ARE NATIVE VASCULAR PLANTS IN HE SASKATOON AREA

ovincially rare plants found in the vicinity of Saskatoon, Saskatchewan, Canada.)

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total of 21 provincially rare, native, cular plant species have been orded in the general Saskatoon area, hin the region delimited in Figure 1, uding about a 30 km radius around katoon, but extending about 40 km thward. Included in the present list are species found in the Syllogeus list of *Rare Vascular Plants of Sasknewan*,² plus two additional taxa that author presently considers rare for katchewan, and a third thought to also rve protection because of its vulbility and rarity elsewhere. This anited list for the Saskatoon area is ented on the premise that an ap-

ted list for the Saskatoon area is ented on the premise that an apiation of our native plants depends an awareness and personal vledge about them. Only if the value re plants and of botanical diversity is eciated as an important part of our ral heritage by enough people, can ed public support be garnered for preservation efforts.

ce the listed plants are rarities, either nally restricted or locally very sparse ever found, fa' desirable motto for alists who find them is "to enjoy and lestroy." Their locations, however, d be noted and properly recorded botanists at the Fraser Herbarium, ersity of Saskatchewan, Saskatoon, National Herbarium of the Nationseum of Natural Sciences, Ottawa.

seven plant names below preceded asterisk (*) represent species also lered rare for Canada.¹ The 11 led by an exclamation mark (!) reptaxa that the author considers esperare in Saskatchewan.

In the following list of the rare native vascular plants of the Saskatoon area, the species are alphabetically listed by their scientific names under their respective plant families, which in turn are arranged in the traditional Englerian sequence. For each species entry, the common names are followed by the scientific names and important synonyms, if any, and then the habitats and localities of the plants in the Saskatoon area, the distributional records elsewhere in Saskatchewan, and finally a brief description of the respective plants to aid readers in their recognition. The maps 1-21 in Figures 2 and 3 show the recorded distribution in Saskatchewan of the respective rare plant taxa.

Concluding this article, an alphabetical listing of the scientific and common names, including important synonyms and alternate common names, serves as both a summary and an index [and can serve as a check-list] of the rare native plants of the Saskatoon area.

SPIKE-MOSS FAMILY (Selaginellaceae)

PRICKLY SELAGINELLA [Selaginella selaginoides (L.) Link] is found in wet boggy areas. Pike Lake has the southernmost Saskatchewan record. In Saskatchewan, it is locally limited at widely spaced localities, northward to Carswell Lake and the northeastern corner of the province (map 1).

This species consists of small, delicate, mat-forming, moss-like plants, with lanceolate (lance-shaped) leaves and sporophylls, or cone scales, that are distinctly larger than the leaves and

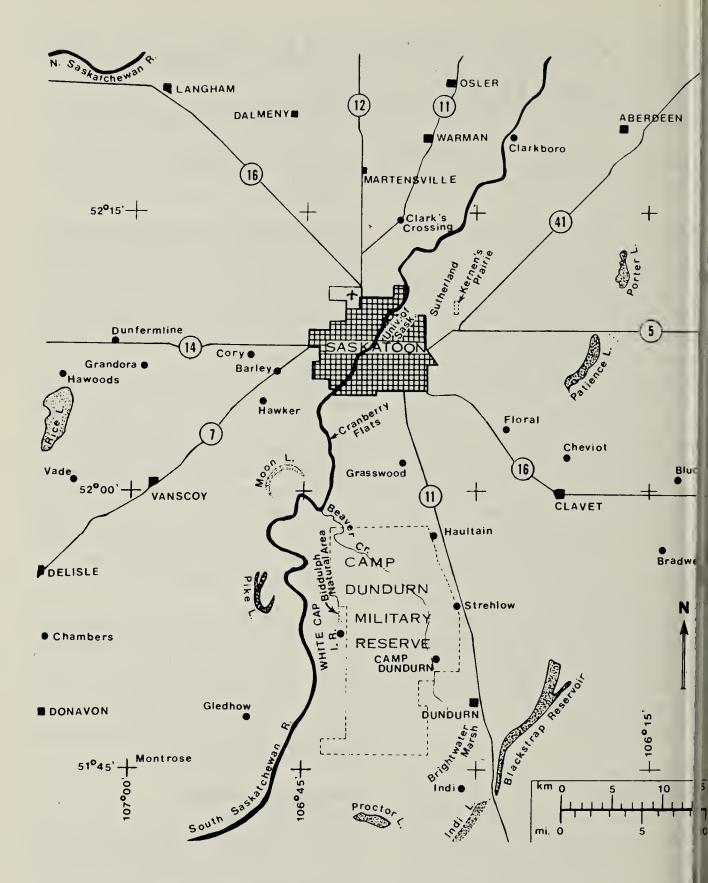


Figure 1. Map of the Saskatoon area

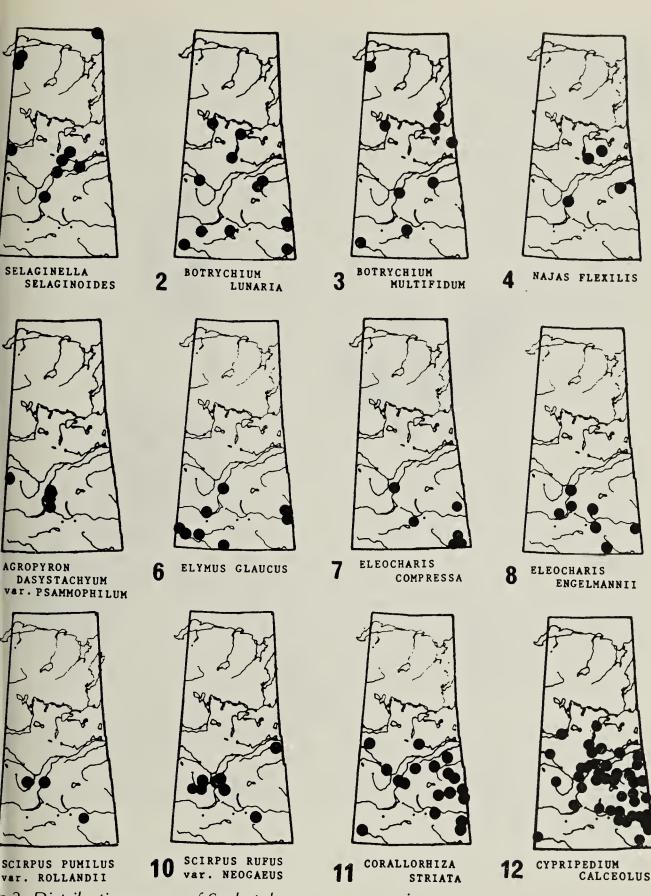
spinulose-toothed (with spiny margins), but not bristle-tipped.

GRAPE-FERN FAMILY (Ophioglos-

saceae)

MOONWORT or MOON-FERN [*Botrychium lunaria* (L.) Sw.], a fern of open woods, grows along Beaver Creek. In Saskatchewan they are locally few at widely spaced localities, rt to Lac Ile-a-la-Crosse and La R g (map 2).

The sterile (not spore-bearing) ne blades of this small distinctive spore fern are attached near the middle he stalk (stipe), are much longer and broad, oblong in overall outline ne



e 2. Distribution maps of Saskatchewan rare species

innate (divided into leaflets along sides of a common axis), with the -shaped pinnae (leaflets) in 3-7 rs.

HERY GRAPE-FERN [*Botrychium ltifidum* (Gmel.) Rupr.] grows in dy, mesic (moist), open woods or shrublands. It is known in our area from a single 1927 collection by W.H. Cameron, labelled only "Saskatoon," and not verified since. Look for it! Elsewhere in Saskatchewan, it is locally sparse at widely spaced localities over the province north to Cluff Lake and Southend (Map 3).



Leathery Grape-fern

The sterile frond blades of this evergreen grape-fern are attached near the base of the stipe, thick-leathery, stout-stalked, triangular in outline, 2-4 ternate-pinnately compound. [Ternate with three primary leaf divisions]

PONDWEED FAMILY (Najadaceae)

! FLEXIBLE NAIAD [Najas flexilis (Willd.) Roem. & Schult.] is an aquatic of shallow lake water found in Pike

Lake. Elsewhere in Saskatchewar at Candle Lake, Big Sandy Lake, C and north of Armit (map 4).

Plants of this pondweed relativa small, delicate, annual, submo aquatic herbs, with leaves opp minutely spinulose-toothed, li a filiform (narrow, thread-like), b 1 broad-sheathing, and crowded tips of slender stems; the separate a and female flowers are solitary; and the nchene-fruits are sessile (not stalked), fusiform and smooth-walled.

RASS FAMILY

oaceae or Gramineae)

SAND-DUNE WHEATGRASS Agropyron dasystachym (Hooker) cribner var. psammophilum (Gillett & enn) E. Voss; syn. A. psammophilum cillett & Senn] grows in active sand lowouts at "Peter's Blowout," 3.5 km of Beaver Creek (17.5 s of Saskatoon), Cranberry Flats, and Dundurn. It is corded from west of Hanley, Douglas rovincial Park (se of Elbow), and ortheast of Macklin (map 5).

lants of this distinctive grass variety hay be distinguished from the common orthern Wheatgrass [Agropyron] asystachyum var. dasystachyum] by e more densely villous (long-hairy) mmas, the first and second glumes 3nd 5-nerved respectively, the paleas to ver 8 mm long, the spikes to longer an 1 dm, with the rachis pubescent elow the spikelets and the spike edium internodes 8-12 mm long; the aves are more glaucous (bluisheen) with more distinctly ribbed ners. [A grass flower is enclosed by two ny leaves or bracts, the upper called e palea, the lower the lemma. At the se of each cluster of flowers or ikelet are more bracts called glumes. e spikelets are on an axis or stalk rmed a rachis; several spikelets ether form the spike. The awn is a stle-like extension of a bract.]

OOTH OR BLUE WILD RYE [*Elymus ucus* Buckl.] grows in mesic shore ods and shrublands on river banks d bluff shelves. It is found here on aver Creek and the White Cap Indian serve. Elsewhere in Saskatchewan, it recorded from various sites in the press Hills, Wood Mountain, itador, Rocanville and Saltcoats p 6). This is a perennial, tufted, nonrhizomatous, wild rye grass, with the glumes over 1 mm wide, thinnish, not awn-like, and the lemma-awns straightish, less than 2 cm long, about equalling the lemma-body.

SEDGE FAMILY (Cyperaceae)

FLAT-STEMMED SPIKE-RUSH [*Eleocharis compressa* Sulliv.; syn.: *E. elliptica* Kunth. var. *compressa* (Sulliv.) Drap. & Mohlenbr.] grows in wet boggy depressions. Pike Lake has the northwesternmost record in Saskatchewan. It is found farther to the south and southeast in the province, near Moose Jaw, Bredenbury, Forget, Kisbey, Pinto (e of Roche Percee) and Glen Ewen (map 7).

This perennial spike-rush is characterized by flattened wiry culms (aerial stems), somewhat tufted from short hard rhizomes; the sheaths tight; the spikelet-scales ovate-lanceolate, acuminate-pointed, and purplishbrown; the styles and stigmas number 3, and the achenes are 3-sided, golden to brownish, with granular-roughened surfaces, and short-conic cap-like tubercles separated from the achene summits.

*! ENGELMANN'S SPIKE-RUSH [Eleocharis engelmannii Steud.; syn.: E. obtusa (Willd.) Schultes var. engelmannii (Steud.) Gilly] is found in seasonally wet sloughs. Near Saskatoon it has been located 5 km nw, 10 km w, 5 km
* e, and n of Sutherland. Elsewhere in Saskatchewan, it has been recorded near Matador, Loreburn, Govan, Regina, Rocanville and Colgate (on the Souris River drainage).

This non-rhizomatous, annual spikerush is characterized by terete (round in cross-section) culms of markedly unequal lengths within tufts; the sheath summits are rather loose and 1-toothed; the spikelet-scales are elliptic-obovate,

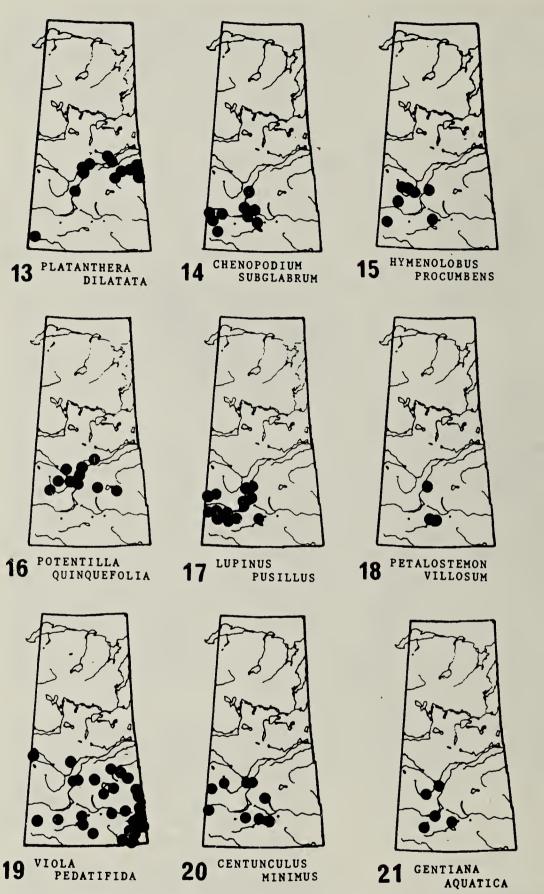


Figure 3. Distribution maps of Saskatchewan rare species

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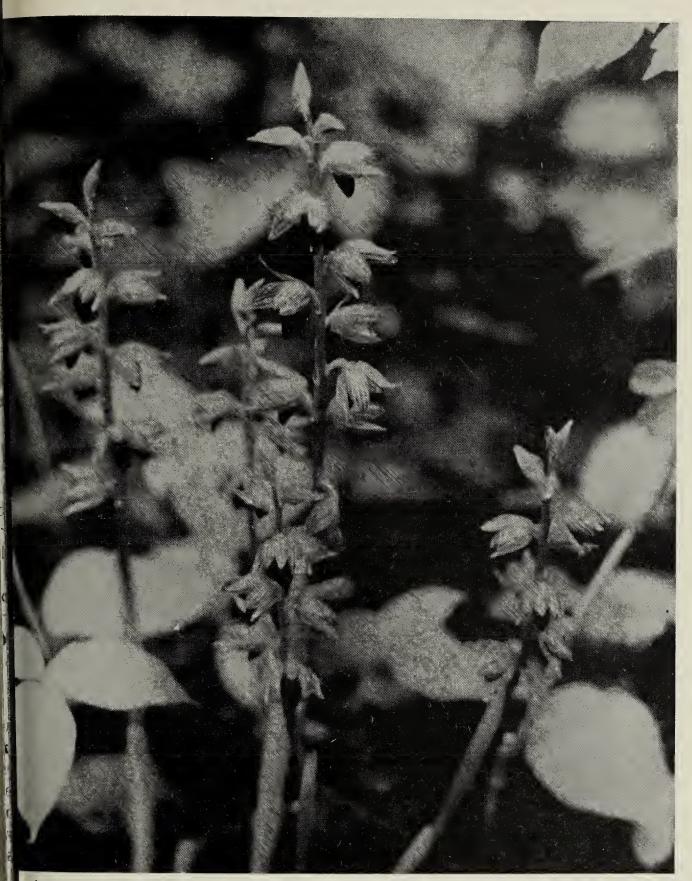
brownish, with bluntish hyaline (appearing transparent) tips and margins. The styles and stigmas are 2, and the achenes lens-shaped, brown-shining, smooth-surfaced, with short broad tubercles close-fitting and fused to achene summits.

RED CLUB-RUSH [Scirpus of (Huds.) Schrad. var. *neogaeus* Fe.] a plant of more or less alkaline, g marshes. Pike Lake and marshe Sutherland have it. It is also rec Jo from near Hanley just to the sout an

[Scirpus pul Vahl. var. rol (Fern.) Be syn.: S. roll Fern.] grows i careous b marshes. It been found Sutherland. where in atchewan recorded from three localiti the Biggar (viz. Levey, and Keppel) from Straw Lakes (s of I Head) (map 1

DWARF BULL

This sma perennial bu has slender less than 1. high, round i tion, smoot strongly gro borne in tuft short, sle rhizomes; solitary, spikelets are than 5 mm with scales less, and ac plano-con dark brow blackish, sc beaked, la perianth br [Perianth ref the flower petals and se is



ed Coralroot

G.J. Smith

opel, Marriott, Anglia and Stranraer newhat to the west of the Saskatoon a, and also from Strawberry Lakes (s ndian Head), and the Nitenai River t Marsh (in Carrot River Valley n of quia Hills) (map 10).

s medium-sized bulrush is characzed by bluntly triangular culms 1-4 dm high, more-or-less tufted from elongate creeping rhizomes, all sheaths bearing blades, the solitary terminal spikes consisting of several overlapping, lanceolate, dark reddish-brown spikelets in 2 rows along rachis edges, subtended by single green involucral bracts often appearing like continuations of the stem, and the achenes long-



Small Yellow Lady's-slipper

Wayne C. Fr

beaked and stipitate (stalked), with perianth bristles absent or inconspicuous. [Involucral bracts occur at the base of a flower cluster or spikelet.]

ORCHID FAMILY (Orchidaceae)

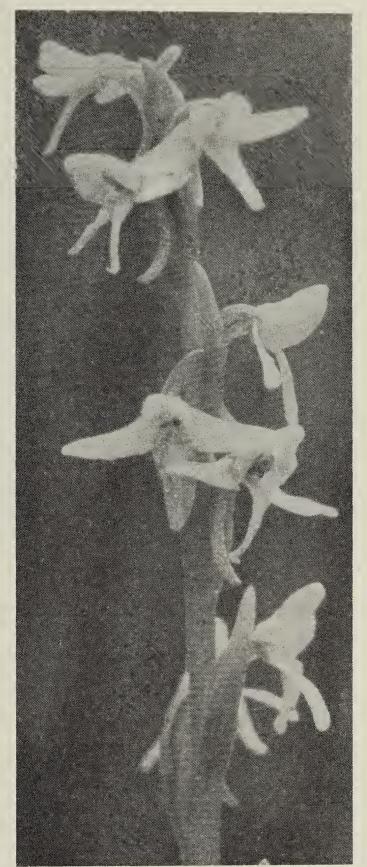
STRIPED CORALROOT [Corallorhiza striata Lindl.] is an orchid of rich aspen woods. Near Saskatoon it is found at Pike Lake and 10 km sw of Dundurn. It is locally sparse at about a dozen widely spaced localities in the Aspen Parkland and southermost Source Boreal Forest regions of the provise north to St. Walburg and Candle and southeastward to Indian Head Moose Mountain, and also in he Cypress Hills (map 11).

This orchid is a non-green saprop te living on decaying organic matter, it roots coral-like, the sepals and p al (including the "lip") are about an long and conspicuously purple-stp ad ne lip is declined, tongue-shaped, with o lobes or spurs.

ALL YELLOW LADY'S-SLIPPER cypripedium calceolus L. var. pariflorum (Salisb.) Fern.; syn.: C. pariflorum Salisb.] is found in moist pring woods. Beaver Creek, Pike Lake nd Biddulph Natural Area have opulations of this orchid. In Saskchewan it is widespread across the outhern Boreal Forest, the Aspen arkland Region, and southward, espeally along the Qu'Appelle and Pipesne River valleys; it has recently been corded in the Cypress Hills West lock near Fort Walsh, and along oose Mountain Creek north of xbow (map 12). Although this orchid ppears too frequently in Saskchewan to be designated a provinally rare species according to the iteria used by the National erbarium's Rare Plants Program, and as not included as such by Maher et , it is reportedly rare elsewhere over uch of North America.² It is also on e protected list of C.I.T.E.S. (Convenn on the International Trade of Enngered Species). Thus, for the above asons, and because as a largewered, showy orchid it is both subt to and very vulnerable to picking d transplantation attempts, as well as ccumbing quickly to cattle-grazing d trampling, it has been tentatively cluded here as a "rare species" serving to be protected and apciated in natural habitats.

is showy native orchid is characized by 3-4 lance-ovate stem-leaves, nspicuous flowers with bright-yelv lip-pouches 2-3 cm long, and the bals and lateral petals yellowish to lally purplish-brown, longer than the

WHITE BOG-ORCHID or BOG NDLE [*Platanthera dilatata* (Pursh) dl.; syn. *Habenaria dilatata* (Pursh)



White Bog Orchid

W.C. Harris

Hook.; *Limnorchis dilatata* (Pursh) Rydb.] is found in wet boggy woods. In the Saskatoon area it is at Pike Lake. It has been recorded in the Cypress Hills and from various places in the southern Boreal Forest and northern Aspen Parkland regions, in the Duck Lake-Macdowall area, north to Lake Waskesiu and east to the Pasquia and Porcupine Hills (map 13).

Although this orchid was not listed by Maher et al., it appears at least as rare in Saskatchewan as various other included species, and in this author's opinion should be added to the provincial rare list.² It, also, is on the protected list of C.I.T.E.S.

This species differs from the similar and more common Green-flowered Bog Orchid [*Platanthera hyperborea* (L.) Lindl.] in having flowers milky-white (rather than greenish) and strongly spicy-scented; the lip is more abruptly and conspicuously dilated at base, and the upper leaves tend to be more sharply pointed.

GOOSEFOOT FAMILY

(Chenopodiaceae)

*! SMOOTH ARID GOOSEFOOT [Chenopodium subglabrum (S. Wats.) A. Nels.; syn.: C. leptophyllum (Moq.) Nutt. var. subglabrum S. Wats.] grows on shrubby, stabilized sand-hills. It has been located in Beaver Creek Park and 2 km n of that park. It is locally sparse near Piapot, Empress, Liebenthal, Cramersburg, Broderick, Dunblane, Elbow, Bridgeford and Mortlach (map 14).

This goosefoot is an erect annual, 1-5 dm tall, with leaves linear, 1-nerved, entire (edges not lobed or toothed), fleshy, glabrous (naked, without hair or scaliness) or nearly so, pale-green, the larger ones 3-5 cm long and less than 5 mm broad.

MUSTARD FAMILY

(Brassicaceae or Cruciferae)

*! PROSTRATE ALPEN-CRESS [*Hy-menolobus procumbens* (L.) Nutt.; syn.: *Hutchinsia procumbens* (L.) Desv.] grows in saline lakeshore meadows, such as those at Indi Lake. It is also recorded at Oban and Handel (nw & w of Biggar), Goose Lake (se Tessier), Morran (se of Kindersley), Ingebi Lake (se of Fox Valley) and Park (map 15).

These plants are tiny, erect, spring nuals, with very slender stems, less 1 dm tall; the leaves are entire or basal ones lyrate-pinnatifid; the sr distinctly stalked flowers, and event ly fruits, are borne in loose term racemes (each flower is on a short : I from a common stem) composing the plant height, the sepals and w petals are only about 1 mm long, the pod-fruits (silicles) short, to 4 long, elliptical to ovate or obove scarcely flattened, with multiple so per compartment.

ROSE FAMILY (Rosaceae)

FIVE-LEAVED CINQUEFOIL [Poter I quinquefolia Rydb.; syn.: P. nive I var. subquinata (Lange) Hiit.; P. r var. pentaphylla Lehm.] occurs or r grassland slopes above sand-pit shes. It is found just n of Saskatoon recorded at various local sites r Herschel, east to Leslie (sw of Wade and north to Richard and Prince A (map 16).

Plants of this cinquefoil are low, so e what tufted, perennial herbs, with e stems 1-2 dm tall; the leaves are (5 palmately compound (with the least arising from one point), with the least lobes narrow, serrate (toothed), der hwhite-tomentose (with matted woll like hairs) beneath, lacking long g mathematical stalks with sem peressed silky-villous hairs. The ye we flowers are about 1 cm wide, in rate dense terminal clusters.

LEGUME FAMILY

(Fabaceae or Leguminosae)

SMALL LUPINE [Lupinus pusillus P h occurs on bluff slopes of stabiled sand-dune grassland and self beaches along South Saskatchewa ?.



all Lupine

and 30 km s-sw of Saskatoon. It nges from the Great Sandhills, east to ortlach, and north to Alsask, indersley and Saskatoon (map 17). though highly infrequent and locally arse in the Saskatoon vicinity, this ecies becomes more frequent, somenes even quite numerous locally, furer southwestward in the province. hus, based on present distributional owledge, the species is borderline th regard to still deserving a provinilly rare status.

all Lupines are annual herbs from nder taproots, with somewhat basaldecumbent stems (the lower stem ng along the ground) to 2 dm tall; the ves are palmately compound and stly 5-digitate; the stem and leaf unsurfaces are densely pilose (with g straight hairs). The flowers are pale e-purple to almost white, and the legume-pods are 2-seeded, shaggy villous, about 2 cm long.

*! HAIRY PRAIRIE-CLOVER [*Petalos-temon villosum* Nutt.] is a plant of sandhill blowouts. In this area it occurs 16 km sw of Dundurn and nw of Proctor Lake. Near Mortlach and Caron are the only other sites within the province (map 18).

These are perennial herbs, 2-5 dm high, densely silky hairy throughout, the pinnately compound leaves with (7-)11-17 leaflets lanceolate, elliptic or oblong, but not linear, 0.5-1.5 cm long. The flowers are roseate to purplish, borne in spikes that loosen and elongate to over 1 dm in fruit stage, when they bear 1-2 seeded pods.



Crowfoot Violet

VIOLET FAMILY (Violaceae)

CROWFOOT VIOLET [Viola pedatifida G. Don] is found on sandy grassland slopes. Crowfoot Violets occur s and sw of Saskatoon, at Beaver Creek and Kernen's Prairie. It is widespread but sporadic from the southern border of the province, northward to near Lloydminster, Shellbrook and McKague (map 19).

Usually this violet is locally sparse, often becoming depleted by overgrazing and tillage. Nevertheless, the Crowfoot Violet appears rather too widespread and frequent overall in Saskatchewan to deserve a provincially rare status.

This is a blue-flowered, stemless violet that is primarily characterized by its leaves being deeply 2-3 palmately divided into lance-linear ultimate ments.

PRIMROSE FAMILY (Primulaceae

*! CHAFF-WEED [Centunculus 17 mus L.; syn.: Anagalis minima. Krause] grows on dried slough ma r and bottoms. It is found at Cory a of the Saskatoon Airport. Provincia is recorded near Burstall (s of Lea r Reed Lake (s of Herbert), Mortlach i ney (se of Moose Jaw), w of n er o Last Mountain Lake, Fusilier (w of a robert), and Tramping Lake (s of W is (map 20).

This small, depressed, annual he less than 1 dm high, with the let alternate, obovate to oblong, al x sessile (stalkless), less than 1 dm The flowers are axillary, pink, tiny, 1 about 3 mm wide; the capsule If sessile, with dehiscence circumc il (termed a pyxis). [The seeds are released by the opening of a cap-like lid.]

ENTIAN FAMILY (Gentianaceae)

MOSS GENTIAN [Gentiana aquatica L.; syn.: G. fremontii Torr.] requires moist ground-water seepage in grassy meadows. It has been found at Dunfermline (w of Saskatoon). It occurs also at Wyatt (sw of Swift Currrent), Glen Kerr, Caron, Mortlach, and Valley Centre (ne of Rosetown) (map 21).

This small annual or biennial herb is basally much branched, less than 1 dm all, with leaves numerous, small, less han 6 mm long, scaly, white-margined. The flowers are small, solitary, terninal, purplish-green, with corollas 4barted and pleated, enclosing the ubsessile capsules.

ARGUS, G.W. and K.W. PRYOR. 1986. Preliminary list of the rare vascular plants f Canada. Botany Division, National Juseum of Natural Sciences, Ottawa, Onario. 45 pp. (prepublication draft).

MAHER, R.V., G.W. ARGUS, V.L. ARMS, and J.H. HUDSON. 1979. he rare vascular plants of Saskatchewan. yllogeus No. 20. National Museums of anada, Ottawa.

HABETICAL CHECK LIST OF ENTIFIC AND COMMON NAMES

uding important synonyms** and alate common names)

pyron dasystachyum var. *psammophilum* AND-DUNE WHEAT GRASS (Poaceae).

- **Agropyron psammophilum (A. dasystachyum var. psammophilum).
- ALPEN-CRESS, PROSTRATE (*Hymenolobus procumbens*).
- **Anagalis minima (Centunculus minimus).
- BOG-CANDLE (Platanthera dilatata).
- BOG-ORCHID, TALL WHITE (*Platanthera dilatata*).
- Botrychium lunaria MOONWORT; MOON-FERN (Ophioglossaceae).
- *Botrychium multifidum* LEATHERY GRAPE-FERN (Ophioglossaceae).
- BULRUSH, DWARF (*Scirpus pumilus* var. rollandii).
- Centunculus minimus CHAFF-WEED (Primulaceae).

CHAFF-WEED (Centunculus minimus).

- **Chenopodium leptophyllum var. subglabrum (C. subglabrum).
- Chenopodium subglabrum SMOOTH ARID GOOSEFOOT (Chenopodiaceae).
- CINQUEFOIL, FIVE-LEAVED (Potentilla quinquefolia).
- CLUB-RUSH, RED (*Scirpus rufus* var. *neogaeus*).
- *Corallorhiza striata* STRIPED CORALROOT (Orchidaceae).
- CORALROOT, STRIPED (Corallorhiza striata).
- Cypripedium calceolus var. parviflorum -SMALL YELLOW LADY'S-SLIPPER (Orchidaceae).
- **Cypripedium parviflorum (C. calceolus var. parviflorum).

- *Eleocharis compressa* FLAT-STEMMED SPIKE-RUSH (Cyperaceae)
- **Eleocharis elliptica var. compressa (E. compressa).
- *Eleocharis engelmannii* ENGELMANN'S SPIKE-RUSH (Cyperaceae).
- **Eleocharis obtusa var. engelmannii (E. engelmannii).
- *Elymus glaucus* SMOOTH or BLUE WILD RYE (Poaceae).
- GENTIAN, MOSS (Gentiana aquatica).
- Gentiana aquatica MOSS GENTIAN (Gentianaceae).
- **Gentiana fremontii (G. aquatica).
- GOOSEFOOT, SMOOTH ARID (Chenopodium subglabrum).
- GRAPE-FERN, LEATHERY (*Botrychium multifidum*).
- **Habenaria dilatata (Platanthera dilatata).
- **Hutchinsia procumbens (Hymenolobus procumbens).
- *Hymenolobus procumbens* PROSTRATE ALPEN-CRESS (Brassicaceae).
- LADY'S-SLIPPER, SMALL YELLOW (Cypripedium calceolus var. parviflorum)
- **Limnorchis dilatata (Platanthera dilatata).

LUPINE, SMALL (Lupinus pusillus).

Lupinus pusillus - SMALL LUPINE (Fabaceae).

MOON-FERN (Botrychium lunaria).

MOONWORT (Botrychium lunaria).

NAIAD, FLEXIBLE (Najas flexilis).

Najas flexilis - FLEXIBLE NAIAD (Najadad

- Petalostemon villosum HAIRY PRA CLOVER (Fabaceae).
- Platanthera dilatata TALL WHITE BOG CHID or BOG-CANDLE (Orchidaceae
- Potentilla quinquefolia FIVE-LEA CINQUEFOIL (Rosaceae).
- **Potentilla nivea var. pentaphylla quinquefolia).
- PRAIRIE-CLOVER, HAIRY (*Petaloste villosum*).
- Scirpus pumilus var. rollandii DWARF RUSH (Cyperaceae).
- **Scirpus rollandii (S. pumilus var. rollai
- Scirpus rufus var. neogaeus RED C RUSH (Cyperaceae).
- SELAGINELLA, PRICKLY (Selag. selaginoides).
- Selaginella selaginoides PRIC SELAGINELLA (Selaginellaceae)
- SPIKE-RUSH, ENGELMANN'S (Eleoc engelmannii).
- SPIKE-RUSH, FLAT-STEMMED (*Electronic compressa*).
- *Viola pedatifida* CROWFOOT VI(E (Violaceae).
- VIOLET, CROWFOOT (Viola pedatifida),
- WHEATGRASS, SAND-DUNE (Agro, dasystachyum var. psammophilum).
- WILD-RYE, BLUE (Elymus glaucus).

WILD-RYE, SMOOTH (*Elymus glaucus*).