

BROCKELBANK HILL—FLORISTICALLY UNIQUE IN SASKATCHEWAN, AND DESERVING PROTECTION

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Floristically one of the most unique areas in the province, possessing an unusually high concentration of provincially rare and sometimes widely disjunct native plant species, is the 3800-hectare summit of Brockelbank Hill, the highest part of the Porcupine Hills in east-central Saskatchewan (about 45-50 km east-southeast of the town of Hudson Bay, see Map 1). With the inclusion of an 8-km linear stretch of the Little Armit River Valley to the north a total of 29 species of native vascular plants recognized as rare in Saskatchewan are found in this area (see map 2). Nine of these taxa are considered especially rare for the province [viz. *Carex laxiflora* var. *varians*, *Cystopteris montana*, *Lycopodium selago* var. *patens*, *Malaxis monophyllos* var. *brachypoda*, *Milium effusum* var. *cisatlanticum*, *Potamogeton robbinsii*, *Viola incognita*, *Viola macloskeyi* ssp. *pallens*, and *Viola pubescens* var. *leiocarpa*].

Fourteen of the 29 provincially rare plants now known from the Brockelbank Hill - Little Armit River area were first discovered there and collected in 1973 and 1974 by John H. Hudson, who subsequently published reports on eight of them, including four as new provincial records.^{6, 7} The remainder were subsequently found and collected in the area by George F. Ledingham, Wayne C. Harris, Donald F. Hooper, Les Baker and the present author, with Hudson and Hooper making the most significant contributions to our botanical knowledge of the area.

The provincially rare plants that have been recorded from within the confines

of the proposed Brockelbank Hill - Little Armit River Natural Area are presented in an appended annotated list, alphabetically by scientific name, followed by important synonyms, the common name(s), local habitats of the plants, literature reports and specimen record citations from the study area and a list of other sites within Saskatchewan. Maps show recorded sites within the study area of provincially rare taxa. Saskatchewan contribution is also shown on the inset map.

Vegetation and forests

Prior to the 1980 fire the Brockelbank Hill summit and slopes were primarily covered by forests of White and Black Spruce (*Picea glauca* and *P. mariana*) with varying admixtures of White Birch (*Betula papyrifera* and *B. neoalaskana*), and especially along drainages, Balsam Poplar (*Populus balsamifera*), River Alder (*Alnus rugosa*) and willows (*Salix* sp.). Some of the drier ridges supported Jack Pine (*Pinus banksiana*) stands. Small lakes or ponds are often margined by boggy shore fens; bogs are surrounded by wet Black Spruce woods.

At the lower elevations (about 425-1400 m/1400-1700 ft.) along the Little Armit River are found rich, mesic, predominantly mixedwood stands of White Spruce - White Birch - Balsam Poplar - Trembling Aspen (*Populus tremuloides*), often with a lush understory of Mountain Maple (*Acer spicatum*).

About two-thirds of the forests on Brockelbank Hill summit and north-south brow were burned off during the major

violets, and other wild flowers upon the removal of the cool, mossy, high-altitude woods. Hopefully such a serious mistake from a conservation perspective may still be prevented in Saskatchewan's Porcupine Hills, so that an important and irreplaceable part of our natural botanical heritage may still be preserved in its wilderness state.

Present day forest harvesting, as carried out both for the lumber and pulping industries, is an anathema to naturalists and conservationists. The current clear-cutting and associated forestry methods that involve the removal of all harvestable species and a bulldozing of the underbrush, leaves the cut forest totally disturbed. The understory plants are largely destroyed, especially those characteristic of the cool, moist woods which are unable to survive on the now warmed, exposed surfaces. The rarest and most delicate understory species are irretrievably lost from extensive clear-cut areas. With the use of modern clear-cutting methods, followed often by scarification and sometimes a subsequent "weeding" of successional understory plants, natural forests can not be considered truly renewable, nor the forestry industry to be environmentally sustainable. Systematic botanists, ecologists and naturalists view forests in terms of the total spectrum of native species present. It is not tolerable that our province's forests should be considered as merely a resource to be "mined" and destroyed for immediate profits and jobs, nor that they be managed as if they were only "tree-farms" to produce "crops" of a few desired tree species. Rather, they are the natural home for hundreds of plant and animal species, and as such represent important and irreplaceable surviving fragments of our natural heritage. At the very least, those limited areas of our natural forests that reveal a special uniqueness in terms of the presence of rare species and unusual botanical diversity, should be saved from destruction in per-

petuity. To do otherwise would seem unforgivable display of human arrogance and greed. Few areas in Saskatchewan would appear more deserving of preservation for the foregoing reasons than the proposed Brockelbank Hill - Little Armit River Natural Area.

Access to this proposed natural area is provided by the Woody Lake Road which extends south from the former village of Armit (on Provincial Highway #49) ascending the northern slopes of the Porcupine Hills along the Little Armit River and then descending the southern slopes of the hills roughly parallel to the Woody Lake River, and continuing southward to the village of Arran (on P.H. #49). Along the Woody Lake Road, about 22 km (13 mi.) south of Armit, just over the northern brow of the Brockelbank Hill summit, approximately 790 m (2600 ft.) elevation, a 2.5-km side road branches to the west leading past "Rice Lake" to the Fire Tower Lookout. On the east side of the Woody Lake Road, at this junction and beside the streamlet that is the upper Little Armit River, a small provincial roadside picnic site was established in the late 1970s. A plaque-bearing cairn was erected at this site to commemorate and name the hill summit in honor of John Brockelbank, a long-time popular member of the provincial legislative assembly who represented the Hudson Bay District. In 1979-80 the Saskatchewan Department of Tourism and Renewable Resources (STRR) laid out the "Brockelbank Hill Nature Trail" beginning at the picnic site, proceeding east through the rich spruce woods, and terminating at the marshy lake shore. Although the self-interpretive brochure prepared for this trail by STRR (1980) failed to mention any, there are 12 provincially rare plant species found either on the streamlet banks in the campsite area or in the woods along the trail, or else on the marshy shore and shallow lake water at the trail terminus. These include the especially rare Mountain Bladder-fern, Large-leaved White Violet, Millet Grass,

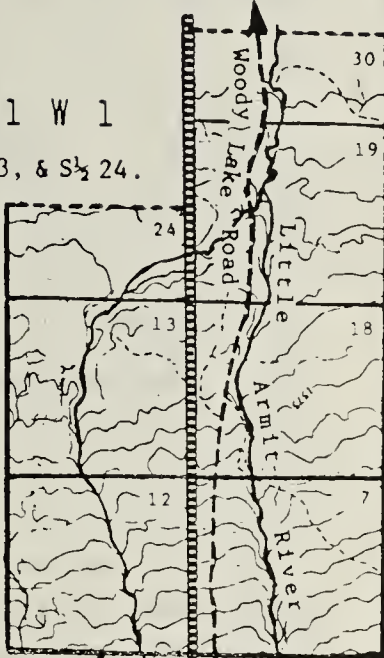
7.5 miles (12 km) to Armit

T 43 N, R 31 W 1

SECS. E ½ 1, 12, 13, & S ½ 24.

T 43 N, R 30 W 1

SECS. SW ¼ 5, 6, 7, 18, 19, & S ½ 30.

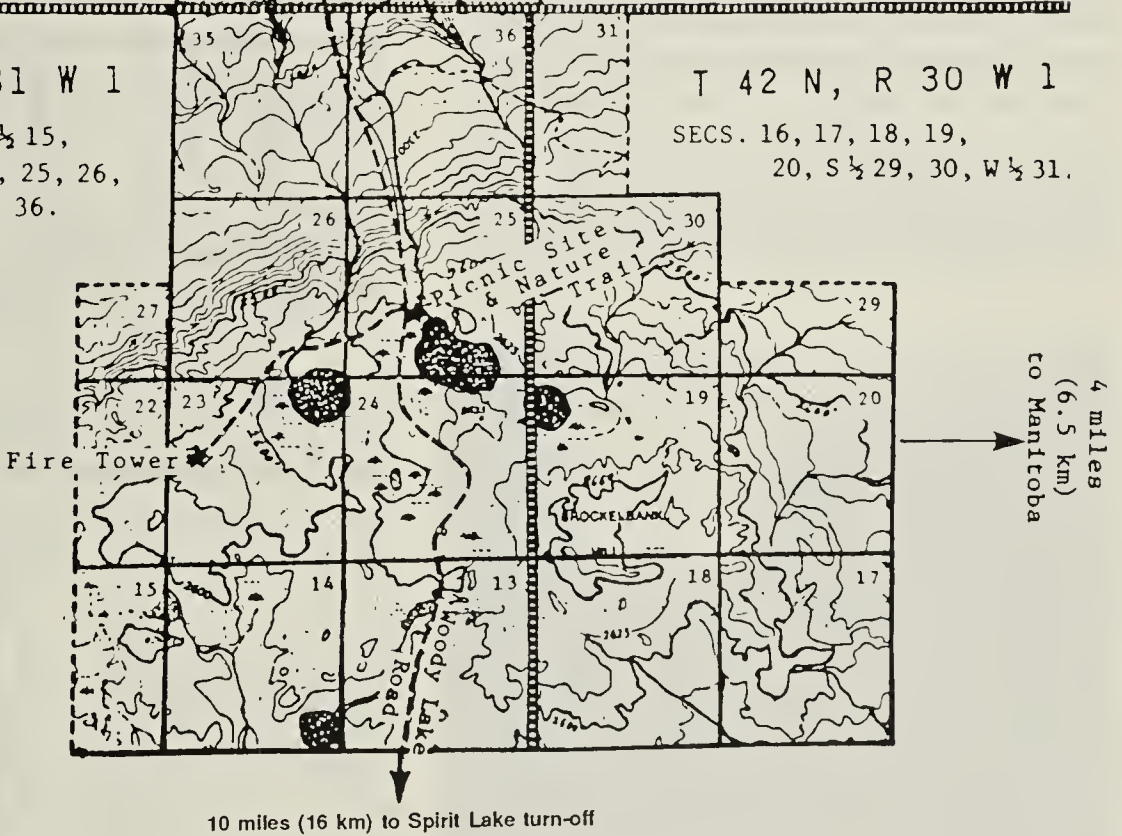


T 42 N, R 31 W 1

SECS. 13, 14, E ½ 15,
E ½ 22, 23, 24, 25, 26,
SE ¼ 27, 35, 36.

T 42 N, R 30 W 1

SECS. 16, 17, 18, 19,
20, S ½ 29, 30, W ½ 31.



4 miles
(6.5 km)
to Manitoba

Map 2. The proposed Brockelbank Hill Natural Area (Porcupine Hills)

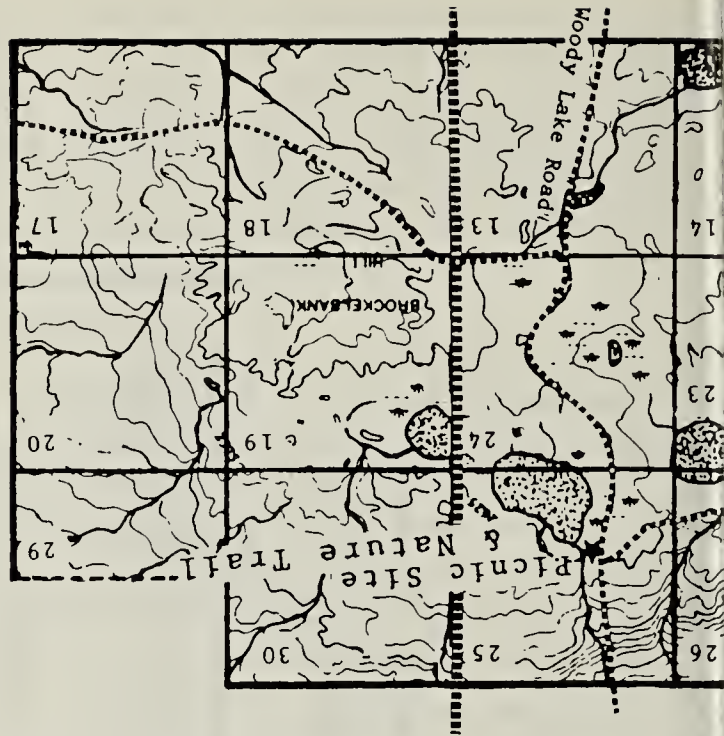
Loose-flowered Sedge, White Adder's-mouth Orchid, and Robbin's Pondweed. Not only Ostrich Ferns, as mentioned in the brochure, are prominent along moist streamlet banks at the picnic site, but almost equally abundant here are the provincially rare Lady Ferns.

About 1 km west-southwest of the picnic site, along the Fire Tower Road, the broad marshy fen-like border of the small lake, locally called "Rice Lake" because of the aquaculturing here of Wild Rice (*Zizania aquatica*), is a second site notable for the presence of six provincially rare species. These include the especially rare Sweet White Violet and the Patent Mountain Club Moss.

Proposed Natural Area

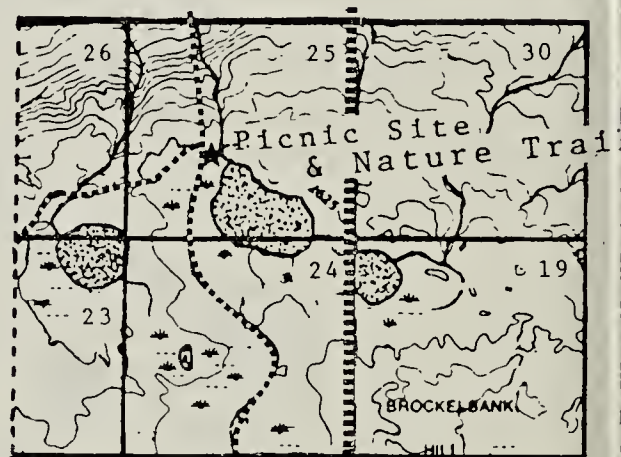
The author proposed to the Saskatchewan Department of the Environment that the Brockelbank Hill - Little Armit River be legally established as a protected ecological reserve, first in 1985, and again in 1986 and 1988. Hooper has also variously petitioned the Saskatchewan government to legally protect this area.

The maximum area recommended for protection within the reserve is shown in Map 2 and includes a total of 60 km² (23 mi.²), including the following sections, or parts thereof: sections 16,17,18,19, s half 29, 30, w half 31 in Township 42-Range 30-west of the 1st meridian; 13, 14, e half 15, e half 22, 23, 24, 25, 26, se quarter 27, 35 -T42-R31-W1; sw quarter 5, 6, 7, 18, 19, s half 30-T43-R30-W1; e half 1, 12, 13, s half 24 -T43-R31-W1. A more limited version of the natural area would encompass 26 km² (10 mi.²), designated by sections 17, 18, 19, 20, s half 29 and 30-T42-R30-W1, and sections 13, e half 14, e half 23, 24, 25, e half 26-T42-R31-W1 (see Map 3).



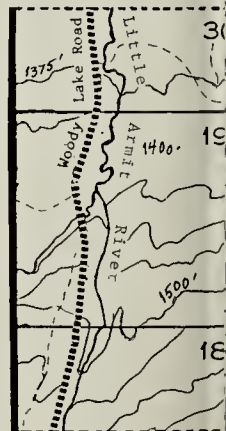
Map 3. Limited Brockelbank Hill Natural Area

The minimum area which needs protection as a Brockelbank Hill Natural Area, as shown in Map 4, includes 13 km² (5 mi.²) within sections 19 and 30-T42-R30-W1, and the e half 23, 24, e half 25 and 25-T42-R31-W1.



Map 4. Minimum Brockelbank Hill Natural Area

The minimum area for a Little Armit River Natural Area (Map 5) includes 5.2 km² (2 mi.²) legally described as n half 18, 19 and s half 30-T43-R30-W1.



Map 5. Minimum Little Armit R. N.A.

Conclusion

The previous proposals to the Saskatchewan government for the legal protection of the Brockelbank Hill - Little Armit River area as an ecological reserve, provincial park, or protected forest reserve have received little apparent response to date from either the Department of Environment or the Department of Parks and Renewable Resources. Hopefully, the preservation of the natural habitats of provincially rare native plants and of unique areas of exceptional botanical diversity, that represent irreplaceable portions of our natural heritage, may yet receive more consideration and a higher priority from Saskatchewan government departments than has been apparent in the recent past.

Besides documenting plant rarities, an important objective of this article has been to better inform Saskatchewan naturalists and conservationists concerning the existence of rare plants and the distinctive uniqueness of the Brockelbank Hill - Little Armit River area, thus hopefully soliciting public support for efforts to legally protect this valuable fragment of our natural heritage.

ARGUS, G.W. 1968. Contributions to the flora of boreal Saskatchewan. *Phodora* 70: 200-214.

HARMS, V.L. 1978. A Tentative Checklist of the Rare and Potentially Endangered Native Vascular Plants of Saskatchewan, Canada. TR No. 78-1, The W.P. Fraser Herbarium, University of Saskatchewan. 32 pp.

HARMS, V.L., D.F. HOOPER, and L. MAHER. 1985. Four violets new to the provincial flora and other rare violets of east-central Saskatchewan. *The Canadian Field-Naturalist* 99(4):498-502.

HOOPER, D.F. 1984. The twining buckwheats of east-central Saskatchewan. *Blue Jay* 42(2):71-72.

HOOPER, D.F. 1988. Field Checklist of Rare Saskatchewan Plants of the Hud-

son Bay Area. Saskatchewan Natural History Society, Regina, Sk.

⁶ HUDSON, J.H. 1974. Plant records for Saskatchewan - 1973 Version - starring Porcupine Mountain. *Blue Jay* 32 (4):210-214.

⁷ HUDSON, J.H. 1976. 1974 plant records from Saskatchewan; rediscoveries, discoveries and curiosities. *Blue Jay* 34(1): 9-15.

⁸ HUDSON, J.H. 1977a. Rare and endangered native plant species in Saskatchewan. South of latitude 55°. *Blue Jay* 35(3):126-137.

⁹ HUDSON, J.H. 1977b. *Carex* of Saskatchewan. Bison Publishing House, Saskatoon, Sk.

¹⁰ MAHER, R.V., G.W. ARGUS, V.L. HARMS and J.H. HUDSON. 1979. The Rare Vascular Plants of Saskatchewan. *Sylogaeus* No. 20, National Museums of Canada, Ottawa, Ontario.

¹¹ SKOGLUND, N.A. and V.L. HARMS. 1976. An Identification Guide to the Grasses of Saskatchewan. TR No 76-1, The W.P. Fraser Herbarium, University of Saskatchewan.

¹² WHITE, D.J. and K.L. JOHNSON. 1980. The rare vascular plants of Manitoba. *Sylogaeus* No. 27, Nat. Mus. of Canada, Ottawa.



Forest with rare violets in understory
Wayne C. Harris

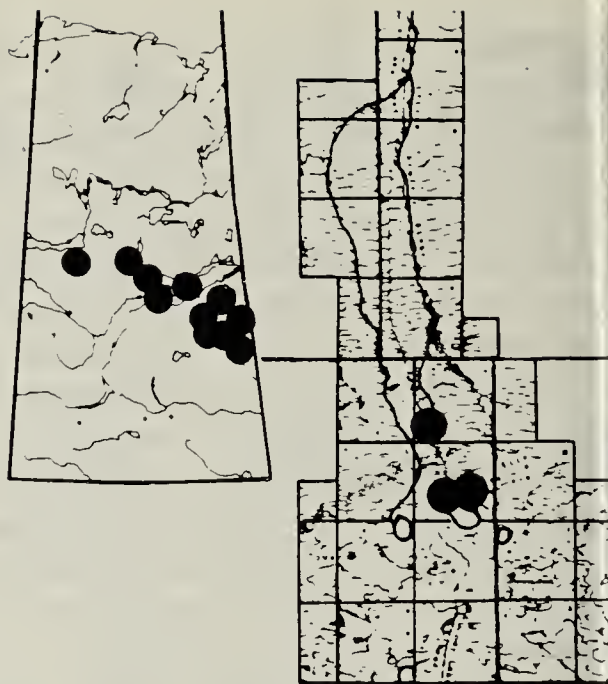
Annotated List of the Provincially Rare Plants of the Brockelbank Hill - Little Armit River Area

1. *Adoxa moschatellina* L. — MOSCHATEL. (Adoxaceae). In wet woods. Elsewhere in Saskatchewan, occasionally across the central part of the province, becoming somewhat more frequent eastward. Reported by Hooper.⁵ Specimen records: V.L. Harms, D.F. Hooper & L. Baker 32490, 32505, 32626. Brockelbank Hill & Little Armit River. (Map 6).

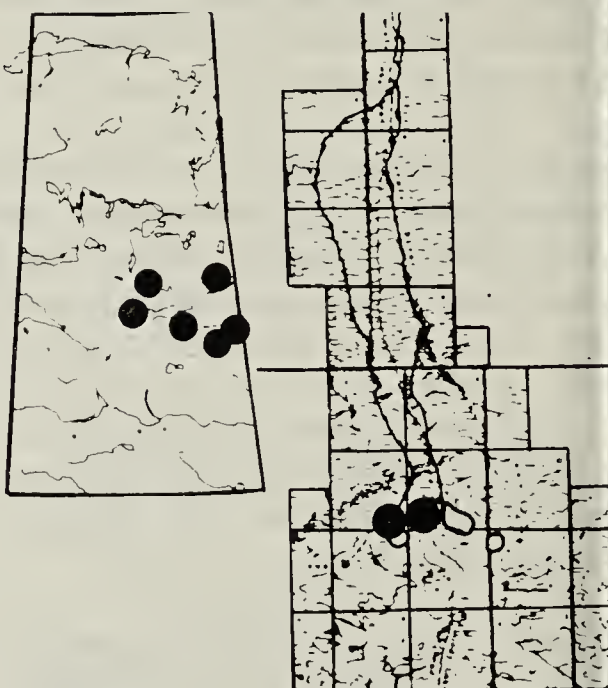
2. *Andromeda glaucophylla* Link [A. *polifolia* L. ssp. *glaucophylla* (Link) Hulten] — GLAUCOUS-LEAVED BOG ROSEMARY. (Ericaceae). In wet bogs. At various other sites in the east-central part of the province, west to near Prince Albert. Reported by Hooper.⁵ Specimen records: V.L. Harms, D.F. Hooper & L. Baker 34946, 35059, 35145 (SASK). Brockelbank Hill. (Map 7).

3. *Anemone quinquefolia* L. var. *interior* Fern. [A. *nemorosa* L. var. *bifolia* (Farw.) Boivin] — WOOD ANEMONE. (Ranunculaceae). Moist mixed woods. Only in east-central Saskatchewan. Reported by Hudson,^{7 8} Harms,² Maher et al.,¹⁰ and Hooper.⁵ Specimen records: J.H. Hudson 2930 (SASK); V.L. Harms & L. Baker 32478 (SASK); V.L. Harms, D.F. Hooper & L. Baker 32524 (SASK). Brockelbank Hill & Little Armit River. (Map 8).

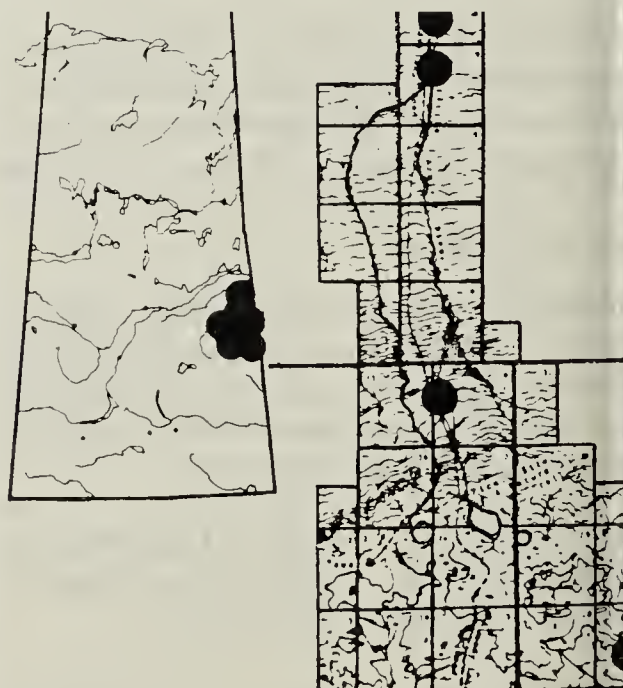
4. *Athyrium filix-femina* (L.) Roth — LADY FERN. (Aspleniaceae). Moist streamlet edges under mixed and birch woods. Elsewhere in Saskatchewan from half a dozen, widely spaced localities, including the Cypress Hills, Clearwater River, Lake Athabasca south shore, south of Wollaston Lake, Wapawekka Lake and the Pasquia Hills. Reported here by Hooper.⁵ Specimen records: W.C. Harris, 553, 554, or 560 (SASK); V.L. Harms, D.F. Hooper & L. Baker 32145, 32168, 32489, 32533, 34847,



Map 6. *Adoxa moschatellina*



Map 7. *Andromeda glaucophylla*



Map 8. *Anemone quinquefolia interior*



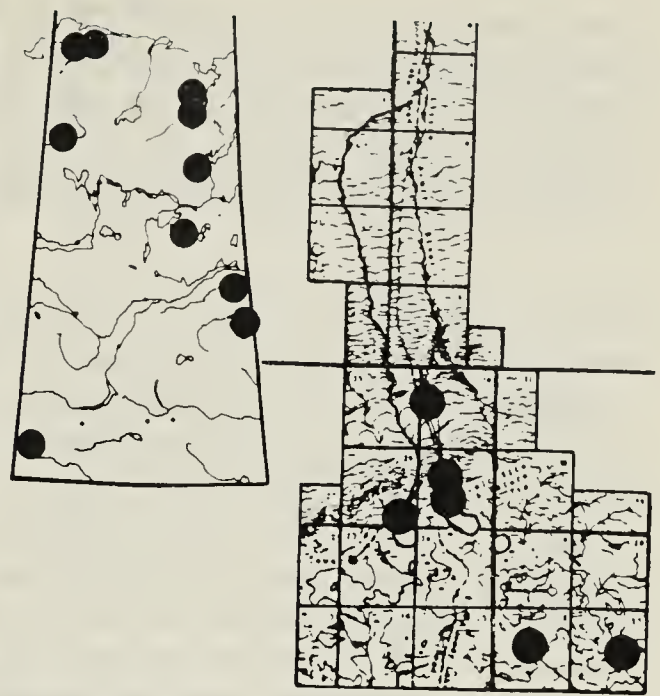
Athyrium filix-femina — LADY FERN
Wayne C. Harris

34927, 35026, 35057 (SASK). Brockelbank Hill & Little Armit River. (Map 9).

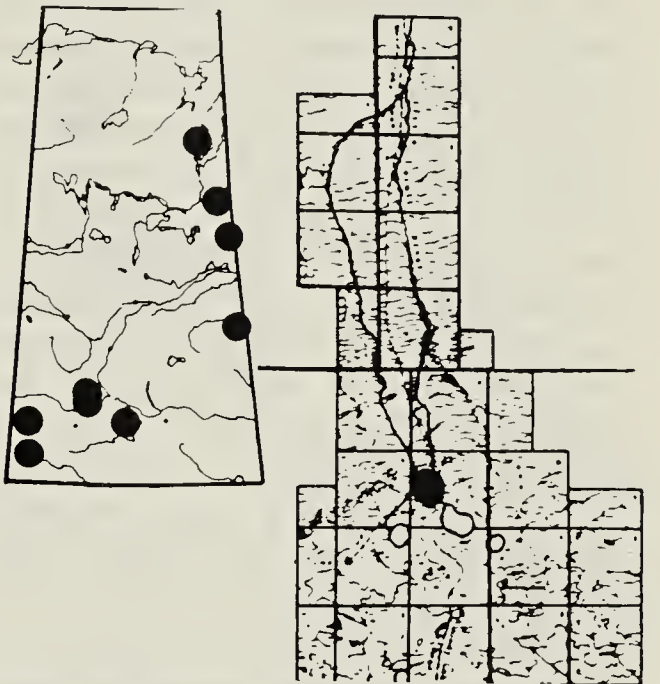
Botrychium matricariaefolium A.Br. — CHAMOMILE-LEAVED GRAPE-FERN. (Ophioglossaceae). Moist-open spruce woods. Locally rare at widely spaced localities from the Cypress Hills to near Reindeer Lake. Reported by Hooper.⁵ Specimen records: V.L. Harms, D.F. Hooper & L. Baker 35123 (SASK). Brockelbank Hill. (Map 10).

Botrychium multifidum (Gmel.) Rupr. — LEATHERY GRAPE FERN. (Ophioglossaceae). Moist, open-wooded shores. Locally rare at various widely spaced sites over the province. Reported by Hooper.⁵ Specimen records: D.F. Hooper & L. Baker 8707-103 (SASK). Brockelbank Hill. (Map 11).

Carex laxiflora Lam. var. *varians* Bailey [C. *leptonervia* Fern.] — MOOSE-FLOWERED SEDGE. (Cyperaceae). In mossy spruce woods. The only Saskatchewan record at the species' western range limit. Reported



Map 9. *Athyrium filix-femina*

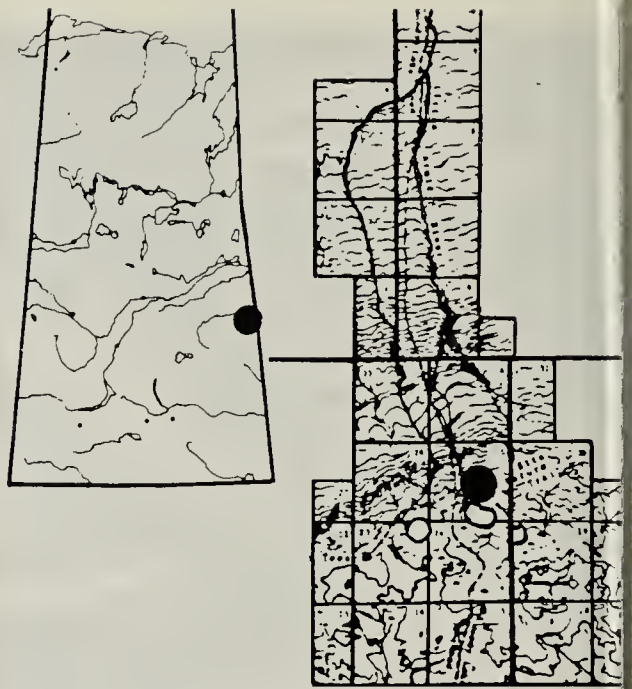


Map 10. *Botrychium matricariaefolium*



Map 11. *Botrychium multifidum*

by Hudson,^{6 8 9} Harms,² Maher et al.¹⁰ and Hooper.⁵ Specimen records: J.H. Hudson 2871, reported as var. *blanda* (Dewey) Boott [*C. blanda* Dewey] (SASK, DAO).⁶ Brockelbank Hill. (Map 12).



Map 12. *Carex laxiflora varians*

8. *Carex pauciflora* Lightf. — FEW-FLOWERED SEDGE. (Cyperaceae). On sphagnum moss in wet black spruce woods. Recorded from Lake Athabasca, Cluff Lake, Southend region, Courtney Lake (south of Wollaston Lake) and Candle Lake. This sedge was not included by Maher et al. as a provincially rare species because the plants are apparently quite numerous in some northern Saskatchewan populations.¹⁰ Nevertheless the known locality records in the province are relatively few and this species would seem at least a potential candidate for provincially rare status. Hudson reported it to be "a species of the Boreal Coniferous Forest, which is either rare or hard to see."⁹ Whether or not this species deserves a provincially rare status, the Brockelbank Hill population represents a phytogeographically interesting southern outlier in Saskatchewan. Specimen records: J.H. Hudson 2856 (SASK, DAO); D.F. Hooper 8307-1603 (SASK); V.L. Harms, D.F. Hooper & L. Baker 84922 (SASK). Brockelbank Hill. (Map 13).



Map 13. *Carex pauciflora*

9. *Carex pedunculata* Muhl. — LONG-STALKED SEDGE. (Cyperaceae). Moist rich deciduous and mixed woods. Only from near Hudson Bay and Cumberland House. Reported by Hudson,^{7 8 9} Harms;² Maher et al.¹⁰ & Hooper.⁵ Specimen record: J.H. Hudson 2932 (SASK). Little Armit River. (Map 14).

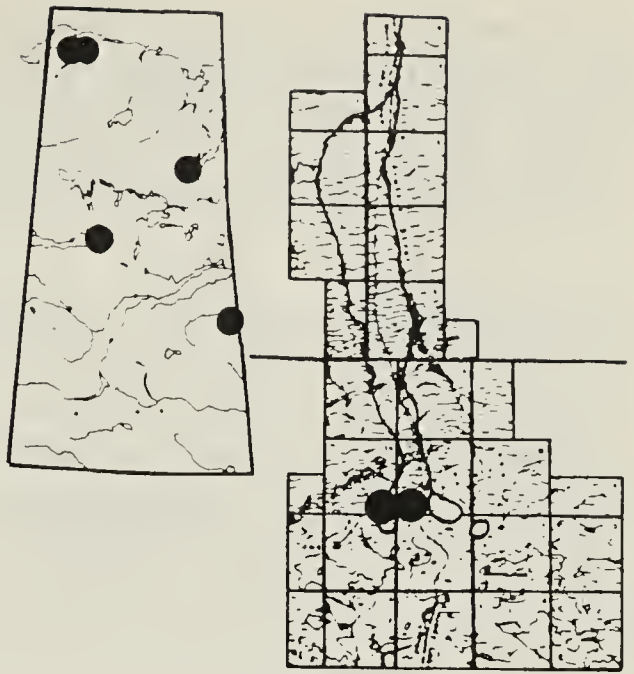


Map 14. *Carex pedunculata*

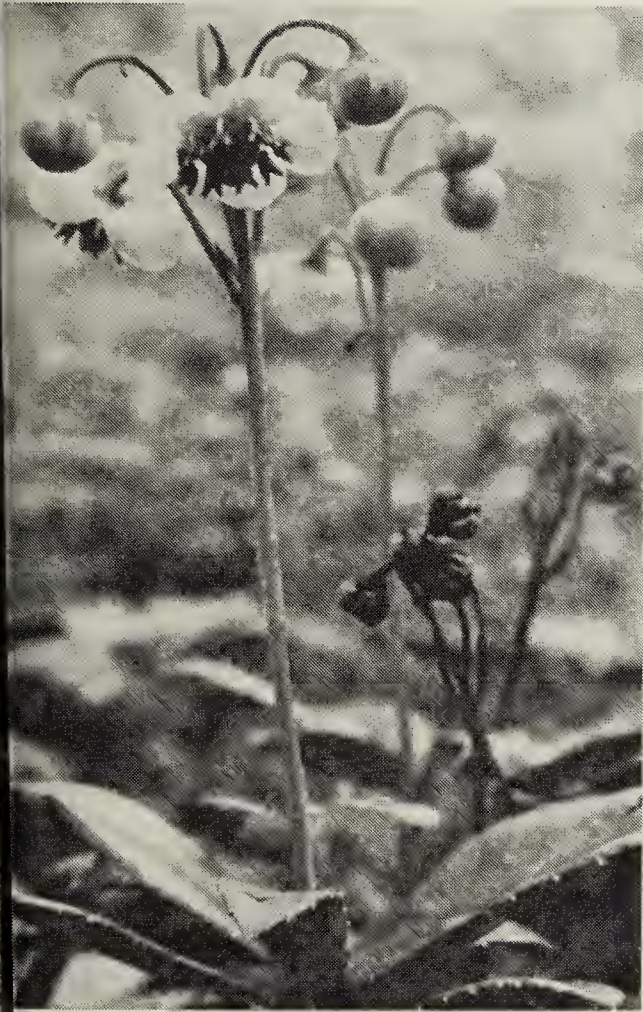
10. *Carex trisperma* Dewey — THREE-SEEDED SEDGE. (Cyperaceae). In wet woods. At several, widely spaced, boreal forest localities across the province. Reported by Hooper.⁵ Specimen records: D.F. Hooper, L.

Baker & V.L. Harms 8508-0108 & 8508-0118 (SASK). Brockelbank Hill. (Map 15).

1. *Chimaphila umbellata* (L.) Bart. — PRINCE'S-PINE; PIPSISSEWA. (Pyrolaceae). In open coniferous or mixed woods. At various widely spaced boreal forest and Cypress Hills localities. Reported by Maher et al.¹⁰ and Hooper.⁵ Specimen records: Those documenting the Maher et al. report have not yet been located. Brockelbank Hill. (Map 16).



Map 15. *Carex trisperma*

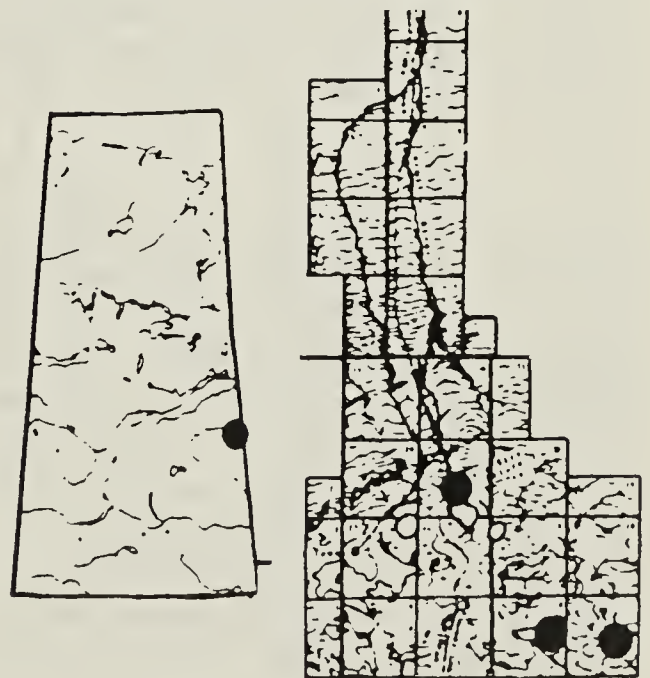


Chimaphila umbellata — PIPSISSEWA
Wayne C. Harris



Map 16. *Chimaphila umbellata*

Cystopteris montana (Lam.) Bernh. — MOUNTAIN BLADDER FERN. (Aspleniaceae). Moist spruce woods and open seepy north-facing slopes. The single known Saskatchewan locality, and only record of this species between Waterton Lakes National Park, Alberta, and Lake Superior. Reported by Hudson,⁶ Harms,² Maher



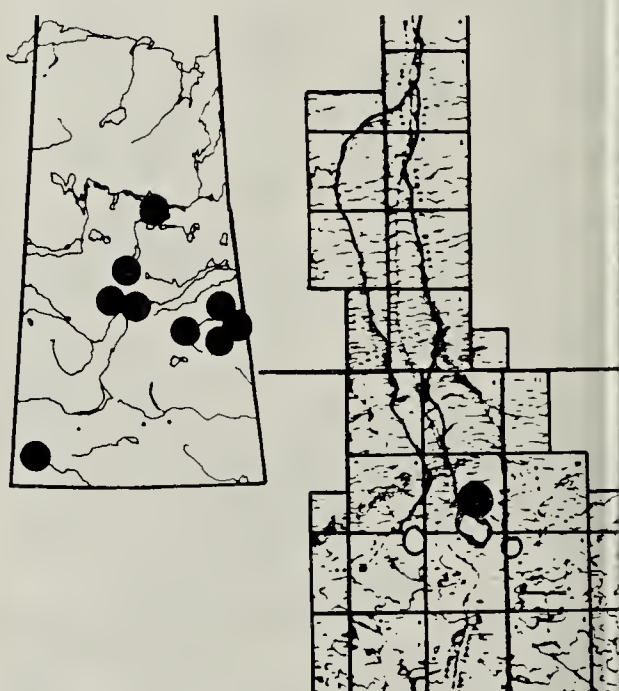
Map 17. *Cystopteris montana*

et al.¹⁰ and Hooper.⁵ Specimen records: J.H. Hudson 2866 (SASK, DAO); V.L. Harms, D.F. Hooper & L. Baker 32150, 32163, 32172, 32179, 34930, 35035, 35075 (SASK). Brockelbank Hill. (Map 17).

13. *Diervilla lonicera* P.Mill. — BUSH HONEYSUCKLE. (Caprifoliaceae). In moist White Spruce and mixed woods. It is now known from quite a number of localities in east-central Saskatchewan from the Pasquia Hills, the Red Deer and Piwei River valleys, and west to Greenwater Lake Provincial Park, extending northwestward to Nipawin and Torch Lake south of Candle Lake. On the basis of the fairly numerous recent collections with notations of relative abundance in east-central Saskatchewan, this species may no longer deserve the provincially rare status assigned to it by Maher et al.¹⁰ Specimen records: J.H. Hudson 2868 (SASK); R. Berezowsky s.n. (22 July 1975) (SASK). Brockelbank Hill and Little Armit River. (Map 18)

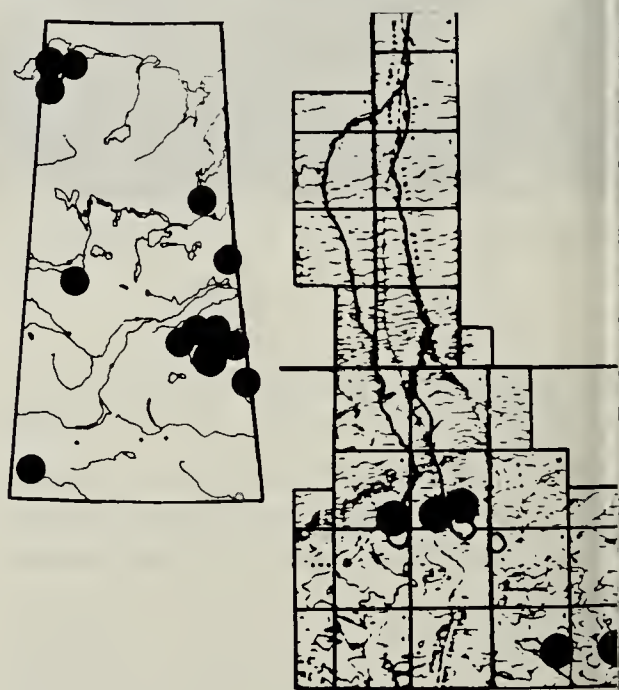


Map 18. *Diervilla lonicera*



Map 19. *Listera borealis*

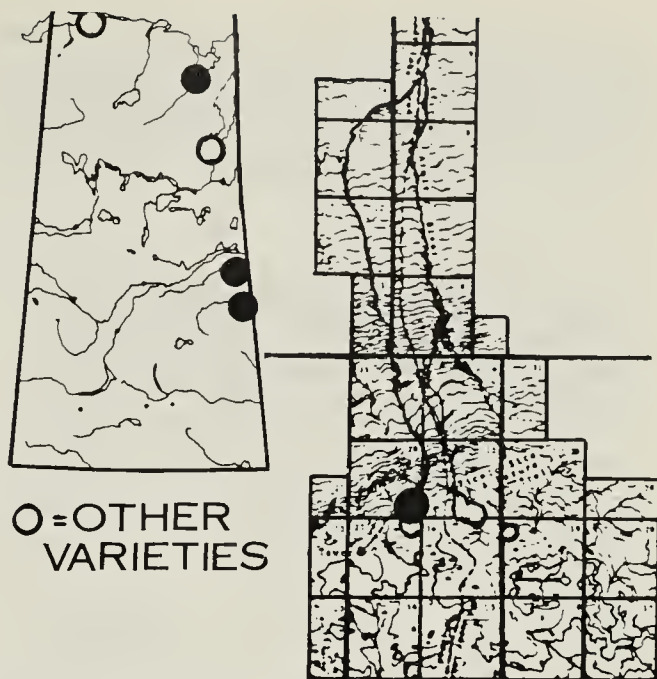
14. *Listera borealis* Morong — NORTHERN TWAYBLADE. (Orchidaceae). Springy spruce woods and alder thickets. Sparse in the Cypress Hills and the southern boreal forest region from Duck Mountain and near Prince Albert north to Lac la Ronge. Reported by Hooper.⁵ Specimen records: D.F. Hooper s.n. Brockelbank Hill. (Map 19).



Map 20. *Listera cordata*

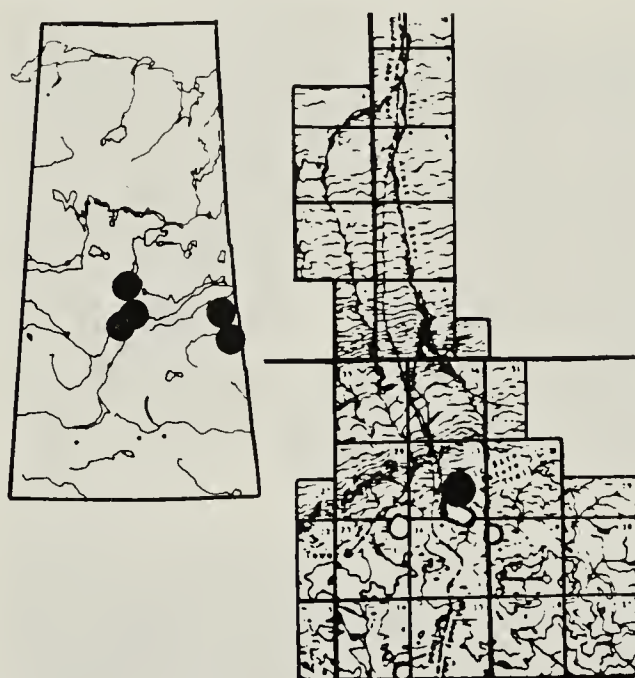
15. *Listera cordata* (L.) R.Br. — HEART-LEAVED TWAYBLADE. (Orchidaceae). In moist spruce woods and treed bogs. Sparse at various widely spaced localities in the Cypress Hills and the boreal forest northwards from Duck Mountain and Meadow Lake. Reported by Harms² and Hooper.⁵ Specimen records: J.H. Hudson 2854 (SASK); V.L. Harms, D.F. Hooper & L. Baker 34823, 34898, 35043, 35081 (SASK). Brockelbank Hill. (Map 20).

6. *Lycopodium selago* L. var. *patens* (Beauv.) Desv. — MOUNTAIN CLUB-MOSS. (Lycopodiaceae). Moist seepy spruce woods. This variety is recorded from single sites at western Wollaston Lake and at Bainbridge Canyon, north-eastern Pasquia Hills. The variety *appressum* is recorded in Saskatchewan from Lake Athabasca, the northeastern corner of the province, Southend and near Cree Lake, and the variety *selago* only from Southend and the north-eastern corner. Specimen record: D.F. Hooper & L. Baker 8906-0710 (SASK). Brockelbank Hill. (Map 21).



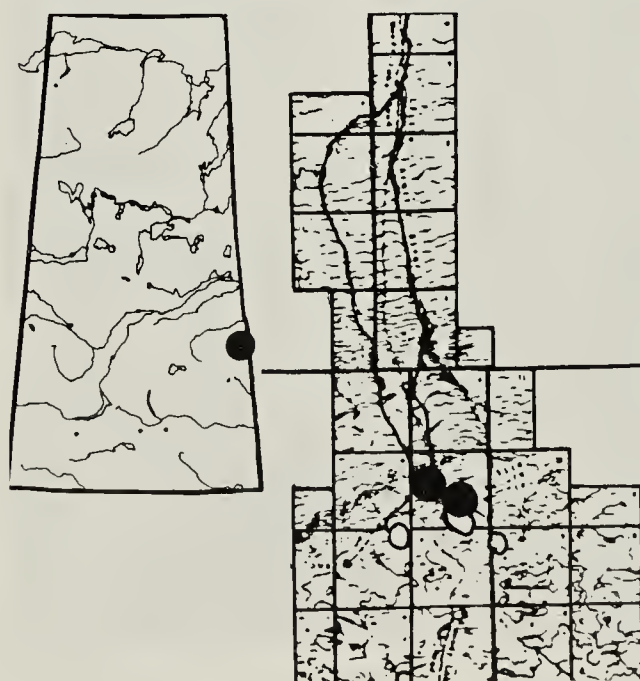
Map 21. *Lycopodium selago patens*

7. *Malaxis monophyllos* (L.) Sw. var. *brachypoda* (Gray) Morris & Eames — SHEATHED ADDER'S-MOUTH ORCHID. (Orchidaceae). Wet spruce woods. Locally sparse at a few sites near Prince Albert, Lake Waskesiu, and in the Pasquia Hills. Reported by Hooper.⁵ Specimen record: V.L. Harms, D.F. Hooper & L. Baker 34890 (SASK). Brockelbank Hill. (Map 22).



Map 22. *Malaxis monophyllos*

8. *Milium effusum* L. var. *cisatlanticum* Fern. — MILLET GRASS. (Poaceae). Open mixed woods. The only known Saskatchewan locality, at the western range limit of this eastern species. Reported by Hudson,⁶ ⁸ Skoglund & Harms,¹¹ Maher et al.¹⁰ and Hooper.⁵ Specimen records: J.H. Hudson 2858 (SASK, DAO). D.F. Hooper & L. Baker 8707-31050 (DFH). Brockelbank Hill. (Map 23).



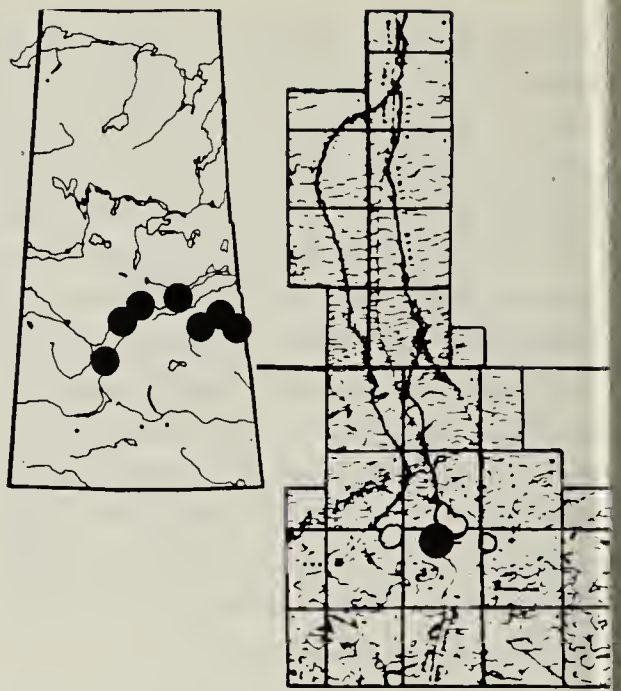
Map 23. *Milium effusum cisatlanticum*

9. *Platanthera dilatata* (Pursh) Lindl. [*Habenaria dilatata* (Pursh) Hook.] — TALL WHITE BOG ORCHID or BOG CANDLE. Wet Black Spruce muskeg. At Red Deer River north of Armit, Greenbush, Bjorkdale, Nipawin, St. Laurent, Macdowall, Prince Albert, and Pike Lake south of Saskatoon. Although this orchid was omitted by Maher et al.¹⁰ from the Saskatchewan rare plant list, it appears at least as infrequently encountered as the Round-leaved Bog Or-

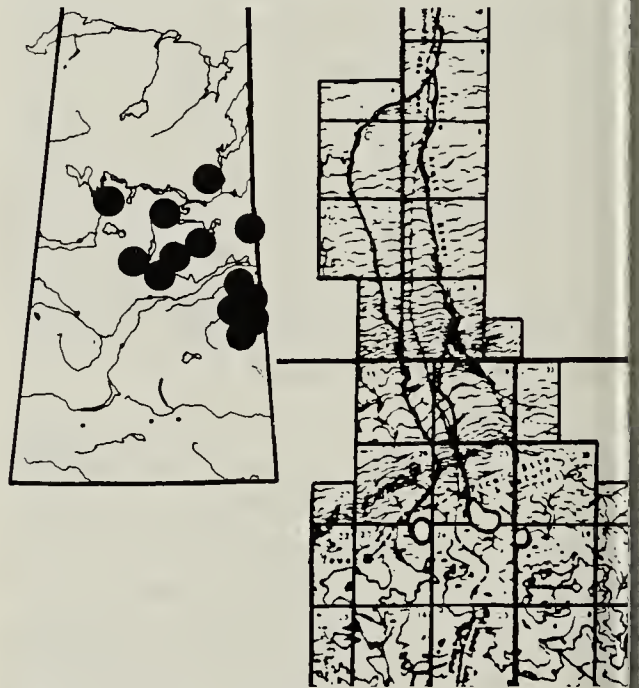
chid and various other species placed on that list, and should be added. Specimen records: D.F. Hooper 8307-1610 (SASK). Brockelbank Hill. (Map 24).

20. *Platanthera orbiculata* (Pursh.) Lindl. [*Habenaria orbiculata* (Pursh) Torr.]. — ROUND-LEAVED BOG ORCHID. (Orchidaceae). Moist spruce woods. Locally sparse at various southern boreal forest sites from the Porcupine Hills westward across the province. Reported by Hooper.⁵ Specimen record: V.L. Harms, D.F. Hooper, L. Baker & L. Hooper 35079 (SASK). Brockelbank Hill. (Map 25).

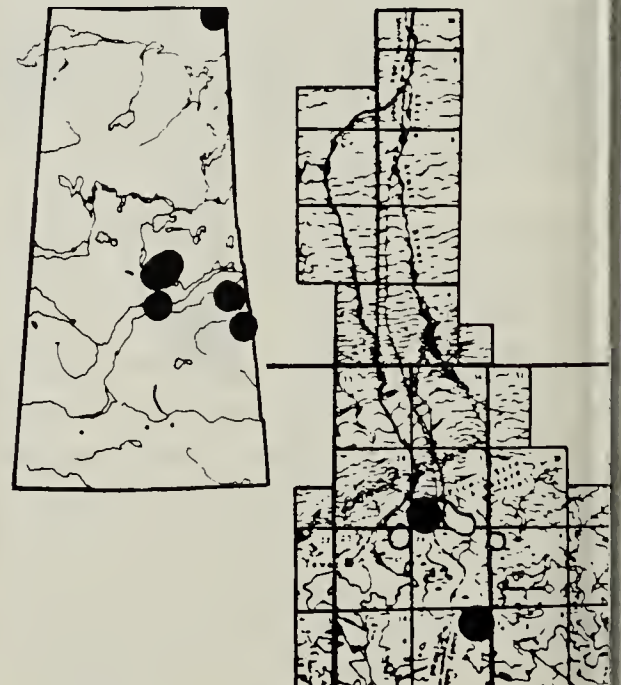
21. *Polygonum viviparum* L. — ALPINE BISTORT. (Polygonaceae). Boggy Black Spruce woods. This subarctic species has been recorded from the north-eastern corner, Pasquia Hills, Cub Hills, and Fort-la-Corne. Reported by Harms,² Maher et al.¹⁰ and Hooper.⁵ Specimen records: J.H. Hudson 2890 (SASK); V.L. Harms, D.F. Hooper & L. Baker 34945 (SASK). Brockelbank Hill. (Map 26).



Map 24. *Platanthera dilatata*



Map 25. *Platanthera orbiculata*

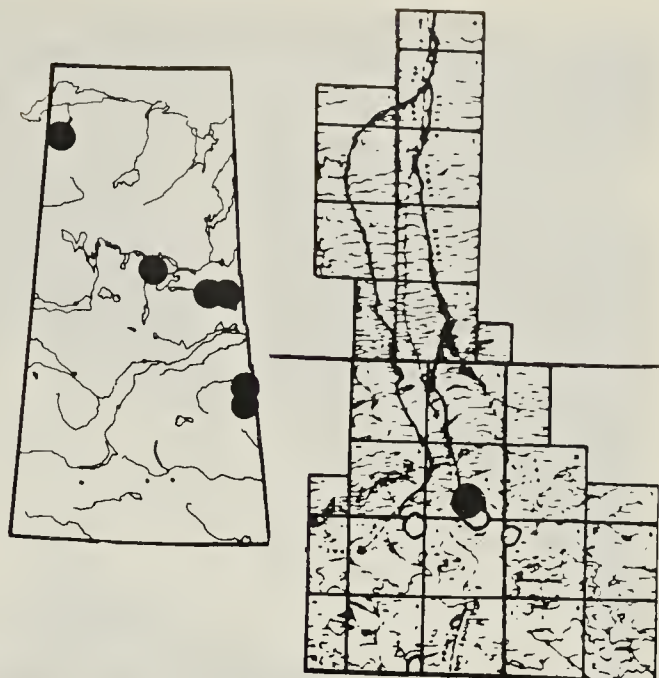


Map 26. *Polygonum viviparum*



Polygonum viviparum — ALPINE BISTORT
S.M. Lamont

2. *Potamogeton robbinsii* Oakes — ROBBIN'S PONDWEED. (Najadaceae). Submersed aquatic in shallow lake margins. Recorded at three widely spaced boreal sites – Cluff Lake, Nemeiben Lake, and east of Deschambault Lake. Reported by Hooper⁵ and at Isbister Lake to the south by Hudson (31 August 1988). Specimen records: D.F. Hooper & L. Baker 8307-1608 (SASK); V.L. Harms, D.F. Hooper & L. Baker 34991 (SASK); J.H. Hudson 4826. Brockelbank Hill. (Map 27).



Map 27. *Potamogeton robbinsii*

3. *Sambucus racemosa* L. ssp. *pubens* (Michx.) House. [*S. pubens* Michx.] — RED-BERRIED ELDER. (Caprifoliaceae). In moist deciduous and mixed woods, and on wooded banks. In east-central Saskatchewan, also occasional at Cumberland House, Pasquia Hills, and Duck Mountain. Reported by Hudson,^{7 8} Harms,² Maher et al.¹⁰ and Hooper.⁵ Specimen records: J.H. Hudson 2929 (SASK); V.L. Harms, D.F. Hooper & L. Baker 32512 (SASK). Little Armit River. (Map 28).

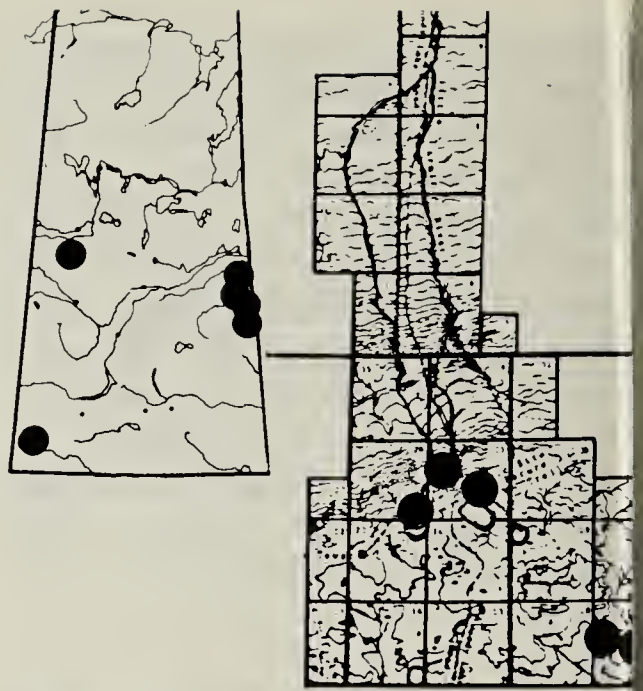


Map 28. *Sambucus racemosa pubens*

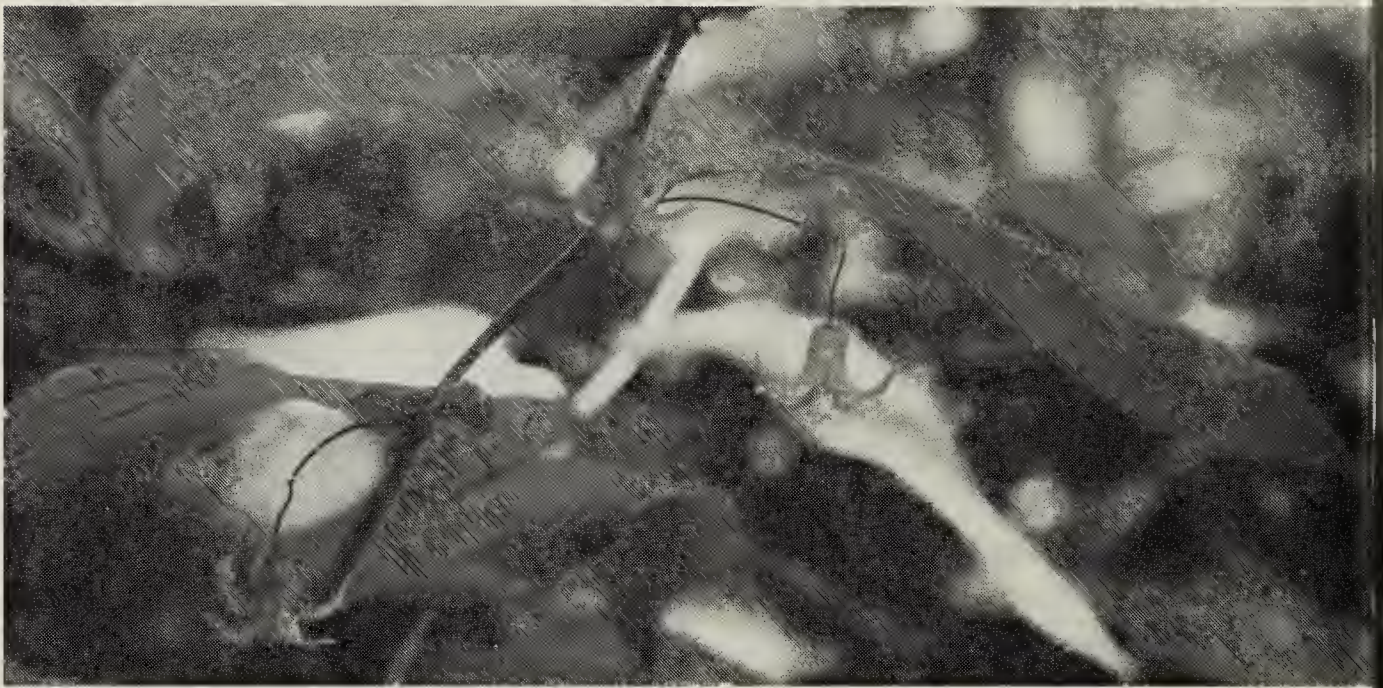


Sambucus racemosa pubens — RED-BERRIED ELDER W.C. Harris

24. *Streptopus amplexifolius* (L.) DC. var. *americanus* Schultes — CLASPINGLEAF TWISTED STALK. (Liliaceae). Moist mixed woods. Occasional in the Pasquia Hills, Greenwater Lake Provincial Park, Cypress Hills, and land summit south of Meadow Lake. Reported by Harms,² Maher et al.¹⁰ and Hooper.⁴
⁵ Specimen records: J.H. Hudson 2857 (SASK); V.L. Harms, D.F. Hooper & L. Baker 34868, 35000, 35083 (SASK); G.F. Ledingham, A. Marshall & W. Vanderwal 6234 (SASK, USAS). Brockelbank Hill. (Map 29).



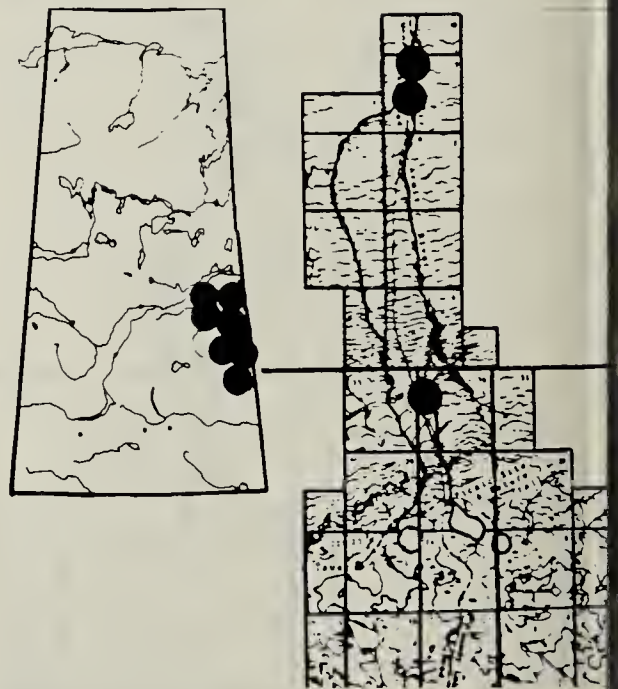
Map 29. *Streptopus amplexifolius*



Streptopus amplexifolius — CLASPINGLEAF TWISTED STALK

W.C. Har

25. *Trillium cernuum* L. — NODDING TRILLIUM or WAKE-ROBIN. (Liliaceae). In moist floodplain woods on deep alluvial soil. Elsewhere scarce at scattered localities in east-central Saskatchewan. Reported by Hooper.⁵
 Specimen records: V.L. Harms & L. Baker 32482 (SASK); V.L. Harms, D.F. Hooper & L. Baker 32516, 32534 (SASK). Little Armit River. (Map 30).



Map 30. *Trillium cernuum*

26. *Viola incognita* Brainerd — LARGE-LEAVED WHITE VIOLET. (Violaceae). Moist mixed woods. Only known from a Duck Mountain site recently discovered by Donald Hooper. These are the only localities yet recorded for this



Trillium cernuum — NODDING TRILLIUM

Wayne C. Harris



Viola incognita — LARGE-LEAVED WHITE VIOLET

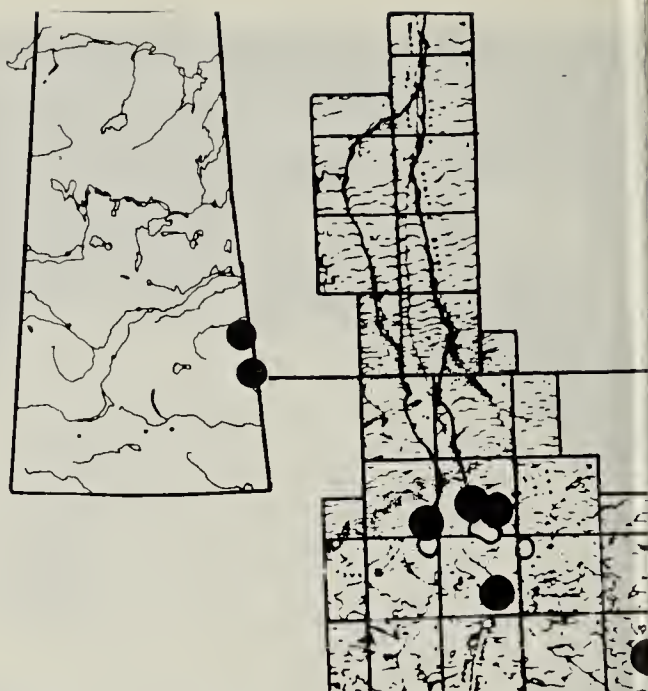
Wayne C. Harris

species west of Minnesota and north-easternmost North Dakota. Reported here first by Hudson as *V. blanda*,⁷ Harms et al.³ and Hooper.⁵ Specimen records: J.H. Hudson 2924 (SASK); V.L. Harms, D.F. Hooper & L. Baker 32129, 32133, 32134, 32157, 32486, 32495, 35036 (SASK); Hooper & Baker 8306-2903; Harms & Baker 32486, 32495, 32495, 32498 (SASK). Brockelbank Hill. (Map 31).

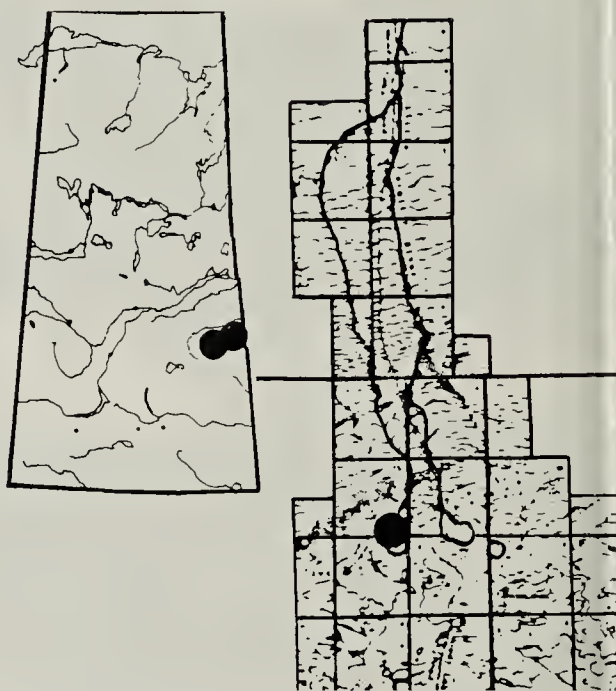
27. *Viola macloskeyi* Lloyd ssp. *pallens* (Banks) M.S. Baker [*V. pallens* (Banks) Brainerd]. — SWEET or NORTHERN WHITE VIOLET. (Violaceae). Wet lake-shore open bog-fen. One of only three known Saskatchewan localities, the other two near Chelan and Porcupine Plain. Reported by Harms et al.³ and Hooper.⁵ Specimen records: V.L. Harms, D.F. Hooper & L. Baker 32543, 34808 (SASK). Brockelbank Hill. (Map 32).

28. *Viola pubescens* Aiton var. *leiocarpa* (Fern. & Wieg.) Boivin — DOWNY YELLOW VIOLET. (Violaceae). In moist floodplain deciduous woods on deep alluvial soil. Recorded in Saskatchewan only from a 7 km stretch of the Little Armit River, plus one site on nearby Smoking Tent Creek representing the western range limit of this species. Reported by Hudson,^{7, 8} Harms et al.,³ and Hooper.⁵ Specimen records: J.H. Hudson 2931 (SASK); V.L. Harms & L. Baker 32484; V.L. Harms, D.F. Hooper & L. Baker 32517 (SASK). Little Armit River. (Map 33).

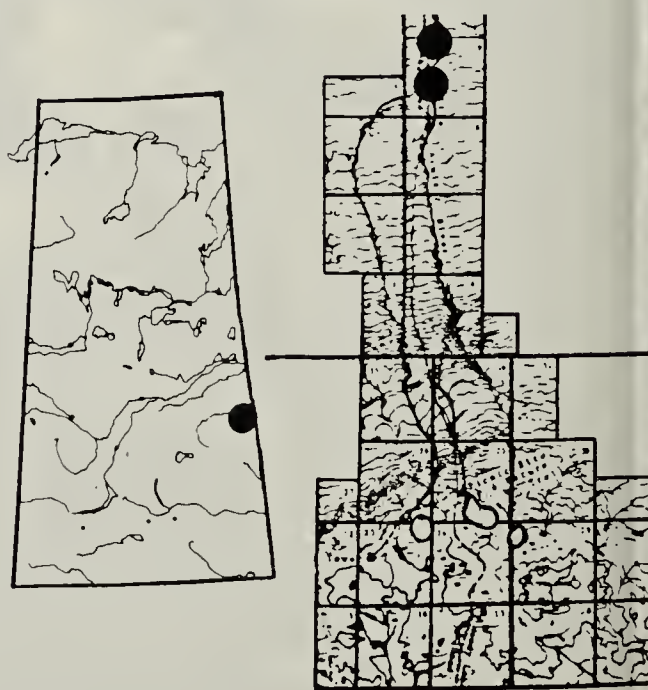
29. *Viola selkirkii* Pursh — SELKIRK'S or LONG-SPURRED VIOLET. In wet coniferous woods. Only recorded from sites in east-central Saskatchewan. Reported by Hudson,^{7, 8} Harms,² Maher et al.,¹⁰ Harms et al.,³ and Hooper.⁵ Specimen records: J.H. Hudson 2923 (SASK); V.L. Harms, D.F. Hooper & L. Baker 32487, 32500, 32525 (SASK).



Map 31. *Viola incognita*

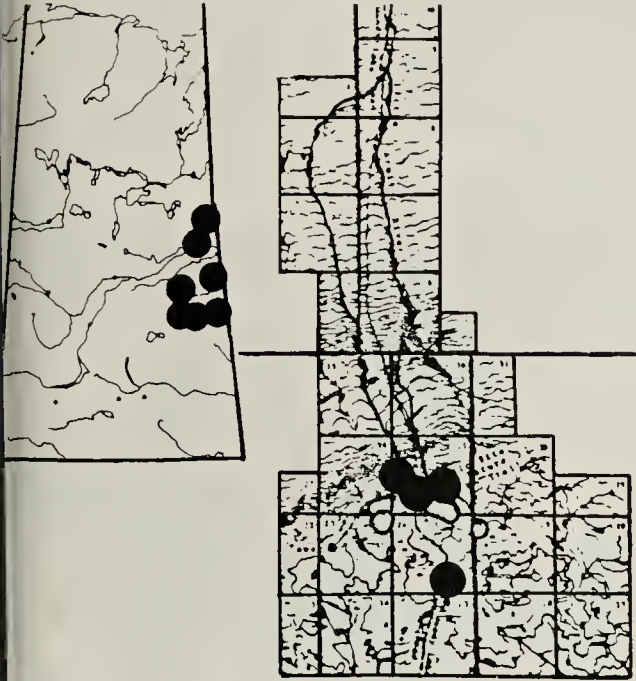


Map 32. *Viola macloskeyi pallens*



Map 33. *Viola pubescens leiocarpa*

Brockelbank Hill and Little Armit River.
(Map 34).



Map 34. *Viola selkirkii*

Other Notable Plant Species

In addition to the foregoing list the following three species occur nearby and may yet be discovered in the area as delimited in Map 2:

Calypso bulbosa (L.) Oakes — VENUS SLIPPER or CALYPSO ORCHID. In rich woods at Townsend Lake in the Porcupine Hills south of Brockelbank Hill (D.F. Hooper & L. Baker 8906-0203, SASK). Wide-ranging but sporadic and locally sparse, in the Cypress Hills and across the boreal forest zone, north to Lake Athabasca.

Prenanthes alba L. — WHITE LETTUCE. In rich moist mixed-woods along Woody River in the Porcupine Hills south of Brockelbank Hill (J.H. Hudson 3847, SASK), and along the Little Armit River about 6.5 km (4 mi.) south of Armit (D.F. Hooper). At various sites in east-central Saskatchewan from the Nitenai River, south to Duck Mountain and Moose Mountain.

Scutellaria lateriflora L. — BLUE GULLCAP. Along moist shores of Armit

River about 8 km (5 mi.) se of Armit, about 10 km northeast of the presently defined Brockelbank Hill - Little Armit River area (D.F. Hooper & L. Baker s.n. & J.H. Hudson 2895, SASK). At various localities in Pasquia Hills, south to the Qu'Appelle, Souris and Antler river valleys.

Also occurring in the Brockelbank Hill - Little Armit River area are the following willow species that were listed as rare in nearby Manitoba by White and Johnson¹² although they are not considered rare in Saskatchewan:

Salix arbusculoides Anderss. — LITTLE-TREE WILLOW. On Brockelbank Hill.

Salix lasiandra Benth. [*S. lucida* Muhl. ssp. *lasiandra* (Benth.) Argus] — RED WILLOW. Along Little Armit River.

Two other plant species, with their provincial ranges limited to east-central Saskatchewan, although they are not considered provincially rare, which occur quite frequently in the proposed natural area are Showy Mountain Ash (*Sorbus decora* Sarg.) and Mountain Maple (*Acer spicatum* Lam.)



Mountain Maple

Wayne C. Harris