

# RARE AND ENDANGERED NATIVE PLANT SPECIES IN SASKATCHEWAN SOUTH OF LAT. 55°

JOHN H. HUDSON, Fraser Herbarium, University of Saskatchewan, Saskatoon  
S7N 0W0

My first intention in writing this memorandum was to catalogue the native species whose survival is threatened in the inhabited parts of Saskatchewan. Then other members of the committee that I was working with in Saskatoon suggested the inclusion of rare species known only from a few locations which might be under no present threat of extermination, but could be wiped out easily by "development."

All opinions about rarity of species, their tendency to decrease or otherwise, and the causes thereof, are my own, formed in 25 years of collecting in the southern and central parts of Saskatchewan. Most rare Boreal Forest species have been mentioned only to the extent that they either straggle down into the northern fringes of the inhabited area, or as I have encountered them in my own collecting around Flin Flon. No pretense is made of treating all of the rare boreal species, especially the rare high-northern species, north of about lat. 55°N, as my field experience extends no further north; someone better informed than I will have to write this.

All statements about range apply only to Saskatchewan, unless otherwise stated. Most of our rarities of southeastern Saskatchewan range east to Ontario or even further, by way of southern Manitoba and the American upper mid-west.

Species known only from the Cypress Hills, hence known in Saskatchewan from a limited area, are mentioned with the sole comment "Cypress Hills", even if common there. Unless otherwise stated, all Cypress Hills plants may be expected to have wide ranges further west (and usually disjunctly) in the Cordillera of North America.

No mention has been made of introduced species, some of which, of course, are rare but whose survival is of less interest because they do not represent elements of our native flora.

The statements about range and habitat are mainly my own, but much help has been derived from Breitung Catalogue.<sup>2</sup> Locality citations not in Breitung are largely my own, or have been taken from the shelves of the Fraser Herbarium.

The principal present threats to plant survival are:

- 1) *Agriculture*. When crop prices are depressed farmers must enlarge their cultivated acreage to spread their overhead over a greater area and when prices are high they are tempted to add marginal agricultural land to their cultivated acreage in the hope of making greater profits.
- 2) *Overgrazing*. This is a sin of the small operator or mixed farmer especially. Actually high farm prices are the best antidote to this.
- 3) *Governmental Action*. In this is included schemes to put dams in wooded valleys with habitat containing rare species (see comment on *Astragalus purshii*), destruction of aspen parkland to make community pastures of cultivated grasses, replacement of prairie by cultivated grasses such as Crested Wheat grass, and drainage schemes. All one can do here is keep the public informed about such schemes; one can at least count on the societies of hunters for help against drainage schemes.
- 4) *Weed Spread*. The introduced species Perennial Sowthistle, Awnless Brome, Couch Grass, Canada Thistle, Dandelion, and (in dry ground) Crested Wheat-grass

have a particularly noxious influence on the remaining stands of native vegetation in that they spread into these stands and take over. This would be because their natural enemies in Europe haven't come over with them to control their numbers. Seeking out these natural enemies and introducing them (after checking that these enemies don't attack anything native) would seem to be biologically and politically possible, at least for Sow Thistle, Canada Thistle, and Dandelion. The pest grasses mostly have close native relatives and also it would evoke political opposition to destroy them even if possible.

) *Picking*. Not a major threat except to Western Red Lily, the Yellow Lady's-Slippers, Venus' Slipper, Crocus Anemone, and possibly to Cliff-brake.

## SPECIES LIST

### OPHIOGLOSSACEAE — GRAPE FERN FAMILY

*Ostrychium lunaria*. Moon-fern. Very rare now but always was rare or sporadic. Heavy grazing on aspen woods on sandhills endangers this one.

*Ostrychium multifidum*. Leathery-leaved Grape-fern. Moist prairie. Rare.

### OLYPODIACEAE-FERN FAMILY

*Cystopteris montana*. Mountain Bladder-fern. Porcupine Mountain only.

*Woodsia glabella*. Cliff-brake. A rock fern growing in cracks of limestone or dolomite cliffs, known from Amisk Lake, Athabasca Lake, Limestone Lake, Roche Percee, Big Muddy Valley. A station could be cleaned out even by botanical collectors if there were many of them.

*Woodsia glabella*. Smooth Woodsia. A rare fern of limestone cliffs known from Amisk and Athabasca Lakes.

*Woodsia oregana*. Oregon Woodsia. Not uncommon in basic rocks in the Precambrian, as at Denare Beach and Athabasca Lake; unlike most other northern rock ferns, occurs southward at a few places, as Cypress Hills and Big Muddy Valley. Very rare southward.

### SELAGINELLACEAE — SELAGINELLA FAMILY

*Selaginella selaginoides*. Prickly Selaginella. A rare species of marl bogs, mostly in the southerly parts of the Boreal Forest.

### PINACEAE — PINE FAMILY

*Pinus contorta latifolia*. Lodgepole Pine. Cypress Hills, the dominant evergreen.

### NAJADACEAE — PONDWEED FAMILY

*Najas flexilis*. Water-nymph. Big Sandy Lake, Pike Lake.

*Potamogeton foliosus*. Leafy Pondweed. Saskatoon, Candle Lake, Caron, Mortlach. There is a large number of pondweeds (*Potamogeton*) for which few reports exist. Difficulties of identification are mainly responsible for the fewness of the reports. Such difficulties are especially severe for the narrow-leaved pondweeds such as this one. There are, too, at least five species of rarely reported pondweeds confined in Saskatchewan to the Boreal Forest region.

### JUNCAGINACEAE — ARROW-GRASS FAMILY

*Scheuchzeria palustris*. Scheuchzeria. Bogs (sphagnous?) P.A. National Park, Candle Lake. This must indeed be scarce, as I have never seen this in the field.

### LILAEACEAE — FLOWERING QUILLWORT FAMILY

*Lilaea scillioides*. Flowering Quillwort. Rare — grows around sloughs and in dry creek beds. Trossachs, Spring Valley, Cypress Hill (Fairwell Creek).

### HYDROCHARITACEAE — WATER WEED FAMILY

*Elodea canadensis*. Canadian Water-weed. An eastern species found in slow rivers; Souris River at Carnduff; Cumberland House area; Sturgeonweir R. below Amisk Lake.

*Elodea nuttallii*. Western Water-weed. A western species found in intermittent sloughs; Smiley, Glen Bain, Frontier.

### GRAMINAE — GRASS FAMILY

*Alopecurus glaucus*. Western Foxtail. Cypress Hills.

*Andropogon gerardi*. Big Blue-stem. A species of tall-grass prairie in S.E. of province. Now confined there to upper part of valley cutbanks, and easily grazed out.

*Aristida longiseta*. Red Three-Awn. It has been collected at Val Marie, but I have never seen it in Saskatchewan.

*Bouteloua curtipendula*. Side-Oats Grama. Same comments as *Andropogon gerardi*. Does not go as far north-west.

*Calamagrostis rubescens*. Pine Grass. Cypress Hills.

*Elymus cinereus*. Giant Wild Rye. Reported in Breitung's Catalogue from Cypress Hills, Vanguard, and Indian Head.<sup>2</sup> I have never seen this but once, in a moist draw at Old-Man-on-his-Back plateau.

*Elymus glaucus*. Smooth Wild Rye. Cypress Hills.

*Eragrostis hypnoides*. Moss-like Lovegrass. Muddy river bayous, along Souris R. south of Carnduff only.

*Festuca idahoensis*. Bluebunch Fescue. Cypress Hills.

*Glyceria canadensis*. Rattlesnake Grass. One disjunct station at Denare Beach.

*Hordeum brachyantherum*. Meadow Barley. Cypress Hills.

*Milium effusum*. Millet-grass. Porcupine Mountain.

*Munroa squarrosa*. False Buffalo-grass. Saskatchewan Landing (perhaps exterminated by Diefenbaker Lake), Hatton.

*Oryzopsis canadensis*. Canadian Ricegrass. Edges of aspen bluffs, north margin Park Belt, particularly vulnerable to squeeze-out by brome grass.

*Panicum depauperatum*. Starved Panic-grass. Moosomin only. I have not seen this one.

*Panicum subvillosum*. Hairy Panic-grass. Creighton, Amisk Lake, Lake Athabasca; sandy or rocky pine woods in Boreal Forest.

*Panicum virgatum*. Switch Grass. Extreme southeast corner of the province; same comments as *Andropogon gerardi*.

*Panicum wilcoxianum*. Wilcox's Panic-grass. Sand barrens, east half of Park Belt; Welby, Prince Albert, MacDowell, Goodwater.

*Panicum xanthophysum*. Yellow-green Panic-grass. Rock outcrops. Denare Beach, Creighton.

*Phleum alpinum*. Mountain Timothy. Cypress Hills.

*Sitanion hystrix*. Squirrel Tail. Reports scanty; Val Marie, Hatton, Beechy. Not really rare on bare clays and eroded bedrock outcrops in southwest.

*Sporobolus heterolepis*. Prairie Dropseed. Another grass of tall-grass prairie in the southeast. Same comments as for *An-*

*dropogon gerardi*.

*Sporobolus neglectus*. Small Dropseed. Disturbed places, Estevan.

*Stipa richardsonii*. Richardson's Speargrass. Cypress Hills mainly, a very few outlying stations further northeast.

*Trisetum spicatum*. Spike Trisetum. An arctic-alpine species found in the Cypress Hills and reappearing in the N.E. corner of the province (Hasbala Lake).

*Trisetum wolfii*. Wolf's Trisetum. Cypress Hills.

#### CYPERACEAE-SEDGE FAMILY

*Carex alopecoidea*. Foxtail Sedge. Woods; McKague, Mortlach, Estevan, Craven, Katepwa, Wood Mountain Park.

*Carex arcta*. Bear Sedge. Amisk Lake, Candle Lake.

*Carex granularis*. Granular Sedge. Spy Hill, Welby, Pipestone Valley, Good Spirit Lake.

*Carex gravida*. Heavy-fruited Sedge. Roche Percee, Oxbow, Willowbunch, Shand.

*Carex hoodii*. Hood's Sedge. Cypress Hills.

*Carex laxiflora*. Loose-flowered Sedge. Porcupine Mountain.

*Carex meadii* and *Carex tetanica*. May be the same species. This was rare on moist prairie in the lower Qu'Appelle valley area in old John Macoun's time. I cannot find it now. Probably it has been exterminated by tillage and by the proliferation of *Bromus inermis* (brome grass) on untilled moist prairie.

*Carex pedunculata*. Long-stalked Sedge. Cumberland House, Hudson Bay Junction, Armit.

*Carex petasata*. Cespitose Sedge. Cypress Hills.

*Carex raynoldsii*. Raynolds' Sedge. Cypress Hills.

*Cladium mariscoides*. Twig Rush. Dahlton only. I have never seen this; it must be exceedingly rare. A bog species.

*Cyperus strigosus*. Straw-coloured Cyperus. A report from Watrous exists; I have never seen this one either.

*Rhynchospora alba*. White Beaked-rush. Bare in Boreal Forest bogs; reported by Breitung from Dahlton, Prince Albert and Nipawin, but there are no specimens in the Fraser Herbarium from Saskatchewan. I have it from Garthland P.O.

*Rhynchospora capillacea*. Hair-like Beaked-rush. Rare in southern Boreal Forest bogs, often not the same bogs as



Western Red Lily

R. E. Gehlert

*Rh. alba*. Nipawin, Wallwort, Mennon, Garthland, P.O.

*Scirpus atrovirens*. Dark-green Bulrush, Estevan area only.

*Scirpus clintonii*. Clinton's Rush. Rare. Meadow Lake only.

*Scirpus fluviatilis*. River Bulrush. Scarce on marshy shores. Pike Lake (but I haven't seen it), Indian Head, Cumberland House, Keg Camp (Churchill R.).

*Scirpus pumilus*. Dwarf Bulrush. Known from 3 groundwater bogs within 40 miles of Saskatoon. Status OK at present but can be exterminated by drainage.

*Scirpus rufus*. Red Club-rush. As for above, known from 3 or 4 subsaline groundwater bogs in the Saskatoon area.

**LILIACEAE — RUSH FAMILY**

*Juncus ensifolius*. Iris-leaved Rush. Cypress Hills, widespread.

*Juncus nevadensis*. Nevada Rush. Cypress Hills; east block only, so far as known.

*Juncus stygius*. American Bog Rush. Garthland P.O. (Macdowell area); Lake Athabasca.

*Juncus tracyi*. Tracy's Rush. Cypress Hills.

**LILIACEAE-LILY FAMILY**

*Allium cernuum*. Nodding Onion. Confined in Sask. in my experience to the Cypress Hills; reports from elsewhere are almost certainly in error.

*Allium stellatum*. Pink-flowered Onion. Park Belt. Much reduced by grazing and tillage.

*Lilium philadelphicum* var. *andinum*. Western Red Lily. O.K. in Palaeozoic and Precambrian areas of province. Very much reduced in settled area, mostly by overgrazing of the moist calcareo-saline groundwater areas in which it grows best. Picking has had some adverse effect too, near cities, especially since, although perennial, it flowers only once before dying. Its scattered occurrences in aspen woodland have been much reduced by grazing and by influx of drift soil into bluffs which provides an entry for *Bromus inermis*. Lacking in southwest, but never did occur in Cypress Hills or west of Valjean on the main line.

*Polygonatum canaliculatum*. Common Solomon's-Seal. Rare, Estevan area.

*Smilacina racemosa*. Clasping-leaved Solomon's-Seal. Cypress Hills.

*Streptopus amplexifolius*. Clasping-leaved Twisted-Stalk. Rare in rich moist aspen woods, Boreal Forest-Aspen Parkland intergrade. Cypress Hills, Meadow Lake, Pasquia Hills, Porcupine Mountain.

*Trillium cernuum*. Nodding Trillium. Found rarely in moist woods in east-central Saskatchewan. Occurrences at Runnymede and Veregin and somewhat affected by grazing. Hudson Bay Junction area more or less OK.

#### AMARYLLIDACEAE—AMARYLLIS FAMILY

*Hypoxis hirsuta*. Hairy Star Grass. In grassy meadows subject to some groundwater influence, Yorkton area. Probably reduced by the infiltration of such meadows by *Sonchus arvensis* and *Cirsium arvense*. Rare and at edge of range to begin with.

#### ORCHIDACEAE-ORCHID FAMILY

*Calypso bulbosa*. Venus' Slipper. Rare in pine woods, Cypress Hills, Precambrian of Amisk Lake, and a few scattered stations along the southern edge of the Boreal Forest. A slow reproducer and easily picked out.

*Corallorhiza striata*. Striped Coral-root. Reported from several locations in the east half of the Park Belt, but I have not seen it outside the Cypress Hills.

*Cypripedium arietinum*. Ram's Head Lady's-Slipper. Very rare. Prince Albert, Hudson Bay Junction.

*Cypripedium calceolus* var *parviflorum*. Small Yellow Lady's Slipper. Growing in wooded bogs and groundwater seeps in the Park Belt, the populations of this Lady's Slipper are not too severely reduced because they are hard to find.

*Cypripedium calceolus* var *pubescens*. Large Yellow Lady's Slipper. This large-flowered form grew on moist prairie in the Park Belt in the eastern half of Saskatchewan. Very much reduced, due mainly to tillage. The plants are rhizomatic, so picking is not quite such a menace as for bunched or bulb-bearing species.

*Cypripedium passerinum*. Sparrow's-egg Lady's Slipper (often, White Lady's Slipper). Rare along springs in coniferous woods.

*Goodyera oblongifolia*. Menzies' Rattlesnake Plantain, Cypress Hills.

*Habenaria dilatata*. White Bog Orchid. OK



Large Round-leaved Orchid Bob Godwin

as yet in calcareous groundwater-fed bogs in Park Belt, but fate bound up with that of the bogs. Uncommon.

*Habenaria orbiculata*. Large Round-leaved Orchid. Rare in southern part of Boreal Forest area.

*Habenaria viridis* var *bracteata*. Long-bracted Orchid. Rare around edges of thickets, wetter parts of Park Belt. Almost always occurs by ones or twos, not by colonies.

*Liparis loeselii*. Bog Tway-blade. Confined to a few very wet groundwater-fed bogs in east half of Park Belt. Very rare now but always was so. Fate bound up with that of the bogs.

*Listera borealis*. Northern Tway-blade. Very rare in spruce forests at springy places.

*Listera cordata*. Heart-leaved Tway-blade. In cool spruce woods, reported infrequently, but more because it's hard to see rather than because of great rarity.

*Malaxis monophyllos* var *brachypoda*. Adder's Mouth. In coniferous woods; rare and hard to see. MacDowall, Waskesiu.

*Malaxis paludosa*. Swamp Adder's Mouth. Even rarer and harder to see than the preceding; known only from Garthland P.O. area.

*Spiranthes gracilis*. Slender Ladies'-Tresses. Rare in sandy pine woods, west half of



Large Yellow Lady's Slipper Bob Godwin

Boreal Forest area, as far south as Meadow Lake.

#### **SALICACEAE-WILLOW FAMILY**

*Populus angustifolia*. Willow-leaved Cottonwood. Known in Saskatchewan in relatively pure state only from middle part of Fairwell Creek valley north of Ravenscrag. Watch for dam-building schemes.

#### **FAGACEAE-BEECH FAMILY**

*Quercus macrocarpa*. Bur Oak. Abundant, lower Qu'Appelle and Pipestone valleys; rare, Assiniboine and lower Souris valleys.

#### **URTICACEAE-NETTLE FAMILY**

*Urtica canadensis*. Wood Nettle. Rare in heavy woods, lower part of Souris (and Antler?) river valleys.

#### **POLYGONACEAE-BUCKWHEAT FAMILY**

*Polygonum confertiflorum*. Dense-flowered Knotweed. An inconspicuous little knotweed known in Sask. only from two Cypress Hills collections.

#### **CHENOPODIACEAE-PIGWEED FAMILY**

*Chenopodium dacoticum*. Stinking Goosefoot. Known from a few collections in arid wash slopes in river valleys — south of Kyle in the valley of the South Saskatchewan, and west of Ravenscrag in

the Frenchman R. valley. Probably exterminated at the former location by Diefenbaker Lake.

*Cycloloma atriplicifolium*. Winged Pigweed. One old report from Baildon; the specimen involved cannot be located, and no later collections have been made. It is an open question whether the species is extinct in Saskatchewan or whether it never occurred and the report is in error.

*Eurotia lanata*. Winter Fat. A species of dry prairie and eroded slopes in the prairie region differentially reduced by overgrazing because it is palatable and nutritious to stock.

*Suaeda intermedia*. Shrubby Blite. Known in Sask. only from a couple of outcrops of redeposited Ravenscrag Formation on buttes above the Frenchman River 35 miles southeast of Val Marie.

#### **NYCTAGINACEAE-FOUR O'CLOCK FAMILY**

*Mirabilis linearis*. Linear-leaved Umbrellawort. Dry hot slopes. Big Muddy Valley, Frenchman R. valley at Knollys. May just be a form of *Mirabilis hirsuta*, Hairy Umbrellawort, which is common enough.

#### **PORTULACACEAE-PURSLANE FAMILY**

*Claytonia lanceolata*. Lance-leaved Spring Beauty. Cypress Hills.

*Claytonia linearis*. Linear-leaved Spring Beauty. Rare, Cypress Hills.

#### **CARYOPHYLLACEAE-PINK FAMILY**

*Arenaria congesta* var *lithophila*. Rocky-ground Sandwort. Cypress Hills and the High Plains southward thereof.

*Arenaria rubella*. Boreal Sandwort. Cypress Hills, Lake Athabasca.

#### **NYMPHAEACEAE-WATER LILY FAMILY**

*Nymphaea tetragona leibergii*. Small White Water Lily. Rare, Cumberland House area only.

#### **RANUNCULACEAE — BUTTERCUP FAMILY**

*Anemone quinquefolia*. Wood Anemone. Rare, aspen woods; Somme, Hudson Bay Junction, Armit.

*Aquilegia canadensis*. Red Columbine. Assiniboine R. and lower Qu'Appelle R. drainage areas only; subject to picking.

*Clematis verticellaris* var *columbiana*. Western Purple Clematis. Cypress Hills.

*Delphinium glaucum*. Tall Larkspur. Rare, woods in west-central Saskatchewan, such

as the Meadow Lake and Loon Lake areas; I have never seen this.

*Ranunculus inamoenus*. Cypress Hills.

*Thalictrum occidentale*. Western Meadow Rue. Cypress Hills.

### CRUCIFERAE-MUSTARD FAMILY

*Halimolobos virgata*. Only few reports: Cypress Hills, Wood Mountain, Birsay. Seems rare but may just be overlooked because of its extreme resemblance to several species of Rock Cross (*Arabis*). I myself never did recognize it until I memorized the drawing in Flora Pac. N.W., and now I'm fairly sure that I have seen it in the past.<sup>3</sup>

*Hutchinsia procumbens*. Very seldom collected — Parkbeg, Ingebright Lakes, Indi Lake. A tiny mustard found in earliest spring on the beaches of sodium sulfate lakes.

### DROSERACEAE-SUNDEW FAMILY

*Drosera anglica*. Oblong-leaved Sundew. Very rare, sopping wet bogs in southern part of Boreal Forest; Prince Albert, McKague, Garthland P.O.

*Drosera linearis*. Slender-leaved Sundew. Same comments as preceding.

### SARRACENIACEAE-PITCHER PLANT FAMILY

*Sarracenia purpurea*. Pitcher Plant. Requires large calcareous bogs; very showy in flower; shallowly rooted and subject to picking. Not rare as yet.

### CRASSULACEAE-STONECROP FAMILY

*Sedum lanceolatum*. Stonecrop. Cypress Hills.

### SAXIFRAGACEAE-SAXIFRAGE FAMILY

*Lithophragma bulbifera*. Star Flower. Grows along draws on the lower south slopes of the Cypress Hills. Vulnerable to grazing.

*Parnassia glauca*. American Grass of Parnassus. Marl bogs and groundwater seeps in a limited area of east-central Saskatchewan from Yorkton north to Nipawin. Same comments as for *Hypoxis hirsuta*.

*Saxifraga rhomboidea*. Rhomboid-leaved Saxifrage. Cypress Hills.

### ROSACEAE-ROSE FAMILY

*Potentilla diversifolia*. Varying-leaved Cinquefoil. Cypress Hills.

*Prunus americana*. Wild Plum. A large

shrub or small tree. Souris R. valley from Estevan downstream. Deforestation measures or dam-building schemes could clean this one out. Not presently critical.

*Prunus pumila*. Sand Cherry. Rare on open sand plains in east-central Sask.; Welby Hudson Bay Junction. Vulnerable to community pasture "improvement" schemes.

*Sorbus americana* (incl. *S. scopulina* of the Cypress Hills) Mountain Ash, Rowan. A small tree or large shrub widely but discontinuously distributed in Boreal Forest areas of high moisture efficiency but good drainage; Cypress Hills, Porcupine Mountain, Amisk Lake, Little Bear Lake on Hanson Lake Road, Lake Athabasca.

*Spiraea lucida*. Shining-leaved Meadow sweet. Cypress Hills.

### LEGUMINOSAE — PEA FAMILY

*Astragalus crassicarpus*. Ground Plum. Moist prairie. Palatable to grazing. Much reduced by tillage and overgrazing.

*Astragalus kentrophyta*. Prickly Milk Vetch. Confined in Saskatchewan to a few gravel barrens in the Great Sand Hills area Webb, Bitter Lake.

*Astragalus purshii*. Pursh's Milk Vetch. Known from very dry prairie, South Saskatchewan River valley south of Kyle and south of Old-Man-on-his-Back plateau. Former locality has likely been extinguished by the South Saskatchewan dam.

*Astragalus racemosus*. Racemose Milk Vetch. A large selenium-collecting milk vetch found in Canada only on Bearpaw shale outcrops in south-central Saskatchewan; Moose Jaw, Buffalo Pound Lake, Dirt Hills, Blackfoot Ridge badland at Truax.

*Astragalus vexilliflexus*. Few-flowered Milk Vetch. Cypress Hills and the Driftless area in the Rockglen district.

*Lupinus pusillus*. Small Lupine. Rare species of loose sand, southwest Saskatchewan. Needs disturbance for survival. Can be extinguished if blowouts are permitted to revegetate with grass.

*Oxytropis besseyi*. Bessey's Locoweed. Known in Canada only from silt buttes of the Ravenscrag formation in the driftless areas at Rockglen-Killdeer and the lower Frenchman river valley. No present threat.

*Oxytropis lambertii*. Lambert's Loco-weed. A loco-weed with long spikes of showy magenta flowers found only in the extreme south-east; Estevan, Goodwater.

*Petalostemon villosus*. Hairy Prairie

Clover. Known in Saskatchewan only from the Caron-Mortlach area on loose sand in blowouts; threatened by natural regrassing of blowouts there.

#### **GERANIACEAE — GERANIUM FAMILY**

*Geranium richardsonii*. White Wild Geranium. Cypress Hills.

*Geranium viscosissimum*. Sticky Purple Geranium. Common, Wood Mountain plateau; West Block only, Cypress Hills. There are reports and specimens from the Touchwood Hills area, which must be an isolated pocket of the range.

#### **POLYGALACEAE — MILKWORT FAMILY**

*Polygala alba*. White Milkwort. Found in Canada only on dry eroded slopes in the Estevan, Souris River, and Big Muddy Valley areas; abundant enough there.

*Polygala paucifolia*. Pink Fringed Milkwort. Discontinuously distributed in the southern part of the Boreal Forest, favouring high-lime areas. I have seen it at MacDowall, Hudson Bay Junction, and Amisk Lake, and there are reports or specimens to hand from McKague, Hellbrook, and Candle Lake.

*Polygala senega*. Seneca Snakeroot. Probably reduced as much by the collection of seneca roots for medicine as by agriculture. Even now not hard to find if one knows where to look for it.

*Polygala verticillata*. Whorled Milkwort. One location on valley bottom of a side coulee of Souris R., 4 miles west of Estevan. Annual and seems to behave like a desert ephemeral in that the population is not always visible every year.

#### **RUBRACARDIACEAE — SUMAC FAMILY**

*Rhus glabra*. Smooth Sumac. One colony known, on shore of Little Birch Lake near Flon.

#### **CLAYTONIACEAE — STAFF TREE FAMILY**

*Claytonia scandens*. Climbing Bittersweet. Known from one tract of brush on river bluffs of Souris valley south of Estevan. This is right at the edge of the range, so it could easily be wiped out by climatic changes even without human interference.

#### **HYDROPHYLLACEAE — ST. JOHN'S WORT FAMILY**

*Hydrophyllum virginianum* var. *fraseri*. Virginia St. John's-wort. Sedge swamps; Amisk Lake, Saskatchewan River delta.

#### **VIOLACEAE — VIOLET FAMILY**

*Viola pedatifida*. Crowfoot Violet. Moist prairie in prairie and parkland regions. Much reduced by tillage and overgrazing; now hard to find.

*Viola pubescens* var. *leiocarpa*. Yellow Wood Violet. Wet woods, Armit.

*Viola selkirkii*. Selkirk's Blue Violet. Rare, wet woods, east end of Boreal Forest; Amisk Lake, Porcupine Mountain, Saskatchewan River delta. The seldom collected *V. palustris* of wet alder woods and *V. renifolia* of upland white spruce forest (both in the Boreal Forest zone) are not really rare, just inconspicuous; *V. renifolia* furthermore blooms very early.

#### **ONAGRACEAE — EVENING PRIMROSE FAMILY**

*Oenothera breviflora*. Taraxia. Rare, S.W. Saskatchewan, around alkali lakes and on dry slough bottoms.

#### **HALORAGIDACEAE — WATER MILFOIL FAMILY**

*Myriophyllum pinnatum*. Pinnate Water-Milfoil. Shallow water on southern prairies; Wordsworth.

#### **UMBELLIFERAE — CARROT FAMILY**

*Lomatium dissectum*. Mountain Wild Parsnip. West Block Cypress Hills only. Must be very rare; I have never seen it.

*Lomatium cous* (*L. montanum*). Cous. Confined in Canada, so far as is known, to late-snow areas just below plateau level in West Block Cypress Hills of Saskatchewan.

*Lomatium orientale*. White-flowered Parsley or Cous. Rare along Souris River valley from Estevan downstream on dry benches. No present threat but could be wiped out by "development."

*Perideridia gairdneri*. Yamp, Squaw-root. Cypress Hills.

*Zizia aurea*. Golden Alexanders. One report for Saskatchewan, at Strongfield, but the specimen is an aberrant *Z. aptera* (Meadow Parsnip).

#### **PYROLACEAE — WINTERGREEN FAMILY**

*Monotropa hypopithys*. Pine-sap. A rare saprophyte of the Cypress Hills.

*Pterospora andromedea*. Pine-drops; Giant Bird's Nest. Rare in lodgepole pine woods in Cypress Hills; could be easily cleaned out by picking, as it is very spectacular, almost weird-looking, and occurs singly.

*Pyrola minor*. Lesser Wintergreen. Rare, Cypress Hills and Precambrian part of



Boreal Forest.

### **PRIMULACEAE — PRIMROSE FAMILY**

*Dodecatheon conjugens*. Cylindrical-flowered Shooting Star. Cypress Hills.

*Dodecatheon pulchellum*. Shooting Star. Meadows in calcareous zone of groundwater outcrops. Can be reduced by overgrazing or by sowthistle spread into these areas. Showy.

*Primula incana*. Mealy Primrose. Same comments as for Shooting Star.

*Primula mistassinica*. Dwarf Canadian Primrose. A few reports from Boreal Forest areas; I cannot say whether or not is rare.

### **GENTIANACEAE — GENTIAN FAMILY**

*Gentiana affinis*. Oblong-leaved Gentian. Same comments as for Shooting Star.

*Gentiana andrewsii*. Bottle Gentian. Moist prairie, lower Qu'Appelle Valley area. At the edge of its range, subject to wiping out by tillage and sowthistle spread. I have not seen it despite looking. Probably extinct.

### **ASCEPIADACEAE — MILKWEED FAMILY**

*Asclepias verticillata*. Whorled Milkweed. A few locations on dry flats in Souris River valley west of Estevan.

### **POLEMONIACEAE — PHLOX FAMILY**

*Linanthus septentrionalis*. Northern Linanthus. An inconspicuous early-spring annual of grassy slopes confined in Saskatchewan to the high plains south of the Cypress Hills and to Pinto Butte.

*Phlox alyssifolia*. Blue Phlox. Wood Mountain — Big Muddy Valley area only.

### **BORAGINACEAE — BLUE BUR FAMILY**

*Lithospermum ruderales*. Woolly Gromwell. West Block Cypress Hills only.

*Onosmodium molle* var *occidentale*. Western False Gromwell. Around edges of brush and groves, Souris River valley below Estevan. Threatened by brome-grass aggression.

### **VERBENACEAE — VERVAIN FAMILY**

*Verbena hastata*. Blue Vervain. Rare on moist banks and shores, southeast corner — Roche Percee; there is an outlying collection from Wadena.

*Verbena urticifolia*. Nettle-leaved Vervain. One location on the banks of the Antler River south of Gainsborough; visibly threatened by the spread of sowthistle.

### **LABIATAE — MINT FAMILY**

*Scutellaria lateriflora*. Blue Skull-cap. Distribution southeastern; Trossachs, Souris River valley, Armit.

### **SOLANACEAE — POTATO FAMILY**

*Physalis grandiflora*. Large White-flowered Ground-Cherry. Very rare; grows by ones and twos on disturbed bare sand in Boreal Forest areas. Civilized man has introduced many weedy annuals quick to take over such disturbed sands.

### **SCROPHULARIACEAE — SNAPDRAGON FAMILY**

*Besseyia wyomingensis*. Kitten-tails. West Block Cypress Hills.

*Castilleja coccinea*. Scarlet Paint-brush. Reported from a damp meadow near Buchanan about 1920; not collected since. I have never seen it. Probably extinct in Saskatchewan, but was here at the northwest edge of the range anyway. Same comments as Bottle Gentian.

*Mimulus glabratus*. Small Yellow Monkey-flower. A few reports from shady boggy springs in the Qu'Appelle and Pipestone valleys. It must be very rare; I've never seen it.

*Mimulus guttatus*. Yellow Monkey-flower. Cypress Hills, abundant and widespread.

*Mimulus ringens*. Blue Monkey-flower. Reported by Breitung from the banks of the Red Deer River at Hudson Bay Junction.<sup>2</sup> I could not find it there, but the river was in high water then. An eastern species.

*Rhinanthus crista-gallii*. Yellow Rattle. Cypress Hills mainly (I have not seen it elsewhere); Ile a la Crosse; I question the locality data on the Carnduff sheet in the Fraser Herbarium.

*Veronica serpyllifolia* var *humifusa*. Northern Thyme-leaved Speedwell. Cypress Hills.

### **LENTIBULARIACEAE — BLADDERWORT FAMILY**

*Pinguicula vulgaris*. Butterwort. Known from a few calcareous bogs in the Park Belt — Prince Albert, Mennon, Strawberry Lakes, Candle Lake. Its future is bound up with the future of these bogs.

### **OROBANCHACEAE — BROOMRAPE FAMILY**

*Orobanche uniflora*. One-flowered Cancer Root. One Cypress Hills record.

### **CAPRIFOLIACEAE — HONEYSUCKLE FAMILY**



Large White-flowered Ground-Cherry

Wayne Harris

*Sambucus pubens*. Red-berried Elder. Lower Saskatchewan river near Cumberland House; Armit. A large shrub of wet woods, plainly confined to the first prairie level or Lake Agassiz bottom in Saskatchewan.

*Viburnum lentago*. Nanny-berry. A shrub in extreme S.E. corner of the province. Very rare — I have not seen it. Same comments as *Prunus americana*.

#### ADOXACEAE — MOSCHATEL FAMILY

*Adoxa moschatellina*. Moschatel. Under Ostrich Fern clumps in wet spots along river banks in Boreal Forest; records scanty, but plant very hard to spot. Height of 17 miles south of Meadow Lake; Canale Lake; Pasquia Hills (Boivin).<sup>1</sup>

#### ORANTHACEAE — MISTLETOE FAMILY

*Arceuthobium pusillum*. Spruce Mistletoe. Hudson Bay Junction only. By the descriptions given, this would appear to be very much more difficult to spot than the widespread Pine Mistletoe, *A. americanum*.

#### LOBELIACEAE — LOBELIA FAMILY

*Downingia laeta*. Downingia. A small mud annual with pink flowers collected in the 1890's by John Macoun at Crane Lake and Skull Creek, and still present along Skull Creek in the late 1950's. I have never seen it elsewhere.

#### COMPOSITAE — COMPOSITE FAMILY; TUBULIFLORAE — THISTLE SUB-FAMILY

*Anaphalis margaritacea*. Pearly Everlasting. Cypress Hills; Cutknife.

*Antennaria dimorpha*. Stemless Everlasting. A rare species of very dry prairie south of the Cypress Hills. Divide, Climax.

*Antennaria anaphaloides*. Anaphalis-like Pussy-toes. Cypress Hills.

*Antennaria corymbosa*. Corymbose Pussy-toes. Cypress Hills. A doubtful segregate out of the *A. rosea* - *A. microphylla* (small-leaved Pussy-toes) complex.

*Antennaria umbrinella*. Brown-bracted Pussy-toes. Cypress Hills.

*Arnica cordifolia*. Heart-leaved Arnica. Cypress Hills, with a few outlying localities elsewhere — Waskesiu Lake, Pasquia Hills (Boivin, part III).

*Arnica fulgens*. Shining Arnica. Moist prairie, grassland zone. Much reduced by cultivation, overgrazing, and drifting of blow dirt onto road allowances.

*Aster eatonii*. Eaton's Aster. Cypress Hills.

*Aster umbellatus* var *pubens*. Flat-topped Aster. Spy Hill area only, growing among brush. Seemed OK for the time being when I collected it.

*Bahia oppositifolia*. Bahia. Rare in very arid places, extreme south; probably native. Field weed at Pambrun; in alkaline valleys at Divide (on the south side of the Old-Man-on-his-Back); and I have seen it in the Big Muddy.

*Bidens beckii*. Water Marigold. Quiet waters, Cumberland House area.

*Boltonia asteroides*. Aster-like Boltonia. Wet clayey disturbed places, such as tilled sloughs and road ditches, south-central Saskatchewan, mostly on the Regina Plain; Torquay, Weyburn, Milestone, Baildon. Abundant but seldom reported because of its extreme likeness to *Aster hesperius*, Western Aster, of similar habitats.

*Cirsium drummondii*. Stemless Thistle. Moist prairie at edges of brush in Park Belt. Much reduced by cultivation and spread of brome grass. The only locations where I have seen it are MacDowall Forest Reserve and the Runnymede-Togo area.

*Cirsium muticum*. Swamp Thistle. Rare in swamps and alder thickets, east half of the intergrade between Park Belt and Boreal Forest. There are several citations in Breitung but the only place that I have seen it is Armit.<sup>2</sup> It is subject to aggression by sowthistle.

*Echinacea angustifolia*. Purple Coneflower. Another Souris River specialty; grows on dry slopes along the Souris River at least as high up as Goodwater. I have seen it on slopes near Big Beaver.

*Erigeron radicans*. Dwarf Fleabane. Dry eroded slopes and badlands, Wood Mountain area and Cypress Hills. Reports from elsewhere appear improbable to me. I have not seen this except in the Wood Mountain area.

*Helianthus tuberosus* var *subcanescens*. Jerusalem Artichoke. Estevan area only. Grows among brush along with Western Snowberry. In no present danger.

*Heliopsis helianthoides* var *scabra*. Sunflower Heliopsis. Said to grow around

edges of bluffs in north-east part of Park Belt, an area much subject to invasion of lands not cultivated by brome grass and sow thistle. I have never seen it, much less collected it, so I presume it's much reduced.

*Hymenoxys acaulis*. Stemless Rubberweed. There are scattered reports or collections from various parts of S.W. Saskatchewan, but I know this only from one coulee south of Mortlach. Breitung gives it a Cypress Hills range, but I've never seen it there. Probably this always was sporadic at least, but now is much reduced.

*Senecio integerrimus*. Entire-leaved Ragwort. Same comments as Shining Arnica.

### COMPOSITAE: LIGULIFLORAE — CHICORY SUB FAMILY

*Crepis occidentalis* - *Crepis intermedia* complex. Western Hawksbeard. Cypress Hills: outlying station at Matador.

*Hieracium albiflorum* Hook. White-flowered Hawksbeard. Cypress Hills.

*Lactuca biennis*. Tall White Lettuce. OK in southern half of Boreal Forest area; much reduced in Park Belt a little to the south, mostly due to sowthistle spread.

*Lactuca ludoviciana*, Western Lettuce, has been reported by Breitung and Boivin from Regina and Gainsborough.<sup>2 1</sup> We have no specimens in the Fraser Herbarium, and I have never observed it.

*Lygodesmia rostrata*. Annual Skeleton Weed. An annual of bare sands in S.W. Saskatchewan, subject to extermination if blowouts are permitted to revegetate. It is in the same position as Small Lupine.

*Microseris cuspidata*. Cuspidate Small Lettuce. A few records from coulee slopes and grassy hillsides in south-central Saskatchewan — Lebret, Lumsden, Mortlach, Big Muddy Valley. Very early flowering and whole plant quickly shrivelling — hence the fewness of the collections.

*Prenanthes alba*. White Lettuce. Rare in rich aspen woods, east half of Park Belt. Not resistant to grazing, trampling or invasion by brome grass or sowthistle. Probably reduced.

*Prenanthes racemosa*. Glaucoous White Lettuce. Somewhat drier aspen woods in entire Park Belt as far south as Saskatoon. Invasion of aspen bluffs by brome grass has been particularly damaging to this species.

*Stephanomeria runcinata*. Rush Pink. Con-

fined to outcrops of the non-bentonitic powder-shale members of the Bearpaw formation in S.W. Saskatchewan. I have seen or collected it at Beechy, the Morgan Creek badlands, Horse Creek, and the Frenchman River canyon 35 miles southeast of Val Marie.

<sup>1</sup>BOIVIN, B. 1967. Flora of the Prairie Provinces, a handbook to the flora of the provinces of Manitoba, Saskatchewan, Alberta, Parts I, II, III. Pro-

vancheria 2, Memoires de l'Herbier Louis Marie, Faculte d'Agriculture, Universite Laval, and Department of Agriculture, Ottawa.

<sup>2</sup>BREITUNG, A. J. 1957. Annotated catalogue of the vascular flora of Saskatchewan. American Midland Naturalist 58: 1-72.

<sup>3</sup>HITCHCOCK, C. L. and A. CRONQUIST. 1964. Vascular plants of the Pacific Northwest, Part II. Univ. of Washington Press. 508-510.



Common Reed Grass

J. B. Gollop