

THE ROCHE PERCEE-PINTO AREA, SOURIS RIVER VALLEY: A CENTER OF PROVINCIAALLY RARE PLANTS

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The Souris River Valley lies in southeastern Saskatchewan where many plant species reach their northwestern range limits. It is on the edge of the Tall Grass Prairie and its riverine deciduous woods tend to have floristic affinities with those farther south and southeast. Thus it is a floristically rich and unique region of the province, with a total of 34 plant species recorded there that are listed as rare for Saskatchewan.¹¹ Of the latter, 14 are known only from this river valley (or also from the Antler River valley) in the province. Various collectors have contributed to our knowledge of the plant rarities of the Souris River valley, the most notable being Bernard Boivin and John H. Hudson.

In southeastern Saskatchewan during the summer of 1986, many of the earlier collection sites were relocated and some new localities found for botanical rarities in the general Estevan to Pinto-Hirsch region of the Souris River valley. The Estevan area has already been recognized as a center of provincially rare plants, with 22 such species recorded from a 7-mile stretch of the Souris River valley centered on the town of Estevan.¹¹ During 1986 most locations at which rare plants had been found were revisited in the Estevan area and some new stations recorded for many of the species. But the most rewarding result of 1986 botanical explorations along the Souris River was the finding of a significant number of botanical rarities also in the Roche Percee-Pinto area (totalling 21 rare species, combining new collection records with

verified earlier reports). The expectation that the Roche Percee-Pinto area supports populations of many of the same botanical rarities found in the Estevan area was confirmed. Although not all of the species reaching their eastern and western limits in the Estevan area were located in the Pinto-Hirsch area, some additional ones of eastern affinities were included.

Earlier collection records of provincially rare plants in the Roche Percee-Pinto area include the following ten species (listed in chronological order of collection) [Please note that some of the land locations noted hereafter may deviate from the standard quarter section-township-range-meridian by having the designation e - east, ec -east central or wc - west central]:

White Milkwort (*Polygala alba*) — "top of sandstone cliffs bordering the valley of the Souris River" at Roche Percee (17 July 1951, B. Boivin & W.G. Dore; 8022, DAO & SASK).

Switch Grass (*Panicum virgatum*) — top of cliffs bordering Souris River valley, Roche Percee (July 1951, W.G. Dore & B. Boivin; 13309, DAO).

Blue Vervain (*Verbena hastata*) — "small bog at foot of cliff. . . Souris River valley," Roche Percee (July 1951, B. Boivin & W.G. Dore; 8000, DAO)

— "moist ground between. . . brush and boggy ravine bottom", 3 mi. e. of Roche Percee (nw 27-01-06-W2) (17 August 1971, J.H. Hudson; 2750, SASK).

Common Milkweed (*Asclepias syriaca*) — “river valley” at Roche Percee (1954, Harold Longney; *s.n.*, SASK).

To date this is the only record reported of this species in Saskatchewan.

Smooth Cliffbrake (*Pellaea glabella* var. *occidentalis*) — crevices of rock outcrops on s-facing slopes of Souris Valley at Roche Percee (31 May 1958, B. Bovin & J.M. Perron, 11820, DAO & SASK).

Blue Skullcap (*Scutellaria lateriflora*) — “moist shady muddy bank of creek”, 3 mi. e. of Roche Percee (nw 27-01-06-W2, 17 August 1971, J.H. Hudson; 2751, SASK).

White-flowered Parsley (*Lomatium orientale*) — a “prairie bench above Souris valley”, about 0.25 mi. n. of Pinto (nw 25-01-06-W2, 8 May 1971, J.H. Hudson; 2702, SASK)

Nanny-berry (*Viburnum lentago*) — “base of n-facing wooded slope... in ravine” about 0.5 mi. s of Pinto (sw 25-01-06-W2, 6 June 1978, J.H. Hudson; 3516, SASK).⁹

Tomentose Pussytoes (*Antennaria neodioica*) — “moist wash slope at foot of bedrock outcrop” near Pinto (sw 25-01-06-W2, 6 June 1978, J.H. Hudson; 3519, SASK).⁴

Flat-stemmed Spike-rush (*Eleocharis compressa*) — “slightly seepy ground at foot of ravine cutbank” near Pinto (se 26-01-06-W2, 6 June 1978, J.H. Hudson; 3518, SASK).

The collection sites of these rare plants were visited to confirm their continued presence and additional sites in the region were found for most of them. Only Common Milkweed, Smooth Cliff-brake, and Flat-stemmed Spike-rush could not be located in 1986. Eleven other provincially rare plant species were found for a total

of 21 now recorded for the Roche Percee-Pinto section of the Souris River valley.

The rare plant species recorded for the Roche Percee-Pinto region of the Souris River valley are listed (in alphabetical order by latin name) and their known local occurrences, based on verified herbarium collections, are shown on the map (fig. 1).

The most significant 1986 discovery in the area was Indian Grass (*Sorghastrum nutans*), new to the known native flora of Saskatchewan. The collection was made about 1 mi. n., 0.3 mi. e. of Pinto (wc 36-01-06-W2), below prairie bluff rising above the gallery woods and bordering shrub zone north of the Souris River (28 August 1986, 36953). A single localized colony of about a dozen, rather small-sized plants was found. Indian Grass is one of the characteristic grasses of the Tall Grass Prairie Association found to the east and southeast. It is an additional species for the provincial list of rare plants.

Three other provincially rare grasses, also characteristic of the Tall Grass Prairie Association, were found and collected in the Roche Percee-Pinto region, as follows: Big Bluestem (*Andropogon gerardii*, at 6 sites), Side-oats Grama (*Bouteloua curtipendula*, at 4 sites), and Switch Grass (*Panicum virgatum*, at 3 sites). The characteristic habitat of all three grasses was similar to that described above for Indian Grass, - i.e. relatively mesic (seepage-watered), south-facing, lower to middle slopes of prairie bluffs rising above the gallery woods north of the Souris River, associated with or just below sandstone outcrops. East of Pinto, where such sandstone outcrops on south-facing bluffs north of the Souris River were especially frequent, plants of Big Bluestem, and Side-oats Grama were numerous. The latter seemed more frequent and better established here than elsewhere in the province, although limited to the described habitat. In contrast, Big Bluestem sometimes also occurred in prairie mesic depressions and on other slope aspects,

- a *Andropogon gerardii* Big Bluestem
- b *Antennaria neodioica* Tomentose Pussytoes
- c *Asclepias syriaca* Common Milkweed
- d *Bouteloua curtipendula* Side-oats Grama
- e *Celastrus scandens* Climbing Bittersweet
- f *Eleocharis compressa* Flat-stemmed Spike-rush
- g *Helianthus tuberosus* var. *subcanescens* Jerusalem Artichoke
- h *Laportea canadensis* Wood Nettle
- i *Lomatium orientale* White-flowered Parsley
- j *Onosmodium molle* var. *occidentalis* Western False Gromwell
- k *Oxytropis lambertii* Lambert's Locoweed
- l *Panicum virgatum* Switch Grass
- m *Pellaea glabella* var. *occidentalis* Smooth Cliffbrake
- n *Polygala alba* White Milkwort
- o *Polygonatum biflorum* Great Solomon's Seal
- p *Prunus americana* American Plum
- q *Scutellaria lateriflora* Blue Skullcap
- r *Sorghastrum nutans* Indian Grass
- s *Verbena hastata* Blue Vervain
- t *Viburnum lentago* Nanny-berry
- u *Viola pedatifida* Crowfoot Violet

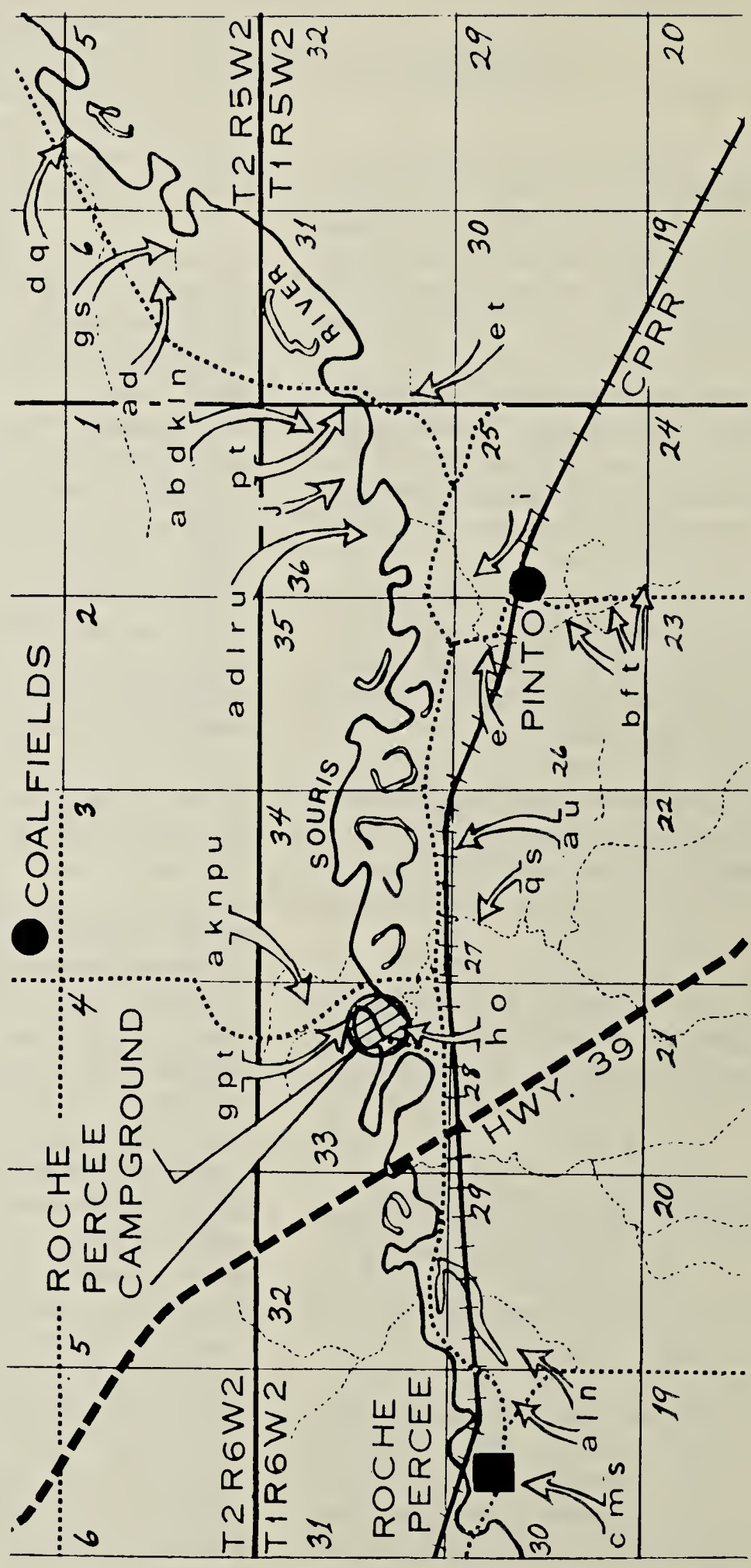


Figure 1. The Roche Percee - Pinto area of the Souris River Valley, showing verified locality sites of provincially rare plants. The letters at each locality on the map are those preceding the names of the species present (as given above).

shrubland margins, and even roadside ditches. Switch Grass was locally scarce wherever found. Abouguendia et al., during an ecological investigation of the Coalfields Community Pasture, (partly included in the area covered by this survey), also reported the latter three provincially rare grass species,¹ but the relevant collections were taken farther east than those of this survey, at about 5-8 mi. northeast and east of Pinto (Z. Abouguendia, pers. comm.).

Another interesting species found in 1986 was Climbing Bittersweet (*Celastrus scandens*) collected at two sites near Pinto as follows: about 0.3 mi. n.w. of Pinto (ne 26-01-06-W2), occasional plants climbing on Saskatoon-berry shrubs under dense Green Ash-American Elm-Manitoba Maple woods on n-facing ravine slopes

above streamlet (27 August 1986, 36843); 1 mi. e., 0.3 mi. n. of Pinto, (sw 31-01-05-W2), very occasional plants climbing on Saskatoon-berry and Chokecherry shrubs under Green Ash-American Elm woods towards base of n-facing slope of wooded ravine between bluffs about 0.5 mi. s. of the Souris River (29 August 1986, 36995). These collections are the only Saskatchewan records for this woody climber, since the first provincial report from about 3 mi. southeast of Estevan (se 6-02-07-W2), where it was collected nearly 30 years ago on 3 August 1957 by John Hudson.⁷ At that site the local population was still present in 1986 and well established. All plants seen at the 3 sites in 1986 were vegetative only, with no evidence of flowering or fruiting during that season. Blue Vervain (*Verbena hastata*) was found at Hudson's original



Climbing Bittersweet

G.J. Smith

site 3 mi. e. of Roche Percee, where, despite heavy cattle-trampling and grazing, an extensive local population was well established along a muddy streamlet channel. In addition, this species was collected from a site about 4.5 mi. n.e. of the original one, 2.5 mi. n.e. of Pinto (ec 6-02-05-W2), where a small colony occurred in a small ravine bottom along a marshy streamlet (29 August 1986, 37013).

Wood Nettle (*Laportea canadensis*) was found at the Roche Percee Provincial Campground, 2.5 mi. e. and about 0.5 mi. n. of Roche Percee (se 33-01-06-W2) where two sizeable local colonies occurred in moist depressions under dense Green Ash-American Elm-Manitoba Maple gallery woods along the Souris River (26 June 1986, 36002; 30 August 1986, 37055). This rare species for Saskatchewan was collected previously from near Glen Ewen (7 September 1960, B. Boivin, 14045, DAO & SASK), and from about 1 mi. s.-se. of Estevan by Hudson.⁶ It seems to occur only in river gallery woods not subjected to much trampling and browsing by cattle. At the Roche Percee Campground, the human-disturbance appears to be more localized and less extensive than the cattle-disturbance elsewhere in the study region. (Unfortunately, the generalization does not seem to apply for human-disturbances at some other Souris River valley sites, such as the Woodlawn Regional Park south of Estevan and the Oxbow Regional Park.) Wood Nettle may be endangered by the excessive cattle and other disturbances of gallery and bluff woods so prevalent along the extent of the Souris River valley located in southeastern Saskatchewan.

Great Solomon's Seal (*Polygonatum biflorum*) was also found at the Roche Percee Provincial Campground, about 2.5 mi. e. and 0.5 mi. n. of Roche Percee (se 33-01-06-W2), where the plants were occasional and scattered in dense undergrowth beneath mesic American Elm-Green Ash-Manitoba Maple gallery

woods along the Souris River (26 June 1986, 36014). This species had previously been collected from south of Estevan and near Oxbow (19 July 1951, B. Boivin & W.G. Dore, 8041, DAO & SASK).⁸ In Saskatchewan it appears to be limited to the Souris River's gallery and bluff woods which lack obvious cattle-disturbance, is scarce wherever found, and perhaps, similarly to the Wood Nettle, could be endangered because of its intolerance to the extensive cattle-browsing and trampling that seems characteristic of most present Souris River gallery woods.

Blue Skullcap (*Scutellaria lateriflora*) was still present at the site 3 mi. east of Roche Percee where it was first collected 15 years ago by John Hudson. It was also found about 3.3 mi. ne. of Pinto (s. edge of sw 8-02-05-W2), where it appeared scarce (or at least difficult to detect) along a muddy streamlet channel at the shaded base of a n-facing, minor ravine slope (20 August 1986, 37029) wooded with Green Ash-Manitoba Maple.

Nanny-berry (*Viburnum lentago*) shrubs still grow at Hudson's earlier collection site south of Pinto, and also at several other nearby sites within se 21 and sw 15-01-06-W2. They were also present at three other localities as follows: (1) the Roche Percee Provincial Campground, 2.5 mi. e., 0.75 mi. n. of Roche Percee (ec 33-01-06-W2), where two local colonies of about 20 and 10 shrubs were found in upper gallery woods of Green Ash-Manitoba Maple-American Elm along the Souris River (27 June 1986, 36144-A; 26 August 1986, 36798); (2) 1 mi. e., 0.8 mi. n. of Pinto (ec 36-06-06-W2), about 15 tall shrubs in a similar habitat to the previous (26 June 1986, 36128-A; 28 August 1986, 36933); and (3) 1 mi. e., 0.3 mi. n. of Pinto (sw 31-01-05-W2); where a colony of 12 shrubs occurred under Green Ash-American Elm woods along an intermittent stream at the base of n-facing slope of a ravine between high prairie bluffs about 0.5 mi. s. of Souris River (29 August 1986, 37003). Hudson's collection



Nanny-berry in the Qu'Appelle Valley.

S.M. Lamont

from south of Pinto had been the only report of Nanny-berry from the Souris River valley previous to these records, which now show it to be well established within the limits of our study region.⁹ Elsewhere in Saskatchewan, Nanny-berry is recorded from the lower Qu'Appelle River valley, Pipestone Creek and Thunderhill north of Duck Mountain.¹¹ Breitung reported it also from Gainsborough on the basis of a cited Fraser Herbarium collection which we have been unable to locate.³

Tomentose Pussytoes (*Antennaria neodioica*) was collected 1 mi. n. and 0.8 mi. e. of Pinto (ec 36-01-06-W2), on s-facing prairie bluffs just n. of the Souris River (26 June 1976, 36109), a locality only about 1.5 mi. ne. of Hudson's 1978 site. The known Saskatchewan distribution of this species forms an unusual pattern that is difficult to interpret, consisting of the following three widely separated stations: Cypress Hills, Otter Rapids (on the Churchill River), and Pinto. It appears to represent a distinctive taxon rather than only an extreme form of another species, although some taxonomists have treated it as a variant of the more common and widespread *A. neglecta* Greene, - viz. as *A. neglecta* var. *attenuata* (Fern.) Cronq.

Lambert's Locoweed (*Oxytropis lambertii*), another species listed as rare in Saskatchewan, is apparently restricted in the province to the Souris and middle Qu'Appelle River valleys.¹¹ During 1986 it was collected from two sites as follows: (1) 0.25 mi. n of the Roche Percee Campground, 2.5 mi. e. and 1 mi n. of Roche Percee (ne 33-01-06-W2; 27 May 1986, 35322), and (2) about 1 mi. n., 0.8 mi e. of Pinto (ne 36-01-06-W2; 26 June 1986, 36045, 36115). Its habitat at both sites was the middle to lower slopes of open prairie bluffs just n. of the Souris River, where it was locally quite frequent and conspicuous.

Western False Gromwell (*Onosmodium*

molle var. *occidentale*), another species accorded a rare status for Saskatchewan, was found at a site about 1 mi. n. and 0.5 mi. e of Pinto (c 36-01-06-W2), where it was scarce in the Western Snowberry short-shrub zone at the base of s-facing prairie bluffs bordering the gallery woods on the north side of the Souris River (28 August 1986, 36970). While this is the first collection from within our Roche Percee-Pinto study region (as delimited in fig. 1), it was recorded previously from the Souris River valley 2 miles southeast of Shand (18 July 1969, J.H. Hudson, 2625, SASK), a site only about 2 mi. west of Roche Percee and 7 mi. west of the station located within the study area.

The American Plum (*Prunus americana*) is known in Saskatchewan only from the Souris and Antler River valleys in the southeastern part of the province. The following collections are apparently the first for the Roche Percee-Pinto area: (1) Roche Percee Campground area, about 2.5 mi. e., 0.75 mi. n. of Roche Percee (ec 33-01-06-W2), forming dense thickets in gallery forest along Souris River (27 June 1986, 36144-B; 30 August 1986, 37053); (2) 0.25 mi. n. of Roche Percee Campground and Souris River, 2.5 mi. e., 1 mi. n. of Roche Percee (ne 33-01-06-W2), forming dense thickets in ravines between prairie bluffs (27 May 1986, 35320); initially noted by Donald F. Hooper; 25 June 1986, 35998); 1 mi. e., 0.8 mi. n. of Pinto (ec 36-01-06-W2), forming dense thickets in Green Ash-Manitoba Maple-American Elm gallery woods on north side of Souris River (26 June 1986, 36128-B; 28 August 1986, 36992). American Plum shrubs seem relatively tolerant of cattle-disturbance, perhaps because of the self-protection provided by their more or less thorny stems and the formation of dense thickets. While listed as rare for Saskatchewan because of a regional restriction to the Souris and Antler River valleys, American Plum shrubs appear relatively frequent there and often form sizeable local thickets.

Jerusalem Artichoke (*Helianthus tuberosus* var. *subcanescens*) was found at two sites in the Roche Percee-Pinto region, as follows: (1) about 2.5 mi. ne. of Pinto (ec 6-02-05-W2), a small colony at semi-open base of wooded ravine along streamlet n. of Souris River (29 Aug. 1986, 37016); and (2) in the Roche Percee Provincial Campground, about 2.5 mi. e., 0.75 mi. n. of Roche Percee (ec 33-01-06-W2), where a large colony of over 30 plants occurred at the open edge of an American Plum thicket bordering the American Elm-Green Ash-Manitoba Maple gallery woods along the Souris River (30 August 1986, 37054). This state-ly, showy sunflower species is thus far known in the province only from the Souris and Antler River valleys of southeastern Saskatchewan.^{7 11}

White Milkwort (*Polygala alba*) was collected at three sites within the Roche Percee-Pinto study region, where it was locally numerous and usually associated with sandstone outcrops on s-facing middle or lower slopes of prairie bluffs above the Souris River (see Fig. 1).

Crowfoot Violet (*Viola pedatifida*) was collected in 1986 from three local sites within the Roche Percee-Pinto study area (see Fig. 1). Although relatively widespread in the southern one-third of Saskatchewan, this species was accorded a borderline rarity status for the province in part because of its presumed scarcity at all known localities.¹¹ Its local abundance at various sites along the Souris River valley makes the rare status of this species more questionable.

In addition to the 21 rare plants already listed, it might be noted that two provincially rare sedges, *Carex assiniboinensis* W. Boott. and *Carex gravida* Bailey, would have been included if the arbitrary boundaries of our Roche Percee-Pinto study area (as mapped in fig. 1) had been extended three miles westward to include the Souris River valley south of Shand,

where they were originally collected under open ash-elm woods, 18 July 1969 by John Hudson.¹¹

A northeastern portion of our Roche Percee-Pinto study region was included within the proposed "Pinto/Souris River Valley" Natural Area, by the International Biological Program (as I.B.P. Area 71-22).¹⁰ The I.B.P. field reconnaissance team limited their botanical survey to a listing of dominant plants of the various vegetational communities and did not note or report any rare plants for the proposed natural area, although 15 provincially rare species were recorded during 1986 from within the boundaries. In a more recent report reviewing the proposed IBP Natural Areas in Saskatchewan, Chris Adam did list a provincially rare plant, the Blue Phlox (*Phlox alyssifolia* Greene), within his reduced boundaries of the proposed "Pinto-Souris Natural Area."² Blue Phlox, which is otherwise unrecorded in the province east of the Big Muddy area, is an additional plant rarity for the Roche Percee-Pinto study region, but until the record is substantiated and known to be documented by a voucher herbarium specimen, it can only be accepted as an unverified report.

The collection numbers cited in this paper are those of the author, with those of late May 1986 (numbers less than 35478) made with co-collectors' Donald F. Hooper and Les Baker, and those of late June when accompanied by Ramona Harms (numbers 35855-36205). All voucher specimens have been deposited in the W.P. Fraser Herbarium (SASK), University of Saskatchewan, Saskatoon, Saskatchewan.

Acknowledgements

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Ground Plum

Bernard de Vries