricularia vulgaris* L. var. *americana* Gray GREATER BLADDERWORT (*U. macrorrhiza* Le Conte)

A species which often floats on the surface of the water with the leaves submerged. The stems are from 1 to 3 feet long, branched, and bearing many much divided leaves from $\frac{3}{4}$ to 2 inches long. The leaves bear

numerous bladders from $\frac{1}{8}$ to $\frac{3}{16}$ inch long. The flowers are yellow from $\frac{1}{2}$ to $\frac{3}{4}$ inches long, and borne in a raceme of from 6 to 15 flowers on a long flowering stem from 4 to 12 inches high. Fairly common in lakes and sloughs throughout the entire area.

OROBANCHACEAE (Broom-rape Family) 1 genus.

Low pinkish-coloured plants without green foliage. They are parasitic on the roots of other plants, particularly on those of the Artemisias. The leaves are scale-like, and the flowers are perfect and irregular. The calyx has 5 lobes, the corolla is 2-lipped and there are 4 stamens. The fruit is a many-seeded capsule.

OROBANCHE (Broom-rape) genus. 2 species.

1. Flowers borne singly on a naked stalk, with no bracts beneath each flower.

(1) *O. fasciculata*

Flowers borne in a racemose cluster, with one or two long bracts beneath each flower.

(2) *O. ludoviciana*

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- (1) *Orobanche fasciculata* Nutt.
(*Anoplanthus fasciculatus* (Nutt.) Walp.)

CLUSTERED BROOM-RAPE

A low pinkish-stemmed plant from 1 to 4 inches high, with scale-like leaves. There are from 1 to 10 purplish to yellow flowers about 1 inch long, each on a naked, unbracted stalk. Quite common wherever *Artemisia* is found throughout the entire southern portion of the area. The roots are attached to roots of *Artemisia* as well as others of the *Compositae*.

- (2) *Orobanche ludoviciana* Nutt.
(*Myzorrhiza ludoviciana* (Nutt.) Rydb.)

LOUISIANA BROOM-RAPE

A stout, somewhat sticky glandular hairy, pink stemmed plant, from 2 to 10 inches in height, with scale-like leaves. The purplish flowers are from ½ to ¾ inch long and borne in a dense terminal spike with 1 or 2 long bracts beneath each flower. Not as common as the preceding species, but is found on sandy soil throughout the south-central part of the area. Parasitic on roots of *Artemisia* and other *Compositae*.

PLANTAGINACEAE (Plantain Family) 1 genus.

PLANTAGO (Plantain) genus. 7 species.

Plants with all leaves basal, generally with several prominent longitudinal ribs. The flowers, which are borne in long, narrow spikes, have a 4-lobed calyx and a 4-lobed corolla, with either 2 or 4 stamens. The fruit is a pyxis, or a capsule, the conical top of which falls off to release the seeds.

1. Leaves lanceolate to ovate.

Leaves linear to filiform (thread-like).

2.

5.

2. Leaves lanceolate, gradually tapering to the stalks.

Leaves ovate, abruptly joining the stalk.

3.

4.

3. Spikes of the inflorescence long and narrow; plants of saline areas.

(3) *P. eriopoda*

Spikes of the inflorescence short, dense and oblong; stamens protruding and very conspicuous.

(4) *P. lanceolata*

4. Pyxis or seed capsule breaking off about at its middle; leaf stalks green to base.

(5) *P. major*

Seed capsule breaking off much below its middle; leaf stalks red at base.

(7) *P. Rugelii*

5. Inflorescence with many long bracts, from $\frac{3}{8}$ to 1 inch long.

(1) *P. aristata*

Inflorescence without long bracts.

6.

6. Plant densely whitish, silky-woolly.

(6) *P. Purshii*

Plant not whitish woolly; leaves very slender.

(2) *P. elongata*

(1) *Plantago aristata* Michx.

BRACTED PLANTAIN

A dark green annual species growing from 6 to 18 inches in height. It has linear leaves that are 3-ribbed, from 1 to 4 inches long, and up to $\frac{3}{16}$ inch wide. The inflorescence is a very dense cylindric spike, from 1 to 6 inches long, bearing numerous long, linear bracts of which the lower may be up to 1 inch long, with the length decreasing towards the upper part of the spike. Very rare, but has been found on dry soil at odd locations throughout the area. These may be *P. spinulosa* Decne.

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(2) *Plantago elongata* Pursh

LINEAR-LEAVED PLANTAIN

An annual plant growing from 3 to 6 inches high. It has very narrow, thread-like leaves from 1 to 5 inches long, about $\frac{1}{16}$ inch wide, and single ribbed. The inflorescence is a loosely flowered, very narrow spike, from 2 to 4 inches long. Not common, but occasionally found in wet places and low flats throughout the southern part of the area.

(3) *Plantago eriopoda* Torr.

SALINE PLANTAIN

A somewhat fleshy, perennial species from a long, coarse rootstock. The leaves are oblanceolate, from 2 to 8 inches long, and with several longitudinal ribs. These are borne on long stalks which arise generally from a mass of long, brown hairs at the crown of the root. The inflorescence is a somewhat dense, narrow spike, from 1 to 4 inches long on a long stem. Very common on saline or alkaline soils, river flats, slough margins, etc., throughout the entire southern and central portion of the area.

(4) *Plantago lanceolata* L.

RIBGRASS

An introduced biennial or perennial species with a short rootstock. The numerous leaves are narrowly lanceolate, 3 to 5 ribbed, from 2 to 12 inches long, and taper to very short stalks. There are generally some tufts of

brownish hair at the crown of the root. The flowering stems are much longer than the leaves, from 12 to 20 inches, and the inflorescence is a short-thick, dense spike from 1 to 3 inches long. The stamens are much protruding and often form a conspicuous yellow or white ring around the flower head. Occasionally found where imported lawn grass has been sown and is a weed of newly seeded lawns.

(5) *Plantago major* L.

COMMON PLANTAIN

A perennial species from a short, thick rootstock. The numerous leaves are very dark green, oval or ovate, from 1 to 10 inches long. They have many conspicuous longitudinal ribs that contract abruptly at the base to a long stalk. The flowering stems are fairly long with an inflorescence that is a dense, narrow spike, from 3 to 12 inches long. This is a very common weed of lawns, waste places and yards throughout the entire area. It may have been introduced but, if so, has been spread across the entire country. A variety *asiatica* (L.) Decne. with tapering leaf bases and more upright leaves has been found in the extreme northern parts of the area.

(6) *Plantago Purshii* R. & S.

PURSH'S PLANTAIN

An annual very pale green and whitish silky-woolly all over. The leaves are from 1 to 3 inches long, linear, with from 1 to 3 nerves. The inflorescence is a dense spike, from 1 to 5 inches long on a stem 3 to 4 inches in length, and is very woolly. Found in sandy soil, on river flats and dry soils throughout the southwestern part of the area. It is an indicator of an overgrazed condition.

(7) *Plantago Rugelii* Decne.

PALE PLANTAIN

A perennial species very similar to *P. major*, but smaller, with reddish based leaf stalks. The rather loose inflorescence is somewhat pointed at the top, whereas in *P. major* it is generally blunt. The seed capsule is longer and narrow and breaks off near the base. Has been reported from the area but the identification is doubtful.

RUBIACEAE (Madder Family) 2 genera.

Plants with opposite or whorled leaves, with stipules, and perfect, regular flowers. There are as many stamens as corolla lobes, and the fruit may be a capsule, berry, or a drupe.

1. Leaves apparently whorled, the stipules resembling the leaves; stems square.

[GALIUM](#)

Leaves opposite, in pairs; low plants.

[HOUSTONIA](#)

GALIUM (Bedstraw) genus. 5 species.

1. Annuals; leaves apparently in whorls of 6 or 8; stem reclining, with bristly hairs.

(5) *G. Vaillantii*

Perennials; leaves mostly in whorls of 4 or 6.

2.

2. Leaves 3-nerved; flowers in dense terminal, leafy panicles.

(1) *G. boreale*

Leaves 1-nerved; inflorescence not dense.

3.

3. Leaves with a sharp, rigid, protruding point at the tip; leaves usually 6 in a whorl.

(4) *G. triflorum*

Leaves not with sharp protruding point; leaves generally 4 in a whorl; flowers very small.

4.

4. Corolla greenish white, usually with 3 blunt lobes.

(3) *G. trifidum*

Corolla white, usually with 4 acute lobes; leaves generally reflexed.

(2) *G. labradoricum*

(1) *Galium boreale* L.

NORTHERN BEDSTRAW

An erect perennial from thin, brown rootstocks, growing to a height of from 8 to 24 inches with a slender, square stem. The leaves are borne in whorls of 4 around the stem and are linear to lanceolate, 3-ribbed, and from 1 to 2½ inches long. The inflorescence takes the form of a terminal, leafy panicle, fairly dense and many-flowered. The flowers are white, about ⅛ inch across with 4 corolla lobes, and have a faintly fragrant odour. The fruits are borne in pairs and are about ¹/₁₆ inch long and covered with short whitish hairs. Very common in openings in woodlands, along roadsides and moister places on the prairies throughout almost the entire area, in some years being almost the dominant roadside flower. Most of the prairie plants appear to be variety *intermedium* DC. with short, curved hairs on fruit.

(2) *Galium labradoricum* Wieg.

LABRADOR BEDSTRAW

A very slender stemmed perennial growing from 2 to 12 inches high. It has linear oblanceolate leaves in whorls of 4. The leaves are from $\frac{1}{4}$ to $\frac{1}{2}$ inch long, and generally reflexed or somewhat downwards pointing. The flowers are very small, white, with 4 corolla lobes. A rare plant occasionally found in bogs and swamps in the northern fringe of the area. Its natural habitat is sub-arctic swamps.

(3) *Galium trifidum* L.

SMALL BEDSTRAW

A slender stemmed perennial with decumbent or erect, weak stems, from 8 to 16 inches long. The leaves are borne in whorls of 4, are linear to spatulate, from $\frac{1}{4}$ to $\frac{1}{2}$ inch long. The greenish-white flowers are terminal or axillary, on long stalks, and are in twos or threes, very small, generally with 3 blunt corolla lobes. The fruits are borne in pairs and are smooth, without any hairiness. Found occasionally in moist places along the eastern and northern edges of the area and in the Cypress Hills.

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(4) *Galium triflorum* Michx.

SWEET-SCENTED BEDSTRAW

A spreading, branched perennial growing from 12 to 30 inches long, often trailing or decumbent, with an almost hairless stem. The leaves are generally in whorls of 6, are narrowly oval or oblanceolate, with a sharp, pointed tip, and are from 1 to $2\frac{1}{2}$ inches long. The greenish-white flowers are each long stalked and borne in clusters of 3, and have 4 corolla lobes. The fruits are in pairs and are covered with long, hooked hairs. Fairly common in moist places and damp woodlands throughout the whole area.

(5) *Galium Vaillantii* DC.

VAILLANT'S CLEAVERS

A trailing or decumbent annual species with a square stem from 2 to 4 feet long that is covered with retrorse or backwards pointing, bristly hairs. The leaves are in whorls of 6 or 8 and are oblong-linear to oblanceolate, sharp-tipped, rough bristly on margins and mid-rib, and up to 1 inch long. The long-stalked cream-coloured flowers are borne in axillary clusters of from 4 to 9 flowers. The fruits are in pairs and bear hooked hairs. Frequently found in moist woodlands and river banks in the southwestern parts of the area.

HOUSTONIA (Bluets) genus. 1 species.

(1) *Houstonia longifolia* Gaertn.

LONG-LEAVED BLUETS

Low, tufted perennials growing from 3 to 10 inches high, often with a purplish square stem. The leaves are opposite, linear to linear-oblong, from $\frac{3}{8}$ to 1 inch long, and at the base are small whitish or purplish stipules. The flowers are pinkish or purple, from $\frac{1}{4}$ to $\frac{3}{8}$ inch long, and borne in very leafy, terminal clusters. The fruit is an ovoid capsule. Found occasionally on grasslands and sandy soils in the parkland areas throughout the eastern, central and northern portions of the area.

CAPRIFOLIACEAE (Honeysuckle Family) 5 genera.

Trees, shrubs, vines, or perennial herbs with opposite leaves without stipules. The flowers are perfect, with the corolla varying from rotate or campanulate to urn-shaped. Generally there are 5 stamens, but one genus *Linnaea* has only 4. The fruit is a berry, a drupe, or a capsule.

1. Low, trailing evergreen shrub; flowers with 4 stamens.

[LINNAEA](#)

Shrubs or small trees; flowers with 5 stamens.

[2.](#)

2. Corolla rotate; inflorescence all terminal in compound cymes; fruit a drupe containing a flattened stone.

[VIBURNUM](#)

Corolla tubular or bell-shaped; inflorescence axillary as well as terminal; fruit a capsule or berry with 2 or more seeds.

[3.](#)

3. Leaves with finely toothed margins; calyx with 5 linear lobes; fruit a capsule.

[DIERVILLA](#)

Leaves with entire or wavy margins; calyx with short lobes; fruit a berry.

[4.](#)

4. Flowers regular, bell-shaped, in clusters; fruit a white berry.

[SYMPHORICARPOS](#)

Flowers often slightly irregular, tubular, generally in pairs; fruit a red or black berry.

[LONICERA](#)

DIERVILLA (Bush Honeysuckle) genus. 1 species.

(1) *Diervilla Lonicera* Mill.

BUSH HONEYSUCKLE

A shrub from 2 to 4 feet high with opposite simple leaves. The leaves have short stalks, are ovate to oval, finely toothed on the margins, and from 2 to 5 inches long. The flowers are narrow, funnel-shaped, about $\frac{3}{4}$ inch long, yellow, and borne in axillary and terminal clusters of from 1 to 5 flowers. The fruit is a slender capsule with the linear stamens remaining on the end. Not common but found in rocky woodlands along the northern and eastern margins of the area.

LINNAEA (Twin-flower) genus. 1 species.

- (1) *Linnaea borealis* L. var. *americana* (Forbes) Rehder TWIN FLOWER
(*L. americana* Forbes)

A very low creeping or trailing evergreen plant, from 6 to 30 inches long. The leaves are opposite, short-stalked, oval or orbicular, from $\frac{3}{8}$ to $\frac{5}{8}$ inches across and with a somewhat wavy margin. The fragrant flowers are pink, funnel-form, about $\frac{3}{8}$ inch long, and are borne in pairs, pendant or hanging downwards from the top of a stem from 1 to 4 inches high. The flowers have but 4 stamens. Very common in cool woodlands and often found on decayed, fallen tree trunks throughout the entire wooded parts of the area.

LONICERA (Honeysuckle) genus. 6 species.

1. Somewhat twining shrub; upper leaves joined at bases and perfoliate; inflorescence a terminal cluster.

(2) *L. glaucescens*

Erect shrubs; leaves not connate-perfoliate; inflorescence axillary and flowers in pairs.

2.

2. Bracts below flowers large, broad and leaf-like; berries of the two flowers separate.

(3) *L. involucrata*

Bracts below flowers thin or minute; berries of the two flowers more or less united.

3.

3. Flower stalks short, about $\frac{1}{4}$ inch long; berry blue or black, with a bloom.

(6) *L. villosa*

Flower stems longer, from $\frac{3}{8}$ to 1 inch long; berry orange or red.

4.

4. Leaves often cordate at base, quite hairless.

(5) *L. tatarica*

Leaves not cordate based, downy or hairy beneath, at least when young.

5.

5. Leaves with marginal fringe of hairs, rounded at base, bright green on both sides; corolla lobes almost equal.

(1) *L. canadensis*

Leaves with smooth margins, tapering to the base, paler below; corolla definitely two-lipped.

(4) *L. oblongifolia*

(1) *Lonicera canadensis* Bartr. AMERICAN FLY HONEYSUCKLE
(*Xylosteon canadense* (Marsh) Duham.)

A shrub from 3 to 5 feet high, with thin, bright green leaves, from 1 to 4

inches long. The flowers are greenish-yellow, about $\frac{5}{8}$ inch long, borne in pairs. The fruit is a light red, ovoid berry about $\frac{1}{4}$ inch in diameter. Very rare, but has been found in the extreme east of the area in moist woods and in the Riding Mountains.

(2) *Lonicera glaucescens* Rydb.

TWINING HONEYSUCKLE

A more or less twining shrub with light-coloured shreddy bark. The leaves are obovate or oval, all opposite and often connate, or joined at their bases, and perfoliate, especially the upper ones. The leaves are from 2 to $3\frac{1}{2}$ inches long, pale and often hairy below, particularly on the veins. The flowers are in a terminal cluster and are yellow, later turning reddish, from $\frac{3}{4}$ to 1 inch long. The fruits are clusters of red berries. Fairly common in woodlands throughout the entire area.

(3) *Lonicera involucrata* (Richards.)

INVOLUCRATE HONEYSUCKLE

Banks

(*Distegia involucrata* (Richards.) Cockerell)

A shrub from 3 to 10 feet in height, sometimes with downy stems. The leaves are oblong to oval, from 2 to 6 inches long, somewhat glandular-dotted and downy below, with a prominent mid-vein. The flowers are in pairs, yellow, and have large leaf-like bracts at their bases. The fruit are two large berries, very dark purple to black, about $\frac{1}{3}$ of an inch across and surrounded by the persistent bracts. Fairly common in the woodlands of the eastern, northern, and western edges of the area.

(4) *Lonicera oblongifolia* (Goldie) Hook.

SWAMP FLY HONEYSUCKLE

(*Xylosteon oblongifolium* Goldie)

A shrub from 2 to 4 feet high, with ascending branches. The leaves are oblong, downy beneath when young, and from 1 to 2 inches long. The flowers are yellow with a purplish tinge inside, from $\frac{3}{8}$ to $\frac{5}{8}$ inch long and two-lipped, borne in pairs on a long stem. The fruit are pairs of more or less united purplish-red berries. Occasionally found in swamps and marshy lands in the northern and eastern portions of the area.

(5) *Lonicera tatarica* L.

TARTARIAN HONEYSUCKLE

(*Xylosteon tataricum* (L.) Medic.)

A shrub from 3 to 10 feet high with thin, ovate, somewhat cordate based leaves, from 1 to 3 inches long. The flowers are pink or white, about $\frac{5}{8}$ inches long, borne in pairs and very numerous. The fruit is an orange or yellow berry about $\frac{1}{4}$ inch in diameter. This is an introduced species very commonly used for ornamental planting and hedges. It has become established in woodlands and moist spots in several parts of the area.

- (6) *Lonicera villosa* (Michx.) R. & S. var. *Solonis* (Eat.) Fern.
(*Xylosteon coeruleum* (L.) Dum.-Cours.) BLUE FLY HONEYSUCKLE

Low, erect shrubs from 1 to 3 feet high, the twigs sometimes finely hairy. The leaves are oval to obovate, slightly downy when young, very short stalked and from $\frac{3}{4}$ to $1\frac{1}{2}$ inches long. The flowers are borne in pairs in the axils of the leaves and are yellow, about $\frac{1}{2}$ inch long. The fruit is an oblong or globose bluish-black berry, covered with a bloom, and is edible. Fairly frequent in moist or swampy places in woodlands along the eastern, northern, and western fringes of the area.

SYMPHORICARPOS (Snowberry) genus. 2 species.

Low shrubs with strongly creeping roots, opposite, simple, and short-stalked leaves, and small pink and white, perfect flowers, that are campanulate or bell-shaped. The fruit is a small round, 2-seeded, white berry.

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1. Stamens and styles not protruding from corolla.

(1) *S. albus*

Stamens and styles protruding from corolla.

(2) *S. occidentalis*

- (1) *Symphoricarpos albus* (L.) Blake

SNOWBERRY

An erect shrub, from 18 inches to 5 feet in height. It has thin, oval leaves, from $\frac{3}{4}$ to 2 inches long, that are sometimes slightly toothed. The flowers are borne in several-flowered clusters. The berry is waxy, white, from $\frac{1}{4}$ to $\frac{3}{8}$ inch across. Occasionally found in the northeastern and eastern fringe of the area. The variety is more commonly found.

- (1A) *Symphoricarpos albus* (L.) Blake var. *pauciflorus* (Robbins) Blake.

(*S. pauciflorus* (Robbins) Britt.)

FEW-FLOWERED SNOWBERRY

A low-growing, spreading shrub, from 4 to 12 inches high. It has oval or round leaves from $\frac{1}{2}$ to 1 inch long that are softly hairy beneath. The flowers are borne singly in the upper leaf axils or in terminal clusters of 2 or 3, and are about $\frac{1}{4}$ inch long. The white, waxy berries are about $\frac{1}{4}$ inch in diameter. Found in rocky and sandy woodlands throughout the bush parts of the area and in the Cypress Hills.

- (2) *Symphoricarpos occidentalis* Hook.

WESTERN SNOWBERRY

A shrub from 1 to 4 feet high, growing from creeping roots. The leaves are oval, ovate, or almost round, somewhat soft hairy beneath, and from 1 to 3 inches long. The flowers are pink and white with the styles and stamens conspicuously projecting from the corolla, and are borne in rather dense terminal and axillary spikes. The fruits are snow white, waxy berries, often borne in large numbers. It is one of the most widespread and commonest shrubs. Dense stands are found on open prairie, in ravines, and coulees,

and throughout woodlands over the entire area.

VIBURNUM (Bush cranberry) genus. 4 species.

Shrubs or small trees with opposite leaves and flowers all in terminal clusters. The corolla is from rotate or wheel-shaped to short bell-shaped, regular, 5 lobed, while the flowers are perfect, with 5 stamens and a short 3-cleft style. The fruits are single seeded, edible drupes, the stone being somewhat compressed or flattened.

1. Leaves usually 3-lobed, veins radiating from base.

2.

Leaves not lobed, veins pinnate from centre rib.

3.

2. Outer flowers of cluster large and neutral or sexless, with large lobes.

(4) *V. Opulus*

None of flowers large and neutral.

(2) *V. edule*

3. Leaves densely hairy beneath, stalks not more than ¼ inch long.

(1) *V. affine*

Leaves not hairy beneath, stalks slender, more than ¼ inch long.

(3) *V. Lentago*

- (1) *Viburnum affine* Bush var. *hypomalacum* Blake DOWNY ARROW-WOOD
(*V. Rafinesqueanum* Schultes)

A shrub from 2 to 5 feet in height with many slender grey branches. The leaves are coarsely toothed, oval or ovate, slightly cordate at the base, from 1 to 3 inches long, and densely covered below with velvety hairs. The inflorescence is rounded, and from 1 to 3 inches across. The flowers are all perfect and white. The fruits grow large clusters, are almost black, and about ¼ inch long. The stone is grooved slightly on both sides. Fairly common in woodlands in the eastern part of the area.

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- (2) *Viburnum edule* (Michx.) Raf.
(*V. eradiatum* (Oakes) House)

LOW-BUSH CRANBERRY

A rather straggly shrub from 2 to 6 feet high. The leaves are generally shallowly 3-lobed, and from 1½ to 4 inches across. The leaf bases are

usually flat or cordate. The few-flowered inflorescence is from $\frac{1}{2}$ to $1\frac{1}{4}$ inches across, while the flowers are all perfect. The fruit is a red drupe about $\frac{3}{8}$ inch long. Fairly common in rich, moist woodlands throughout the more heavily wooded parts of the area.

(3) *Viburnum Lentago* L.

NANNYBERRY

A tall shrub or small tree up to 20 feet in height. The leaves are ovate, have sharp, small, marginal teeth, taper to a point at the apex, and are from $1\frac{1}{2}$ to 4 inches long. The flowers are borne in large clusters from 2 to 5 inches across. The fruit is an edible, bluish-black berry about $\frac{1}{2}$ inch long, covered with a bloom. Common in woodlands in the southeastern corner of the area.

(4) *Viburnum Opulus* L. var. *americanum* (Mill.) Ait.
(*V. trilobum* Marsh)

HIGH BUSH CRANBERRY

A shrub from 3 to 12 feet in height with smooth branches. The leaves are palmately veined, broad and 3-lobed, and from 2 to 4 inches across. The outer flowers in the cluster are from $\frac{1}{2}$ to $\frac{3}{4}$ inch across, have 5 large petals, but are neuter without fully formed styles or stamens. The inner flowers are smaller, creamy white and perfect. The fruit is a red berry about $\frac{3}{8}$ inch in diameter and very acid. Fairly common in woodlands throughout the heavier wooded parts of the area.

CUCURBITACEAE (Gourd Family) 1 genus.

ECHINO CYSTIS (Balsam Apple) genus. 1 species.

- (1) *Echinocystis lobata* (Michx.) T. & G.
(*Micrampelis lobata* (Michx.) Greene)

WILD CUCUMBER

An annual, succulent, trailing vine from 10 to 20 feet in extent, climbing by means of tendrils over bushes and shrubbery. The stem is somewhat angled and bears long, spirally twisted tendrils. The leaves are thin, pale green, rough on both sides, palmately veined, have from 3 to 7 large lobes, and are from 2 to 5 inches across. The greenish-white flowers are unisexual; the male flowers are borne in panicles or racemes; the female flowers are one or two in number and are borne in the axils of the leaves. The fruit is called a “pepo” that is a large, ovoid, fleshy berry with a thick skin, pale green in colour, and covered with weak spines. These fruits are from 1½ to 2 inches long, and contain several large, flat, roughened, almost black seeds. Found in moist places amongst bushes in the southeastern and south-central parts of the area, and fairly common.

CAMPANULACEAE (Blue-bell Family) 1 genus.

CAMPANULA (Bell flower) genus. 3 species.

Perennial plants with rootstocks, and alternate, simple leaves. The flowers are perfect, usually blue, campanulate or funnel-form, and borne in panicles. There are 5 stamens and from 3 to 5 stigmas. The fruit is an ovoid capsule containing many seeds.

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1. Basal leaves ovate or cordate, soon withering; flowers more than $\frac{1}{2}$ inch long.

(2) *C. rotundifolia*

Basal leaves linear or narrowly lanceolate; flowers not over $\frac{1}{2}$ inch long.

2.

2. Corolla blue, $\frac{3}{8}$ to $\frac{1}{2}$ inch long.

(3) *C. uliginosa*

Corolla white or bluish tinged, less than $\frac{3}{8}$ inch long.

(1) *C. aparinoides*

- (1) *Campanula aparinoides* Pursh

MARSH BELL FLOWER

A very thin, slender-stemmed plant from 8 to 24 inches high. It has a 3-angled stem, somewhat roughened with downward pointing stiff, short hairs. The leaves are lanceolate to linear-lanceolate, and from $\frac{3}{4}$ to 2 inches long. The flowers are borne at the ends of the branches, are generally white or with a faint bluish tinge, and from $\frac{1}{4}$ to $\frac{5}{16}$ inch long. Frequently found in wet meadows and marshes in the eastern and north-eastern parts of the area.

- (2) *Campanula rotundifolia* L.
(*C. petiolata* A. DC.)

HARE-BELL

A perennial growing from rootstocks to a height of from 4 to 18 inches, often with many stems. The basal leaves, which disappear early, are ovate

or deeply cordate based, from $\frac{1}{2}$ to 1 inch in length and on long stalks. The stem leaves are linear or linear-oblong, and from $\frac{1}{2}$ to 3 inches long. The flowers are blue, campanulate, and from $\frac{5}{8}$ to $\frac{3}{4}$ inches long. Occasionally the flowers are solitary, but more often in a raceme of 3 or 4 flowers. Very common throughout the entire area.

(3) *Campanula uliginosa* Rydb.

BLUE MARSH BELL FLOWER

A plant from 8 to 24 inches high, with very thin, weak, rough angled stems. The leaves are linear, from $\frac{3}{4}$ to 2 inches long. The blue flowers are borne on long stalks, and are from $\frac{3}{8}$ to $\frac{1}{2}$ inch long. Very rare, but has been found in the eastern and northeastern parts of the area in wet, swampy meadows.

LOBELIACEAE (Lobelia Family) 1 genus.

LOBELIA (Lobelia) genus. 4 species.

Annual or perennial herbs that often have a bitter, milky sap. The leaves are alternate or basal. The flowers are perfect, and irregular, with a 2-lipped corolla, which is divided to the base on one side. There are 5 stamens. The fruit is a many-seeded capsule.

1. Leaves all basal, circular in cross-section; stems practically leafless; plant usually submerged in water.

(1) L. Dortmanna

Stems leafy; plants not generally submerged.

2.

2. Stem leaves linear; plants of moist, marshy places; racemes few-flowered.

(3) L. Kalmii

Stem leaves lanceolate to ovate; plants of drier soils; racemes many-flowered.

3.

3. Stem mostly simple and unbranched; flowers in a terminal spike-like raceme; pods not inflated.

(4) L. spicata

Stem generally branched; flowers in loose raceme; pods usually inflated.

(2) L. inflata

(1) *Lobelia Dortmanna* L.

WATER LOBELIA

An aquatic perennial plant with large masses of white fibrous roots. The leaves are linear, tufted at the base of the plant, terete (circular in cross-section) hollow and from ½ to 2 inches long. The flowering stalk or scape

is from 4 to 16 inches high. The flowers are borne in a loose raceme, are two-lipped, blue, and from $\frac{1}{2}$ to $\frac{5}{8}$ inches long. Rare, but is found in shallow water of lakes in the extreme eastern part of the area.

(2) *Lobelia inflata* L.

INDIAN TOBACCO

A somewhat hairy, branched annual growing from 1 to 3 feet in height. The leaves are obovate to oval, with prominent veins beneath, and are from 1 to 3 inches long. The light blue to lilac flowers are about $\frac{5}{16}$ inch long, and are borne in loose racemes. The fruiting capsule is inflated and about $\frac{1}{4}$ inch long. Rare, but has been found on dry hillsides in the eastern part of the area.

(3) *Lobelia Kalmii* L.

KALM'S LOBELIA

(*L. strictiflora* (Rydb.) Lunell)

A leafy-stemmed biennial or perennial branching plant from 4 to 12 inches high. The lower leaves are spatulate, from $\frac{1}{2}$ to 1 inch long, while the upper are linear. The flowers are light blue, about $\frac{3}{8}$ inch long, and borne in loose racemes. Each flower stalk usually bearing two small bracts or two glands. Fairly common in bogs and wet meadows throughout the entire eastern, northern, and western heavily wooded areas.

(4) *Lobelia spicata* Lam.

SPIKED LOBELIA

A perennial with a simple, erect stem, from 1 to 3 feet high. The lower leaves are spatulate, from 1 to $3\frac{1}{2}$ inches long, while the stem leaves are lanceolate to spatulate. The flowers are borne on a long spike-like terminal inflorescence, are pale blue, and about $\frac{5}{16}$ inch long. In the type, the sepals and bracts are very slightly or not at all hairy. Occasionally found in dry, sandy soil throughout the eastern part of the area.

(4a) *Lobelia spicata* Lam. var. *hirtella* A. Gray

PALE SPIKED LOBELIA

(*L. hirtella* (A. Gray) Greene)

Very similar to the species, but the plant has the bracts and sepals finely hairy. Occasionally found on dry soils throughout the area, but not common.

VALERIANACEAE (Valerian Family) 1 genus.

VALERIANA (Valerian) genus.

Perennial herbs with scented roots. The opposite leaves have no stipules. The leaves vary, the lower often being entire and spatulate, while the upper are pinnately lobed with a large terminal lobe. The flowers are generally rose or white, 5-lobed, small, and are borne in many-flowered clusters which lengthen and become paniculate as the plant ripens. The seed is an achene.

1. Roots deep and fusiform (carrot-like); leaves parallel-veined.

(1) *V. ciliata*

Roots fibrous; leaves pinnately-veined.

(2) *V. septentrionalis*

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- (1) *Valeriana ciliata* T. & G.
(*V. edulis* Nutt.)

TOBACCO-ROOT

An erect plant, from 1 to 4 feet high, with long, thick, carrot-shaped root. The basal leaves are entire, spatulate or oblanceolate, from 3 to 12 inches long. The stem leaves are pinnately parted, with from 3 to 7 narrow divisions and parallel veined. The flowers are unisexual, the staminate flowers about $\frac{1}{8}$ inch long, the female ones smaller. Very rare, but has been found in the extreme north and east of the area in wet places.

- (2) *Valeriana septentrionalis* Rydb.

NORTHERN VALERIAN

An erect, rather weak-stemmed plant from 8 to 24 inches high. The basal leaves are entire, generally spatulate, the stem leaves being pinnate, with a large terminal lobe, and pinnately veined. The flowers are white, about $\frac{1}{8}$ inch across, and borne in dense terminal clusters, which later lengthen into a short cymose panicle. Fairly common in wet places throughout the northern parts of the area. Some authorities divide this species to form *V. uliginosa*, but the distinction hardly appears justified from the western

specimens.

DIPSACACEAE (Teasel Family) 1 genus.

SCABIOSA (Scabious) genus. 1 species.

(1) *Scabiosa arvensis* L.

FIELD SCABIOUS

(*Knautia arvensis* (L.) Duby)

An erect, hairy, perennial growing from 1 to 3 feet high with lower leaves stalked, oblong-lanceolate, from 3 to 10 inches long, and upper stem leaves opposite, pinnatifid or lobed and without stalks. The flowers are pale lilac or blue and borne in heads 1 to 1½ inches broad, with involucre bracts resembling heads of *Compositae*. Occasionally found in western Alberta and around Winnipeg, but has been introduced from Europe.

COMPOSITAE (Composite Family) 3 sub-families.

This is a very large and varied family. The apparent flower is a head or a capitulum, composed of many florets or small flowers borne on a common receptacle, which is surrounded by an involucre composed of one or more rows of bracts. There are two main types of floret, the tubular or disk florets, and the ligulate or ray florets. The tubular florets are regular and tube-shaped and a head or flower entirely composed of these is termed “discoid”. The ray florets are irregular, with a single, strap-like petal, and heads entirely composed of these are termed “ligulate”. Where both forms of floret are present it is termed “radiate”. In such cases the tubular florets occupy the centre or disk, and the ligulate florets the margins or rays. In ligulate and discoid flowers the florets are all perfect, having both pistil and stamens. In radiate flowers the tubular florets are generally perfect and the ray florets are either female (pistil only) or neuter (with neither pistil nor stamens). Often there are bracts or scales amongst the florets on the top of the receptacle which are called the “chaff”. If none is present, the receptacle is said to be naked. There are 5 stamens, generally with their anthers united to form a ring around the pistil. In some genera the flowers are unisexual—the male and female florets being borne in separate flowers. The fruit is an achene, sometimes enclosed in a bur-like closed involucre, sometimes provided with a pappus or tuft of hairs to aid in dissemination, and sometimes with awns or scales. In one sub-family all the species contain latex, a sticky, often milky sap. For convenience this large family is divided into three sub-families.

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1. Stamens not united to form a tube around the pistil.

[AMBROSIACEAE](#)

Stamens united to form a tube around the pistil.

2.

2. Some or all of the florets tubular.

[TUBULIFLORAE](#)

None of the florets tubular, all ligulate; plants with a milky or sticky sap.

[LIGULIFLORAE](#)

AMBROSIACEAE (Ragweed sub-family) 4 genera.

Annual or perennial herbs, generally with alternate leaves. There are no perfect florets, and the flowers are inconspicuous. In one genus, both male and female florets are borne in the same head, but in the others the male and female florets are borne in separate heads in different parts of the plant. The heads composed entirely of male florets and those with both male and female florets are reflexed, or hang downwards and this trait aids in recognizing this sub-family. When the male and female florets are borne in separate heads, the fruit is often enclosed in a bur-like or nut-like involucre. This sub-family, being wind pollinated, is responsible for a large amount of “hay fever”.

1. Heads with both male and female florets; achenes not contained in bur-like involucre.

[IVA](#)

Male and female florets on separate heads; involucre of female flowers bur-like or nut-like.

[2.](#)

2. Leaves not lobed or dissected; female heads with two florets; involucre forming an oblong bur with hooked prickles.

[XANTHIUM](#)

Leaves lobed or divided; female heads generally with one floret; prickles on involucre not hooked.

[3.](#)

3. Involucre of female heads with a single series of prickles or tubercles, and spines short.

[AMBROSIA](#)

Involucre of female heads with several rows of spines, and spines long and prominent.

[FRANSERIA](#)

AMBROSIA (Ragweed) genus. 3 species.

1. Leaves all opposite, some entire, some with 3 to 5 lobes.

(3) *A. trifida*

Leaves opposite or alternate, all once or twice divided.

2.

2. Annuals; leaves with stalks; fruit with sharp spines or tubercles.

(1) *A. artemisiifolia*

Perennials with running rootstocks; leaves without stalks; fruit without sharp spines.

(2) *A. psilostachya*

- (1) *Ambrosia artemisiifolia* L. var. *elatior* (L.) Descourtils

(*A. elatior* L.)

COMMON RAGWEED

An erect annual growing from 1 to 3 feet high, with much divided, stalked leaves that are somewhat greyish hairy below. There are many male heads, borne in long, narrow racemes, and the female heads are in small clusters. Very common in the southeastern part of the area, but scarcer further west. A weed of roadsides and waste places.

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- (2) *Ambrosia psilostachya* DC. var. *coronopifolia* (T. & G.) Farwell

(*A. coronopifolia* T. and G.)

PERENNIAL RAGWEED

A greyish, hairy, erect perennial growing from 12 to 36 inches high from running rootstocks. The leaves are once or twice divided and without stalks. The inflorescence is similar to the preceding species. The fruit is almost devoid of spines. Fairly common along roadsides and waste places in the eastern part of the area, and present, but scarcer further west.

- (3) *Ambrosia trifida* L.

GREAT RAGWEED

A rather stout stemmed, erect annual growing from 2 to 5 feet in height. It has a rough, hairy stem. The leaves are all opposite, stalked, mostly with 3 to 5 lobes, and with 3 main palmate veins. The leaves are from 2 to 10 inches across. The male flowers are in long terminal racemes, while the female ones are in clusters in the axils of the upper bract-like leaves. Very

common in the southeastern part of the area along roadsides, and in waste places and fields, but scarce elsewhere.

FRANSERIA (Bur-ragweed) genus. 1 species.

(1) *Franseria acanthicarpa* (Hook.) Coville

BUR-RAGWEED

An annual, generally rather decumbent and spreading, from 6 to 24 inches high, and much branched. The leaves are doubly divided, from 2 to 4 inches long, and the male flowers are in long terminal racemes. The female flowers are clustered in the leaf axils and have an involucre with long, straight spines, making the plant very prickly to handle. Only found in sand dune areas in the south-central and southwestern parts of the area; may be plentiful locally.

IVA (Marsh Elder) genus. 2 species.

1. Low-growing perennials with creeping, woody roots; flowers solitary on stalks in the leaf axils.

(1) *I. axillaris*

Tall-growing, coarse annuals with fibrous roots; flowers in terminal and axillary spike-like panicles.

(2) *I. xanthifolia*

(1) *Iva axillaris* Pursh

POVERTY WEED

An herbaceous perennial with woody, running roots, growing erect to a height of from 8 to 24 inches. The leaves are stalkless, entire, 3-nerved, obovate to linear-oblong, and from ½ to 1½ inches long. The lower leaves are opposite, the upper alternate. The flowers are small, yellow, and borne reflexed in the leaf axils. Very plentiful locally in heavy, somewhat saline soils in the south-central and southwestern parts of the area. This species is a serious weed in many farming areas where soil conditions favour its growth.

(2) *Iva xanthifolia* Nutt.

FALSE RAGWEED

(*Cyclachaena xanthifolia* (Nutt.) Fresen.)

A tall, erect, branching annual with a rough, downy stem, from 2 to 6 feet in height. The leaves are broadly ovate, rough above and downy below, long stalked, and from 2 to 6 inches long. The inconspicuous heads are small, and crowded on terminal and axillary panicles. The plant looks like a sunflower when growing, except for the inflorescence. Very common around towns and settlements throughout the entire area, in vacant lots and waste places, and has now become a common roadside and field weed in the eastern parts of the area. Formerly a rather rare plant of waste places, but increasing rapidly with settlement.

XANTHIUM (Cocklebur) genus. 1 species.

Annual herbs with alternate leaves. The male flowers are in terminal spikes or racemes, whereas the female flowers are borne in the axils of the leaves. The fruit is a bur with two stout beaks at one end, covered with hooked prickles, and containing two long, flat seeds. One seed will germinate rapidly, but the other has a long delayed germinating period.

(1) *Xanthium italicum* Moretti

COCKLEBUR

A rather decumbent, coarse-stemmed and much branched annual growing from 6 inches to 2 feet high. The leaves are roughly ovate with wavy or slightly lobed margins, and from 1 to 3 inches long. The male flowers are clustered at the ends of the branches with the female flowers in clusters below. The involucre of the female flower is closed and ends in two beaks. The involucre forms a bur over the fruit and has two terminal beaks, and is covered with stout, hairy, hooked prickles. Quite common around slough margins and low places, especially somewhat saline areas throughout the entire southern portion of the area. Cocklebur seedlings are reputed to be poisonous to swine. There has been considerable controversy regarding the identification of the *Xanthium* species, some authorities listing *X. echinata* Murr. *X. commune* Britt. *X. Macounii* Britt. and *X. glanduliferum* Greene for western Canada, but the identification is very doubtful.

LIGULIFLORAE (Chicory sub-family) 12 genera.

The plants in this sub-family have a ligulate or strap-like, irregular corolla in each of the florets and all the florets are perfect, with both pistils and stamens, the anthers of the stamens being united in a ring around the pistil. The leaves are either basal or alternate and all plants contain a milky sap. The primary leaves, after the cotyledons or seed leaves of seedlings of this sub-family, are a single leaf instead of a pair of equal leaves.

1. Plants with leaves all basal or a few reduced leaves on the stem.

[2.](#)

Plants with normal stem leaves.

[6.](#)

2. Flower heads solitary on the long stalk.

[3.](#)

Heads several on the flowering stalk.

[4.](#)

3. Bracts of the involucre imbricated (overlapping like shingles); seed without a long beak at the apex.

[AGOSERIS](#)

Main bracts of the involucre equal with shorter spreading bracts at their base; seed with a long beak at the apex.

[TARAXACUM](#)

4. Pappus hairs plumose (with fine hairs on either side like a feather); bracts of involucre few.

[HYPOCHOERIS](#)

Pappus of simple hairs not plumose.

[5.](#)

5. Bracts in a single series, all equal, their midribs thickened.

[CREPIS](#)

Bracts in from 1 to 3 series, their midribs not thickened.

[HIERACIUM](#)

6. Leaves all long, narrow and grass-like; heads solitary on the stem.

[TRAGOPOGON](#)

Leaves not all grass-like; more than one head on the stem.

7.

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7. Leaves narrowly linear or else scale-like; flowers pink.

LYGODESMIA

Leaves broader and leaf-like; flowers yellow, white or purplish.

8.

8. Seeds with no hairy pappus, merely scales; flowers blue.

CICHORIUM

Seeds with a hairy pappus.

9.

9. Seeds flattened; pappus usually white.

10.

Seeds not flattened; pappus tawny or white.

11.

10. Seeds with a long beak at the apex.

LACTUCA

Seeds without a long beak at the apex.

SONCHUS

11. Pappus white; involucre of one series of equal bracts.

CREPIS

Pappus brownish or tawny; involucre generally of unequal bracts.

12.

12. Heads borne erect; leaves entire margined or merely toothed; bracts of involucre narrow and green.

HIERACIUM

Heads usually nodding; leaves divided or lobed; bracts of involucre broad and coloured.

PRENANTHES

AGOSERIS (False Dandelion) genus. 4 species.

Perennial herbs from a tap-root, with leaves all basal and generally long and narrow. The large yellow flower heads are borne singly on a long stalk or scape and are about one inch across. The pappus is of white hairs.

1. Achenes (seeds) not beaked.

(2) *A. cuspidata*

Achenes somewhat beaked.

2.

2. Bracts of involucre not hairy, except sometimes at the very base.

(3) *A. glauca*

Bracts of involucre somewhat hairy, at least along the margins.

3.

3. Leaves tapering to a long pointed apex, more or less deeply toothed or pinnatifid.

(1) *A. agrestis*

Leaves not very tapering to the apex, entire margined or rarely toothed.

(4) *A. scorzoneraefolia*

- (1) *Agoseris agrestis* Osterhout PINNATE-LEAVED FALSE DANDELION

A herb with linear or oblong leaves, tapering to the apex, with upward pointing lobes, or pinnately divided. The flowering stem is from 8 to 12 inches high, with a yellow head, and involucre about $\frac{3}{4}$ inch high and broad. Quite rare in the area, but has been reported from several points.

- (2) *Agoseris cuspidata* (Pursh) Raf. PRAIRIE FALSE DANDELION

A species with linear leaves that are from 4 to 8 inches long, very narrow, and tapering to a long, narrow point, the margins somewhat crinkled, and somewhat hairy. The flowering stem is generally no longer than the leaves and bears a single head with involucre about $\frac{3}{4}$ inch high. Rare but has been occasionally found in the southeastern and south-central parts of the area.

(3) *Agoseris glauca* (Pursh) Raf. LARGE-FLOWERED FALSE DANDELION

A hairless species with long, linear-oblong leaves, sometimes toothed, and up to 10 inches long. The flowers are from 1 to 2 inches across, borne on a stem 8 to 18 inches high, light yellow when young, but turning pinkish with age. Common on moist prairie throughout most of the area, but occasionally replaced by the variety.

(3a) *Agoseris glauca* (Pursh) Raf. var. *parviflora* (Nutt.) Rydb.
(*A. parviflora* (Nutt.) SMALL-FLOWERED FALSE DANDELION
Greene)

Resembling the species but the leaves are narrowly linear, from 3 to 8 inches long, and the flowering stem is 4 to 8 inches high, often decumbent at base, and the flower not over 1 inch across. Not common, but has been found on moist prairie in several widely separated localities.

(4) *Agoseris scorzoneraefolia* (Schrad.) Greene
LONG-LEAVED FALSE DANDELION

A species with oblong to linear-oblong leaves, from 4 to 12 inches long, usually entire margined and hairless. The involucre of the large flower head are from $\frac{3}{4}$ to 1 inch across and the bracts are hairy, at least along the margins. Very common on hillsides and prairies throughout the western part of the area.

CICHORIUM (Chicory) genus. 1 species.

(1) *Cichorium Intybus* L.

CHICORY

A perennial plant from a long, thick, deep root, with branching, hairy stems, growing from 2 to 3 feet in height. The leaves are mostly near the base of the stem, somewhat spatulate in outline but deeply toothed or pinnatifid with backward pointing lobes, and are from 3 to 6 inches long. The upper stem leaves are small, lanceolate, entire or lobed and stalkless. The flowers are bright blue, almost 2 inches across and are borne in clusters of 3 or 4 without stalks, at intervals along the upper, leafless part of the stems. The seed has no hairy pappus, but a series of short, blunt scales. An introduced weedy plant which has become fairly common in some localities in the southeastern part of the area, and at scattered points in the western section.

CREPIS (Hawksbeard) genus. 7 species.

1. Stem leafy with linear, stalkless leaves; annual.

(7) *C. tectorum*

Stem leaves very few and much reduced in size; perennials.

2.

2. Plants grey hairy or scurfy.

(3) *C. intermedia*

Plants not grey hairy or scurfy.

3.

3. Bracts of involucre neither hairy nor glandular.

(1) *C. glauca*

Bracts of involucre hairy or glandular, or both.

4.

4. Leaves with stalks half as long as blades, and not wing-margined.

(2) *C. glaucella*

Leaves with very short and wing-margined stalks.

5.

5. Leaves not hairy; involucre with few short hairs.

(4) *C. perplexans*

Leaves hairy, at least at the base.

6.

6. Involucres, flower-stalks and usually the scape very hairy and glandular.

(5) *C. platyphylla*

Flower stalks and stems usually neither hairy nor glandular, and involucres sparingly hairy.

(6) *C. runcinata*

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(1) *Crepis glauca* (Nutt.) T. & G.

SMOOTH HAWKSBEARD

A species with mostly basal leaves, rarely 1 or 2 reduced stem leaves, growing to a height of from 8 to 24 inches. The basal leaves are spatulate,

from 2 to 6 inches long, sometimes toothed. The few heads are from $\frac{1}{2}$ to 1 inch across, yellow, and borne on long stalks near the top of a long, flowering stem or scape. Not very common, but is found in moist or saline soil throughout the area, particularly towards the northern parts.

(2) *Crepis glauccella* Rydb.

SLENDER HAWKSBEARD

A slender-stemmed species growing to a height of about 12 inches. The basal leaves are smooth and shiny, from 2 to 4 inches long, oblanceolate and sometimes toothed. The few stem leaves are much reduced. The flowers are on long stalks near the top of a scape. Fairly abundant in moist meadows throughout the western part of the area.

(3) *Crepis intermedia* A. Gray

SMALL-FLOWERED HAWKSBEARD

A gray, hairy or scurfy plant from 1 to 2 feet in height. The basal leaves are deeply lobed or divided, and are from 4 to 6 inches long. The stem leaves are smaller and less divided. There are several yellow heads, from $\frac{1}{2}$ to $\frac{3}{4}$ inches across, borne near the top of the flowering stem. Quite uncommon in the area, but may be looked for on hillsides in the southwestern parts. This species and *C. occidentalis* Nutt. of British Columbia are very similar, but the latter has some black hairs on the involucre and from 9 to 18 bracts, whereas the former has about 7 bracts and no black involucre hairs. This species may possibly be found in the southwestern parts of the area.

(4) *Crepis perplexans* Rydb.

GLAUCOUS HAWKSBEARD

A species with basal leaves about 4 inches long, and rarely with a few hairs on the midrib. The heads are yellow, nearly 1 inch across and borne on stalks near the top of a stem from 1 to 2 feet high. This is sometimes considered a form of *C. runcinata*. Fairly common in saline and moist meadows throughout the southern part of the area.

(5) *Crepis platyphylla* Greene

BROAD-LEAVED HAWKSBEARD

This species is also considered to be a form of *C. runcinata*, from which it differs by the copiously glandular hairy stem and involucre. It has been found in the Cypress Hills of Saskatchewan, but is very uncommon.

(6) *Crepis runcinata* (James) T. & G.

SCAPOSE HAWKSBEARD

A species with a stem from 1 to 3 feet high, with oblanceolate to spatulate basal leaves, from 2 to 6 inches long, generally entire, but occasionally somewhat toothed. The flower heads are almost 1 inch across and are borne on stalks near the top of the flowering stem. Found in meadows and wooded areas, and in low places throughout the region.

(7) *Crepis tectorum* L.

NARROW-LEAVED HAWKSBEARD

An introduced annual species with a slender, branched leafy stem, from 6 to 18 inches high. The stem leaves are linear and stalkless, while the basal leaves are from 4 to 6 inches long, generally with backward pointing teeth. The many small yellow flowers, about $\frac{3}{8}$ inch high, are borne on a stem from 12 to 18 inches high. Becoming more plentiful as a weed on light soils in the northern and eastern parts of the area.

HIERACIUM (Hawkweed) genus. 7 species.

Perennial herbs with alternate or basal leaves. The bracts of the involucre are in from 1 to 3 series with a few smaller bracts at their bases. The pappus is composed of brownish or tawny hairs.

1. Flowers white or cream-coloured.

(2) *H. albiflorum*

Flowers yellow or orange.

2.

2. Rootstock long, slender, with offshoots; flowers orange.

(3) *H. aurantiacum*

Rootstock short, stout, without offshoots; flowers yellow.

3.

3. Bracts of involucre imbricate, or overlapping like shingles.

4.

Bracts of involucre in practically a single row.

6.

4. Leaves ovate to lanceolate; heads many.

(4) *H. canadense*

Leaves linear-lanceolate; heads few.

5.

5. Stem yellowish or whitish hairy below; upper leaves much reduced.

(5) *H. columbianum*

Stem scarcely hairy.

(7) *H. scabriusculum*

6. Involucres and flower stalks with dense, long yellow hairs.

(1) *H. albertinum*

Involucres blackish or glandular with very few yellow hairs.

(6) *H. Rydbergii*

(1) *Hieracium albertinum* Farr.

WOOLLY HAWKWEED

A species growing from 12 to 20 inches high, with long, white or yellowish hairs. The leaves are from 2 to 5 inches long, the lower having winged

stalks, the upper oblong to lanceolate, stalkless and hairy. Not common but occasionally found on hillsides and in woodlands in the southwestern corner of the area.

(2) *Hieracium albiflorum* Hook.

WHITE HAWKWEED

A species growing to a height of from 1 to 2 feet with stalked, hairy and spatulate basal leaves that are from 2 to 5 inches long. The stem leaves are without stalks and reduced in size. The flowers are white or pale cream-coloured, about $\frac{1}{2}$ inch across, and are borne in an open branched cluster at the head of the stem. Found fairly frequently in woodlands in the southwestern portion of the area and in the Cypress Hills.

(3) *Hieracium aurantiacum* L.

ORANGE HAWKWEED

A perennial with slender, running roots. The basal leaves are hairy, spatulate, from 2 to 5 inches long. The stem may bear one or two small leaves. It is glandular hairy, from 6 to 20 inches high, and bearing a cluster of orange-red flowers that are from $\frac{3}{4}$ to 1 inch across. A rare plant in the area, but has been found in the vicinity of Winnipeg. It is a common weed in Eastern Canada.

(4) *Hieracium canadense* Michx.

CANADA HAWKWEED

An erect plant growing from 1 to 4 feet in height with a leafy stem. The leaves are ovate to lanceolate, from 1 to 3 inches long. There are numerous yellow heads about 1 inch across. Fairly common in dry woodlands in the eastern part of the area.

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(5) *Hieracium columbianum* Rydb.

COLUMBIA HAWKWEED

A species growing to a height of about 2 feet. Its oblanceolate lower leaves are from 3 to 4 inches long, while the upper leaves are ovate-lanceolate, and are reduced upwards to mere bracts. The few heads (from 2 to 6) are from $\frac{3}{8}$ to $\frac{1}{2}$ inch high; the involucral bracts are very dark in colour. Found occasionally in moist places and woodlands in the extreme southwestern part of the area and in the Cypress Hills.

(6) *Hieracium Rydbergii* Zahn.

Very similar to *H. columbianum* but with some scattered yellow hairs on the involucre. Found in similar localities in the southwestern corner of the area, but not very plentiful.

(7) *Hieracium scabriusculum* Schwein.

COMMON HAWKWEED

An erect-growing plant, from 1 to 2½ feet in height, with the stem leafy as a rule up to the inflorescence. The leaves vary from lanceolate to linear, from 1 to 3 inches long, and sometimes bear a few teeth. The flowers are borne in a corymb-like cluster at the head of the stem. They are about 1 inch across and are yellow in colour. The pappus is brownish. Quite common in moist meadows and woodlands throughout the entire area and the most abundant of the hawkweeds. Recent works consider this to be *H. umbellatum* L.

HYPOCHOERIS (Cat's-ear) genus. 1 species.

(1) *Hypochoeris radicata* L.

CAT'S-EAR

A perennial with a basal rosette of lobed leaves that are somewhat hairy, from 2 to 6 inches long, oblanceolate, and with backward pointing lobes or teeth. The few stem leaves are scale-like. There are 3 or 4 yellow, stalked flowers at the summit of the stems which are from 8 to 18 inches high. The flower heads are about 1 inch across. The achene (seed) has a long beak and a pappus of plumose white hairs. An introduced weed which has been found rarely in the area.

LACTUCA (Lettuce) genus. 5 species.

Tall, leafy plants, annual, biennial or perennial, with yellow, blue or white flowers, and alternate leaves. The involucre has 1 or 2 rows of nearly equal inner main bracts and smaller bracts at their base. The seeds have white or brown pappus hairs.

1. Pappus brown; achenes without a beak.

(1) *L. biennis*

Pappus white; achenes with a distinct beak.

2.

2. Flowers blue; achenes with a short beak; plant smooth with a bluish bloom.

(4) *L. pulchella*

Flowers yellow; achenes with long, slender beak.

3.

3. Heads with from 6 to 12 florets.

(5) *L. Scariola*

Heads with from 12 to 20 florets.

4.

4. Leaves with hairs or bristles on underside of midrib.

(3) *L. ludoviciana*

Leaves smooth, without hairs or bristles.

(2) *L. canadensis*

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- (1) *Lactuca biennis* (Moench.) Fern.
(*L. spicata* (Lam.) Hitchc.)

TALL BLUE LETTUCE

An annual or biennial species, growing from 3 to 8 feet in height with a leafy stem. The leaves are large, from 5 to 10 inches long, and deeply lobed or pinnatifid, and with sharp-toothed margins. The very numerous flowers are about $\frac{3}{16}$ inch across, blue or creamy-white, and are borne in a large, dense panicle. Occasionally found in swampy or moist places throughout the northern and eastern fringes of the area.

(2) *Lactuca canadensis* L.

TALL YELLOW LETTUCE

An annual or biennial, quite smooth and hairless plant, growing from 3 to 10 feet in height, and very leafy. The leaves have wavy or lobed margins and are lanceolate, from 2 to 8 inches long. The numerous flowers are pale yellow, about $\frac{1}{4}$ inch across and borne in an open, long, terminal panicle. Quite rare in the area, but has been reported from the east-central portion. It is native to Eastern Canada.

(3) *Lactuca ludoviciana* (Nutt.) Riddell

WESTERN LETTUCE

A biennial species, quite hairless and growing to a height of from 2 to 5 feet, with a leafy stem. The leaves are ovate-oblong, from 2 to 4 inches long, wavy lobed, the lobes often spiny tipped. The numerous flowers are yellow, or pale lilac, from $\frac{1}{4}$ to $\frac{3}{8}$ inch across and borne in an open panicle. Not common, but occasionally found along river banks in the south-central and eastern parts of the area.

(4) *Lactuca pulchella* (Pursh) DC.

BLUE LETTUCE

A pale bluish-green, smooth, glaucous perennial with white running rootstocks, and growing from 1 to 3 feet in height. The leaves are generally linear-lanceolate often with backward pointing lobes. The flowers are bright blue, nearly 1 inch across, and borne in a few-flowered panicle. The seed has a short, thick beak, and a pappus of white hairs. Very common as a weed in cultivated lands and along roadsides throughout the entire area.

(5) *Lactuca Scariola* L.

LOBED PRICKLY LETTUCE

An annual, winter annual or biennial, erect plant, growing to a height of from 1 to 5 feet. The leaves are from 2 to 8 inches long, deeply lobed, the upper leaves clasping the stem and often eared at the base. The underside of the mid-vein bears a row of short, stiff prickles. The flowers are about $\frac{1}{4}$ to $\frac{1}{3}$ inch across, yellow, with from 6 to 12 florets and are borne in large numbers on a large, open panicle. The seeds are long-beaked and bear a pappus of white hairs. An introduced, but very common weed across the entire area, along roadsides, slough margins, waste places and in cultivated land.

(5a) *Lactuca Scariola* L. var. *integrata* Gren. & Godr.

(*L. virosa* L.)

DENTATE PRICKLY LETTUCE

Similar to the species in every way, except that the leaves are not lobed or pinnatifid, other than those at the base. As plentiful in most places as the type, and often both are found growing together.

LYGODESMIA (Skeleton-weed) genus. 2 species.

Stiff stemmed branching plants with leaves very narrow or reduced almost to scales. The flower heads are from pink to rose coloured, and with from 3 to 10 florets. The pappus is of white or very light brown hairs.

1. Perennials from very deep, tough rootstocks; leaves very small or scale-like; flowers solitary on branches.

(1) *L. juncea*

Annuals from a tough tap-root; leaves long and very narrow; flowers racemose along branches.

(2) *L. rostrata*

(1) *Lygodesmia juncea* (Pursh) D. Don.

SKELETON WEED

A much-branched skeleton-like perennial herb growing from very deep, tough, sticky rootstocks. It grows from 6 to 18 inches high. The lower leaves are linear-lanceolate, sometimes 1½ inches long, and the upper ones are smaller or reduced to scales. The flower heads, which contain from 3 to 5 florets, are borne singly at the ends of the branches, are pink, and are from ½ to ¾ inch across. The seeds are short, without a beak, and bear a pale brownish pappus. Very common on light, sandy soil and in the sandhills throughout the entire southern and central portions of the area.

(2) *Lygodesmia rostrata* A. Gray

ANNUAL SKELETON WEED

A branching, thin stemmed annual growing from 6 to 24 inches in height, from a tough, thin root. The leaves are linear, 3-nerved and sharp tipped, from 3 to 6 inches long, the upper ones much smaller. The numerous flowers contain from 6 to 10 florets, are pink, about ½ inch across, and are borne in a raceme towards the ends of the branches. The seeds are almost ½ inch long, with a tapering beak, and a pappus of white hairs. This plant is somewhat rare but has been found in sandhills and similar locations in the southwestern part of the area.

PRENANTHES (Rattlesnake-root) genus. 3 species.

Perennial plants with alternate, generally stalked leaves. The heads are clustered, usually nodding or pendant, and the bracts of the involucre are generally coloured and not green. The pappus hairs are brownish or tawny.

1. Bracts of involucre hairy; basal leaves tapering to winged stalks.

(3) *P. racemosa*

Bracts of involucre not hairy; basal leaves cordate or hastate based, abruptly joining stalk.

2.

2. Heads with from 8 to 16 florets; involucre bracts $\frac{1}{8}$ to $\frac{1}{16}$ inch thick; pappus cinnamon-coloured.

(1) *P. alba*

Heads with from 5 to 7 florets; involucre bracts less than $\frac{1}{8}$ inch thick; pappus straw-coloured.

(2) *P. altissima*

- (1) *Prenanthes alba* L.
(*Nabulus albus* (L.) Hook.)

WHITE LETTUCE

A smooth, hairless plant with an erect stem from 2 to 5 feet high, sometimes purplish. The stalkless lower leaves are hastate, cordate or triangular, sometimes lobed, and from 1 to 6 inches long. The upper leaves are lanceolate and without stalks. The heads are borne in a long terminal panicle, and are drooping, greenish or yellowish-white with purplish bracts, somewhat scented. The pappus is cinnamon brown in colour and very conspicuous. Found frequently in open woodlands throughout the entire area.

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- (2) *Prenanthes altissima* L.
(*Nabulus altissimus* (L.) Hook.)

TALL WHITE LETTUCE

Somewhat similar to *P. alba* but growing to a height of 6 feet. The involucre bracts are very narrow, and are green in colour, while the pappus is generally a pale straw colour. Not common, but occasionally

found in open woodlands in the eastern part of the area.

(3) *Prenanthes racemosa* Michx.

GLAUCOUS WHITE LETTUCE

(*Nabulus racemosus* (Michx.) DC.)

A very erect, stout perennial, from 2 to 6 feet high, the stem usually covered with a white bloom. The lower leaves are oblanceolate to spatulate, from 4 to 8 inches long and tapering to a winged stalk. The upper leaves are smaller and somewhat clasping. The heads are borne in a long spike of crowded clusters, are purplish, about $\frac{1}{2}$ inch long and $\frac{1}{4}$ inch broad, and generally not as pendant or drooping as the previous two species. The pappus is straw-coloured. Fairly abundant in wooded areas across the entire area.

SONCHUS (Sow Thistle) genus. 3 species.

1. Flowering heads from 1¼ to 2 inches across; perennials from creeping rootstocks.

(1) *S. arvensis*

Flowering heads not over 1 inch across; annual growing from deep tap-roots.

2.

2. Ears at base of clasping leaves rounded.

(2) *S. asper*

Ears at base of clasping leaves acutely pointed.

(3) *S. oleraceus*

(1) *Sonchus arvensis* L.

PERENNIAL SOW THISTLE

A weedy plant growing from 1 to 5 feet in height with very vigorous, creeping rootstocks. The stems are usually hollow and not much branched. The lower leaves are runcinate-pinnatifid or with backward pointing lobes, and are from 4 to 10 inches long, and are narrowed to a short stalk. The upper leaves are less lobed and without stalks. The teeth of the leaves are spiny pointed. The numerous showy, bright, yellow flowers are borne on bristly stalks in a corymbose panicle. The involucre are glandular hairy. Very common in moister districts and wet places throughout the entire area.

(1a) *Sonchus arvensis* L. var. *glabrescens* Guenth. Grab. & Wimm.

(*S. uliginosus* Bieb.)

SMOOTH PERENNIAL SOW THISTLE

This variety differs from the species in having a smooth, hairless, not glandular involucre and is very common in many places through the area.

(2) *Sonchus asper* (L.) Hill

PRICKLY SOW THISTLE

An annual weedy plant, growing from 2 to 6 feet high, with leaves not much lobed or divided. The leaf lobes generally have spine-tipped teeth. The leaves clasp the stem at the base, while the basal lobes are rounded. The flowers are from ½ to 1 inch across, and pale yellow in colour. A fairly common weed of gardens and roadsides throughout the area.

(3) *Sonchus oleraceus* L.

ANNUAL SOW THISTLE

An annual, growing from 2 to 8 feet in height and not very branched. The leaves are deeply lobed and have rather soft prickles, the lower leaves are stalked, but the upper ones clasp the stem. The heads are pale yellow, from $\frac{1}{2}$ to 1 inch across. Fairly common in gardens and waste places in the eastern parts of the area, but scarcer towards the west. The leaves are undivided in forma *integrifolius* (Wallr.) G. Beck

TARAXACUM (Dandelion) genus. 2 species.

1. Leaves deeply divided, almost to the midrib into narrow segments with the terminal lobe small; seeds reddish.

(1) *T. laevigatum*

Leaves shallowly divided, with the terminal lobe large; seeds greenish or brownish-yellow.

(2) *T. officinale*

- (1) *Taraxacum laevigatum* (Willd.) DC.
(*T. erythrospermum* Andrz.)

RED-SEEDED DANDELION

A stemless perennial plant with all leaf and flower stalks arising from the fleshy root-crown, and growing from a deep tap-root. The leaves are from 4 to 8 inches long, and very deeply divided into narrow segments. The flowers are from 1 to 1½ inches across with many florets, are bright yellow in colour and borne singly on stems or scapes from 4 to 12 inches high. The seeds are bright red and have a white hairy pappus on a long, thin beak. Fairly common in waste places and roadsides throughout the area. Introduced from Europe.

- (2) *Taraxacum officinale* Weber

DANDELION

An introduced, stemless perennial with deep, fleshy tap-roots. The leaves are coarsely incised with triangular lobes and a large terminal lobe. The leaf stalks and flowering stems arise from the root crown. The yellow flower heads are from 1½ to 2 inches across and have very many florets. The seed is a greenish-buff colour with a long beak and a pappus of white hairs. Very common on lawns, roadsides and waste places in every part of the area and often the earliest plant to bloom in the spring.

TRAGOPOGON (Goatsbeard) genus. 3 species.

Fairly tall biennial or perennial plants with deep, fleshy tap-roots and grass-like leaves. The flowering heads are large, while the seeds and plumose seed heads are very large. The seeds which are narrow and long and have from 5 to 10 ribs end in a long beak that terminate in a pappus of plumose hairs.

1. Flowers purple; involucre bracts much longer than the florets.

(2) *T. porrifolius*

Flowers yellow.

2.

2. Involucre bracts longer than florets; stem usually thickened below flower head.

(1) *T. dubius*

Involucre bracts not longer than florets; stem little thickened below flower head.

(3) *T. pratensis*

(1) *Tragopogon dubius* Scop.

YELLOW GOATSBEARD

A coarse biennial plant growing from a deep, fleshy tap-root to a height of from 6 to 24 inches high. The leaves are narrow, erect, and grass-like, from 4 to 12 inches long, stalkless and clasping at base. The flowers are sulphur yellow in colour, from 1¼ to 2 inches across. The involucre bracts, numbering from 10 to 14 are longer than the yellow florets. The heads are borne singly on the summit of an erect scape or stem which is decidedly thickened just below the head. The plumose seed heads are very conspicuous, generally from 3 to 4 inches in diameter. The seeds, which are long and taper to a long beak, have ribs of minute tubercles, and a pappus of plumose white hairs. The body of the seed is about ½ inch long with the beak a trifle longer. This plant has become a very common roadside and waste land weed throughout almost the entire area during the past two decades. It apparently came in from the southwest. It is an introduced plant, first noticed in Colorado.

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(2) *Tragopogon porrifolius* L.

SALSIFY

A perennial or biennial with an edible, fleshy tap-root, and growing from

12 to 30 inches high. It has grass-like leaves. The flower heads are from 2 to 4 inches across with purple florets and bracts much exceeding the florets. A garden plant sometimes found as a weed in the eastern part of the area.

(3) *Tragopogon pratensis* L.

GOATSBEARD

A biennial very similar to *T. dubius*, but somewhat smaller in most respects. The florets are chrome yellow, and the bracts of the involucre (usually 8 or 9 in number) are not longer than the florets. The seed is somewhat shorter than *T. dubius*, but similar in appearance. This is a fairly common weed in the eastern part of the area, but does not appear as aggressive and rapid spreading as *T. dubius* which came from the West.

TUBULIFLORAE (Thistle sub-family) 47 genera.

A very large sub-family bearing flower heads in which some, or all of the florets are tubular. Generally the central or tubular florets are perfect or bisexual. The ray or marginal florets are ligulate or strap shaped and are either female or neuter. This sub-family does not have a milky sap and generally the primary leaves (following the cotyledons or seed leaves) are borne in pairs.

1. Flower heads with all florets tubular. (Discoid heads) 2.
Flower heads with both tubular and ray florets. (Radiate heads). 21.
2. Bracts of involucre dry, parchmenty or membranous, not green. 3.
Bracts of involucre not dry and parchmenty, usually green. 5.
3. Some florets bisexual, both male and female florets on same plant. GNAPHALIUM
No fertile bisexual florets, male and female florets on separate plants. 4.
4. Tall, leafy stemmed plants. ANAPHALIS
Low plants; leaves mostly basal, stem leaves reduced. ANTENNARIA
5. Plants with no pappus whatever; heads small, numerous and inconspicuous; plants generally scented. ARTEMISIA
Pappus present, either hairs, bristles, scales or chaff. 6.
6. Involucral bracts spiny tipped or with hooked bristles. 7.
Involucral bracts neither spiny tipped nor with hooked bristles. 10.

7. Involucral bracts with hooked bristles; leaves large, cordate and not prickly.

[ARCTIUM](#)

Some bracts at least, spiny tipped.

[8.](#)

8. Pappus hairs not longer than achene (seed).

[CENTAUREA](#)

Pappus hairs much longer than achene.

[9.](#)

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9. Pappus hairs plumose or feathery.

[CIRSIUM](#)

Pappus hairs roughened but not plumose.

[CARDUUS](#)

10. Florets purplish-white, purple or rose-coloured.

[11.](#)

Florets yellow or greenish-yellow.

[15.](#)

11. Pappus hairs not longer than achene.

[CENTAUREA](#)

Pappus hairs much longer than achene.

[12.](#)

12. Flowers in terminal, more or less flat topped clusters.

[13.](#)

Flowers in elongated racemes or spikes.

[14.](#)

13. Leaves alternate; flowers purple.

[VERNONIA](#)

Leaves opposite or whorled; flowers purplish-white or purple.

[EUPATORIUM](#)

14. Florets conspicuous; heads ½ inch or more high.

[LIATRIS](#)

Florets hidden by pappus; heads less than ½ inch high.

[BRACHYACTIS](#)

15. Low, greyish shrubs with linear leaves.

Herbs.

[CHRYSOTHAMNUS](#)

[16.](#)

16. Leaves with spiny tipped teeth.

Leaves without spiny tipped teeth.

[HAPLOPAPPUS](#)

[17.](#)

17. Most of leaves opposite.

Leaves alternate.

[BIDENS](#)

[18.](#)

18. Heads not over $\frac{3}{16}$ inch across, in open or spike-like panicles.

Heads over $\frac{3}{16}$ inch across, in more or less flat-topped clusters.

[ARTEMISIA](#)

[19.](#)

19. Stems and leaves generally white woolly.

Stems and leaves green and scarcely hairy.

[HYMENOPAPPUS](#)

[20.](#)

20. Leaves less than 2 inches long; pineapple scented.

Leaves over 2 inches long, tansy scented.

[MATRICARIA](#)

[TANACETUM](#)

21. Ray florets yellow.

Ray florets not yellow, usually blue, purple or white.

[22.](#)

[41.](#)

22. Pappus composed of hairs.

Pappus not of hairs, but scales, bristles or none.

[23.](#)

[27.](#)

23. Involucral bracts usually one series, not or scarcely imbricated (overlapping like shingles).

[24.](#)

Involucral bracts in 2 or more series, well imbricated or overlapping.

[25.](#)

24. Leaves opposite.

[ARNICA](#)

Leaves alternate.

[SENECIO](#)

25. Heads small and numerous, in terminal or axillary clusters; leaves simple, not pinnatifid or divided.

[SOLIDAGO](#)

Heads usually solitary at ends of the branches.

[26.](#)

26. Stems equally leafy almost to inflorescence; pappus double, the outer series composed of scales or small bristles.

[CHRYSOPSIS](#)

Leaves mostly basal, stem leaves reduced; pappus not double.

[HAPLOPAPPUS](#)

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27. Receptacle (disk to which florets are attached) bare and naked, without chaffy scales but sometimes bristly.

[28.](#)

Receptacle with chaffy scales between florets.

[33.](#)

28. Flower heads not more than $\frac{1}{4}$ inch across, in terminal clusters.

[GUTIERREZIA](#)

Flower heads more than $\frac{1}{4}$ inch across.

[29.](#)

29. Involucre of flower heads sticky and gummy.

[GRINDELIA](#)

Involucre not sticky and gummy.

[30.](#)

30. Heads large, generally more than 1½ inches across; disk florets purple; ray florets yellow but usually with a purplish base.

[GAILLARDIA](#)

Heads generally less than 1½ inches across; all florets yellow.

[31.](#)

31. Involucral bracts decidedly reflexed or turned backwards when mature; leaves lanceolate.

[HELENIUM](#)

Involucral bracts not reflexed; leaves generally pinnatifid with narrow lobes.

[32.](#)

32. Lower leaves opposite; seeds long, four times as long as wide.

[PICRADENIOPSIS](#)

Leaves all alternate; seeds less than four times as long as broad.

[ACTINEA](#)

33. Pappus none, or merely a short crown.

[34.](#)

Pappus of scales, bristles or barbs.

[38.](#)

34. Ray florets neuter, sterile.

[35.](#)

Ray florets female.

[36.](#)

35. Receptacle flat; flower not over 1 inch across, rays orange; leaves pinnately divided into narrow segments.

[COREOPSIS](#)

Receptacle convex; flowers 2 inches or more wide; ray florets yellow; leaves not divided into narrow segments.

[RUDBECKIA](#)

36. Annual plants with glandular, sticky inflorescence; plants strongly scented; leaves linear.

[MADIA](#)

Perennial plants; leaves broad.

37. Leaves basal, white woolly beneath and large; roots thick and exuding a sticky balsam.

[BALSAMORHIZA](#)

Leaves opposite, very rough to the touch.

[HELIOPSIS](#)

38. Achenes (seeds) with barbed awns.

39.

Achenes without barbed awns.

40.

39. Aquatic floating plants, the submerged leaves very finely divided; perennial.

[MEGALODONTA](#)

Not aquatic plants but often found standing in water or mud; mostly annual.

[BIDENS](#)

40. Plants with entire, undivided leaves; receptacle flat.

[HELIANTHUS](#)

Plants with pinnately divided leaves; receptacle cylindrical and tall.

[RATIBIDA](#)

41. Pappus of numerous hairs.

42.

Pappus absent or of a few hairs.

48.

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42. Ray florets not conspicuous.

43.

Ray florets conspicuous.

44.

43. Bracts nearly equal; flowers purplish.

[BRACHYACTIS](#)

Bracts unequal; flowers white.

[ERIGERON](#)

44. Leaves all basal and appearing after the flowers.
Leaves appearing before the flowers.
[PETASITES](#)
[45.](#)
45. Plants low, stemless and tufted; leaves generally extend beyond the flowers.
Plants generally with leafy stems; leaves not extending beyond flowers.
[TOWNSENDIA](#)
[46.](#)
46. Ray florets 50 or over; bracts in one or two series.
Ray flowers 10 to 50 in number; bracts in several series.
[ERIGERON](#)
[47.](#)
47. Pappus bristles in a single series.
Pappus bristles in two series, the outer series shorter.
[ASTER](#)
[DOELLINGERIA](#)
48. Receptacle with chaffy scales.
Receptacle naked, without chaffy scales.
[49.](#)
[52.](#)
49. Leaves opposite.
Leaves alternate.
[GALINSOGA](#)
[50.](#)
50. Flowers large and purple; leaves undivided.
Ray florets white; leaves divided.
[ECHINACEA](#)
[51.](#)
51. Heads small, numerous, in dense almost flat topped clusters, not strongly scented.
Heads fewer, about 1 inch across; plant unpleasantly scented.
[ACHILLEA](#)

[ANTHEMIS](#)

52. Pappus of bristly scales or with 2 to 4 slender bristles.

[BOLTONIA](#)

Pappus none, or merely a border.

[53.](#)

53. Leaves entire and not divided; heads solitary on stem, from 1 to 2 inches across; plants not scented.

[CHRYSANTHEMUM](#)

Leaves much divided into narrow segments; heads several to a stem, less than 1 inch across; plants generally somewhat scented.

[MATRICARIA](#)

ACHILLEA (Yarrow) genus. 3 species.

1. Leaves merely toothed, but not divided into fine segments.

[\(3\)](#) *A. sibirica*

Leaves twice pinnatifid into fine linear-lanceolate segments.

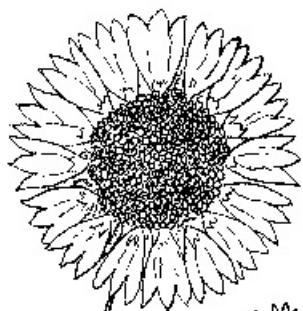
[2.](#)

2. Plants densely woolly; leaf segments crowded, ascending;
inflorescence decidedly rounded on top.

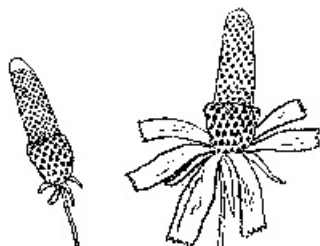
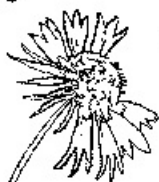
[\(1\)](#) *A. lanulosa*

Plants loosely woolly to hairless; leaf segments not crowded, more or
less spreading; inflorescence flat-topped.

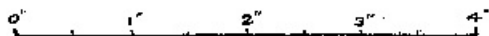
[\(2\)](#) *A. Millefolium*



GAILLARDIA
(*Gaillardia aristata*)



PRAIRIE CONE-FLOWER
(*Ratibida columnifera*)



A.C.B.

(1) *Achillea lanulosa* Nutt.

WOOLLY YARROW

A perennial growing from shallow rootstocks to a height of from 6 inches to 2 feet. The plant is generally covered with silky hairs, and the leaves are from 1½ to 6 inches long and finely divided into segments. The flowers are borne in a compact, round-topped cluster at the head of the stem, are white, rarely pink, and about ¼ inch across. The involucral bracts have straw-coloured margins. A very common plant of prairie and roadsides throughout the entire area.

(2) *Achillea Millefolium* L.

YARROW OR MILFOIL

A species very similar to the preceding, but with wider and more spreading leaves and much less woolly or hairy. The inflorescence is flat-topped and the flowers vary from white to deep pink. Common throughout the northern and eastern wooded parts of the area.

(3) *Achillea sibirica* Ledeb.
(*A. multiflora* Hook.)

MANY-FLOWERED YARROW

A perennial growing to a height of from 1 to 2 feet, with linear, deeply toothed leaves, from 1½ to 3 inches long. The flowers are very similar to those of the preceding species, but the bracts have dark brown margins. Occasionally found along the wooded northern fringe of the area.

ANAPHALIS (Pearly Everlasting) genus. 1 species.

(1) *Anaphalis margaritacea* (L.) C. B. Clarke

PEARLY EVERLASTING

A woolly stemmed perennial growing in a cluster from numerous running rootstocks. The stem is generally erect, from 12 to 30 inches high, often branched near the top. The leaves are stalkless, alternate, linear-lanceolate, white-woolly beneath and greyish above, and are from 2 to 5 inches long. The flowers are numerous, in a fairly dense, terminal cluster up to 6 inches across. Each flower head is discoid, from $\frac{1}{4}$ to $\frac{1}{3}$ inch across, white, with pearly-white, papery bracts. Found in open woodlands in the eastern parts of the area. The variety *subalpina* Gray, with very congested inflorescence is found in the western portion of the area covered and in the Cypress Hills.

ANTENNARIA (Everlasting) genus. 13 species.

Perennial herbs, generally mat-forming, with leaves mostly basal and usually woolly or hairy. The flowers are unisexual, sometimes both sexes on the same plant, but generally on separate plants. The female heads sometimes produce fertile seed without pollination. The involucre bracts are papery and the achenes bear a white, hairy pappus.

1. Plants not mat-forming, the offshoots erect.

[2.](#)

Plants mat-forming, with horizontal, leafy offshoots.

[3.](#)

2. Bracts of involucre with large dark spot and light brown or dirty-white tips; bracts in 6 or 7 series.

[\(12\)](#) *A. pulcherrima*

Bracts of involucre with either small or no dark spot and white tips; bracts in 3 or 4 series.

[\(2\)](#) *A. anaphaloides*

3. Bracts of involucre entirely brownish in colour.

[\(1\)](#) *A. aizoides*

Bracts of involucre white or pink on upper portion.

[4.](#)

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4. Bracts of involucre pinkish or red on upper portion.

[\(13\)](#) *A. rosea*

Bracts of involucre white on upper portion.

[5.](#)

5. Rosette leaves triple ribbed below.

[7.](#)

Rosette leaves single ribbed below.

[9.](#)

7. Rosette leaves green and not hairy above.

[\(7\)](#) *A. Howellii*

Rosette leaves woolly or hairy above.

8. Rosette leaves over 1¼ inches long; heads small, involucre ¼ to 5/16 inch high.

(11) *A. plantaginifolia*

Rosette leaves about 1 inch long; heads larger, long-stalked, involucre about 3/8 inch high.

(9) *A. obovate*

9. Rosette leaves angular at the apex, spatulate, very finely woolly, the separate hairs undistinguishable to the naked eye.

10.

Rosette leaves rounded or pointed at the apex, not angular, the woolliness loose or occasionally hairless on the upper side.

11.

10. Heads nodding or pendant when young.

(8) *A. microphylla*

Heads erect and not nodding when young.

(10) *A. parvifolia*

11. Rosette leaves obovate, gradually tapering to a stalkless base, practically hairless above.

(4) *A. campestris*

Rosette leaves spatulate, abruptly contracted to a stalk-like base.

12.

12. Upper surface of leaves bright green and hairless.

(5) *A. canadensis*

Upper surface of leaves dull and woolly.

(3) *A. aprica*

(1) *Antennaria aizoides* Greene

BROWN-BRACTED MOUNTAIN EVERLASTING

A low, mat-forming species growing from 1 to 3 inches high, with small whitish, silky rosette leaves and linear-lanceolate stem leaves. The bracts of the few, small flower heads are dark brown. Very local, but found on dry hillsides in the Foothills Region and has been found in the Cypress Hills.

(2) *Antennaria anaphaloides* Rydb.

TALL EVERLASTING

A tall species, not mat-forming, growing from 8 to 18 inches high with oblanceolate basal leaves from 2 to 4 inches long and long narrow stem leaves. The many flowering-heads are borne in an open corymb and the bracts have white tips but either very small, or no dark spots. Found frequently in the Foothills Region and locally in the Cypress Hills.

(3) *Antennaria aprica* Greene

LOW EVERLASTING

A low, mat-forming perennial, generally growing to a height of less than 6 inches. The spatulate or wedge-shaped rosette leaves are from $\frac{3}{8}$ to $\frac{3}{4}$ inch long, densely whitish woolly on both sides. The stem leaves are linear and about $\frac{3}{8}$ inch long. The white flower heads are borne in compact, very short-stalked clusters on a stem from 2 to 6 inches high. The heads occasionally have a faint pinkish tinge. Very common on dry prairies throughout the southern and western drier parts of the area.

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(4) *Antennaria campestris* Rydb.

PRAIRIE EVERLASTING

A low, mat-forming perennial, rarely over 6 inches high. The rosette leaves are obovate to wedge-shaped, from $\frac{3}{4}$ to $1\frac{1}{2}$ inches long, woolly below, but yellowish-green and practically hairless above. The flower heads are similar to the preceding species. Quite common throughout most of the eastern, central and southern parts of the area on open prairies.

(5) *Antennaria canadensis* Greene

CANADA EVERLASTING

A slender perennial growing to a height of from 8 to 10 inches. Its rosette leaves are bright green on the upper surface, from 1 to $1\frac{1}{2}$ inches long, and spatulate. Fairly plentiful in dry, open spaces and sandy pinelands in the eastern part of the area.

(6) *Antennaria corymbosa* E. Nels.

CORYMBOSE EVERLASTING

A medium tall species with narrowly oblanceolate rosette leaves from $\frac{1}{2}$ to $1\frac{1}{4}$ inches long, greyish and finely woolly. The stem leaves are linear and sharp tipped. The stems are from 8 to 12 inches high and the flower heads are stalked and borne in a terminal corymb. The bracts have white upper portions. Found in mountain meadows in the Foothill Region and has been found in open woodlands in the Cypress Hills.

A tall species, often growing from 8 to 15 inches high, with ovate, wedge-shaped basal leaves from 1 to 2 inches long, closely silky-woolly beneath but bright green above. The stem leaves are small and narrow and the heads are borne in a corymb. Fairly plentiful in the wooded Foothill Region and has been also found in the Cypress Hills.

- (8) *Antennaria microphylla* Rydb.
(*A. nitida* Greene)

A mat-forming perennial from 6 to 12 inches high. The rosette leaves are very small, barely exceeding $\frac{1}{2}$ inch in length, white densely-woolly on both sides, and somewhat angular but roughly spatulate in shape. The stem leaves are about $\frac{1}{2}$ inch long and linear. The flower heads are nodding or pendant when young. A fairly plentiful species on dry prairie throughout the entire western part of the area. Some authorities divide this species to form *A. arida* E. Nels. with obtuse bracts on the pistillate heads. In *A. microphylla* Rydb. these bracts are acute. The distinction between this species and *A. parvifolia* Nutt. is very vague and slight, and many authorities do not separate them.

- (9) *Antennaria obovata* E. Nels.

A fairly tall species with rosette leaves which are indistinctly 3-ribbed, oblanceolate, woolly, and from 1 to $1\frac{1}{4}$ inches long. The flower heads have rather long stalks and are borne on a leafy stem from 8 to 12 inches high. Quite an uncommon species but has been found in the Cypress Hills.

- (10) *Antennaria parvifolia* Nutt.

A low mat-forming perennial growing from 6 to 8 inches high. The rosette or basal leaves are from $\frac{1}{4}$ to $\frac{5}{8}$ inches long, very finely silky woolly and angular-spatulate in shape. The heads are borne erect, even when young, in a dense cluster on leafy stems from 6 to 8 inches high. Very plentiful on dry prairie and in saline meadows throughout the southern part of the area.

- (11) *Antennaria plantaginifolia* (L.) Hook.

A tall-growing species with basal leaves that are from oval to spatulate, 1½ to 3 inches long, and woolly above and below. The flower heads are borne on an erect, leafy stem, from 8 to 20 inches high. Occasionally found in the extreme eastern part of the area.

(12) *Antennaria pulcherrima* (Hook.) Greene SHOWY EVERLASTING

Perennials but not mat-forming plants, growing to a height of from 12 to 20 inches. The basal leaves are oblanceolate, from 2 to 4 inches long, 3-ribbed and woolly. The stem leaves are narrow and smaller. The heads are borne in a cluster at the head of the stem, while the bracts are generally brownish with gray-white tips. Occasionally found in moist soils in the north-central portion of the area and also in the extreme western parts, but is generally a mountain species.

(13) *Antennaria rosea* Greene ROSY EVERLASTING

A somewhat mat-forming, white-woolly perennial, growing from 6 to 18 inches high. The basal rosette leaves are from ½ to ¾ inch long, oblanceolate to spatulate, stalked, pointed at the apex, and white-woolly. The flower heads are borne in a close terminal cluster and have conspicuous pinkish tipped involucre bracts. Found in meadows and moist hillsides in favoured localities throughout the entire area, but more particularly in the Cypress Hills and the southwestern portions.

A rather similar species with stalkless, blunt pointed basal leaves, and brownish outer bracts, called *Antennaria concinna* E. Nels. is found rarely in the extreme southwestern part of the area.

ANTHEMIS (Mayweed) genus. 1 species.

(1) *Anthemis Cotula* L.

STINKING MAYWEED

(*Maruta Cotula* (L.) DC.)

A hairless annual weed, much branched, and growing to a height of from 12 to 24 inches. The whole plant has a fetid and unpleasant odour. The leaves are deeply dissected into very narrow lobes, and are from 1 to 2 inches long. The flowers are about 1 inch across, with numerous yellow disks, and from 10 to 18 white ray florets that are borne on the heads of the stems forming a large, flat cluster. An introduced weed, which is becoming increasingly plentiful in waste places and gardens throughout the area, especially in the eastern portion.

ARCTIUM (Burdock) genus. 3 species.

Large, coarse, biennial plants that have broad, oval, or cordate leaves which are long stalked and paler beneath. The flowers are discoid. The involucre are globose and much imbricated, and the stiff bracts are hooked tipped.

1. The bracts of the involucre densely cottony.

(3) *A. tomentosum*

Bracts not cottony, sometimes slightly woolly.

2.

2. Involucre 1 inch or more across; inner bracts as long as, or longer than the flower head.

(1) *A. lappa*

Involucre $\frac{1}{2}$ to $\frac{3}{4}$ inch across; inner bracts not longer than the flower head.

(2) *A. minus*

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- (1) *Arctium lappa* L.

COMMON BURDOCK

A coarse, branching plant, growing from 4 to 9 feet in height. It has broadly ovate, stalked leaves, which are pale beneath, often cordate based, and up to 18 inches long. The flowers are purple and discoid, with a globose involucre from 1 to 1½ inches across. The bracts are tipped with hooked bristles. An introduced weed becoming increasingly plentiful in waste places in the southeastern corner of the area.

- (2) *Arctium minus* (Hill) Bernh.

LESSER BURDOCK

A coarse, tall, branching biennial, growing from deep, thick tap-roots to from 3 to 6 feet in height. The leaves are large, cordate, pale and downy beneath, and up to 12 inches long. The numerous flower heads are generally borne in a leafy, one-sided raceme, are discoid with purple florets, and are from $\frac{1}{2}$ to $\frac{3}{4}$ inch across the involucre. The involucre is somewhat globose and from green to purplish in colour. The bracts have hooked bristles. An introduced and widely distributed weed, very plentiful locally. As the “burs” or seed bearing heads are very prickly, they can be carried on clothing and the coats of animals. Thus, this weed, when once

established, becomes very common in the district.

(3) *Arctium tomentosum* Mill.

COTTON BURDOCK

This species is similar to the preceding, but the involucre is a trifle larger and covered with a cottony web. It is introduced and has been found in a few places, widely separated, and is still quite rare. The bracts of the involucre have hooked tips.

ARNICA (*Arnica*) genus. 3 species.

Perennial plants growing from rootstocks, with opposite leaves and large, radiate, yellow or orange heads. The pappus is a single series of rough bristles.

1. Basal leaves long-stalked, cordate or ovate; pappus white.

(2) *A. cordifolia*

Basal leaves short-stalked, lanceolate or oblanceolate.

2.

2. Stem leaves several pairs, not much reduced; flowers lemon-yellow.

(1) *A. chamissonis*

Stem leaves 1 to 3 pairs, upper much reduced; flowers orange-yellow.

(3) *A. fulgens*

- (1) *Arnica chamissonis* Less.

LEAFY ARNICA

A species growing from 12 to 24 inches high, with a very leafy, softly hairy stem. The leaves are oblong-lanceolate, the lower tapering to a winged stalk which clasps the stem at the base, and are from 3 to 6 inches long. The upper leaves are stalkless and opposite, and there are usually several pairs. The flowers are lemon yellow, from 1 to 2 inches across and borne in a cluster at the head of the stem. While quite widespread in moist places throughout the western and central part of the area, it is nowhere very common.

- (2) *Arnica cordifolia* Hook.

HEART-LEAVED ARNICA

A species growing from 8 to 24 inches high with cordate or heart-shaped leaves. The basal leaves are long stalked and are from 1 to 3 inches long. The stem leaves are cordate, but smaller and generally without stalks. The flowers are lemon yellow in colour, from 1½ to 3 inches across, and are borne on the summit of the stem. Quite plentiful in wooded areas in the western part of the area and in the Cypress Hills, and has also been found in Prince Albert Park.

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- (3) *Arnica fulgens* Pursh

SHINING ARNICA

A plant growing to a height of from 8 to 16 inches. Its stalked, oblanceolate basal leaves are from 2 to 3 inches long, generally 3-ribbed and entire

margined. There are 2 or 3 pairs of linear-lanceolate, smaller, opposite, stem leaves. The flower heads are orange-yellow in colour, from 1 to 2 inches across and are generally solitary on the stem, but occasionally 2 or 3 heads. Fairly abundant in meadows and slightly moister spots on prairie throughout the southwestern and south-central parts of the area. Very plentiful some years and quite scarce in others.

ARTEMISIA (Wormwood) genus. 17 species.

Biennial or perennial shrubs or herbs, generally with a conspicuous odour. The leaves are alternate and vary from entire to much dissected, and from green and hairless to dense white-woolly. The flowers are small and generally in spike-like panicles, and are discoid with only tubular florets. The seeds bear no pappus. The wind borne pollen of the *Artemisias* is often a cause of “hay fever”.

1. Shrubs with definite woody bases.

(5) *A. cana*

Herbs or sub-shrubs, bases not definitely woody.

2.

2. Plants neither hairy, silky nor woolly.

3.

Plants hairy, silky or woolly.

5.

3. Leaves entire and undivided though occasionally individual leaves maybe 3-cleft.

(8) *A. dracunculoides*

Leaves pinnatifid and divided.

4.

4. Leaves cleft into very narrow, linear divisions.

(6) *A. caudata*

Leaves cleft into lanceolate, toothed divisions.

(2) *A. biennis*

5. Leaves hairy or silky-hairy, but not woolly.

6.

Leaves white-woolly, at least on the underside.

11.

6. Leaves linear, entire, or lower 3-cleft.

(11) *A. glauca*

Leaves dissected into segments.

7.

7. Leaves divided into 3 divisions, 2 or 3 times.
Leaves merely once or twice divided. (10) *A. frigida*
8.
8. Leaf segments oblong to ovate; receptacle hairy.
Leaf segments linear; receptacle naked. (1) *A. absinthium*
9.
9. Heads about $\frac{3}{16}$ inch broad.
Heads not over $\frac{1}{8}$ inch across. (3) *A. Bourgeauana*
10.
10. Biennial; outer bracts of involucre acute.
Perennial; outer bracts of involucre obtuse. (9) *A. Forwoodii*
(4) *A. camporum*
11. Leaves white-woolly on both sides. 12.
Leaves white-woolly below but not on upper side. 15.
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12. Leaves, at least lower ones, lobed or divided, with long, narrow
lobes directed forward. (7) *A. diversifolia*
Leaves entire, or basal ones merely toothed. 13.
13. Corollas dark brown; leaves less woolly above than below. (12) *A. gnaphalodes*
Corollas light brown or yellow; leaves equally white-woolly on
either side. 14.
14. Slender stemmed from creeping rootstocks; leaves 1 to 2 inches long,
often toothed and a trifle yellowish.

(16) *A. pabularis*

From coarse, woody roots; leaves 2 to 5 inches long and generally with rolled margins.

(14) *A. longifolia*

15. Leaves deeply dissected to near midrib into linear divisions with rolled margins.

(15) *A. Michauxiana*

Leaves entire or, if deeply dissected, the segments are broad and somewhat spatulate.

16.

16. Leaves entire or sharply toothed.

(13) *A. Herriotii*

Leaf segments doubly divided with broad ultimate divisions.

(17) *A. vulgaris*

- (1) *Artemisia absinthium* L.

ABSINTH

A somewhat shrubby plant, growing from 2 to 4 feet high. The stems are much branched and finely hairy. The leaves are from 2 to 5 inches long and several times divided into segments that are from ovate to oblong and finely greyish hairy. The inflorescence is a large, many flowered somewhat spike-like panicle; the heads are stalked, drooping, and about $\frac{3}{16}$ inch across. Occasionally found in waste places in the north and east of the area where it has escaped from gardens.

- (2) *Artemisia biennis* Willd.

BIENNIAL WORMWOOD

An annual or biennial plant from 1 to 4 feet in height, with hairless, coarse stems which are generally reddish for about half their length. The early leaves generally form a rosette on the ground and are twice or three times dissected into toothed segments. The stem and upper leaves are from 1 to 3 inches long, once or twice divided into narrow segments and quite hairless. The flowers are borne in short, compact spikes in the axils of the upper leaves, forming a dense, leafy spike-like panicle. Very common throughout the whole area in moist places, slough margins, roadsides and cultivated fields.

- (3) *Artemisia Bourgeauana* Rydb.

BOURGEAU'S WORMWOOD

A perennial from 12 to 16 inches high with a reddish tinged stem, the plant covered with silky hairs. The heads are about $\frac{3}{16}$ inch across, a bit larger than its closely allied species. This species is reported from the plains of Saskatchewan and North Dakota by some authorities, but its distinction from *A. camporum* seems somewhat doubtful.

(4) *Artemisia camporum* Rydb.

PLAINS WORMWOOD

A greyish-hairy perennial plant, growing from 12 to 20 inches high, the stem often somewhat purplish or reddish. The leaves are mostly basal, stalked, from $1\frac{1}{2}$ to 4 inches long, twice or three times divided into narrow segments. The stem leaves are stalkless and smaller, and the numerous heads are borne in a leafy panicle. Common on prairie and hills, especially on light or sandy soil throughout the south-central and southwestern parts of the area. Some confusion exists as to the synonymy of this species, and it is probably identical with *A. campestris* var. *pacifica* and perhaps with *A. canadensis*.

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(5) *Artemisia cana* Pursh

HOARY SAGE-BUSH

A shrub with somewhat gnarled and twisted, shreddy barked, woody stems, growing from 1 to 4 feet in height. The leaves are from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long, silvery hairy on both sides, linear to linear-lanceolate in shape and generally entire, or rarely with toothed points. The yellow flowers are crowded into a leafy panicle. Very common on lighter soils in the central, south-central, and southwestern parts of the area.

(6) *Artemisia caudata* Michx.

TALL WORMWOOD

A hairless biennial growing from 2 to 6 feet high, erect and very leafy. The leaves are from 3 to 6 inches long, several times divided into very narrow, linear segments. The numerous heads are borne in a leafy panicle. Found occasionally on sandy soils in the northern and eastern parts of the area.

(7) *Artemisia diversifolia* Rydb.

VARIOUS-LEAVED SAGE

A slender, white-woolly stemmed species from 18 to 24 inches high, with very narrow leaves from 2 to 4 inches long. The leaves are white woolly on both sides and the lower are cleft into from 2 to 5 very narrow, forward pointing lobes. Very rare but has been found near the southern border of the

area.

(8) *Artemisia dracunculoides* Pursh LINEAR-LEAVED WORMWOOD

An entirely hairless perennial from 2 to 4 feet high. The leaves are from ½ to 2½ inches long, narrowly linear, generally entire, but the basal leaves are occasionally cleft or divided. The inflorescence is in a leafy compound panicle. Very common on dry prairie throughout the southern and northwestern portions of the area.

(9) *Artemisia Forwoodii* S. Wats. FORWOOD'S WORMWOOD

A biennial very similar to *A. camporum* but taller, growing from 18 to 30 inches high, and with acute outer involucre bracts. Very uncommon but thought to occur in the area.

(10) *Artemisia frigida* Willd. PASTURE SAGE

A densely silky hairy, silvery-grey perennial with a somewhat woody base, growing from 6 to 20 inches in height. The leaves are from ½ to 1½ inches long and several times divided into linear segments. The plant has a distinct odour when handled. The numerous yellowish heads are borne in terminal, somewhat leafy racemes. Very common throughout all the area on unforested land, and particularly conspicuous in overgrazed pastures. While one of the most plentiful of prairie plants, its unpalatability enables it to increase with heavy grazing at the expense of the more palatable plants, thus making it a useful indicator of too intensive pasturing.

(11) *Artemisia glauca* Pall. SILKY WORMWOOD

A silky-hairy perennial growing from 12 to 24 inches high, with linear leaves, from ½ to 2 inches long, generally entire but occasionally with a few linear lobes. Occasionally found along the northern parts of the area. By some considered a form of *A. dracunculoides*.

(12) *Artemisia gnaphalodes* Nutt. PRAIRIE SAGE

A white-woolly, often much branched perennial, growing from 6 inches to 4 feet in height and very variable in form and size. The leaves vary from ½

to 3 inches in length, are white-woolly on both sides, but a trifle less so on the upperside as a rule. The lower leaves are oblanceolate, generally entire but occasionally with a few lobes, and the upper leaves are lance-linear and entire. The inflorescence is in dense axillary spikes, making a leafy panicle, and the flower heads are brownish. Very common on prairie throughout the entire area, especially where conditions are a little moist. Probably the most common and widespread *Artemisia* in the area.

(13) *Artemisia Herriotii* Rydb. HERRIOT'S SAGE

An erect perennial from coarse woody base, growing from 18 to 36 inches in height, with a simple, fine-hairy stem. The leaves are generally linear, from 2 to 6 inches long and sometimes with a few sharp, linear teeth. They are densely white-woolly beneath and smooth and green above. The numerous heads are in a dense spike-like panicle. Quite unusual, but found in badlands and river breaks in the western part of the area.

(14) *Artemisia longifolia* Nutt. LONG-LEAVED SAGE

A perennial from a coarse, woody, much branched root crown, with densely white-woolly stems, growing from 18 inches to 3 feet high. The leaves are white-woolly on both sides, from 2 to 5 inches long, linear or linear-lanceolate, and often with rolled margins. The upper sides sometimes lose the tomentum or woolliness with age. The inflorescence is a narrow, leafy spike-like panicle. Found occasionally in saline areas, badlands and shaly outcrops throughout the southern part of the area.

(15) *Artemisia Michauxiana* Besser MICHAUX' SAGE

A perennial from a much branched root crown, growing from 8 to 16 inches in height. The leaves are from $\frac{3}{4}$ to 2 inches long, green above and white-woolly beneath and cleft into narrow, linear, sometimes toothed segments, the margins often rolled. The rather large flower heads are borne in a sparingly leaved terminal spike-like panicle. Found on hillsides in the extreme southwestern portion of the area, but mostly a mountain species.

(16) *Artemisia pabularis* (A. Nels.) Rydb. SLENDER SAGE

A low perennial from creeping rootstocks, often growing prostrate on the ground or from 8 to 16 inches high. The stems are white-woolly and slender and the leaves are white-woolly or more often pale yellowish-

woolly on both sides. They are from 1 to 2 inches long, narrowly linear-lanceolate, usually entire but the lower sometimes toothed and generally conduplicate or folded lengthwise. The flower heads are small and borne in narrow, terminal spike-like inflorescences. Quite common along slough margins and moister prairie throughout the central and southwestern parts of the area.

(17) *Artemisia vulgaris* L.

COMMON WORMWOOD

A coarse, weedy perennial, growing from 1 to 3 feet high, with a much branched stem. The leaves are from 1 to 3 inches long, dark green above, and densely white-woolly below, several times divided, the segments being somewhat broad and oblanceolate. The numerous heads are in erect, leafy panicles. An introduced plant, escaped from gardens, which is becoming increasingly abundant around towns in the eastern portion of the area covered.

ASTER (Aster) genus. 27 species.

Perennial or biennial herbs with alternate leaves, and generally showy blue or white radiate heads. The ray florets are female and the disk florets perfect and bisexual. Generally the ray florets number from 10 to 50 and the bracts are usually in several series. The pappus is of capillary bristles or hairs. The asters generally flower in late summer and early fall.

1. Biennials with a tap-root, never with rootstocks; leaves with bristle-tipped teeth.

[2.](#)

Perennials, usually with rootstocks; leaves not bristle-tipped nor with bristle-tipped teeth.

[3.](#)

2. Bracts of involucre densely sticky or glandular.

[\(24\)](#) *A. pulverulenta*

Bracts of involucre hairy, but scarcely sticky or glandular.

[\(3\)](#) *A. canescens*

3. Pappus double, the inner being of hairs and the outer of short bristles or scales; inflorescence flat-topped.

[\(27\)](#) *A. umbellatus*

Pappus simple, of similar hairs.

[4.](#)

4. Lower leaves cordate or ovate, with long stalks.

[5.](#)

Lower leaves neither cordate nor long stalked.

[7.](#)

5. Ray florets white.

[\(9\)](#) *A. divaricatus*

Ray florets blue or purple.

[6.](#)

6. Stalks of lower stem leaves with winged margins.

[\(15\)](#) *A. Lindleyanus*

Stalks of lower stem leaves without winged margins.

(8) *A. cordifolius*

7. Bracts of involucre and stalks below flower heads glandular.

8.

Bracts of involucre and stalks below heads not glandular.

10.

8. Leaves oval or ovate, coarsely toothed and rather rough above to the touch.

(7) *A. conspicuus*

Leaves linear to lanceolate, not coarsely toothed.

9.

9. Lower leaves with stalks.

(22) *A. pauciflorus*

None of leaves with stalks.

(19) *A. nova-angliae*

10. Bracts of involucre bristle-tipped.

11.

Bracts of involucre not bristle-tipped.

13.

11. Bracts of involucre almost equal in length, the outer at least half as high as involucre; heads few or solitary at ends of branches.

(6) *A. commutatus*

Bracts of involucre very unequal in length.

12.

12. Hairs of stem spreading or reflexed; rootstock creeping.

(2) *A. adsurgens*

Hairs of stem ascending or appressed; rootstock tufted.

(10) *A. ericoides*

13. Outer bracts leaf-like and equalling or exceeding the inner.

14.

Outer bracts not leaf-like.

16.

14. Stem leaves linear or lance-linear, not clasping at base. (18) *A. Mearnsii*
Stem leaves oblanceolate to cordate, with clasping bases. 15.
15. Lower stem leaves with wing-margined stalks. (11) *A. frondeus*
Lower stem leaves without wing-margined stalks. (25) *A. puniceus*
16. Leaves and bracts densely silvery, silky-hairy. (26) *A. sericeus*
Leaves not silvery; bracts hairless, except for a marginal fringe. 17.
17. Whole plant hairless. 18.
Plants with hairs, or at least lines of hairs running down the stems. 19.
18. Leaves of branches conspicuously reduced; green tips of involucre bracts broad. (14) *A. laevis*
Leaves of branches not conspicuously, but gradually reduced; green tips of involucre bracts narrow. (12) *A. Geyeri*
19. Bracts of involucre oblanceolate, the outer obtuse or blunt. (1) *A. adscendens*
Bracts of involucre linear to oblong, all acute or pointed. 20.
20. Heads few, in small, leafless clusters. (4) *A. ciliomarginatus*
Heads usually many in a leafy panicle or cluster. 21.
21. Stem leaves narrowly lanceolate and toothed. 22.
Stem leaves linear, not toothed. 23.

22. Leaves thick and rough; flowers violet or purple. (5) *A. coerulescens*
 Leaves thin and smooth; flowers white or sometimes pale violet. (21) *A. paniculatus*
23. Bracts in two, almost equal, series. (16) *A. longifolius*
 Bracts in 3 or 4 series, the outer somewhat shorter. 24.
24. Heads in a somewhat flat-topped cluster. 25.
 Heads many, in much branched panicle, not flat-topped. 26.
25. Stem leaves with clasping bases. (13) *A. junciformis*
 Stem leaves without clasping bases. (23) *A. ptarmicoides*
26. Ray florets about $\frac{3}{8}$ inch long. (20) *A. Osterhoutii*
 Ray florets smaller, about $\frac{1}{4}$ inch long. (17) *A. longulus*

(1) *Aster adscendens* Lindl.

WESTERN ASTER

A slender, erect species growing from 6 to 24 inches high, and the stem sometimes decumbent at the base. The leaves are from 1 to 3 inches long, the lower short stalked and spatulate, while the upper ones are stalkless, and more or less clasping and linear. The heads are about 1 inch across, not very numerous and borne in a panicle. The bracts are oblanceolate, blunt pointed, in from 3 to 5 series. Occasionally found in valleys and favoured localities in the southwestern portion of the area.

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(2) *Aster adsurgens* Greene

SMALL-LEAVED ASTER

A branching species growing from running rootstocks to from 16 to 24 inches high. The leaves are linear or oblong, from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long and

with those of the branches crowded and very small. The hairs of the stems are spreading and often reflexed. The flowers are fairly numerous, white, and from $\frac{1}{4}$ to $\frac{1}{3}$ inch across. Very common on prairies and roadsides throughout the central and western parts of the area.

- (3) *Aster canescens* Pursh CANESCENT ASTER
(*Machaeranthera canescens* (Pursh) A. Gray)

A low, branching biennial, growing from a tap-root to a height of from 4 to 16 inches. The stem is covered with short, fine hairs. The leaves are from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long, the lower spatulate or oblanceolate, the upper ones often linear, and vary from entire to slightly toothed. The teeth and the apex of the leaves bear a short bristle-like tooth. The flowers are from $\frac{3}{4}$ to 1 inch across and are bluish-purple in colour and generally very numerous. Very common, especially along roadsides, in the southwestern part of the area.

- (4) *Aster ciliomarginatus* Rydb. CILIOULATE-MARGINED ASTER

An erect, little branched, species growing from 12 to 24 inches high. The lower leaves have wing-margined stalks and are from 4 to 8 inches long and oblanceolate. The upper stem leaves are stalkless, more or less clasping the stem, and lanceolate. The flowers are about $\frac{3}{4}$ inch across, with pale blue ray florets, and are borne in a few-flowered, leafless cluster. Quite rare in the area, but has been found in wet meadows in the Cypress Hills, and may be found in the southwestern regions.

- (5) *Aster coeruleus* DC. WILLOW ASTER

A tall, slender stemmed, erect species, growing from 2 to 5 feet in height, generally considerably branched above. The leaves are linear to linear-lanceolate, rough margined, from 2 to 4 inches long and sharp tipped. The lower leaves often have a few small teeth. The numerous flower heads are from $\frac{3}{4}$ to 1 inch across, the ray florets violet to violet-purple or white. Found fairly abundantly in moist areas and wooded banks along the northern and eastern borders of the area.

- (6) *Aster commutatus* (T. & G.) A. Gray. WHITE PRAIRIE ASTER

A much branched perennial, growing from running rootstocks to a height of from 18 to 30 inches. The stem is rough-hairy. The leaves are linear to

linear-oblong, from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long, stalkless, and entire margined. The inflorescence is of a few or single heads at the ends of the branches and the white flowers are from $\frac{1}{2}$ to $\frac{2}{3}$ of an inch across. The bristle tipped bracts are almost equal in length, the outer ones being at least as high as the involucre. A fairly common plant throughout most of the southern and central portions of the area covered.

(7) *Aster conspicuus* Lindl.

SHOWY ASTER

An erect coarse species, growing from 18 to 30 inches high, with a rough and hairy stem. The leaves are ovate to obovate, coarsely toothed, rough on the upper surface and finely hairy below, and from 4 to 6 inches long. The inflorescence is a large corymb of violet to blue flowers, each about $1\frac{1}{2}$ inches across with the bracts and flower stems glandular. This is a common woodland species of the north-central, northwestern, and western borders of the area, and also found abundantly in the Cypress Hills. Very palatable to livestock.

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(8) *Aster cordifolius* L.

BLUE WOOD ASTER

A tall, much branched, bushy species, growing to a height of from 1 to 5 feet, generally with a hairless stem. The basal, and the lower stem leaves are cordate and slender stalked, and from 2 to 5 inches long, while the upper leaves are stalkless, ovate to lanceolate and smaller. The numerous flower heads are blue or violet, from $\frac{1}{2}$ to $\frac{3}{4}$ inches across. Quite common in woodlands in the eastern portion of the area.

(9) *Aster divaricatus* L.

WHITE WOOD ASTER

A tufted perennial with a zig-zag, twisted brittle stem, growing from 18 to 30 inches in height. The leaves are thin, slender stalked, coarsely toothed and from cordate to ovate in shape, and from 1 to 4 inches long. The flower heads are from $\frac{3}{4}$ to 1 inch across, usually white and borne in a flattish, wide corymb. Occasionally found in the extreme southeastern corner of the area.

(10) *Aster ericoides* L.

MANY-FLOWERED ASTER

A branching perennial from a thick, tufted rootstock, growing from 1 to $2\frac{1}{2}$ feet in height. The stems are covered with fine appressed and ascending hairs. The leaves are from $\frac{1}{2}$ to 2 inches long, linear to narrowly linear-

lanceolate and entire margined. The flower heads are numerous, from $\frac{1}{3}$ to $\frac{1}{2}$ inch across, white, and borne as a rule on one side of the recurved branches. Very common on open prairies, roadsides, etc., throughout the entire unwooded parts of the area.

(11) *Aster frondeus* (A. Gray) Greene LEAFY-BRACTED ASTER

An erect species growing to from 12 to 36 inches high. The lower leaves are from 4 to 6 inches long, oblanceolate, entire margined and with wing margined stalks. The upper leaves are shorter with clasping bases. The flowers are violet and from $\frac{3}{4}$ to 1 inch across. A mountain species which may be found in the western margin of the area and in the Cypress Hills. Sometimes this is considered a variety of *Aster foliaceus*.

(12) *Aster Geyeri* (A. Gray) Howell GEYER'S ASTER

An entirely hairless species growing from 20 to 40 inches in height. The lower leaves are oblanceolate, from 4 to 8 inches long with wing-margined stalks. The upper leaves are stalkless, clasping and oblong-lanceolate. The flowers are blue, generally few, and from 1 to $1\frac{1}{4}$ inches across. Found sparingly in wooded valleys in the western part of the area and in the northwestern forested areas.

(13) *Aster junciformis* Rydb. RUSH ASTER

A slender-stemmed, erect, little branched species, growing from 1 to 3 feet in height. The leaves are from 1 to 3 inches long, narrow and linear, generally with entire margins, stalkless and clasping the stem. The inflorescence is an open panicle, the flower heads being white and from $\frac{1}{2}$ to $\frac{3}{4}$ inches across. Fairly common in swamps and bogs throughout the wooded areas and in the Cypress Hills, and quite widespread.

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(14) *Aster laevis* L. SMOOTH ASTER

A stout stemmed, hairless species growing from 2 to 4 feet in height. The leaves are thick, from 1 to 4 inches long, often toothed, ovate or lanceolate and hairless. The basal leaves have wing-margined stalks but the upper ones are stalkless, and often clasping. The numerous flower heads are about 1 inch across with blue ray florets, and the pappus is somewhat

tawny coloured. Very common on moist prairie, around bluffs or clumps of shrubbery and in open woodlands throughout the entire area.

(15) *Aster Lindleyanus* T. & G.

LINDLEY'S ASTER

A stout, erect stemmed species growing to a height of from 1 to 5 feet. The leaves are thick, sometimes slightly hairy on the veins. The basal leaves are ovate or cordate, from 2 to 4 inches long with long stalks. The lower stem leaves have wing-margined stalks. The upper leaves are often stalkless. The flower heads are generally few, blue to violet and from $\frac{1}{2}$ to $1\frac{1}{4}$ inches across. A common species of woodlands throughout the entire area.

(16) *Aster longifolius* Lam.

LONG-LEAVED ASTER

A leafy stemmed, erect species, growing from 1 to 3 feet in height, often somewhat branched above. The leaves are linear-lanceolate to lanceolate, from 3 to 8 inches long and clasping the stem at their bases. The heads are violet to pale purple in colour and about 1 inch across, with numerous ray florets. Occasionally found in swamps and moist meadows in the southern and eastern parts of the area.

(17) *Aster longulus* Sheld.

PINK-FLOWERED ASTER

An erect species, somewhat branching above, growing from 2 to 4 feet in height. The leaves are from 1 to 4 inches long, narrowly linear, stalkless and sometimes roughened below. The numerous flower heads are borne in a branching panicle, they vary from white to a pale, pinkish lilac colour, and are from $\frac{1}{2}$ to $\frac{3}{4}$ inches across. Fairly common in swamps and meadows in the central and western parts of the area, and in the northern forests.

(18) *Aster Mearnsii* Rydb.

MEARN'S ASTER

A branching species, growing from 12 to 36 inches high. The leaves are linear to lance-linear, from 2 to 4 inches long, stalkless and entire, but not clasping. The outer bracts are large and leaf-like and the flower heads are from $\frac{3}{4}$ to 1 inch across with pinkish or white ray florets. Not common but may be found in river valleys in the southwestern part of the area.

(19) *Aster nova-angliae* L.

NEW ENGLAND ASTER

A tall, erect, stout-stemmed species growing to a height of from 2 to 7 feet. The leaves are lanceolate to oblong, entire, from 1½ to 5 inches long, and stalkless, clasping the stem by a cordate or an eared base. The flower heads are numerous, from 1 to 2 inches across, with reddish-purple to violet-purple ray florets, and are borne in compact clusters at the ends of the branches. Fairly common in moist woodlands and low ground in the eastern portion of the area covered.

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(20) *Aster Osterhoutii* Rydb.

OSTERHOUT'S ASTER

A species growing from 18 to 36 inches high, with a branching, leafy stem. The leaves are linear, entire, somewhat clasping and from 2 to 4½ inches long. The flowers are from 1 to 1¼ inches across, with pinkish or white ray florets and are borne in a many-flowered branching panicle. Common in ditches, stream banks and moist places in the central and western portions of the area.

(21) *Aster paniculatus* Lam.

TALL WHITE ASTER

A tall, much branched species, growing from 2 to 7 feet high. The leaves are from 3 to 6 inches long, lanceolate to linear, and sometimes sparingly toothed. The numerous flower heads are about ¾ inch across, the ray florets being white, sometimes with a faint violet tinge. Quite frequent in woodlands in the eastern parts of the area.

(22) *Aster pauciflorus* Nutt.

FEW-FLOWERED ASTER

A hairless species, growing from creeping rootstocks, much branched, and from 6 to 18 inches high. The leaves are entire margined, somewhat fleshy, from 1 to 4 inches long, the upper linear and stalkless, the lower linear-lanceolate and stalked. The flower heads are few, ⅝ to ¾ inch across and have blue or white ray florets. Rare, but has been found in saline soil in the eastern part of the area.

(23) *Aster ptarmicoides* T. & G.
(*Unamia alba* (Nutt.) Rydb.)

UPLAND WHITE ASTER

A somewhat tufted plant, growing from creeping rootstocks to from 8 to 24 inches high. The leaves are linear to linear-lanceolate, from 1 to 6 inches

long, sometimes slightly toothed and firm and shiny. The numerous flower heads are from $\frac{1}{2}$ to $\frac{3}{4}$ inch across, white, and borne in a somewhat flat-topped, terminal cluster. Rare, but occasionally found in dry, saline or gravelly soil in the north-central wooded areas.

- (23a) *Aster ptarmicoides* T. & G. var. *lutescens* (Hook.) A. Gray
(*Unamia lutescens* (Lindl.) Rydb.) YELLOW ASTER

A variety with short, pale yellow ray florets, which is occasionally found on prairies in the eastern part of the area. This is the only yellow-flowered aster to be met with in the area.

- (24) *Aster pulverulenta* Nutt. PULVERULENT ASTER
(*Machaeranthera pulverulenta* (Nutt.) Greene)

A biennial from a tap-root, much branched and growing from 6 to 14 inches high. The leaves are from $\frac{1}{2}$ to 2 inches long, linear to narrowly oblanceolate with the teeth and apex bearing a hard bristly tooth. The involucre bracts are densely sticky and glandular and the flowers are from $\frac{3}{4}$ to 1 inch across and with purple ray florets. Quite uncommon but has been found in the extreme south-central parts of the area on dry prairie.

- (25) *Aster puniceus* L. PURPLE-STEMMED ASTER

A stout purplish stemmed, branching species growing from a thick rootstock to a height of from 2 to 6 feet. The leaves are from 3 to 6 inches long, lanceolate to oblong lanceolate, often hairy on the midrib below, usually sharp toothed. The flower heads are numerous, from 1 to $1\frac{1}{2}$ inches across, with light violet to pale purple ray florets. Fairly common in swamps and marshlands throughout the eastern and north-central parts of the area.

- (26) *Aster sericeus* Vent. WESTERN SILVERY ASTER

A slender stemmed, branching species, growing from 1 to 2 feet in height. The leaves are from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long, covered with dense silvery-white, silky hairs on both sides, the lower with short, wing-margined stalks and the upper stalkless, oblanceolate to oblong. The numerous heads are about $1\frac{1}{2}$ inches across with reddish-violet to violet-blue ray florets and

the pappus is tawny. Frequently found in the extreme eastern area.

- (27) *Aster umbellatus* Mill. FLAT-TOPPED WHITE ASTER
(*Doellingeria umbellatus* (Mill.) Nees.)

A tall, erect species, growing from a woody rootstock to a height of from 2 to 8 feet. The leaves are from 3 to 6 inches long, narrowly elliptic to lanceolate, tapering to the apex and at the base to a short stalk. The very numerous flower heads are from $\frac{1}{2}$ to $\frac{3}{4}$ inches across, with white ray florets, and are borne in a large flat-topped, terminal cluster. The pappus has an outer row of short, stiff bristles, the inner being long and hair-like. Quite common in moist woodlands throughout Manitoba.

- (27a) *Aster umbellatus* Mill. var. *pubens* Gray
(*Doellingeria pubens* (A. Gray) Rydb.)

This differs from the species by the hairy undersides of the leaves. Occasionally found in woodlands in the eastern and northern parts of the area.

BALSAMORHIZA (Balsam-root) genus. 1 species.

(1) *Balsamorhiza sagittata* (Pursh) Nutt.

BALSAM ROOT

A low perennial that grows from a thick, edible, spindle-shaped root (often over 2 inches thick) that exudes a balsam or sticky substance with a turpentine-like odour. The long stalked leaves are mostly basal, from 4 to 8 inches long, and vary in shape from cordate to hastate or sagittate (arrow shaped). They are white woolly on both sides, densely below, sparsely above. As a rule the flowers are borne singly on stems about 1 foot long that arise from the root crown, are bright yellow, and from 2 to 3 inches across. The bracts are lanceolate and densely white woolly; the seeds have no pappus. Fairly plentiful on hillsides and prairie in the southwestern corner of the area, more plentiful towards the mountains.

BIDENS (Beggar ticks) genus. 4 species.

Annual herbs with the leaves generally opposite. The heads are discoid or radiate, yellow or orange in colour. The achenes (seeds) bear 2 or 4 retrorsely (downward pointing) barbed awns which serve to attach the seed to the coats of animals or to human clothing, and aid in dissemination.

1. Ray florets quite conspicuous; leaves stalkless and clasping.

(3) *B. glaucescens*

Ray florets none or inconspicuous; leaves generally with short stalks, not clasping.

2.

2. Leaves, excepting the lowest, usually undivided, achenes with 3 or 4 pappus awns.

(1) *B. connata*

Leaves generally divided into 3 or 5 leaflets; achenes with two pappus awns.

3.

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3. Large outer bracts of involucre 8 to 16 in number and bearing marginal hairs; florets pale yellow.

(4) *B. vulgata*

Large outer bracts of involucre 4 to 8 in number, practically hairless; florets orange.

(2) *B. frondosa*

(1) *Bidens connata* Muhl.

PURPLE-STEMMED BEGGAR-TICKS

A branched annual plant with erect, hairless, purple stem, growing from 1 to 6 feet high. The leaves are sharply toothed, from 2 to 5 inches long, lanceolate and stalked, generally undivided, although occasionally the lower leaves are three-parted. The disk florets are orange and the ray florets either missing or inconspicuous. The flower heads are from ½ to 1½ inches across. Occasionally found in swamps in the extreme eastern margin of the area.

(2) *Bidens frondosa* L.

COMMON BEGGAR-TICKS

An erect, often branching species growing from 1 to 3 feet high, frequently with a purplish stem. The leaves are slender-stalked, from 2 to 4 inches long, mostly divided into 3 or 5 lanceolate segments, slightly hairy below and toothed. The flowers are orange in colour, from $\frac{1}{2}$ to $\frac{5}{8}$ inch across, with from 4 to 8 large outer involucral bracts. Fairly common in wet places and along stream banks in the eastern portion of the area.

(3) *Bidens glaucescens* Greene

SMOOTH BEGGAR-TICKS

An erect, hairless annual growing from 12 to 30 inches high. The leaves are opposite, from 2 to 6 inches long, toothed, linear-lanceolate, and stalkless, clasping the stem, and somewhat paler on the underside. The flower heads are generally nodding or pendant, from $\frac{3}{4}$ to $1\frac{1}{4}$ inches across, and have conspicuous ray florets. The long, outer bracts are generally as long or longer than the ray florets and are reflexed or turned downwards. Very common in water and very wet soil throughout almost the entire area.

(4) *Bidens vulgata* Greene

TALL BEGGAR-TICKS

A tall almost hairless species growing from 2 to 4 feet high. The leaves are from 1 to 3 inches long, and pinnately 3 to 5 times divided into lanceolate, toothed leaflets. The flower heads are from $\frac{1}{2}$ to 1 inch across, sometimes with some ray florets. A form, forma *puberula* (Wieg.) Fern, has long, curved hairs on the leaves and upper part of the stem. The species and the variety are both uncommon, but have been found in wet places along the southern parts of the area.

BOLTONIA (Boltonia) genus. 1 species.

(1) *Boltonia asteroides* (L.) L'Her.

BOLTONIA

A rather stout stemmed perennial plant, growing from 2 to 7 feet in height. The leaves are linear to lanceolate, from 2 to 3 inches long, and without stalks. The numerous flower heads are radiate, from $\frac{3}{4}$ to $1\frac{1}{2}$ inches across, and the ray florets vary from white to pink. The achene or seed bears a pappus of short scales, often with from 2 to 4 slender bristles, differing from the asters which have a hairy pappus. Quite rare, but has been found in moist soil in the south-central and southeastern portion of the area.

BRACHYACTIS (Rayless Aster) genus. 1 species.

(1) *Brachyactis angusta* (Lindl.) Britton.
(*Aster angustus* (Lindl.) T. & G.)

RAYLESS ASTER

A slender, purplish stemmed, somewhat branching annual, growing from 6 to 24 inches high. The leaves are linear, from 1 to 3 inches long, hairless except for some marginal hairs. The flower-heads are very numerous, often almost hiding the foliage and appear to be mainly composed of white hairy pappus. They are from $\frac{1}{3}$ to $\frac{1}{2}$ inch broad in a raceme, and the few florets are purple. There are occasionally a few rudimentary ligulate florets. The involucral bracts are very narrow and often purplish in colour. Quite common in saline soil and moist places throughout most of the area covered.

CARDUUS (Plumeless Thistle) genus. 1 species.

(1) *Carduus nutans* L.

NODDING THISTLE

A branching biennial, growing from 2 to 3 feet in height. The leaves are very deeply divided, are lanceolate in outline, from 3 to 6 inches long, and very prickly. The flower-heads are borne singly on long stems and are nodding or drooping, from 1½ to 2½ inches across, and purple, rarely white. The involucral bracts are in many series, each with a prominent mid vein that is prolonged into a spine. The pappus hairs are about 1 inch long, white, and roughed but not feathery, thus distinguishing this genus from the *Cirsium*, which have plumose or feathery pappus hairs. An introduced weed which has been found, but rarely, at various widely separated points.

CENTAUREA (Cornflower) genus. 2 species.

Plants somewhat resembling thistles, with a globular involucre, but the pappus hairs are either very short or absent.

1. Perennial plants; involucre not spiny; corolla purplish or pale pink.

(1) *C. repens*

Annual plants; involucre with long spines; corolla yellow.

(2) *C. solstitialis*

- (1) *Centaurea repens* L.
(*C. Picris* Pall.)

RUSSIAN KNAPWEED

An erect, perennial, growing from coarse, woody running roots to a height of from 1 to 3 feet. The stems are grooved and ridged, and when young are covered with whitish woolly hairs. The leaves are from $\frac{1}{2}$ to 3 inches long, pale green, sometimes woolly when young, and linear to lanceolate. The lower ones are deeply lobed, but the upper are entire margined. The numerous flower-heads are at the ends of the branches, with a hard, globular involucre from $\frac{1}{3}$ to $\frac{1}{2}$ inch high and wide, with broad, pale green to almost white bracts, with membranous tips. The florets are all tubular, and pale pink in colour, or sometimes purplish. The seeds are white. This is an extremely persistent, introduced weed, which has been found in shelterbelts and fields at various localities throughout the area.

- (2) *Centaurea solstitialis* L.

YELLOW STAR THISTLE

An annual plant, the branching stem bearing cottony hairs and growing from 1 to 2 feet high. The basal leaves are deeply lobed and may grow up to 5 inches long, the upper leaves are entire, lanceolate to linear and from $\frac{1}{2}$ to 1 inch long. The involucre has yellowish bracts, many of them tipped by a yellow spine from $\frac{1}{2}$ to $\frac{3}{4}$ inches long. The corollas are yellow and all florets are tubular. A rare, introduced weed which has been found in gardens in the area.

CHRYSANTHEMUM (Ox-eye Daisy) genus. 1 species.

(1) *Chrysanthemum leucanthemum* L.
(*Leucanthemum vulgare* Lam.)

OX-EYE DAISY

An erect and little branched perennial, growing from 1 to 2 feet high. The lower leaves are somewhat stalked, obovate to spatulate, toothed or incised, and from 1 to 3 inches long. The upper leaves are not stalked, clasping, oblong and toothed near the base. The heads are generally borne singly at the summit of the stem, and are from 1 to 2 inches across, radiate, with yellow disk florets and white ray florets. The seeds have no pappus. The plants found in the area are variety *pinnatifidum* lecoq. and Lamotte. An introduced plant, escaped from gardens and occasionally found in meadows and moist roadsides adjacent to the forested areas along the eastern, northern and western boundaries of the area.

CHRYSOPSIS (Golden Aster) genus. 2 species.

Perennial, much branched plants from a tufted root crown, generally low-growing and decumbent. The stems are very leafy with stalkless, alternate and usually entire margined leaves. The flowers are radiate, medium in size, with yellow ray florets. The pappus of the hairy achenes (seeds) is double, the inner consisting of rough hairs, and the outer of small scales or minute bristles.

1. Involucres both hairy and sticky glandular.

(1) *C. hispida*

Involucres with short, appressed hairs, but not sticky glandular.

(2) *C. villosa*

- (1) *Chrysopsis hispida* (Hook.) Nutt.

HISPID GOLDEN ASTER

A low-growing species, rarely over 1 foot high, with stem generally bearing spreading hairs and often somewhat sticky. The leaves are entire, oblong, from $\frac{3}{4}$ to $1\frac{1}{2}$ inches long, narrowed at the base to a short stalk. The flower heads are numerous and generally less than 1 inch across, with a sticky, glandular, hairy involucre. Occasionally found in dry soil throughout the area, and by many authorities considered a variety of *C. villosa*.

- (2) *Chrysopsis villosa* (Pursh) Nutt.

HAIRY GOLDEN ASTER

A very branching species, growing from 6 to 24 inches in height from a woody, branching tap-root. The stems are covered with coarse, stiff hairs and bear numerous greyish green, oblong or oblanceolate alternate leaves, from 1 to 2 inches long, covered with short, stiff appressed hairs. The lower leaves occasionally have a short stalk, while the upper ones are generally stalkless. The flower-heads are not very numerous, are radiate, with bright yellow ray florets, and are 1 inch or more across. This species has been divided into several species or varieties by various authorities, a linear leaved variety, being sometimes found in southern Alberta. This plant is very common on dry sandy prairies and hillsides throughout the entire area where such locations exist, but is much more plentiful in the southern portions.

CHRYSOTHAMNUS (Rabbit Brush) genus. 1 species.

(1) *Chrysothamnus frigidus* Greene

RABBIT BRUSH

A low, shrubby, much branched plant with a very coarse, thick, woody root, which often protrudes some distance above the soil surface, and may appear very large for the size of the plant. The shrub grows to a height of from 8 to 24 inches, with white woolly upright branches bearing very narrowly linear, pale greyish-green leaves, from $\frac{1}{2}$ to 2 inches long, and generally erect growing. The inflorescence is dense in terminal panicles, and the flower-heads are discoid, with no ray florets. The flowers are pale yellow, about $\frac{3}{8}$ to $\frac{1}{2}$ inch high, with bracts in 2 or 3 series. The copious pappus consists of dull, white hairs. A very local plant, which is abundant on "badlands", eroded hillsides, and occasionally on saline clay flats in the south-central and southwestern parts of the area covered.

CIRSIUM (Thistle) genus. 10 species.

Stout, erect biennial or perennial herbs with alternate, lobed, or dentate, very prickly, spiny leaves. The involucre is ovoid or globose with much imbricated bracts, which are generally spine-tipped. The flower heads are discoid, all florets being tubular, and the achenes (seed) bear a pappus of plumose (feathery) hairs.

1. Bracts of involucre covered with cobwebby hairs, and all spine-tipped; upper leaf surface with short, stiff bristles.

(10) *C. vulgare*

Bracts of involucre only slightly, if at all, cobwebby, and if so the inner bracts are twisted, and not spine-tipped.

2.

2. Perennial plants from deep, creeping rootstocks; involucre rarely over ½ inch wide; male and female flowers on separate plants.

(1) *C. arvense*

Plants without creeping rootstocks; involucre generally more than ½ inch wide; male and female florets on the same plant or flower-head.

3.

3. Inner bracts of involucre with loose, twisted and spineless tips.

4.

Inner bracts of involucre without loose, twisted and spineless tips.

5.

4. Outer bracts with a narrow, sticky ridge near tip.

(6) *C. Hillii*

Outer bracts without a sticky ridge near tip.

(3) *C. Drummondii*

5. Leaves green on both sides when mature; bracts generally without spiny tips.

(7) *C. muticum*

Leaves white woolly beneath; bracts with spiny tips.

6.

6. Leaves, upper ones at least, entire or only slightly lobed. (8) *C. ob lanceolatum*
Leaves pinnately divided or deeply cleft. 7.

7. Leaves deep green and bristly on upper side. (2) *C. discolor*
Leaves pale or gray or more or less tufted woolly above. 8.

8. Leaves deeply cleft, the lobes linear-lanceolate. (5) *C. Flodmanii*
Leaves with triangular or ovate-lanceolate lobes. 9.

9. Leaves white woolly on both sides. (9) *C. undulatum*
Leaves dark green and almost hairless above. (4) *C. Engelmannii*

(1) *Cirsium arvense* (L.) Scop. CANADA THISTLE

A persistent perennial from deep, running rootstocks, growing to a height of from 1 to 3 feet, generally in large patches. The leaves are stalkless, often somewhat clasping, curled and wavy surfaced, from 2 to 5 inches long, roughly lanceolate in shape, but deeply incised with toothed prickly segments. The basal leaves are sometimes stalked. The numerous flower-heads are borne in large, loose, corymbs at the top of the stems and bear purple florets, or occasionally white florets. The plants bear only one sex of florets, some all male florets, with heads often 1 inch across and others about ½ inch across with only female florets and bearing copious quantities of seed. The achene (seed) bears a pappus of white, plumose hairs. A very common, introduced weed, found in great quantities in waste places, fields, roadsides, etc., across the entire area. The caterpillars of the Painted Lady or Thistle Butterfly, and other closely related butterflies feed on thistles and will occasionally almost eradicate it from an area by continual defoliation.

(1a) *Cirsium arvense* (L.) Scop. var. *integrifolium* Wimm. & Grab.
ENTIRE-LEAVED CANADIAN THISTLE
A variety differing from the species by having flat, almost entire leaves,

with spiny margins, the lower leaves being slightly lobed. Found occasionally throughout the area.

(2) *Cirsium discolor* (Muhl.) Spreng.

FIELD THISTLE

A tall-growing perennial, growing from 3 to 5 feet in height, with a grooved stem. The leaves are deeply cleft into linear-lanceolate lobes and are stalkless and large, the lower sometimes being 12 inches long. They are prickly, with rolled margins, deep green colour above and white woolly beneath. The flower-heads are from 1½ to 2 inches across and the florets pale purple or pink, occasionally white. Rare, but has been found along the extreme southeastern boundary of the area in rich soil.

(3) *Cirsium Drummondii* T. & G.

SHORT-STEMMED THISTLE

A low-growing species, from 4 to 12 inches high, with a hairy, slightly cobwebby stem. The leaves are oblanceolate, green on both sides, with triangular lobes and weak spines, and are occasionally somewhat cobwebby when young, but not white woolly. The heads are purple or rose-purple, from 1½ to 2 inches high, with twisted inner bracts and spiny outer ones. Occasionally found on somewhat open prairie in the wooded areas of the north-central and northeastern parts of the area covered.

(4) *Cirsium Engelmannii* Rydb.

ENGLEMANN'S THISTLE

A perennial, growing to a height of from 2 to 3 feet, with a loosely woolly-tufted stem. The lanceolate leaves have triangular lobes, although the lower ones are somewhat divided, the upper are often entire. They are white woolly below and generally dark green and practically hairless on the upper sides. The flower heads are rose-purple in colour, from 1½ to 2 inches across and the bracts of the involucre have a pronounced glutinous, sticky ridge near the tip. Rare, but has been found in the southern central part of the area, but is very similar to *C. undulatum*, and it hybridizes with that species, so is probably a form of it.

(5) *Cirsium Flodmanii* (Rydb.) Arthur

FLODMAN'S THISTLE

A slender stemmed species, growing from 18 to 36 inches high from a deep root. The stem is usually branched and with loose cottony hairs. The leaves are deeply cleft into lanceolate spiny lobes, white cottony or woolly beneath and somewhat cottony above, and from 2 to 6 inches long. The

flower heads are rose to rose-purple in colour, and are from 1¼ to 1½ inches across. Not common but found on moist prairie and valleys in the southwestern and south-central parts of the area. An albino form with cream coloured flowers was found in an abandoned field in the south-central part of the area.

(6) *Cirsium Hillii* (Canby) Fernald

HILL'S THISTLE

A low-growing leafy-stemmed, hairy perennial, growing from 1 to 2 feet in height from a stout fusiform (carrot-like) hollow root. The leaves are green on both sides, with rounded lobes, prickly and from 3 to 8 inches long, the lower ones stalked and the upper clasping. The flower-heads are few or solitary, purple, and from 2 to 3 inches across. The bracts have a narrow, sticky ridge near the tip, the inner bracts being twisted and soft tipped. A rare species, but has been found in the extreme southeastern corner of the area.

(7) *Cirsium muticum* Michx.

SWAMP THISTLE

A biennial, growing from 3 to 8 feet high, with a branched leafy stem. The leaves are from 4 to 12 inches long, deeply cleft into oblong or lanceolate segments with slender spines, are white woolly beneath when young, but become hairless when more mature. The basal leaves are stalked, the upper smaller and stalkless. The flower-heads are few, about 1½ inches across, purple in colour and the bracts of the involucre are not spiny, but somewhat sticky and hairy or cobwebby. Found in wet marshy lands in the wooded areas along the northern edge of the area.

(8) *Cirsium ob lanceolatum* (Rydb.) K. Schum.

WOOLLY THISTLE

A slender-stemmed species, growing from 12 to 24 inches high with a white woolly stem. The lower leaves are about 4 inches long, with somewhat triangular lobes, the upper ones are smaller and entire, neither divided nor lobed. The leaves are densely white woolly beneath and loosely woolly above. The flower-heads are rose-coloured, from ¾ to 1 inch across. Rare, but has been reported from the central part of the area, although normally it is a mountain species.

(9) *Cirsium undulatum* (Nutt.) Spreng.

WAVY-LEAVED THISTLE

A white woolly biennial species, growing to a height of from 12 to 36 inches, with a stout, branched and leafy stem. The leaves are oblong or lanceolate, with triangular lobes, very prickly, the lower stalked and the upper ones stalkless, often continuing for some distance down the stem. They are generally densely white woolly on both sides, although with age the upper surface may become bare. The flower-heads are solitary at the ends of the branches, are purple or pink in colour, and from 1½ to 3 inches across. Very common on dry prairies and roadsides throughout the entire southern and western portion of the area. A variety with much larger flowers, the involucre being over 1½ inches across, has been termed var. *megacephalum* (Gray) Fernald, and has occasionally been found in the area.

(10) *Cirsium vulgare* (Savi) Tenore
(*C. lanceolatum* (L.) Hill)

BULL THISTLE

A stout stemmed biennial, more or less woolly, growing from 3 to 5 feet high, branched, and leafy up to the heads. The leaves are from 3 to 6 inches long, dark green, hairy on both sides and deeply cleft, and very prickly. The leaves generally continue down the stem forming prickly lobed wings. The numerous flower-heads are borne at the ends of the branches, are purple, and from 1½ to 2 inches broad and high. The involucre bracts are cobwebby and all spine tipped. An introduced species, which has been occasionally found on waste land and field borders throughout the southern and central portion of the area covered.

COREOPSIS (Tickseed) genus. 2 species.

1. Outer bracts of involucre about as long as inner bracts; leaves all stalkless, deeply 3-lobed; perennial.

(1) *C. palmata*

Outer bracts of involucre much shorter than inner bracts; lower leaves with stalks; annual.

(2) *C. tinctoria*

(1) *Coreopsis palmata* Nutt.

STIFF TICKSEED

A perennial with stiff stems, leafy but little branched, growing from 1 to 3 feet high. The stalkless leaves are from 2 to 3 inches long, 3-cleft to about the middle into linear-oblong divisions. The few heads are short-stalked, with orange-brownish disk florets, and from 6 to 10 bright yellow ray florets. They are from 1 to 2 inches across. Rare in the area, but has been reported from the extreme south-central portion.

(2) *Coreopsis tinctoria* Nutt.

COMMON TICKSEED

An annual much branched plant with a slender hairless stem, growing to a height of from 1 to 3 feet. The leaves are once or twice divided into linear segments, except the very uppermost ones. The lower leaves are sometimes stalked. The numerous flower-heads are on slender stalks, are about 1 inch across with brownish disk florets, and from 6 to 10 broad yellow ray florets, which have brownish bases. The seeds are without a pappus and somewhat resemble small insects, giving the plant its common name. Very plentiful locally in moist places, slough margins, low clay flats, irrigation ditches, etc., throughout the entire southern part of the area. It may be very abundant one season in an area and then apparently disappear for several seasons. Much used as a garden flower.

ECHINACEA (Purple Cone-flower) genus. 1 species.

(1) *Echinacea angustifolia* DC.

PURPLE CONE-FLOWER

A perennial, erect plant growing from 1 to 2 feet in height with a stiff, hairy stem. The lower leaves are lanceolate, from 3 to 8 inches long, pointed at the apex, and narrowed at the base to a slender stalk. The upper leaves are stalkless or short-stalked, and all leaves are either stiffly short hairy, or at least very rough to the touch. The flowers are borne singly at the head of the stems, and the conic disk bears awned, stiff, purplish chaff almost hiding the disk florets. The ray florets are purple, from $\frac{3}{4}$ to 1 inch long and often somewhat reflexed or turning downwards. Fairly frequent on dry bench land in the southeast central area.

ERIGERON (Fleabane) genus. 18 species.

Herbs with basal or alternate leaves. The flower heads are generally radiate with many ray florets, usually more than 50. The involucre bracts are usually in 1 or 2 series and imbricated (overlapping). The disk florets are yellow and the ray florets from white to pink or purple, although in one rare species they are yellowish. A very large and widespread genus.

1. Bracts of the involucre thickened at the back, and in 3 or 4 series, the outer shorter.

2.

Bracts of involucre not thickened at back and in 1 or 2 series of almost equal length.

3.

2. Ray florets white.

(2) *E. caespitosus*

Ray florets yellow or cream-coloured.

(11) *E. peuciphyllus*

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3. Ray-florets absent or inconspicuous.

4.

Ray-florets quite conspicuous.

6.

4. Annuals; flower-heads not over $\frac{3}{16}$ inch across, very numerous; florets shorter than pappus and hidden by it.

(3) *E. canadensis*

Biennial; flower-heads about $\frac{1}{2}$ inch across; ray-florets short and borne erect on head.

5.

5. Stem leaves without stalks; plant usually low and branching from base.

(9) *E. minor*

Lower stem leaves with stalks; plant usually erect and not branching.

(8) *E. lonchophyllus*

6. Perennial plants from thick, woody rootstocks. 7.
Annual or biennial plants from fibrous roots, or perennials by offsets from root. 13.
7. Leaves dissected or deeply cleft into divisions; low tufted plants, very leafy at base. 8.
Leaves entire or merely toothed. 9.
8. Leaves divided two or three times. (4) E. compositus
Leaves once cleft into from 3 to 5 divisions at apex. (18) E. trifidus
9. Plants tufted and low, generally with only one flower-head to a stem; stem leaves much reduced in size. 10.
Plants generally over 4 inches high with leafy stem and generally several flower heads to a stem. 11.
10. Stem decumbent at base; branches of root crown rather slender, often purplish. (6) E. Engelmannii
Stems erect; branches of root crown short and stout and not purplish. (15) E. radicans
11. Stems densely tufted from thick tap-root; heads small; pappus double with outer row of short bristles; leaves linear or narrowly oblanceolate. (13) E. pumilis
Stems usually from ends of root crown branches, not densely tufted. 12.
12. Upper stem leaves large, ovate or lanceolate, usually 3-ribbed. (17) E. speciosus
Upper stem leaves reduced in size, linear-lanceolate, and none 3-ribbed.

(7) *E. glabellus*

13. Stem leaves broad, cordate or clasping; perennials.

[14.](#)

Stem leaves not cordate-clasping; annuals or biennials.

[15.](#)

14. Basal leaves with rounded teeth; ray florets white or pink.

[\(12\)](#) *E. philadelphicus*

Basal leaves with sharp, triangular teeth; ray-florets rose or reddish-purple.

[\(14\)](#) *E. purpureus*

15. Stems much branched with numerous small heads; disk of flower-heads $\frac{1}{4}$ to $\frac{5}{8}$ inch across.

[\(16\)](#) *E. ramosus*

Stems simple and not much branched; heads few, large, disk of flower-heads over $\frac{3}{4}$ inch across.

[16.](#)

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16. Hairs of stems and leaves ascending.

[\(1\)](#) *E. asper*

Hairs of stems and leaves spreading.

[17.](#)

17. Hairiness short, sparse and spreading; ray-florets white.

[\(10\)](#) *E. oligodontus*

Hairiness long, shaggy and usually turning backwards; ray-florets pink or lilac.

[\(5\)](#) *E. Drummondii*

(1) *Erigeron asper* Nutt.

ROUGH FLEABANE

A woody rooted perennial growing erect from 8 to 12 inches high, with stems that are covered by short, stiff hairs. The basal leaves are linear-oblongate, from 1 to 4 inches long, with short, stiff hairiness. The upper leaves are linear to linear-lanceolate. There are from 1 to 4 flower heads, from $\frac{3}{4}$ to 1 inch across, with from 100 to 150 very narrow, white ray-florets. Common on dry prairies and hillsides in the southwestern parts of

the area. By many authorities considered merely a form of *E. glabellus*.

(2) *Erigeron caespitosus* Nutt.

TUFTED FLEABANE

A deep rooted, tufted perennial, growing to a height of from 6 to 12 inches. The leaves are finely hairy, the lower ones spatulate stalked, and from 1 to 3 inches long, while the upper are smaller, oblong and stalkless. The flower-heads are borne singly or 3 or 4 to a stem, and are from 1 to 1¼ inches across with many narrow, white ray-florets. The involucre has 3 or 4 series of unequal bracts, thickened on the back. Very plentiful on dry hillsides and prairie throughout the southern and central portions of the area. May be confused with *E. pumilis*, which has more spreading hairiness and more linear leaves, and rather smaller flower heads.

(3) *Erigeron canadensis* L.

CANADA FLEABANE

(*Leptilon canadense* (L.) Britt.)

A slender, bristly hairy stemmed annual, growing from 4 inches to 5 feet in height, generally much branched towards the top. All leaves are usually somewhat hairy, the lower are spatulate and short-stalked, from 1 to 4 inches long, and slightly toothed, while the upper are linear, entire, stalkless and smaller. The flower heads are very numerous, and borne in a large, open panicle. They are small, not over $\frac{3}{16}$ inch across and the florets, though numerous and white, are generally hidden in the pappus. A very common native weed of dry soils, slough margins, and fields throughout the entire area covered.

(4) *Erigeron compositus* Pursh

COMPOUND FLEABANE

A low, tufted perennial from a woody root crown, growing from 1 to 6 inches high, but generally very low. The leaves are mostly basal, crowded, and usually twice divided into 3 linear or spatulate divisions. The flower-heads are borne singly on short stems, and are about ½ inch across with white or rarely violet ray-florets. Found occasionally in the drier, southwestern part of the area on eroded hillsides, badlands and dry or gravelly ridges.

(5) *Erigeron Drummondii* Greene

DRUMMOND'S FLEABANE

An erect biennial, growing to a height of from 4 to 16 inches, not much

branched, and with very hairy stems, the hairs often reflexed or turning downwards. The lower leaves are oblanceolate, with short stalks, and the upper ones lanceolate to linear. The few heads are on long stalks, are about 1 inch or a little more, across and have numerous, very narrow, pink or lilac ray-florets. Occasionally found in the extreme western part of the area, being replaced by *E. oligodontus*, a closely allied species, in the central or eastern parts. 298

(6) *Erigeron Engelmannii* A. Nels.

ENGELMANN'S FLEABANE

A low, tufted species, growing from a slender branched root crown, to a height of from 1 to 8 inches, the stems being decumbent, or almost horizontal at the base. The basal leaves are from 1 to 2½ inches long, linear-oblanceolate and covered with short, fine greyish hairs. The stem leaves are much smaller, about ½ inch long. The flower-heads are borne singly on the stems, and are from ¾ to 1¼ inches across with numerous pink, white or lilac ray-florets. Very unusual, but has been found near the extreme south-central boundary on a dry roadside.

(7) *Erigeron glabellus* Nutt.

SMOOTH FLEABANE

A perennial, growing from a somewhat tufted rootstock to a height of from 6 to 18 inches high. The stems are either hairless or sparingly hairy, and are generally somewhat decumbent or horizontal at the base. The basal leaves are from 2 to 4 inches long, oblanceolate and hairless. The upper leaves are much smaller and linear-lanceolate. The leaves have but one prominent nerve. There are from 1 to 3 flower-heads, from ½ to ¾ inches across, with numerous very narrow purple ray-florets. Fairly common in the moister, northern and central parts of the area.

(8) *Erigeron lonchophyllus* Hook.

HIRSUTE FLEABANE

A somewhat hairy stemmed biennial with several bunched stems, growing from 6 to 24 inches high. The lower stem leaves are stalked and narrow oblanceolate, from 2 to 5 inches long, while the stem leaves are linear and shorter. All leaves are generally smooth and hairless but often have the lower margins hairy. The few heads are about ⅝ inch across with short, white ray-florets, about ⅛ inch long, borne erect on the head. Not common, but occasionally found in wet places throughout the entire western half of the area covered.

(9) *Erigeron minor* (Hook.) Rydb.

LOW FLEABANE

A plant somewhat resembling the preceding species, but very low-growing, rarely 8 inches in height. It generally branches from the base, and the basal leaves are spatulate and from 1 to 2 inches long. The stem leaves are all without stalks and linear. The flowers are very similar to those of the preceding species, but a trifle smaller, with pink or white ray-florets. Quite rare, but may be looked for in damp places throughout the area.

(10) *Erigeron oligodontus* Lunell

SLENDER FLEABANE

A thin stemmed, erect plant growing to a height of from 10 to 18 inches, covered with very short, fine, spreading hairs. The lower leaves are narrow and oblanceolate, from 2 to 6 inches long and occasionally toothed, while the upper leaves are entire and linear. The several flower-heads are about $\frac{3}{4}$ to 1 inch across with numerous white ray-florets. Fairly common in meadows and also on dry prairie throughout the eastern and central parts of the area.

(11) *Erigeron peuciphyllus* A. Gray

THREAD-LEAVED FLEABANE

A low-growing perennial from a much branched root crown, and growing from 4 to 8 inches high. The leaves are very narrow and thread-like, from $\frac{3}{4}$ to 2 inches long. The heads are generally borne singly and are from $\frac{1}{2}$ to $\frac{3}{4}$ inch across, with unequal, thickened bracts and yellow or cream-coloured ray-florets. Found rarely on dry hillsides and eroded hills in the southwestern portion of the area covered.

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(12) *Erigeron philadelphicus* L.

PHILADELPHIA FLEABANE

A slender-stemmed, upright perennial species, growing from 1 to 3 feet in height, with a stem either smooth or downy. The lower and basal leaves are spatulate, blunt rounded, toothed, from 1 to 3 inches long, tapering to a short stalk. The upper leaves are lanceolate, stalkless, partly clasping and shorter. The flower-heads are borne in a terminal corymb, and are from $\frac{1}{2}$ to 1 inch across with many narrow, pinkish or white ray-florets. Fairly common in moist places, open woodlands, etc., throughout the entire area.

(13) *Erigeron pumilus* Nutt.

PLAINS FLEABANE

A low-growing, many stemmed, tufted perennial growing from a deep taproot to a height of from 4 to 10 inches. The stems are covered with spreading hairs and are very leafy. The lower leaves are stalked, linear-oblongate, from 1 to 4 inches long, while the stem leaves are linear, from $\frac{1}{2}$ to 2 inches long, and stalked. The heads are from $\frac{1}{2}$ to $\frac{3}{4}$ inch across, with numerous narrow, white ray florets. Quite common on dry prairies and hillsides in the southwestern part of the area. Differs from the somewhat similar *E. caespitosus* by its more spreading hairiness, narrower leaves, smaller flowers and its almost equal and not thickened bracts.

(14) *Erigeron purpureus* Ait. PURPLE FLEABANE

Practically the same as *E. philadelphicus*, but with sharp triangular teeth on the basal leaves and slightly more cordate based stem leaves. The flowers are rose or reddish-purple. Rare, but may be found in wet meadows in the eastern and north-central parts of the area.

(15) *Erigeron radicans* Hook. DWARF FLEABANE

A perennial with erect stem, growing from 12 to 24 inches high, somewhat stiff hairy. The basal leaves are from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long, linear to oblongate and the stem leaves are few and linear. The flower-heads are few or solitary, from $\frac{1}{2}$ to $\frac{3}{4}$ inch across, with white ray-florets. A mountain species which was reported by Macoun as occurring on dry gravel ridges in the south-central and southwestern parts of the area, but is rare.

(16) *Erigeron ramosus* (Walt.) B.S.P. DAISY FLEABANE

A branching, annual species growing from 12 to 24 inches high with short, stiff appressed hairiness. The basal leaves are stalked, spatulate or oblong, and from 2 to 4 inches long, while the upper leaves are almost linear and reduced in size. The numerous flower-heads are from $\frac{1}{4}$ to $\frac{3}{8}$ inch across, with numerous white ray-florets about $\frac{1}{4}$ inch long. Fairly frequent in dry places throughout the area.

(17) *Erigeron speciosus* DC. SHOWY FLEABANE

An erect-growing species with smooth or slightly hairy leafy stem, growing from 12 to 18 inches high. The basal leaves are from 2 to 4 inches long, linear-oblongate, and taper at the base to a winged stalk, each has 3 ribs

and a fringe of marginal hairs. The stem leaves are linear-lanceolate, clasping at the broad base, and have a marginal fringe of hairs. The flower heads are large, from 1 to 1 $\frac{3}{4}$ inches across, with numerous, narrow, blue or violet ray-florets. Abundant in the Foothills Region of southwestern Alberta.

(18) *Erigeron trifidus* Hook.

TRIFID FLEABANE

A low-growing, tufted plant from a woody root crown, growing from 2 to 4 inches high. The leaves are mostly basal and crowded, from $\frac{1}{2}$ to 1 $\frac{1}{2}$ inches long, roughly spatulate and cleft at the apex into from 3 to 5 spatulate divisions. The heads are solitary on the short stems and are from $\frac{1}{2}$ to $\frac{5}{8}$ inch across with white, rarely violet ray-florets, about $\frac{1}{4}$ inch long. Often considered a variety of *E. compositus*. Quite rare, but has been found on stony ridges in the area, but is more a species of the mountain peaks.

EUPATORIUM (Thoroughwort) genus. 2 species.

Tall, erect perennials with opposite or whorled leaves. The inflorescence is a large, terminal, corymb-like cluster of discoid flower-heads (without ray-florets), either white or purplish in colour, with several series of overlapping involucre bracts, very unequal in length, the outer quite small.

1. Leaves stalked and generally in whorls of from 3 to 6 around the stem; flowers purple or purplish tinged.

(1) *E. maculatum*

Leaves connate-perfoliate (the leaves opposite with their bases united around the stem); flowers white.

(2) *E. perfoliatum*

(1) *Eupatorium maculatum* L.

SPOTTED JOE-PYE WEED

An erect stemmed, somewhat branching plant, growing from 2 to 6 feet high, the stem somewhat purplish or purple spotted, with soft, short hairiness near the top. The leaves are ovate to ovate-lanceolate, sharp pointed at the apex, coarsely toothed, somewhat hairy beneath and from 4 to 6 inches long. They have short stalks and are borne in whorls of from 3 to 6 at the internodes of the stems. The inflorescence consists of many flower-heads that form rounded to flat topped clusters that are up to 7 or 8 inches across and very conspicuous. The flower-heads are pinkish or purplish and consist of pinkish lilac tubular florets. Each head is about $\frac{3}{8}$ inch high and about $\frac{1}{4}$ inch across, and the pappus is of white hairs. The pinkish coloured involucre bracts are unequal in size. Frequent in moist ground and in low, moist woodland openings in the eastern and east-central part of the area.

(1a) *Eupatorium maculatum* L. var. *Bruneri* (A. Gray) Breitung

(*E. Bruneri* A. Gray)

BRUNER'S TRUMPET WEED

Very similar to the species, but the underside of the somewhat narrower leaves is densely covered with a fine, soft, velvety hairiness, while the stem is hairy in its entire length. Found in similar locations, and has the same distribution as the species, possibly advancing a little further west.

(2) *Eupatorium perfoliatum* L.

BONESET

An erect, stout, hairy-stemmed perennial growing from 2 to 5 feet in height. The long-lanceolate leaves are from 4 to 8 inches long, opposite, each pair being joined at the base and encircling the stem, except the upper ones. The leaves are wrinkled, and hairy on the undersides. The inflorescence is a large terminal cluster of white flowers. The flower-heads are about $\frac{1}{4}$ inch high, with all tubular florets and very unequal lengthed bracts. Fairly common in wet places in the extreme eastern part of the area.

GAILLARDIA (Gaillardia) genus. 1 species.

(1) *Gaillardia aristata* Pursh

GREAT-FLOWERED GAILLARDIA

An erect stemmed perennial growing from 8 to 24 inches high with a somewhat hairy stem. The lower leaves are oblong to spatulate, sometimes lobed or pinnatifid, greyish hairy, from 2 to 5 inches long, tapering to a stalk. The upper leaves are stalkless, smaller and generally entire or slightly lobed. The flower-heads are terminal, from 1½ to 3 inches across, radiate, with a rounded purple disk. There are from 10 to 18 wedge-shaped ray-florets, with 3 short triangular lobes at the apex. These are yellow in colour, but often with a purplish tinge at the base. After the flowers fall, the receptacle is somewhat globose and bears the achenes or seeds, which have a pappus of lanceolate, papery, bristled scales. Very common on dry prairie throughout the entire unforested portion of the area, and is a frequent roadside plant.

GALINSOGA (Galinsoga) genus. 1 species.

(1) *Galinsoga ciliata* (Raf.) Blake

GALINSOGA

A much branched, erect or spreading annual, growing from 12 to 24 inches in height, the stems often rooting at the nodes when decumbent. The leaves are opposite, stalked, and ovate with rounded teeth, and are from $\frac{1}{2}$ to 2 inches long. The numerous flower-heads are terminal or axillary, from $\frac{1}{8}$ to $\frac{1}{4}$ inch across with 4 or 5 very small ray-florets. A weed, introduced from South and Central America, which is invading the southeastern part of the area as a garden weed.

GNAPHALIUM (Cudweed) genus 4 species.

Annual or biennial, woolly and sometimes glandular herbs with narrow, entire, alternate leaves. The flower heads are discoid, with no ray-florets, and are borne in panicles of crowded clusters on the stem. The bracts of the involucre are usually dry and membranous, and in several overlapping series. The achenes (seeds) bear a pappus of white hairs.

1. Tall plants without leafy bracts below heads; bracts of involucre well overlapping, white, dry and membranous.

2.

Low plants with leafy bracts under flower-heads; the bracts of the involucre yellowish or white, not much overlapping.

3.

2. Stem and leaves glandular; leaves continuing down the stem and forming a wing (decurent).

(1) *G. Macounii*

Stem and leaves not glandular; leaves not decurrent.

(2) *G. obtusifolium*

3. Leaves broad, oblanceolate to spatulate; plant loosely woolly tufted.

(3) *G. palustre*

Most of leaves narrow, linear or oblanceolate; plant covered with short, appressed hairs.

(4) *G. uliginosum*

(1) *Gnaphalium Macounii* Greene

CLAMMY CUDWEED

A biennial, growing from a tap root to a height of from 18 to 30 inches, with a glandular-hairy stem. The leaves are linear to lanceolate, from 2 to 4 inches long, bright green, but glandular-hairy above and white-woolly beneath. They are stalkless and decurrent, continuing as a narrow wing for a distance down the stem. The flower heads are discoid, about ¼ inch high, white, with dry, membranous, white or straw-coloured involucral bracts. The heads are borne in several globose clusters. Quite rare, but may be expected in the eastern parts of the area.

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(2) *Gnaphalium obtusifolium* L.

COMMON CUDWEED

A sweet-smelling annual or winter annual plant with an erect stem, growing from 12 to 36 inches high. The leaves are from 1 to 3 inches long, stalkless, linear-lanceolate, generally dark green above and densely white-woolly beneath. The flower-heads are about $\frac{1}{4}$ inch high and borne in numerous clusters at the head of the stem. The involucre bracts are membranous and dry, white tinged with brown. Quite frequent in open places in the extreme eastern part of the area.

(3) *Gnaphalium palustre* Nutt.

WESTERN MARSH CUDWEED

A low-growing, much branched, loosely-woolly annual plant, growing from 2 to 8 inches high. The leaves are from $\frac{1}{2}$ to $\frac{3}{4}$ inches long, spatulate to oblong, stalkless, and loosely white-woolly. The heads are small, about $\frac{1}{8}$ inch high, with woolly white or yellowish involucre, and are borne in leafy bracted, small clusters. Found occasionally in sloughs and wet places along the south-central and southwestern borders of the area.

(4) *Gnaphalium uliginosum* L.

LOW CUDWEED

Somewhat similar to the preceding species, but has narrow, linear leaves and the woolliness or hairiness is appressed and not loose and spreading. Rarely found in the area covered, but has been reported from wet places in northern Alberta.

GRINDELIA (Gum-weed) genus. 1 species.

(1) *Grindelia perennis* A. Nels.

GUM-WEED

Biennial or perennial branching, smooth stemmed, plants growing from 8 to 24 inches high. The leaves are oblanceolate, hairless, stalkless, finely and closely toothed, from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long and alternate. Occasionally plants may be found with long, narrowly spatulate basal leaves up to 3 inches in length. The flower-heads are from $\frac{3}{4}$ to $1\frac{1}{4}$ inches across, with an involucre of many series of very sticky, gummy bracts, and are borne in large numbers at the heads of the stems. The ray-florets are bright yellow in colour. The achenes or seeds bear 2 or 3 awns. Very common on dry prairie, roadsides, and especially on somewhat saline flats and slough margins throughout the entire unwooded portion of the area.

GUTIERREZIA (Broom-weed) genus. 2 species.

Erect, much branching and many stemmed perennials, growing from a deep, woody tap root, from 4 to 20 inches high. The leaves are very narrow and the flowers quite small, but very numerous. Unpalatable to livestock, and are native plants which increase with overgrazing.

1. Leaves linear, $\frac{1}{16}$ inch wide or more; plants 4 to 8 inches high; western prairie species.

(1) *G. diversifolia*

Leaves thread-like, less than $\frac{1}{16}$ inch wide; plants from 8 to 20 inches high; eastern prairie species

(2) *G. sarothrae*

(1) *Gutierrezia diversifolia* Greene

COMMON BROOM-WEED

A low-growing, erect, many stemmed perennial, growing from a branching crowned woody tap root, to a height of from 4 to 8 inches. The numerous leaves are stalkless and entire, narrowly linear, from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long. The very numerous small flowers are about $\frac{1}{8}$ inch high and borne in close clusters at the ends of the branches. Very common on dry prairie lands throughout the entire south-central and southwestern parts of the area. Quite unpalatable to livestock and, therefore, tends to increase in abundance when native pastures are heavily grazed. Extremely drought tolerant with deep roots and narrow leaves.

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(2) *Gutierrezia sarothrae* (Pursh) Britt. & Rusby

BROOM-WEED

Very similar to the preceding species but grows somewhat taller, from 8 to 20 inches in height. The leaves are much narrower, linear-filiform or thread-like, less than $\frac{1}{16}$ inch across and are often slightly hairy. Found on dry prairie in the eastern part of the area, but replaced by *G. diversifolia* in the south-central and southwestern portions.

HAPLOPAPPUS (Iron-plant) genus. 7 species.

1. Flowers discoid, only tubular florets.

(5) *H. Nuttallii*

Flowers radiate, both tubular and ray florets.

2.

2. Leaves pinnately dissected.

(6) *H. spinulosus*

Leaves not pinnately dissected.

3.

3. Leaves entire margined; plants low, tufted with woody base; pappus white.

4.

Leaves usually somewhat toothed; plants with stem dying annually down to base; pappus reddish-brown or yellow.

5.

4. Leaves green and hairless; involucre bracts oval and blunt pointed.

(2) *H. armerioides*

Leaves somewhat hairy; involucre bracts lanceolate and sharp pointed.

(1) *H. acaulis*

5. Disk of flower heads over $\frac{3}{4}$ inch across.

(3) *H. integrifolius*

Disk of flower heads; less than $\frac{3}{4}$ inch across.

6.

6. Involucre bracts in 2 or 3 series of unequal lengths.

(4) *H. lanceolatus*

Involucre bracts nearly the same length.

(7) *H. uniflorus*

(1) *Haplopappus acaulis* (Nutt.) A. Gray
(*Stenotus acaulis* Nutt.)

STEMLESS STENOTUS

A dwarf, tufted perennial growing from a much divided woody rootstock to

a height of from 1 to 4 inches. The leaves are mostly basal, spatulate to oblanceolate, 3-nerved and finely hairy. The heads are solitary, about $\frac{3}{4}$ inch across, yellow, and borne on a stem from 1 to 4 inches high. This may possibly be found on very dry soil in the southwestern part of the area.

- (2) *Haplopappus armerioides* (Nutt.) A. Gray
(*Stenotus armerioides* Nutt.) NARROW-LEAVED STENOTUS

A tufted, hairless perennial growing from a large, branching, woody root crown, to a height of from 4 to 8 inches. The leaves are mostly basal, linear or very narrowly spatulate, from 1 to 3 inches long and pale greenish in colour. The flowering stems are almost leafless or with 2 or 3 narrow and reduced leaves. They are from 4 to 8 inches high, bear a yellow flower head about 1 inch across, which has from 8 to 10 ray florets. Not common, but found occasionally on dry, eroded hills and badlands across the southern portion of the area.

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- (3) *Haplopappus integrifolius* Porter ENTIRE-LEAVED PYRROCOMA
(*Pyrrocoma integrifolia* (Porter) Greene)

A species with an herbaceous stem, growing from 4 to 16 inches high, often somewhat decumbent at the base. The lower leaves are oblanceolate, from 4 to 8 inches long, entire margined, and hairless. The stem leaves are linear and reduced. The few or solitary heads are about $1\frac{1}{2}$ inches across with the central disk about $\frac{3}{4}$ inch in diameter. Very rare, but has been found in meadows in the area.

- (4) *Haplopappus lanceolatus* T. & G. LANCE-LEAVED PYRROCOMA
(*Pyrrocoma lanceolata* (Hook.) Greene)

An herbaceous leafy stemmed plant, growing from 4 to 16 inches high, with stems that are practically hairless. The basal leaves are lanceolate, from 1 to 3 inches long, long stalked, and with a few spine-pointed teeth. The stem leaves are shorter and stalkless. The flowers are borne in a raceme or panicle of from 3 to 15 heads, are from $\frac{3}{4}$ to 1 inch across, and yellow in colour. The involucrel bracts are in two or three series of unequal length; they are dry, white at the base, but with a greenish tip, and are sharp pointed. Not uncommon in meadows and moist, saline areas throughout the central and southwestern parts.

(5) *Haplopappus Nuttallii* T. & G.

TOOTHED IRON-PLANT

(*Sideranthus grindeloides* (Nutt.) Britt.)

A low, tufted perennial from a deep, woody root, and growing to a height of from 4 to 12 inches. The leaves are either oblong or lanceolate to spatulate, from $\frac{1}{2}$ to $1\frac{1}{4}$ inches long, with short spiny teeth, and of a greyish-green colour. The flowers are borne either singly or in groups of 2 or 3 at the ends of the branches, are about $\frac{1}{2}$ inch across, and discoid (without ray florets). The bracts of the involucre are yellowish with a faint green tip. Fairly common on dry, eroded hillsides and plains in the south-central and southwestern parts of the area.

(6) *Haplopappus spinulosus* (Pursh) DC.

SPINY IRON-PLANT

(*Sideranthus spinulosus* (Pursh) Sweet.)

A much branched perennial growing from a thick, woody root to a height of from 6 to 18 inches. The leaves are bluish-green in colour, often finely hairy, from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long and very deeply dissected into narrow segments which have bristle-pointed teeth. The heads are yellow, from $\frac{1}{4}$ to $\frac{3}{4}$ inch across, often very numerous and with narrow ray-florets. The pappus is soft and of a faintly tawny-white colour. Very plentiful on dry plains and hillsides throughout the south-central and southwestern parts of the area.

(7) *Haplopappus uniflorus* T. & G.

ONE-FLOWERED PYRROCOMA

(*Pyrrocoma uniflora* (Hook.) Greene)

A species somewhat resembling *A. lanceolatus*, but the involucre bracts are all about the same length, and the heads are generally solitary on the stem. A plant of river valleys, which has been reported from the southern part of the area, but is very rare.

HELENIUM (Sneezeweed) genus. 2 species.

1. Rays of ray-florets not over $\frac{1}{2}$ inch long; golden yellow in colour.

(1) *H. autumnale*

Rays of ray-florets $\frac{1}{2}$ inch or more long, orange in colour.

(2) *H. macranthum*

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(1) *Helenium autumnale* L. var. *montanum* (Nutt.) Fern.

(*H. montanum* Nutt.)

MOUNTAIN SNEEZE-WEED

A perennial growing from 10 to 30 inches high with a stout, erect stem. The leaves are from $1\frac{1}{2}$ to 4 inches long, lanceolate, sometimes slightly toothed, stalkless and decurrent, i. e., continuing down the sides of the stem. The numerous flower-heads are borne at the ends of the branches, and are from $\frac{3}{4}$ to $1\frac{1}{2}$ inches across, with a high, rounded yellow disk and yellow ray-florets up to $\frac{1}{2}$ inch long. The bracts of the involucre are short, reflexed or turned downwards, and the ray-florets are generally somewhat reflexed. The achenes (seeds), which remain on the almost globose receptacle after maturity, bear a pappus of several sharp pointed long scales. Quite common in low meadows, beside watercourses and in low places throughout the western part of the area. Reputed to be somewhat poisonous to livestock and to produce a taint in milk.

(2) *Helenium macranthum* Rydb.

SNEEZE-WEED

A perennial, growing from 12 to 40 inches in height, with ovate-lanceolate or broadly lanceolate leaves. The heads are larger than in the preceding species, are borne on long stems, and with orange coloured ray-florets from $\frac{1}{2}$ to $\frac{3}{4}$ inch long. Quite common around sloughs and wet places in the southeastern and northern part of the area.

HELIANTHUS (Sunflower) genus. 8 species.

Tall, coarse, erect annual or perennial herbs with opposite or alternate, undivided leaves. The flowers are large, radiate with yellow ray-florets. The receptacle or disk is flat or rounded, broad and chaffy. The tubular or disk-florets are yellow, brown or purple. The achenes (seeds) bear a pappus of small scales or awns which soon fall off. This is a difficult genus taxonomically as some species are so very varied that they have been segregated into various species by different authorities.

1. Annuals, with dark brown or purple disk.

2.

Perennials.

3.

2. Bracts of involucre bearing conspicuous marginal hairs.

(1) *H. annuus*

Bracts of involucre without, or with very short marginal hairs.

(4) *H. petiolaris*

3. Disk of flower-heads dark brown or purple.

4.

Disk of flower-heads yellow or light brown.

5.

4. Leaves oblong-lanceolate to lance-ovate, with long tapering tips.

(5) *H. rigidus*

Leaves somewhat rhombic-ovate or rhombic-lanceolate, with bluntish tips.

(6) *H. subrhomboides*

5. Leaf blades ovate.

(8) *H. tuberosus*

Leaf blades lanceolate or lanceolate-linear.

6.

6. Stem, except the upper portion, smooth and hairless, with a whitish waxy bloom.

(2) *H. fascicularis*

Stem more or less rough or with short, stiff, bristly hairiness.

7.

7. Leaves rough on both sides and generally somewhat folded lengthwise.

(3) *H. Maximiliani*

Leaves rough above, but somewhat hairy beneath.

(7) *H. subtuberosus*

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- (1) *Helianthus annuus* L.

COMMON SUNFLOWER

A tall, stout-stemmed, erect annual, growing from 3 to 6 feet high. The stem is rough, sometimes with very short bristly hairs. The leaves are ovate and occasionally cordate based, from 4 to 8 inches long and mostly alternate. The lower ones are long stalked and sometimes opposite. The heads are from 3 to 6 inches across with a dark brown or purple disk generally about 2 inches across. Quite common on clay soils and often found along roadsides in the south-western part of the area. Some authorities call this species *H. lenticularis* Dougl. and use *H. annuus* L. only for the cultivated species.

- (2) *Helianthus fascicularis* Greene

CLUSTERED SUNFLOWER

A perennial growing from a rootstock and with clustered, spindle shaped roots. The leaves are lanceolate to linear-lanceolate, from 2½ to 6 inches long. The lower are opposite but the upper ones are sometimes alternate. The flowers have a yellowish-brown disk and are from 1½ to 3 inches across. Sometimes found in the southern and southwestern parts of the area covered.

- (3) *Helianthus Maximiliani* Schrad.

NARROW-LEAVED SUNFLOWER

A rhizomatic plant or one spreading by underground stems. It is a short stemmed perennial, growing from 2 to 10 feet high. The stem is rough and generally bears coarse, stiff hairs on the upper part. The leaves are stalkless or very short stalked, from 3 to 7 inches long, narrowly lanceolate in shape and generally conduplicate, or folded lengthwise along the mid-vein. They are rough on both sides, the lower opposite and the upper alternate on the stem. The yellow disked flower heads are from 2 to 3

inches broad and are borne on short stalks. Quite common along roadsides, prairies and valleys throughout the entire southeastern and south central portions of the area.

(4) *Helianthus petiolaris* Nutt.

PRAIRIE SUNFLOWER

An annual species which grows from 1 to 3 feet high with a somewhat hairy or stiff hairy stem. The leaves are from 1 to 3 inches long with fairly long stalks, are ovate to ovate-lanceolate and rough on both sides. They generally have somewhat wedge-shaped bases and are not cordate. The flower heads are from 1½ to 3 inches across, generally with a rather small brown, raised disk. This species has been again divided by some authorities to form *H. aridus* Rydb. Fairly abundant on sandy soils throughout the south central and southwestern parts of the area.

(5) *Helianthus rigidus* (Cass.) Desf.

STIFF SUNFLOWER

An erect, perennial growing from 18 inches to 6 feet in height with a rough stem, often purple tinged. The leaves are lanceolate, gradually narrowing at the base to a short stalk, and are thick and leathery, from 2 to 7 inches long, and borne opposite on the stem. The few or solitary heads are from 2 to 3 inches across with a purplish-brown disk and ray-florets from 1 to 1¾ inches long. Has been reported from several points in the southeastern part of the area. By some considered merely a form of a species including the next listed species, as *H. laetiflorus* Pers. var. *rigidus* (Cass.) Fern.

(6) *Helianthus subrhomboideus* Rydb.

RHOMBIC-LEAVED SUNFLOWER

An erect perennial, growing from a rootstock to a height of from 12 to 24 inches, with a sparingly hairy stem often tinged with red. The leaves are opposite, three-veined, from 2 to 4 inches long. They are somewhat obliquely four-sided (rhombic) the upper rhombic-ovate or rhombic-lanceolate, and the lower somewhat spatulate. The flower heads are from 1 to 3 inches across, the ray-florets being 5/8 to 1½ inches long, and the disk purplish. Occasionally found on prairies and dry soils throughout almost the entire area. Fernald consider it as *H. laetiflorus* Pers. var. *subrhomboideus* (Rydb.) Fern.

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(7) *Helianthus subtuberosus* Bourgeau

TUBEROUS-ROOTED SUNFLOWER

A perennial with creeping rootstocks, often with spindle-shaped fleshy

roots, growing from 3 to 10 feet high. The leaves are lanceolate, stalkless or very short stalked, from 2 to 6 inches long, somewhat narrow and very rough on both sides. The flower heads are borne on long stalks and are from 1½ to 2½ inches across with a yellowish disk. Common in moist and saline soils throughout almost the entire area covered especially in the southern portion.

(8) *Helianthus tuberosus* L.

JERUSALEM ARTICHOKE

A perennial with fleshy, tuberous, edible roots, growing from 3 to 10 feet high. The stems are hairy and much branched. The ovate or oblong leaves are from 4 to 8 inches long, rough above and finely hairy below and taper at the base to a stalk. The numerous heads are from 2 to 3½ inches across with a yellow disk and from 12 to 20 yellow ray-florets. Fairly common in moist soil, river flats and other alluvial soil in the southeastern corner of the area, and often cultivated for the edible tubers.

HELIOPSIS (Ox-eye) genus. 1 species.

(1) *Heliopsis scabra* Dunal.

ROUGH FALSE-SUNFLOWER

A perennial, growing from a cluster of fibrous roots to a height of from 18 to 36 inches. The leaves are ovate to ovate-lanceolate, three-ribbed, from 2 to 5 inches long. They are rough on both sides, abruptly narrowed at the base to a short stalk, have large, sharp teeth on the margins, and are borne opposite on the stem. The few flower-heads are generally borne singly on long stalks, and are from 2 to 2½ inches across, and have yellow ray-florets from ¾ to 1 inch long. Frequently found on dry soil, banks and sandhills in the southeastern part of the area.

HYMENOPAPPUS (Hymenopappus) genus. 1 species.

(1) *Hymenopappus filifolius* Hook.

TUFTED HYMENOPAPPUS

A perennial growing from a deep woody root to a height of from 6 to 18 inches. The numerous stems growing from the root crown are generally tufted, white woolly when young, but becoming smooth and purple with age. The leaves are from 1 to 3 inches long, are white woolly when young, turning smooth and pale green when older. The lower leaves are stalked. Each is divided several times into very narrow, almost thread-like segments. The flower heads are generally few, borne terminally, and are from $\frac{1}{2}$ to $\frac{3}{4}$ inches across, discoid, and yellow in colour. The densely woolly bracts are in 1 or 2 series. A very drought tolerant plant found on "badlands", eroded slopes, and gravelly hills in the extreme south-central and southwestern parts of the area.

HYMENOXYS {ACTINEA} (Rubber-weed) genus. 2 species.

1. Heads solitary on long scape or stem; leaves all basal and entire.

(1) *H. acaulis*

Heads several to many; leaves alternate and divided into linear segments.

(2) *H. Richardsonii*

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- (1) *Hymenoxys acaulis* (Pursh) Parker STEMLESS RUBBER-WEED
(*Tetranuris acaulis* (Pursh) Greene)

A low, greyish perennial from a course tap-root, growing to a height of from 4-8 inches. The linear-oblong leaves are all basal and clustered, and are from ½ to 2 inches long, silky-hairy and entire margined. The yellow flowers are from ¾ to 1¼ inches across, with from 10 to 15 rather broad ray florets, and are borne singly on leafless stems from 4-8 inches long. Not common, but found on eroded hillsides in the southwestern part of the area.

- (2) *Hymenoxys Richardsonii* (Hook.) Cockerell
(*Actinea Richardsonii* (Hook.) Kuntze) COLORADO RUBBER-WEED

A perennial growing to a height of 4-12 inches from a coarse, woody tap-root, often with a divided woolly crown. The stems are almost hairless. The leaves are alternate, mostly basal, and divided into very narrow, linear lobes. The leaves are from 2-4 inches long, and their divisions ¾ to 1½ inches in length. The flowers are generally borne in a flat-topped cluster at the ends of the branches and are yellow, about ¾ inch across. Very common on open prairie throughout the dry area. Being unpalatable to livestock it tends to become more prominent with heavy grazing.

LIATRIS (Blazing-star) genus. 3 species.

Perennial plants from a globular corm or tuber like root, with narrow, undivided leaves. The flowers are purple and borne in racemes or spikes, and are discoid and very showy. The flower-heads are discoid, all the florets being tubular, the bracts are in several overlapping series and the pappus is of white, purplish or tawny hairs.

1. Flower heads with from 4 to 6 florets; pappus plumose or feathery.

(2) *L. punctata*

Flower heads with from 15 to 45 florets; pappus barbed and not definitely plumose.

2.

2. Flower heads usually with short stalks; outer bracts of involucre appearing torn at margins.

(1) *L. ligulistylis*

Flower heads with no or hardly any stalks; outer bracts of involucre spreading but not appearing torn at margins.

(3) *L. scariosa*

(1) *Liatris ligulistylis* (A. Nels.) K. Schum.

MEADOW BLAZING-STAR

An erect plant growing to a height of from 12 to 20 inches from a corm or tuber. The leaves are from 1 to 4 inches long, linear-oblongate, and bright green with a rather conspicuous whitish mid-vein. The heads are from $\frac{3}{4}$ to 1 inch across, reddish-purple in colour and borne on short stalks in a long raceme on the stem. The bracts of the involucre are in many series, green with purple tips, and the rounded tops are erose or irregularly jagged as if torn. Fairly abundant in moist places, slough margins, forest openings, and sandhills throughout almost the entire area.

(2) *Liatris punctata* Hook.

DOTTED BLAZING-STAR

A perennial, growing from a stout, often corm-like rootstock to a height of from 4 to 18 inches, often decumbent. The stiff, linear leaves are from 2 to 6 inches long, densely covered with minute dots or depressions, smooth, but with a marginal fringe of short, white hairs. The heads are borne in a dense, crowded spike, and are generally about $\frac{1}{2}$ inch wide, with from 4 to

6 pinkish-purple, tubular florets, and usually show considerable white plumose pappus hairs. A very common species of the dry hillsides and prairies of the southwestern and south-central parts of the area.

(3) *Liatris scariosa* (L.) Willd.
(*L. aspera* (Michx.) Greene)

LARGE BLAZING-STAR

A plant very similar to *L. ligulistylis*, but has longer inflorescence with many flower-heads. The involucre bracts are very spreading, and the outer ones rounded and not appearing torn at the apex. This species grows to a height of 3 feet under favourable conditions, and is common on dry prairie in the southeastern part of the area. This species appears under many different scientific names, and authorities have made several species from it.

MADIA (Tarweed) genus. 1 species.

(1) *Madia glomerata* Hook.

TARWEED

A very sticky, strong and peculiarly scented annual, growing from 8 to 20 inches high, with glandular hairy stem and leaves. The alternate leaves are linear, entire, and from 1 to 3 inches long. The heads are borne in close, congested, terminal and axillary clusters and are radiate. The flower-heads are about $\frac{1}{4}$ inch high and $\frac{1}{8}$ inch wide with up to 5 small yellow ray-florets, often none, and generally they are hidden by the sticky, glandular hairy involucrel bracts. Occasionally, found in moist, open spots in woodlands, or slough margins on the prairie throughout the southwestern parts of the area, especially in areas adjacent to the Rocky Mountains and to the Cypress Hills.

MATRICARIA (Chamomile) genus. 2 species.

1. Ray florets present; leaf segments thread-like.

(1) *M. inodora*

Ray florets absent; plants with a pleasant pineapple-like odour; leaf segments linear.

(2) *M. matricarioides*

(1) *Matricaria inodora* L.

SCENTLESS CHAMOMILE

(*Chamomilla inodora* (L.) Gilib.)

An annual with a much branched, hairless stem, growing from 8 to 30 inches high. The numerous leaves are stalkless and several times divided into narrow, thread-like segments. The numerous flower-heads are borne at the ends of the branches, and are from $\frac{1}{2}$ to 1 inch across, radiate, with yellow disk and white ray-florets. An introduced plant that is occasionally found in waste places, roadsides across the area, but by no means common.

(2) *Matricaria matricarioides* (Less.) Porter

PINE-APPLE WEED

(*Chamomilla suaveolens* (Pursh) Rydb.)

A hairless annual plant, growing from 3 to 18 inches high with the leaves several times divided into linear segments. The leafage is generally compact and copious, much more so than *M. inodora*. The numerous flower-heads are discoid, with tubular florets only, and are borne at the ends of the branches. They are about $\frac{1}{4}$ inch across, conical, with yellow florets and greenish-yellow involucre bracts with membranous margins. The plants, when squeezed, have a strong, pleasant odour of pineapple. An introduced plant which has become very persistent and very plentiful locally in waste places, and especially around farm or ranch yards and driveways. It appears to be rapidly spreading eastward across the prairies.

MEGALODONTA (Water Marigold) genus. 1 species.

(1) *Megalodonta Beckii* (Torr.) Greene

WATER MARIGOLD

An aquatic perennial plant growing in water, with a stem from 2 to 8 feet long. The underwater leaves are stalkless, from 1 to 2 inches long, and many times divided into thin, thread-like segments. The few leaves, which are borne above the water, are stalkless, opposite or occasionally in whorls of three. They are lanceolate, from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long and somewhat toothed. The flower-heads are generally borne singly on short stalks above the water, and are from 1 to $1\frac{1}{2}$ inches across, radiate with golden-yellow ray-florets. Occasionally found in lakes and slow streams in the northern and eastern fringes of the area and in the Riding Mountains.

PETASITES (Coltsfoot) genus. 3 species.

Perennial, generally woodland, plants with thick creeping rootstocks, and scaly-bracted flowering stems which usually appear before the leaves. The leaves are long-stalked and all basal, generally white-woolly on the underside. The flower-heads are in terminal clusters on the stem, are radiate and often unisexual with the male and female florets on separate plants. The achenes (seeds) bear a pappus of soft, white hairs.

1. Leaves cordate to triangular, toothed but not deeply cleft.

(2) *P. sagittatus*

Leaves round, kidney shaped or triangular in outline and deeply cleft.

2.

2. Leaves almost round in outline, deeply cleft almost to base.

(1) *P. palmatus*

Leaves somewhat triangular, cleft only half or a third of way to midrib.

(3) *P. vitifolius*

- (1) *Petasites palmatus* (Ait.) A. Gray

PALMATE-LEAVED COLTSFOOT

A species with the leaves almost circular in outline, from 3 to 12 inches across, deeply cleft almost to the base into several divisions, green and smooth above, but somewhat white-woolly below when young, but losing the woolliness with age. The flowering stem, which appears before the leaves, is stout and scaly-bracted, from 6 to 20 inches high with the heads in a corymbose cluster, on long stalks. The flower heads are white, from $\frac{1}{3}$ to $\frac{1}{4}$ inch across, and the male and female flowers are on separate plants. Common in moist woodlands in the northern and eastern parts of the area.

- (2) *Petasites sagittatus* (Pursh) A. Gray

ARROW-LEAVED COLTSFOOT

This species has triangular-ovate to cordate leaves, with rounded marginal teeth, but not cleft or divided. The leaves are from 4 to 10 inches long, dull green above, densely white-woolly below and borne on long stalks from the root crown. The flowers are borne in a dense terminal cluster at the head of a stem from 8 to 12 inches high, which is scaly and somewhat bracted and appears before the leaves. Fairly plentiful in wet places,

slough margins in the forested and parkland zones of the northern, eastern and central portions of the area covered.

(3) *Petasites vitifolius* Greene

VINE-LEAVED COLTSFOOT

A species with leaves somewhat triangular in outline, generally with hastate basal lobes and cleft as much as halfway to the midrib. They are from 3 to 6 inches long, green on both sides or sometimes white-woolly below. The flowers are nearly white, and borne in a corymbose cluster at the head of a scaly-bracted stem that is from 8 to 12 inches high.

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Occasionally found in wet places in wooded country in the eastern and northern parts of the area.

PICRADENIOPSIS (Picradeniopsis) genus. 1 species.

(1) *Picradeniopsis oppositifolia* (Nutt.) Rydb.

PICRADENIOPSIS

A much branched perennial, growing from creeping rootstocks, to from 4 to 8 inches high. It has a somewhat woody base. The stem is very finely hairy and very leafy. The leaves are from ½ to 1½ inches long, of a gray-green colour, very finely hairy, and often several times divided into narrow, linear segments. The yellow flower-heads are about ½ inch across and are borne at the ends of the branches; there are many tubular florets, but only a few, short ray-florets. Quite unusual, but has been found on two occasions in the southern part of the area acting as a rather persistent weed in cultivated land. The general habitat is on saline flats and dry plains further south.

RATIBIDA (Cone-flower) genus. 1 species.

(1) *Ratibida columnifera* (Nutt.) Woot. & Standl.

(*Lepachys columnifera* (Nutt.) Rydb.) LONG-HEADED CONE-FLOWER

A perennial growing from a tap root to a height of from 12 to 24 inches, generally branched from near the base. The stems are somewhat stiff hairy, with longitudinal grooves and angles. The leaves are from 2 to 4 inches long, very deeply pinnately divided into narrow segments. The flower-heads are borne at the ends of long stalks; they are conspicuous by the disk or receptacle which is cylindrical, from gray to purple in colour, about $\frac{1}{4}$ inch wide, and from $\frac{1}{2}$ to $1\frac{1}{2}$ inches high. The ray-florets are yellow, from $\frac{1}{2}$ to 1 inch long, and are generally reflexed or turning downwards. Very common on dry prairie and roadsides throughout the south-central and southwestern parts of the area.

(1a) *Ratibida columnifera* (Nutt.) Woot. & Standl. var. *pulcherrima* (DC.)

Fern.

BROWN CONE-FLOWER

Similar to the species but the ray-florets are partly or entirely brownish-purple in colour. This variety has been occasionally found in the south-central portion of the area but is very unusual.

RUDBECKIA (*Rudbeckia*) genus. 2 species.

1. Leaves neither lobed nor divided; disk of flower-heads dark brown.

(1) *R. hirta*

Leaves, at least lower ones, deeply lobed and divided; disk of flower-heads greenish-yellow.

(2) *R. laciniata*

(1) *Rudbeckia hirta* L.

BLACK-EYED SUSAN

A rather coarse, hairy biennial growing from 12 to 20 inches high, with erect, sometimes tufted stems. The leaves are lanceolate to oblanceolate, from 2 to 6 inches long, three-ribbed and hairy. The lower ones are stalked, but the upper ones are without stalks and smaller. The flowers are borne singly on long stalks, they are from 2 to 3 inches across, with a dark-brown, hemispheric disk, and from 10 to 20 orange-yellow ray-florets. Common on prairies and woodlands in the eastern part of the area, and in the park lands of the central and north-central portions. Some modern taxonomists consider the western form with oblanceolate to linear lanceolate leaves to be a separate species, *Rudbeckia serotina* Nutt. and retain the name *R. hirta* L. for the eastern plants with ovate leaves.

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(2) *Rudbeckia laciniata* L.

TALL CONE-FLOWER

A branching perennial, growing from 3 to 6 feet high, with a smooth stem. The leaves, except the uppermost, are deeply divided into from 3 to 7 segments and are stalked. The leaves vary in size up to about 8 to 10 inches long, the upper ones being progressively smaller. The stems generally bear several long-stalked heads, from 2 to 4 inches across with a greenish-yellow disk, and from 6 to 10 bright yellow ray florets. Frequent in open woodlands and forest edges in the eastern portion of the area.

SENECIO (Groundsel) genus. 15 species.

Annual or perennial plants with alternate leaves. The flowers are yellow, generally radiate, although one introduced species is discoid. The bracts are in one series or with a few basal bracts forming an outside row. The pappus consists of many soft, white hairs.

1. Annual plants with taproots.

[2.](#)

Perennial plants, generally with rootstocks.

[3.](#)

2. Plants branching; flower heads discoid.

[\(15\)](#) *S. vulgaris*

Plants not much branching; flower heads radiate.

[\(8\)](#) *S. palustris*

3. Stem equally leafy throughout, upper leaves not significantly reduced in size.

[4.](#)

Upper stem leaves definitely reduced in size.

[6.](#)

4. Leaves 2 or 3 times pinnatifid; introduced weed.

[\(7\)](#) *S. Jacobaea*

Leaves toothed, or merely irregularly pinnatifid.

[5.](#)

5. Leaves toothed but not pinnatifid; triangular.

[\(14\)](#) *S. triangularis*

Leaves irregularly pinnatifid.

[\(5\)](#) *S. eremophilus*

6. Basal leaves entire, white-woolly.

[7.](#)

Most of basal leaves toothed or pinnatifid.

[8.](#)

7. Stems from 4 to 8 inches high; stem leaves usually entire; leaves

densely white-woolly.

(12) *S. Purshianus*

Stems from 12 to 20 inches high; stem leaves often pinnatifid; leaves somewhat white-woolly.

(2) *S. canus*

8. Leaf blades thin, smooth and hairless.

(9) *S. pauperculus*

Leaf blades from thick to fleshy and from hairy to woolly.

9.

9. Leaves and stem somewhat woolly.

(10) *S. plattensis*

Leaves and stem not woolly, but may be hairy.

10.

10. Rootstock very short, erect, with many fleshy fibrous roots.

11.

Rootstock well developed, horizontal and woody.

13.

11. Bracts of involucre with black tips.

(3) *S. columbianus*

Bracts of involucre without black tips.

12.

12. Low plants, up to 12 inches high; more or less hairy; not much branching.

(13) *S. Scribneri*

Tall plants, 16 to 36 inches high; not hairy; usually somewhat branching.

(6) *S. integerrimus*

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13. Plant low, less than 8 inches high; leaves thick and somewhat fleshy.

(3) *S. densus*

Plant taller, generally over 8 inches high; leaves thin and not fleshy.

14.

14. Basal leaf blades as broad or broader than long, usually deeply

cordate at base.

(1) *S. aureus*

Basal leaf blades longer than broad, rounded or shallowly cordate at base.

(11) *S. pseud aureus*

(1) *Senecio aureus* L.

GOLDEN RAGWORT

A plant growing from 12 to 30 inches high with long stalked, cordate based, almost circular basal leaves, from 1 to 4 inches long. The stem leaves are pinnatifid and reduced in size. The flowers are a deep yellow, from $\frac{1}{4}$ to $\frac{5}{16}$ inch high and borne in a terminal cluster. Found in meadows and moist places in the eastern parts of the area, being replaced by *S. pseud aureus* further west.

(2) *Senecio canus* Hook.

SILVERY GROUNDSEL

White-woolly perennial growing from horizontal rootstocks to a height of from 12 to 20 inches. The basal leaves are entire margined, oval to spatulate, from $1\frac{1}{2}$ to 4 inches long, stalked and somewhat white-woolly. The stem leaves are much smaller, stalkless, oblong and often somewhat pinnatifid or lobed. The heads are borne in a terminal cluster and are from $\frac{1}{2}$ to $\frac{3}{4}$ inches across. Found on dry hills across the southern and central parts of the area, but not very common.

(3) *Senecio columbianus* Greene

VALLEY RAGWORT

A thick stemmed perennial growing from 12 to 24 inches high. The leaves are somewhat wavy margined but not lobed or pinnatifid. The basal leaves are short-stalked, oblanceolate to spatulate, from 3 to 5 inches long with a rather conspicuous whitish midvein. The upper leaves are shorter, without stalks and are linear-lanceolate. The flower heads are about $\frac{1}{2}$ inch across and borne in a terminal cluster. Found occasionally in low prairie and coulees in the south-central and southwestern parts of the area.

(4) *Senecio densus* Greene

COMPACT GROUNDSEL

A low, slender plant growing from a short rootstock to from 6 to 12 inches high, slightly white hairy at the base of the stem and at the axils of the leaves. The lower leaves are from 1 to $2\frac{1}{2}$ inches long, short-stalked,

oblanceolate and often somewhat toothed. The upper leaves are linear, stalkless, much smaller and lobed. The flower heads are few in number, are from $\frac{1}{2}$ to $\frac{3}{4}$ inches across, with rather pale yellow ray-florets, and are borne in a fairly compact terminal cluster. Occasionally found on moist prairie in the eastern and central portion of the area.

(5) *Senecio eremophilus* Richards.

CUT-LEAVED RAGWORT

A leafy-stemmed species with a stout, often purplish stem, growing from 18 to 36 inches high. The leaves are from 2 to 8 inches long, the lower stalked but the upper without stalks, all lobed or pinnatifid. The upper leaves are not very much smaller than the lower ones, and the stems are leafy up to the inflorescence. The numerous yellow flower heads are from $\frac{3}{8}$ to 1 inch across, with black tipped bracts, and are borne in compact terminal clusters. Occasionally found on moist soil in the wooded districts across the area.

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(6) *Senecio integerrimus* Nutt.

ENTIRE-LEAVED GROUNDSEL

A stout stemmed perennial growing from coarse, fleshy, fibrous roots to a height of from 12 to 36 inches high. When young the stem is somewhat hairy, but otherwise the plant is entirely smooth and hairless. The leaves are entire, thick and fleshy, and from 3 to 8 inches long. The basal leaves are oblong to lanceolate with long stalks, but the upper are stalkless, lanceolate to linear and reduced in size. The flower-heads are often $\frac{1}{2}$ to $\frac{3}{4}$ inches across and are borne in dense terminal clusters. Fairly common in wet meadows throughout most of the eastern and central portions of the area. This species is, by recent authorities, considered synonymous with *S. exaltatus* Nutt. of the western portion of the area, but which has black tipped bracts.

(7) *Senecio Jacobaea* L.

TANSY RAGWORT

A perennial growing from shallow, thick, short rootstocks to a height of from 2 to 3 feet, generally hairless but occasionally with tufts of woolly hairs at the leaf axils. The leaves are two or three times divided into broad, often overlapping segments, and are dark green in colour. The lower leaves are from 6 to 8 inches high and stalked, while the upper are stalkless and slightly smaller. The showy, golden-yellow flower-heads are about $\frac{3}{4}$ inch

across and borne in a large, dense terminal cluster. An introduced weed which is becoming increasingly abundant in waste lands in the southeastern parts of the area.

(8) *Senecio palustris* (L.) Hook.

MARSH RAGWORT

A coarse, hollow-stemmed annual growing from 6 to 24 inches high, with the fleshy stems somewhat cobwebby when young but hairless when mature. The lower leaves are lanceolate to spatulate, from 2 to 6 inches long, with wavy margins and winged stalks. The upper leaves are smaller, stalkless and somewhat lobed or dentate, linear-lanceolate and clasping the stem. The flower heads are in a very crowded, dense terminal cluster, are pale yellow, and from $\frac{1}{2}$ to $\frac{3}{4}$ inch across. Fairly common around sloughs, stream banks and lakes throughout the entire area, often forming a solid belt around a small lake.

(9) *Senecio pauperculus* Michx. var *Balsamitae* (Muhl.) Fern.

BALSAM GROUNDSEL

A slender stemmed perennial with a woolly based stem, growing from 8 to 24 inches high. The basal leaves are stalked, oblong or oval, with wavy margins, and from 1 to 3 inches long. The stem leaves are smaller, not stalked and lobed or toothed. The leaf blades are hairless and thin. The few flower-heads are borne in a loose cluster, on thin stalks at the head of the stem, and are from $\frac{1}{2}$ to $\frac{3}{4}$ inch across. Occasionally found on stony soil in the forested or heavily wooded parts of the area.

(10) *Senecio plattensis* Nutt.

PRAIRIE RAGWORT

A perennial plant with a loosely woolly stem, growing to a height of from 6 to 24 inches. The lower leaves are from 1 to 4 inches long, oval, long stalked and generally toothed or lobed. The upper leaves are stalkless, reduced, linear-lanceolate and deeply toothed, and almost all the leaves are somewhat woolly. The orange-yellow flower-heads are borne in a rather loose terminal cluster on long stalks, and are from $\frac{1}{2}$ to $\frac{3}{4}$ inches across. Found occasionally on moist soils, and in valleys in the park lands and lightly wooded parts of the eastern and central portions of the area.

(11) *Senecio pseud aureus* Rydb.

THIN-LEAVED RAGWORT

A hairless perennial growing from a creeping rootstock to a height of from 12 to 30 inches. The lower leaves are from cordate to oval, not tapering at the base, from 1 to 2½ inches long with long stalks. The upper leaves are clasping and more or less toothed. The heads are from ½ to ¾ inch across, golden yellow and borne in an open terminal cluster. Occasionally found in wet meadows and swamps in the wooded districts around the northern, eastern, and western borders of the area. This species is often called *S. indecorus* Greene.

(12) *Senecio Purshianus* Nutt.

PURSH'S RAGWORT

A low, white-woolly species growing from a rootstock to a height of from 4 to 8 inches. The basal leaves are broadly spatulate or obovate, entire margined, from ¾ to 2 inches long and densely white-woolly. The stem leaves are small, stalkless, linear-lanceolate and generally entire margined. The flowers are bright yellow, from ½ to ¾ inch across and borne in a loose terminal cluster. Very common on dry hillsides and prairies in the south-central portion of the area. By some authorities considered merely a small variety of *S. canus*.

(13) *Senecio Scribneri* Rydb.

SCRIBNER'S RAGWORT

A rather low plant with a stout, short somewhat hairy stem, growing from very coarse, fleshy fibrous roots to a height of from 4 to 12 inches. The basal leaves are oblanceolate to oval with a conspicuous white midrib, fleshy and entire margined. They are from 1 to 3 inches long, and have wing-margined stalks. The upper leaves are stalkless, linear to lanceolate. The flower-heads are from ½ to ¾ inch across, yellow, and borne in a compact, dense terminal cluster. Found occasionally on dry prairie in the south-central and southwestern parts of the area, but appears to be a species of very limited range.

(14) *Senecio triangularis* Hook.

BROOK RAGWORT

A leafy stemmed, often tufted perennial, growing from fleshy, fibrous roots to a height of from 15 to 30 inches. The stem is hairless and leafy to the inflorescence. The leaves are almost all stalked, from 1 to 4 inches long, with conspicuous teeth, and triangular to lanceolate in shape. The flower-heads are from ½ to ¾ inch across and borne in a terminal cluster. Found along streams and in wet places in the extreme southwestern part of the area.

(15) *Senecio vulgaris* L.

COMMON GROUNDSEL

A low, hollow stemmed, much branched annual, growing from 6 to 15 inches high. The leaves are lobed and are from 2 to 6 inches long, the lower stalked and the upper clasping at the base. The flower-heads are discoid (without any ray-florets), are about $\frac{1}{4}$ inch across, often with some black-tipped bracts, and are borne in clusters at the ends of the branches. An introduced weed often found in gardens and around settlements across the entire area, but nowhere very common.

SOLIDAGO (Golden-rod) genus. 16 species.

Perennial herbs growing from rootstocks, with alternate, entire leaves. The inflorescence consists of terminal panicles, racemes or corymbose clusters, with many radiate yellow flower-heads. One species is white or cream-coloured. The pappus is of rough, bristly hairs in one or two series. Most species of golden-rod bloom in mid or late summer and are good honey producing plants.

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1. Inflorescence flat-topped, or somewhat so.

2.

Inflorescence not flat-topped, mostly elongate or pyramid-like.

3.

2. Leaves linear to lanceolate; ray florets more numerous than disk florets.

(6) *S. graminifolia*

Leaves oblong to ovate, one-ribbed; ray florets less numerous than disk florets.

(15) *S. rigida*

3. Inflorescence an erect panicle, neither nodding nor one-sided.

4.

Inflorescence with either recurved branches, one-sided, or more or less nodding.

7.

4. Flower-heads large, involucre $\frac{1}{4}$ inch or more in height.

(3) *S. decumbens*

Heads small, involucre less than $\frac{1}{4}$ inch in height.

5.

5. Plants with hairless stems.

(11) *S. missouriensis*

Plants with hairy stems.

6.

6. Ray-florets white or cream-coloured.

(1) *S. bicolor*

- Ray-florets yellow. [\(7\)](#) *S. hispida*
7. Leaves not 3-ribbed. [\(8\)](#) *S. juncea*
Lower leaves 3-ribbed. [8.](#)
8. Lower leaves obovate, oblanceolate or spatulate. [9.](#)
All leaves lanceolate, upper leaves not greatly reduced in size. [11.](#)
9. Plants practically hairless. [\(11\)](#) *S. missouriensis*
Plants somewhat downy or hairy. [10.](#)
10. Stem leaves thick and obovate, distinctly triple-veined; upper leaves not much reduced; involucre bracts ovate. [\(12\)](#) *S. mollis*
Stem leaves oblanceolate, incompletely triple-veined, upper leaves much reduced; involucre bracts oblong or linear. [\(13\)](#) *S. nemoralis*
11. Leaves green, sparingly hairy, but not whitish or ashy in appearance. [12.](#)
Leaves ashy or whitish with fine, downy hairs. [14.](#)
12. Inflorescence short and dense, almost overtopped by the upper leaves. [\(9\)](#) *S. lepida*
Inflorescence high, with spreading, recurved branches. [13.](#)
13. Leaves quite smooth and hairless on both sides. [\(16\)](#) *S. serotina*
Leaves hairy on the veins on the underside. [\(2\)](#) *S. canadensis*
14. Leaves linear-lanceolate.

Leaves lanceolate to elliptic lanceolate.

15. Plants greenish-grey in colour; involucre over $\frac{1}{8}$ inch high.

(10) *S. Lunellii*

Plants yellowish-grey in colour; involucre less than $\frac{1}{8}$ inch high.

(5) *S. gilvocanescens*

16. Leaves rough to the touch on the upper side.

(4) *S. dumetorum*

Leaves softly hairy on both sides.

(14) *S. pruinosa*

(1) *Solidago bicolor* L.

PALE GOLDEN-ROD

A stout, white-hairy stemmed plant growing from 8 to 36 inches high. The lower leaves are long-stalked, obovate to oblong, and from 2 to 4 inches long. The upper leaves are stalkless, smaller and narrow, and all leaves are hairy on both sides. The narrow inflorescence is from 2 to 7 inches high with short branches bearing the flower heads, which have white or pale cream coloured ray-florets. Occasionally found on dry soil in the extreme eastern part of the area.

(2) *Solidago canadensis* L.

CANADIAN GOLDEN-ROD

A slender stemmed, leafy plant growing from a horizontal rootstock, to a height of from 18 to 48 inches. The leaves are all stalkless, narrowly lanceolate, from 2 to 5 inches long with fine teeth, and are hairy along the veins on the underside and sometimes slightly hairy above. The heads are small and the inflorescence is a broad, pyramid like panicle with the flower-heads borne on one side of the spreading branches. Fairly common in the moister, wooded areas of the northern and eastern parts of the area.

(3) *Solidago decumbens* Greene var. *oreophila* (Rydb.) Fern.

MOUNTAIN GOLDEN-ROD

Rather low plants growing to a height of from 8 to 18 inches. The stems are decumbent at the base, and are often reddish tinged. The lower leaves are spatulate, from 1 to 4 inches long, generally blunt tipped, often with

rounded teeth. The stem leaves are smaller and entire. The basal leaves are usually somewhat crowded at the root crown. The inflorescence is a narrow, erect panicle, while the heads are fairly large and generally about $\frac{5}{16}$ inch high. Quite common on dry prairie in the central and western parts of the area, and often confused with *S. missouriensis*, which has smaller flowers and triple veined leaves.

(4) *Solidago dumetorum* Lunell PRAIRIE GOLDEN-ROD

A leafy, erect species, growing from a horizontal rootstock to a height of from 20 to 36 inches, with a coarse, finely hairy stem. The leaves are lanceolate, toothed, strongly veined, and from 1 to 3 inches long. They are rough above and very finely stiff hairy below. The inflorescence is pyramid shaped with the heads crowded on numerous spreading branches. Common on moister prairie and around bluffs in the south-central part of the area. This may be merely a form of *S. pruinosa*.

(5) *Solidago gilvocanescens* (Rydb.) Smyth SILVERY GOLDEN-ROD

A slender stemmed, yellowish-gray plant growing from a horizontal rootstock to a height of from 12 to 24 inches, with a finely downy haired stem. The leaves are from 1 to 2 inches long, entire or somewhat toothed, narrow-lanceolate, and with very fine, short hairs. The inflorescence is pyramid shaped with spreading, recurved branches. Fairly abundant on light, sandy soils in the eastern and central parts of the area. This also may be a local form of *S. pruinosa*.

(6) *Solidago graminifolia* (L.) Salisb. var. *camporum* (Greene) Fern.
(*Euthamia camporum* Greene) FLAT-TOPPED GOLDEN-ROD

A much branched plant growing from a long rootstock to a height of from 1 to 2 feet. The leaves are numerous and somewhat crowded, from 1 to 5 inches long, linear-lanceolate, and pointed at either end. The small yellow flowers are borne in very short stemmed terminal clusters, forming a somewhat flat-topped inflorescence. Fairly common along stream banks and moist places along the northern borders and the eastern portion of the area.

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(7) *Solidago hispida* Muhl. HAIRY GOLDEN-ROD

A stout stemmed plant growing from 18 to 36 inches high, with a densely short-hairy stem. The lower leaves are oval, stalked, and from 2 to 5 inches long with entire or toothed margins. The upper leaves are smaller, oblanceolate and stalkless. The leaves are hairy on both sides. The inflorescence is a dense, narrow, elongated raceme or panicle. Frequently found in dry places in the eastern and east-central parts of the area, but probably less common than the variety.

(7a) *Solidago hispida* Muhl. var. *lanata* (Hook.) Fern.

SHAGGY GOLDEN-ROD

Differs from the species by having longer and white cobwebby hairs on the stem.

(8) *Solidago juncea* Ait.

SHARP-TOOTHED GOLDENROD

A stout, smooth-stemmed species growing from a horizontal rootstock to a height of from 18 to 36 inches. The lower leaves are single ribbed, broadly oblanceolate, stalked, hairless, and from 6 to 12 inches long, while the upper are stalkless, smaller and narrower. The inflorescence is a somewhat flat-topped panicle with recurved spreading branches, the flower heads are borne on one side of the branches. A species of woodlands and banks, rarely found, but has been noted in the eastern part of the area.

(9) *Solidago lepida* DC.

GRACEFUL GOLDEN-ROD

An erect species growing from 1 to 3 feet high, with the stem smooth below, but somewhat finely hairy above. The leaves are lanceolate, 3-nerved, from 2 to 4 inches long, the stem leaves coarsely toothed. The inflorescence is a short, dense panicle, almost overtopped by the upper leaves, which are little reduced in size. Fairly common throughout the central and western parts of the area along shady banks and low places. The varieties have a rhomboid or more elongate and slender panicle.

(9a) *Solidago lepida* DC. var. *elongata* (Nutt.) Fern.

This variety has the lower part of the leaf blades entire and the upper part sparingly toothed. It is found occasionally in low meadows in the northern wooded parts of the area.

(9b) *Solidago lepida* DC. var. *fallax* Fern.

This variety has coarsely and sharply toothed leaves, while the panicle is leafy, with ascending branches. Fairly common in open woodlands and occasionally in valleys throughout the central and western parts of the area.

(10) *Solidago Lunellii* Rydb.

LUNELL'S GOLDEN-ROD

A species with finely, soft hairy stems, growing from a rootstock to a height of from 12 to 24 inches. The leaves are 3-ribbed, linear-lanceolate, from 1 to 3 inches long and somewhat crowded, finely hairy and greenish-grey in colour. The inflorescence is a fairly compact terminal, pyramidal cluster with the flowers borne on one side of the recurved branches. Found occasionally on dry ground in the central and south-central part of the area.

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(11) *Solidago missouriensis* Nutt.

LOW GOLDEN-ROD

A rather low growing, smooth stemmed species, growing from horizontal rootstocks to a height of from 6 to 18 inches. The stems are hairless, often tufted and generally somewhat reddish in colour. The leaves are 3-ribbed, linear-lanceolate, from 1 to 4 inches long, often reddish and hairless, except for sparse, short marginal hairs. The inflorescence is a compact, terminal panicle with erect branches. Very common on dry prairies and hillsides throughout the southern and western parts of the area. It flowers earlier than other golden-rods.

(11a) *Solidago missouriensis* Nutt. var. *fasciculata* Holzinger

(*S. glaberrima* Martens)

LOW GOLDEN-ROD

This differs from the species by having the branches of the inflorescence recurved and spreading instead of erect. Very common on dry prairie in the south-central parts of the area, being probably the eastern form of the species.

(12) *Solidago mollis* Bartl.

VELVETY GOLDEN-ROD

A stout, low, erect plant growing from a horizontal rootstock to a height of from 8 to 18 inches. The whole plant is covered with very fine, short, velvety hairs. The leaves are pale green, almost entire margined, obovate to oval (or the upper elliptic) 3-nerved, from 1 to 3 inches long, with the upper much reduced. The lower leaves are short-stalked, the upper

stalkless, and very crowded on the stem. The inflorescence is a pyramid shaped, dense panicle. Very common on dry prairie land and roadsides in the southern central portion of the area and probably the most common species there.

(13) *Solidago nemoralis* Ait.

GREY GOLDEN-ROD

A slender, greyish species growing from a thick rootstock to a height of from 8 to 30 inches, generally forming tufts or clumps. The basal leaves are spatulate or broadly oblanceolate, long stemmed, from 2 to 6 inches long. The upper leaves are linear or oblanceolate and much smaller. The involucre is a terminal panicle with the flower-heads borne on one side of the recurved branches. Rare, but has been found on dry soil in the southeastern part of the area. The variety is more commonly found.

(13a) *Solidago nemoralis* Ait. var. *decemflora* (DC.) Fern.

(*S. pulcherrima* A. Nels.)

SHOWY GOLDEN-ROD

A species growing in clumps of several stems from a thick rootstock to a height of from 12 to 30 inches. The stems are often somewhat decumbent, reddish, and covered with fine, downy hairs. The basal leaves are narrowly oblanceolate, entire, and from 2 to 4 inches long. The upper leaves are oblong or linear, and all leaves are somewhat ashy-grey in colour with very minute hairs. The inflorescence is narrow and generally bent over or somewhat nodding at the top. Very plentiful on sandy soil and in the sandhills throughout the central part of the area.

(14) *Solidago pruinosa* Greene

CANESCENT GOLDEN-ROD

A leafy stemmed, erect species, growing to from 12 to 30 inches high, from a horizontal rootstock. The leaves are lanceolate to elliptic and generally have toothed margins. They are borne crowded and almost erect on the stem, are from ½ to 2 inches long, and bear soft, fine, downy hairs on both sides. The inflorescence is short and pyramid-like. Fairly plentiful in the south-central parts of the area.

(15) *Solidago rigida* L. var. *canescens* (Rydb.)

STIFF GOLDEN-ROD

Breitung

(*Oligoneuron canescens* Rydb.)

An erect, stout stemmed species, with a densely, fine-hairy, rough stem, growing from a thick, woody rootstock to a height of from 18 to 30 inches. The basal leaves are long stalked, oval, from 2 to 4 inches long, thick and densely fine-hairy on both sides. The stem leaves are oval, stalkless and smaller. The inflorescence is a dense corymbose cluster, somewhat flat-topped and with an involucre from $\frac{1}{4}$ to $\frac{3}{8}$ inch high. Very common on prairies and openings in woodlands throughout the entire area.

(16) *Solidago serotina* Ait.

TALL SMOOTH GOLDEN-ROD

A stout, erect species growing from stout rootstocks to a height of from 2 to 5 feet, with a smooth, leafy stem. The leaves are lanceolate, thin, from 1 to 6 inches long, without stalks. They are 3-nerved, usually sharply toothed, and smooth on both sides. The inflorescence is large, pyramidal, with heads crowded on the spreading, recurved branches. Very common around bluffs, woodlands and also in coulees and low areas on the prairies throughout the entire area covered. Sometimes called *S. gigantea* Ait. var. *leiophylla* Fern.

TANACETUM (Tansy) genus. 1 species.

(1) *Tanacetum vulgare* L.

TANSY

A stout, erect stemmed perennial plant growing from 12 to 36 inches high. The leaves are from 2 to 10 inches long, pinnately divided into narrow, toothed segments, and are very aromatic when bruised. The flower-heads are discoid (without ray-florets) from $\frac{1}{4}$ to $\frac{3}{8}$ inch across, and borne in a somewhat flat-topped cluster. An introduced garden plant, which seems to have become established in many places across the area.

TOWNSENDIA (*Townsendia*) genus. 2 species.

Tufted plants with clustered basal, alternate, entire leaves, and large aster-like, radiate heads. The pappus consists of bristly hairs.

1. Heads borne on a stalk from the root crown.

(1) *T. Parryi*

Heads stalkless, growing directly on the root crown.

(2) *T. sericea*

- (1) *Townsendia Parryi* D. C. Eaton

PARRY'S TOWNSENDIA

A biennial, usually cushion-like with crowded basal leaves. The leaves are spatulate and thick, from 1 to 2 inches long, and the few stem leaves are very small. The flower-head is borne on a short stem from ½ to 6 inches high, and is about 2 to 2½ inches across, with many narrow, violet or purplish-blue ray-florets, and a wide disk about 1 to 1¼ inches across. Found occasionally on open bench land in the Foothill Region of the southwestern corner of the area.

- (2) *Townsendia sericea* Hook.

LOW TOWNSENDIA

A practically stemless plant growing from a deep, woody branching root. The leaves are narrowly spatulate to linear, and from 1 to 2 inches long. The flower-heads are stalkless, are borne amongst the rosette of leaves, are from 1 to 1½ inches across, and with bluish or white ray-florets. Found occasionally on eroded prairies and dry, stony hillsides throughout the south-central and southwestern parts of the area.

VERNONIA (Iron-weed) genus. 1 species.

(1) *Vernonia fasciculata* Michx.

WESTERN IRON-WEED

A coarse, erect, perennial, generally with a red, smooth stem, growing from 18 to 36 inches high. The leaves are stalkless, lanceolate to ovate-lanceolate, from 3 to 6 inches long, smooth and sharply toothed. The inflorescence is a loose terminal cluster. The flower-heads are discoid, with no ray-florets, about $\frac{1}{4}$ inch across and dark purple in colour. Quite rare, but has been found beside sloughs, and in river valleys along the southeastern boundary of the area.

DIAGRAM OF LEAF ATTACHMENTS.

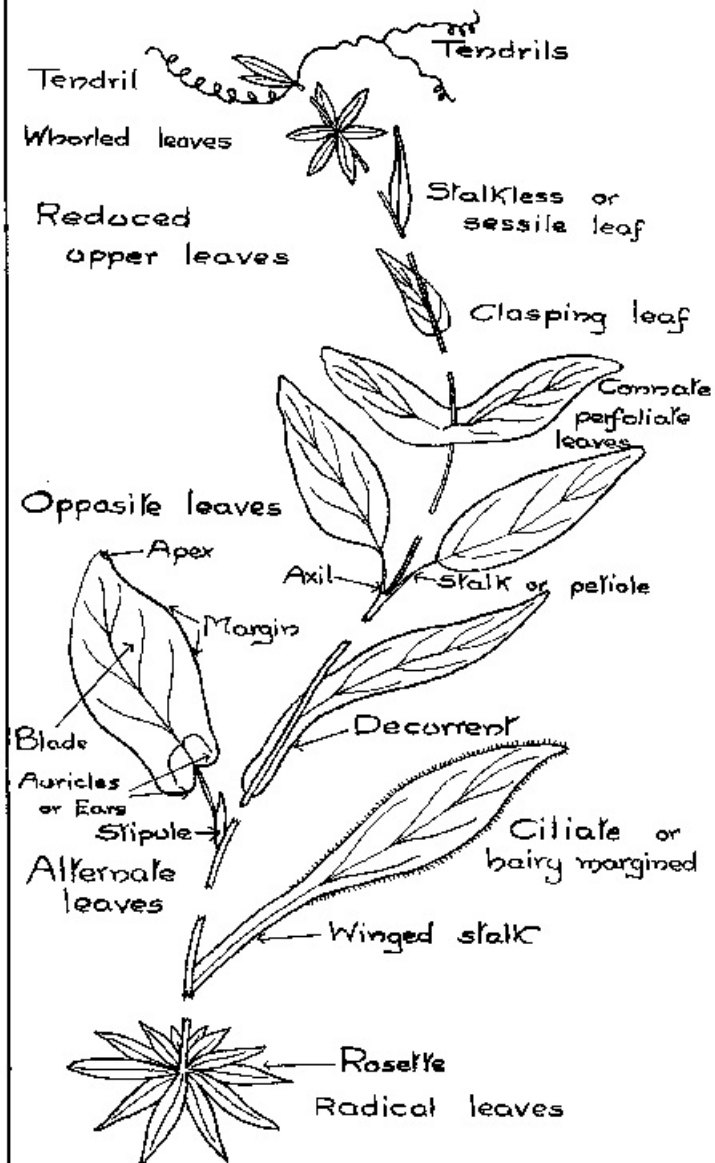


DIAGRAM OF LEAF ATTACHMENTS.

Tendrils

Tendril

Whorled Leaves

Stalkless or sessile leaf

Reduced upper leaves

Clasping leaf

Connate perfoliate leaves

Opposite leaves

Apex

Axil

Stalk or petiole

Margin

Blade

Decurrent

Auricles or Ears

Stipule

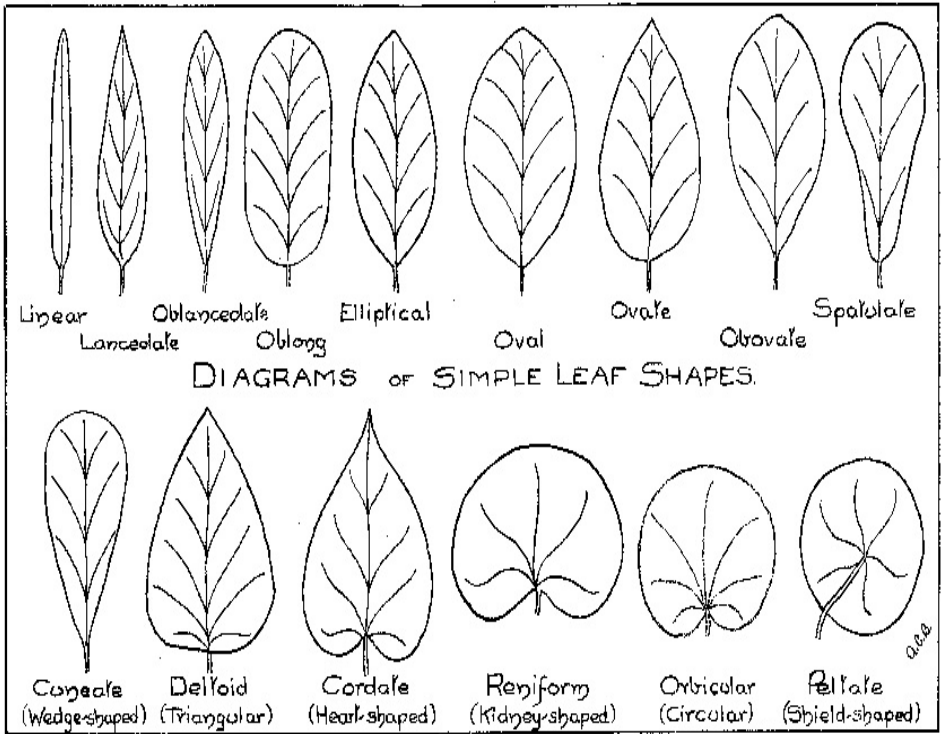
Ciliate or hairy margined

Alternate leaves

Winged stalk

Rosette

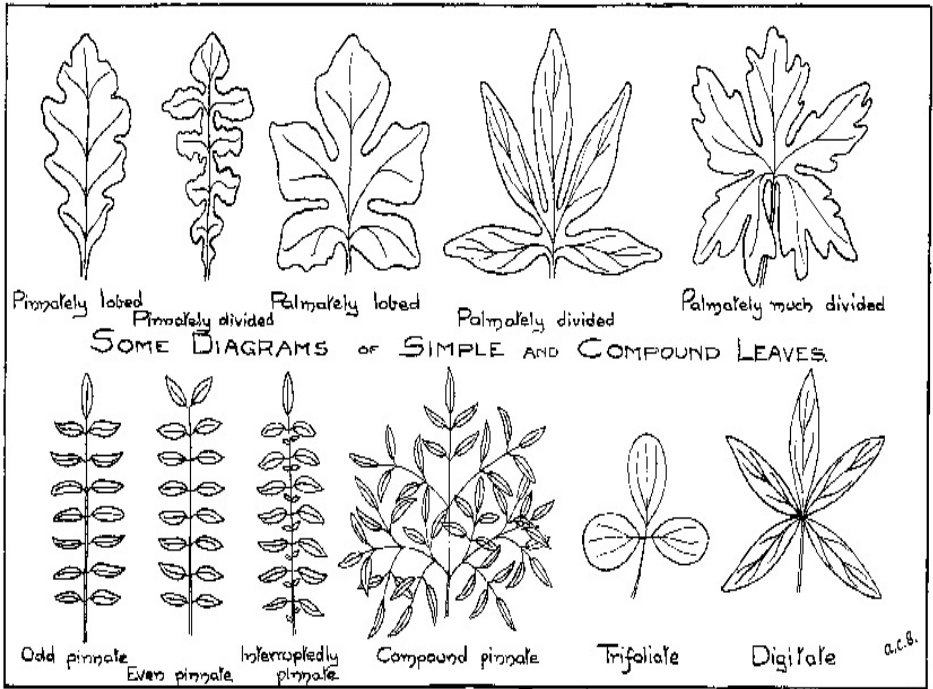
Radical leaves



DIAGRAMS OF SIMPLE LEAF SHAPES.

- Linear
- Lanceolate
- Oblanceolate
- Oblong
- Elliptical
- Oval
- Ovate
- Obovate
- Spatulate
- Cuneate (Wedge-shaped)
- Deltoid (Triangular)
- Cordate (Heart-shaped)
- Reniform (Kidney-shaped)
- Orbicular (Circular)

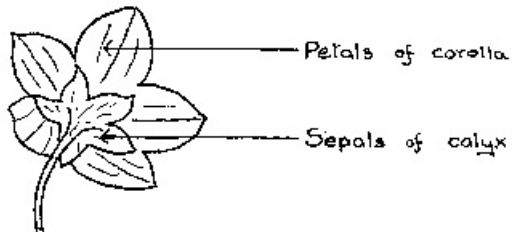
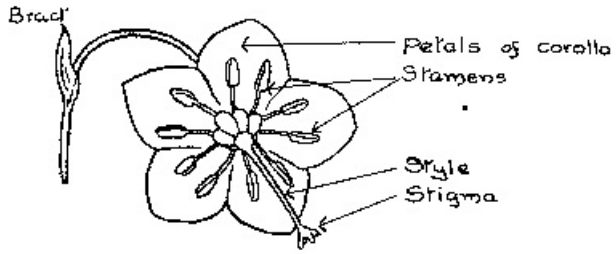
Peltate (Shield-shaped)



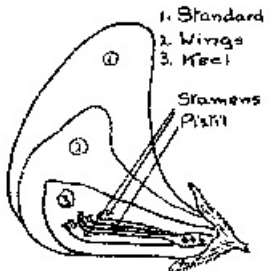
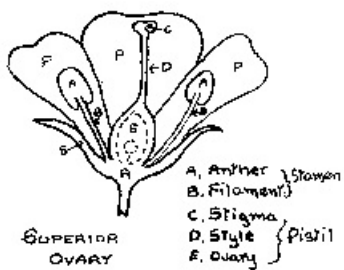
SOME DIAGRAMS OF SIMPLE AND COMPOUND LEAVES.

- Pinnately lobed
- Pinnately divided
- Palmately lobed
- Palmately divided
- Palmately much divided
- Odd pinnate
- Even pinnate
- Interruptedly pinnate
- Compound pinnate
- Trifoliate
- Digitate

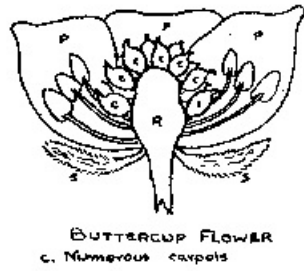
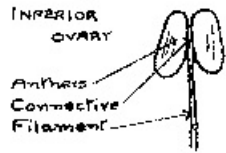
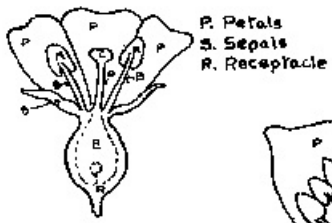
DIAGRAMS OF FLOWER PARTS.



ONE-FLOWERED WINTERGREEN



LEGUME FLOWER (Section)



P. Petals

S. Sepals

R. Receptacle

ONE-FLOWERED WINTERGREEN

Bract

Petals of corolla

Stamens

Style

Stigma

Petals of corolla

Sepals of calyx

SUPERIOR OVARY

Stamen

A. Anther

B. Filament

Pistil

C. Stigma

D. Style

E. Ovary

INFERIOR OVARY

STAMEN

Anthers

Connective

Filament

LEGUME FLOWER (Section)

1. Standard

2. Wings

3. Keel

Stamens

Pistil

BUTTERCUP FLOWER

C. Numerous carpels

DIAGRAMS OF INFLORESCENCE.



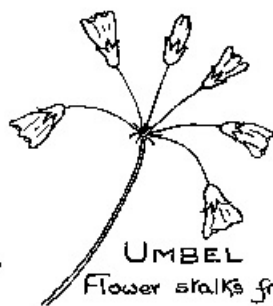
SPIKE
Flowers not stalked.



RACEME
Flowers with stalks.



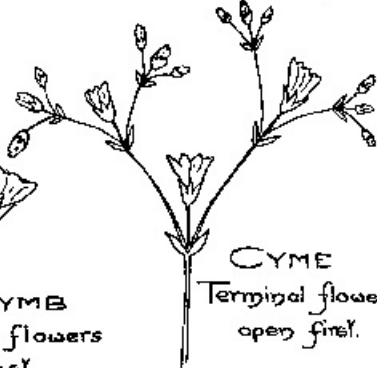
PANICLE
A compound raceme.



UMBEL
Flower stalks from a common centre.



CORYMB
Terminal flowers open last.



CYME
Terminal flowers open first.

DIAGRAMS OF INFLORESCENCE.

SPIKE

Flowers not stalked.

RACEME

Flowers with stalks.

PANICLE

A compound raceme.

UMBEL

Flower stalks from a common centre.



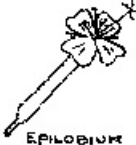
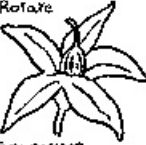

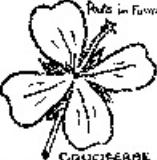















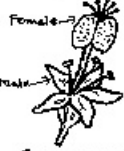


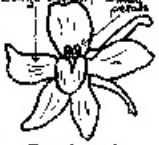



CORYMB

Terminal flowers open last.

CYME

Terminal flowers open first.

DIAGRAMS of FLOWER TYPES

<p>3 sepals, 3 petals</p>  <p>ALISMACEAE</p>	 <p>RANUNCULUS</p>	 <p>EPILOBIUM</p>	<p>Rotate</p>  <p>SOLANUM</p>
<p>Sepals + petals alike</p>  <p>LILIUM</p>	<p>Pets. in fives</p>  <p>CRUCIFERAE</p>	<p>Urceolate or Urn-like</p>  <p>ERICACEAE</p>	<p>Bilabiate</p>  <p>LABIATAE</p>
 <p>SYMPLOCACEAE</p>	 <p>CLEOME</p>	 <p>DODECATEON</p>	<p>Bilabiate</p>  <p>LINARIA</p>
<p>Lip made inflated</p>  <p>CYPRIPEDIUM</p>	<p>Stamens 6</p>  <p>PARNASSIA</p>	<p>Cylindrical</p>  <p>GENTIANA</p>	<p>Bilabiate</p>  <p>MIMULUS</p>
<p>Lip enlarged</p>  <p>ORCHIDACEAE</p>	 <p>LEGUMINOSAE</p>	<p>Funnel-form</p>  <p>CONVOLVULUS</p>	<p>Campanulate</p>  <p>CAMPANULA</p>
<p>Petals often divided</p>  <p>CARYOPHYLLACEAE</p>	<p>Female →</p> <p>Male →</p>  <p>EUPHORBIA</p>	<p>Salver. form</p>  <p>PHLOX</p>	<p>Ray florets only</p>  <p>LICULIFLORAE</p>
<p>Large sepals, small petals</p>  <p>DELPHINIUM</p>	 <p>VIOLA</p>	<p>Rotate</p>  <p>SOLANUM</p>	<p>Tubular and Ray florets</p>  <p>TUBULIFLORAE</p>

DIAGRAMS OF FLOWER TYPES.

ALISMACEAE

3 sepals, 3 petals

RANUNCULUS

EPILOBIUM

SOLANUM

Rotate

LILIUM

Sepals & petals alike

CRUCIFERAE

Parts in fours

ERICACEAE

Urceolate or Urn-like

LABIATAE

Bilabiate

SISYRINCHIUM

CLEOME

DODECATHEON

LINARIA

Bilabiate

CYPRIPEDIUM

Lip much inflated

PARNASSIA

Staminodia

GENTIANA

Cylindrical

MIMULUS

Bilabiate

ORCHIDACEAE

Lip enlarged

LEGUMINOSEAE

CONVOLVULVUS

Funnel-form

CAMPANULA

Campanulate

CARYOPHYLLACEAE

Petals often divided

EUPHORBIA

Female

Male

PHLOX

Salver-form

LIGULIFLORAE

Ray florets only

DELPHINIUM

Large sepals, Small petals

VIOLA









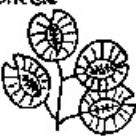




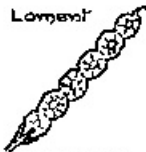














SOLANUM

Rotate

TUBULIFLORAE

Tubular and Ray Florets

DIAGRAMS OF FRUIT

<p>Acorn</p>  <p>QUERCUS</p>	<p>Nut</p>  <p>CORYLUS</p>	<p>Samara</p>  <p>ULMUS</p>	<p>Samara</p>  <p>FRAXINUS</p>
<p>Samara</p>  <p>ACER</p>	<p>Achenes</p>  <p>RANUNCULUS</p>	<p>Flyix</p>  <p>PORTULACA</p>	<p>Silicle</p>  <p>SINAPIS</p>
<p>Silicle</p>  <p>THLASPI</p>	<p>Silicle</p>  <p>CAPSILLA</p>	<p></p>  <p>AGRIMONIA</p>	<p>Plumose style</p>  <p>CLAMATIS</p>
<p>Pod</p>  <p>LEGUMINOSAS</p>	<p>Loment</p>  <p>HEDEYSARUM</p>	<p>Capsula</p>  <p>VIOLA</p>	<p>Berry</p>  <p>RIBES</p>
<p>Aggregate fruit</p>  <p>FRAGARIA</p>	<p>Aggregate fruit</p>  <p>RUBUS</p>	<p>Follicle</p>  <p>AQUILEGIA</p>	<p>Follicle</p>  <p>DELPHINIUM</p>
<p>Capsule</p>  <p>GERANIUM</p>	<p>Capsule</p>  <p>EPILABIUM</p>	<p>Cornucopia</p>  <p>ASCLERIAS</p>	<p>Follicles</p>  <p>APOCYNUM</p>
<p></p>  <p>GALIUM</p>	<p>Bur</p>  <p>XANTHIUM</p>	<p></p>  <p>SONCHUS</p>	<p></p>  <p>LACTUCA a.c.</p>

DIAGRAMS OF FRUIT

QUERCUS Acorn
CORYLUS Nut
ULMUS Samara
FRAXINUS Samara
ACER Samara
RANUNCULUS Achenes
PORTULACA Pyxis
SINAPIS Silicle
THLASPI Silicle
CAPSELLA Silicle
AGRIMONIA
CLEMATIS Plumose style
LEGUMINOSEAE Pod
HEDYSARUM Loment
VIOLA Capsule
RIBES Berry
FRAGARIA Aggregate fruit
RUBUS Aggregate fruit
AQUILEGIA Follicle
DELPHINIUM Follicle
GERANIUM Capsule
EPILOBIUM Capsule
ASCLEPIAS Cornucopia
APOCYNUM Follicles
GALIUM
XANTHIUM Bur
SONCHUS
LACTUCA

GLOSSARY

A B C D E F G H I J K L M N O P Q R S T
U V W X Y Z

A

- Achene**
— A 1-seeded, 1-celled, dry, hard fruit, not splitting open.
- Acuminate**
— Tapering to a point at the end.
- Acute**
— Sharp pointed, but not as sharp as acuminate.
- Alternate**
— Not borne opposite each other, used of leaves.
- Ament**
— A scaly spike of flowers of one sex only, also called catkin.
- Annual**
— Plant maturing and ripening seed in one year.
- Anther**
— The pollen container of a stamen, or male floral organ.
- Apetalous**
— Having no petals.
- Appressed**
— Lying flat and close, usually referring to hairs.
- Ascending**
— Growing upwards or turned up.
- Auricle**
— An ear-shaped organ or the ear at the base of a leaf.
- Awl-shaped**
— Broad at base, tapering to a sharp point.
- Awn**
— A bristle-like organ, often found on grass flowers.
- Axil**
— The angle where a leaf stalk or a branch joins stem.
- Axis**
— The central line of an organ.

B

- Barb
— Short, rigid point, or short bristle, often reflexed.
- Beak
— A prolonged tip or point.
- Bearded
— Hairy, often used of a stamen or of the throat of a flower.
- Berry
— A fruit, the outer wall or coat of which is pulpy.
- Bisexual
— With organs of both sexes, stamens and pistils.
- Blade
— Flat part of a leaf.
- Bract
— A small leaf, or scale, borne below a flower or flower cluster.
- Bristles
— Stiff hairs.
- Bulb
— An underground leaf-bud with successive fleshy coats.

C

- Capitate
— Like a head, a cluster at the head of a stem.
- Capsule
— A dry fruit consisting of more than 1 chamber, and opening at maturity.
- Carpel
— Ovule bearing chamber at base of pistil, or female organ of flower.
- Catkin
— An ament, a scaly spike of flowers of the same sex.
- Cell
— A chamber of the ovary.
- Chaff
— Dry, thin scales.
- Choripetalous
— Having petals distinct from each other.
- Connate
— Joined at the bases, used of leaves; joined together.
- Cordate
— Heart-shaped.
- Corm

- Fleshy, enlarged base of a stem.
- Corolla — The petals, or inside floral ring.
- Corymb — A cluster of flowers, the stems arising from different points on the stem, but the flowers making a flat or convex top.
- Cotyledon — The first or rudimentary leaf from the seed.
- Culm — The stem of a grass or a sedge.
- Cyme — A cluster of flowers of which the central flowers open first.

D

- Decumbent — The basal part of stem almost horizontal, but the rest ascending.
- Decurrent — The blade continuing down the stem, used of leaves.
- Digitate — Like divergent fingers.
- Dissected — Divided or cleft into many segments.
- Divided — Cleft to the midrib or base, used of leaves.
- Drupe — A fruit with the outer coat bony and hard and the inner coat fleshy.

E

- Equitant — Leaves enfolding each other or borne astride, as in Lilies and Iris.
- Erosee — Appearing as though gnawed at the margin.

F

- Fascicle — A dense cluster, used of roots, leaves or flowers.
- Floret — A single flower, generally used of a composite head or cluster.

Follicle

— A fruit with a single chamber, opening at maturity.

G

Gland

— A cell or group of cells secreting sticky or resinous matter.

Glume

— A scaly bract on the floral parts of grasses and sedges.

H

Hastate

— Halberd-shaped, leaves with basal lobes protruding sideways.

Herb

— A plant which has no woody, above ground stem.

Hoary

— Greyish-white hairy.

Hypanthium

— The portion of a flower-head to which the sepals and petals are attached.

I

Imbricate

— Overlapping like shingles.

Imperfect

— Incomplete, flowers without both stamens and pistil.

Incised

— More or less deeply and irregularly cleft.

Inferior ovary

— Ovary joined to or below the calyx or hypanthium.

Involucre

— The whorl of bracts below a flower cluster, or around a flower of the Compositae.

Irregular

— A flower in which all the petals and sepals are not the same shape and size.

L

Lanceolate

— Longer than broad and tapering upwards from the middle.

Leaflet

- A division of a compound leaf.
- Legume
— A dry pod-like fruit, splitting down one or both sides at maturity, and containing the seeds.
- Loment
— A legume or pod, constricted between the seeds.

M

- Membranous
— Rather soft, thin, and somewhat translucent.

N

- Node
— The spot on a stem where leaves grow or normally arise.
- Nut
— A single-seeded fruit with a woody, hard outer coat.

O

- Ob-
— Prefix denoting inverse, or upside down.
- Obcordate
— Shaped like a heart upside down.
- Oblanceolate
— Lanceolate, but tapering downwards, wider above middle.
- Obovate
— Ovate but large end upwards.
- Orbicular
— Somewhat circular in shape.
- Ovary
— The part of the pistil or female organ of a flower containing the female sex cells.
- Ovate
— Egg-shaped.

P

- Palmate
— Like divergent fingers.
- Panicle
— An inflorescence composed of several racemes combined.
- Pectinate

- Comb-like.
- Perfect — Complete, flower having both stamens and pistil.
- Perianth — Floral envelopes of a flower, petals, sepals, and bracts.
- Petal — The separate section or leaf of a corolla or inner floral ring.
- Pinnate — Compound leaf, with leaflets arranged on a common stalk.
- Pistil — The female part of a flower, composed of style and stigma.
- Pistillate — Having pistils or female organs, generally used when no male parts are present.
- Plumose — Like a feather, having fine hairs on either side.
- Pod — A dry fruit, opening when mature.

R

- Raceme — A flower cluster with each flower borne on a short stalk from a common stem.
- Receptacle — The part of a flower stalk bearing the floral organs, or the part of a capitate flower cluster bearing the florets.
- Recurved — Curved backwards.
- Reflexed — Sharply bent backwards.
- Regular — Flower with sepals and petals each of same size and shape.
- Reniform — Somewhat kidney-shaped.
- Rotate — Wheel-shaped flower.

S

Sagittate

— Like an arrow head, leaves with basal lobes protruding downwards.

Salver-shaped

— Flower having a tube with wheel-shaped expansion on top.

Samara

— A winged fruit which does not split open.

Saprophyte

— A plant feeding on dead organic matter.

Scorpioid

— A coiled inflorescence which uncoils as the flowers develop.

Sepal

— Single part of the calyx or outer floral ring.

Spike

— A flower cluster in which the individual flowers are stalkless, but borne on a common stalk.

Spur

— A hollow projection, usually at the base of a flower.

Stamen

— The male organ of a flower.

Staminate

— Having stamens, generally used when no female organs are present.

Stigma

— The summit of the style or place where the pollen is received.

Stipules

— Appendages at the base of certain leaves.

Stolon

— Basal branch which roots at nodes, often underground.

Style

— The part of a pistil connecting the stigma and ovary.

Sympetalous

— With the petals wholly or partly united.

T

Tendrill

— A thread-like filament by which some plants attach to objects.

Tuber

— A swollen root branch, bearing buds.

U

Umbel

— Flower cluster in which all flower stalks arise from a common point.

Unisexual

— Having either male organs or female organs only.

W

Whorl

— A group of 3 or more leaves arising from the same node of the stem.

Woolly

— Entangled soft hairs.

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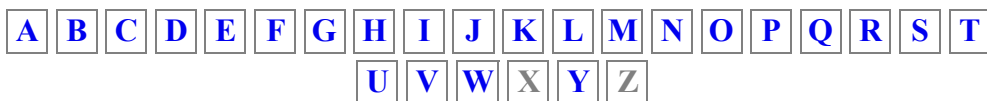
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QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1953

Transcriber's Notes

- Incorporated author's "Errata and Alterations" into the text.
- Silently corrected palpable typos, and eliminated some spelling inconsistencies.
- Interpreted underscores in the typewritten original as italics or boldface, depending on context.
- Collated keys and indexes against species entries, and eliminated some inconsistencies.

[The end of *Plants of the Farming and Ranching Areas of the Canadian Prairies* by A. C. Budd]