

INFORMATION WANTED

Assistance is requested in gathering information on two large mammals that are rare or uncommon in Manitoba.

The Mule Deer was once common in the province, especially in the southwest. Occasionally Mule Deer are shot during the hunting season, but otherwise there is little information on their present status in the province.

There are enough records on hand now to indicate that the Mountain Lion or Cougar occurs in very limited numbers in several areas of the province. Since it feeds chiefly on White-tailed Deer it may even be more abundant now than formerly.

Additional records of Mule Deer and Cougars are needed. Both old and recent observations are equally useful and worth reporting. Reports of sightings should be as detailed as possible.

All records will be acknowledged and a final report on these two interesting animals will be sent to all cooperators.

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VIOLETS Of Saskatchewan

by VERNON L. HARMS*

Among the truly delightful wildflowers of the prairies and woods are the violets spring and early summer. The rarity of some violet species makes finding them more enjoyable. This paper lists the violets found in Saskatchewan, tells how to identify them, describes their habitat, and indicates their known range in the province.

Violets are small herbaceous plants, mostly 2 to 15 inches high. They have laterally symmetrical flowers with five sepals and five petals — a pair of upper petals, a pair of lateral petals, and a lower petal that has a backwardly extending spur (see Fig. 1). The petals are often bearded (hairy) on the inner surface at the base. There are five stamens closely surrounding the single pistil, with the lower spur spurred, the spurs extending into the spur of the petal. The ovary of the pistil matures into an elastic 3-valved seed pod containing several to many seeds. This seed pod opens explosively, shooting the seeds out for some distance. Some of the flowers of each plant are usually self-fertilized without ever opening. The leaves of violets are often, but not always, heart-shaped or kidney-shaped, with quite

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prominent stipules, which are a pair of appendages at the base of the leaf stalk (Fig. 1). The leaves, arise either from along the erect stems or else directly from rootstock at the plant base.

Eleven species of violets are known to occur in Saskatchewan. Of these, the species — the Field Pansy, Pansy and Wild Pansy — are introduced annuals which have occasionally escaped near cultivated areas. Of the eight native perennial species, three are quite rare — the Kidney-leaved Violet, Great-spurred Violet and Marsh Violet — leaving only five fairly common violet species in Saskatchewan the Crowfoot Violet, Northern Bog Violet, Yellow Prairie Violet, White Wood Violet and Early Blue Violet. The following key may be used to identify the species of violets in the province:

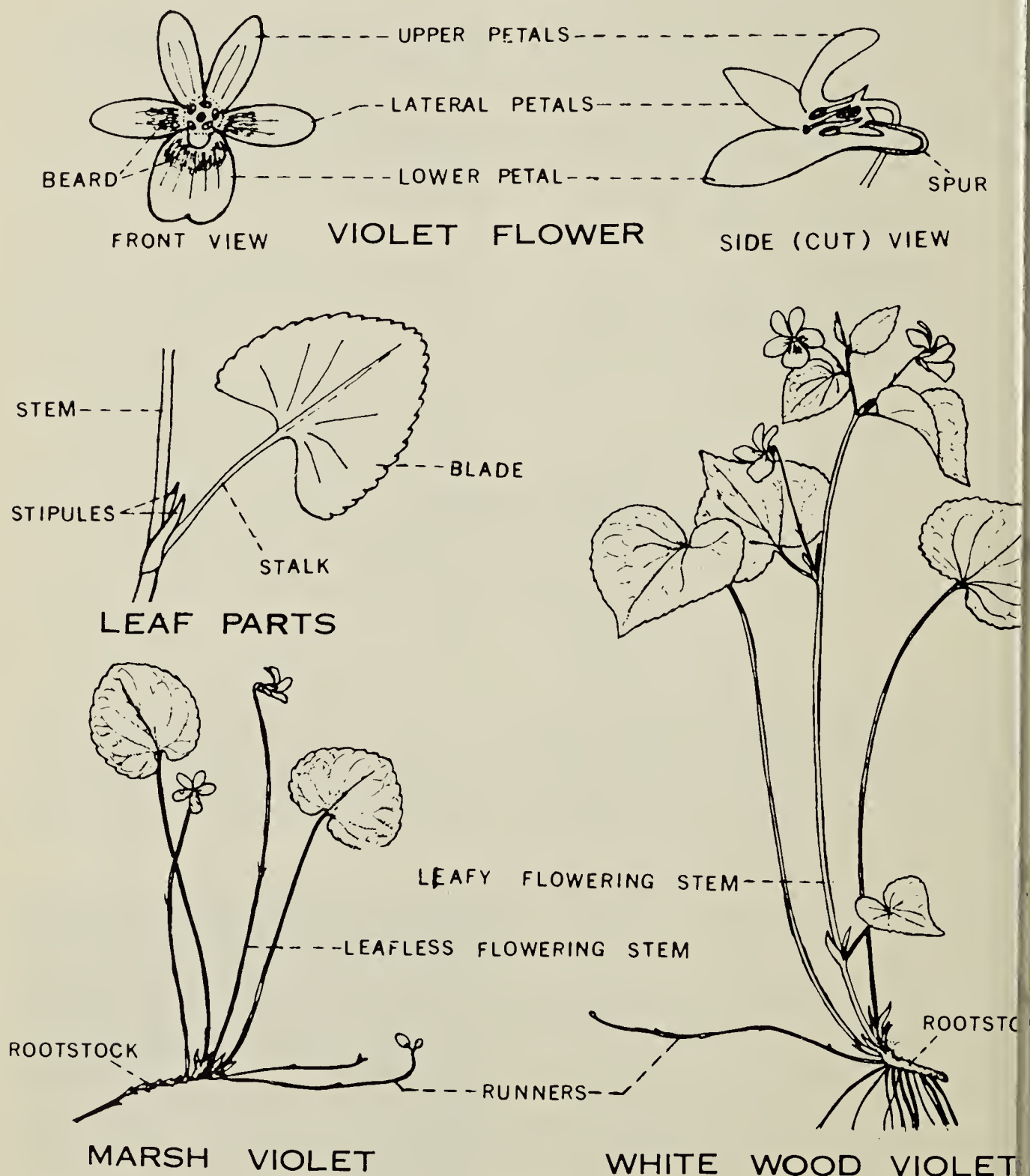


Fig. 1. Parts of a typical violet flower and leaf; whole plants of Marsh Violet and White Wood Violet showing a leafless flowering stem and a leafy flowering stem, respectively.

IDENTIFICATION KEY TO
THE SASKATCHEWAN SPECIES OF VIOLETS

If the flowering stems lack leaves, with all leaves arising from the rootstock at the plant base or from runners, see 2a or 2b.

If the flowering stems bear leaves, see 6a or 6b.

2a) If the flower petals are white with deep red or purple lines (rare plants of moist woods), the plant is —

Kidney-leaved Violet *Viola renifolia* Gray

2b) If the flower petals are blue or violet, or, if white, without deep red or purple lines, see 3a or 3b.

If the leaves are deeply divided lengthwise into segments (widespread plants of dry sandy prairies), the plant is —

Crowfoot Violet (Prairie Violet) *Viola pedatifida* G. Don

If the leaves are not deeply divided or lobed, merely shallowly toothed, see 4a or 4b.

4a) If the plants have thick rootstocks, lack slender runners, and have the lateral petals long-bearded at the throat (common plants of bogs, marshes, and moist woods), the plant is —

Northern Bog Violet *Viola nephrophylla* Greene

4b) If the plants have slender rootstocks and runners, and the lateral petals are not or are only slightly bearded, go to 5a or 5b.

If the leaves have appressed hairs above and the basal lobes strongly converge toward the sinus, and if the flower spur is conspicuously long, at least two-thirds the length of the petal blade (rare plants in northern woods), the plant is —

Great-spurred Violet (Selkirk's Violet) *Viola selkirkii* Pursh

If the leaves are not covered with hairs and the basal sinus is open with flaring lobes which do not converge toward the sinus, and if the flower spur is much shorter than two-thirds the length of the petal blade (rare plants of moist woods), the plant is —

Marsh Violet *Viola palustris* L.

6a) If the stipules (pair of appendages at base of leaf stalk) are not leaflike, not divided, and are much smaller than the leaf blades, and if the plants are perennial, see 7a or 7b.

6b) If the stipules are leaflike, deeply lobed or divided, about as long as the leaf blades, and if the plants are annual, go to 9a or 9b.

If the flower petals are yellow and the leaves are usually narrow and lance-shaped, but sometimes broader, often, but not always, tapering to the base (frequent plants on dry prairies), the plant is —

Yellow Prairie Violet *Viola nuttallii* Pursh

If the flower petals are not yellow except sometimes at base and the leaves are not narrow and lance-shaped, not tapering to the base, see 8a or 8b.

8a) If the flower petals are white to violet with a yellow base, the flower spur short, and stipules not toothed (common plants of aspen woods), the plant is —

White Wood Violet (Western Canada Violet) *Viola rugulosa* Greene

8b) If the flower petals are blue to violet, the flower spur at least twice as long as thick, and stipules toothed at the base (common plants in moist prairies and open woods), the plant is —

Early Blue Violet (Hooked Spur Violet) *Viola adunca* J. E. Smith

9a) If the flower petals are yellow, about as long as sepals, and stems are finely hairy along angles (rare plants in sandy cultivated areas), the plant is —

Field Pansy (Wild Pansy) *Viola arvensis* Murray

9b) If the flower petals are 1-1/2 to 3 times as long as the sepals, see 10a or 10b

10a) If the petals are large, variously multicoloured purple, yellow or white with yellow centers; if the distance between the leaves along the stem is less than the leaf size; if the leaf blades are rounded or heart-shaped at the base, and the stems are finely hairy along angles (infrequently escaped plants in and around gardens), the plant is —

Pansy (Johnny-jump-up) *Viola tricolor* L.

10b) If the petals are smaller, bluish white to cream-coloured, tinged with violet on outside; if the distance between leaves along the stem is greater than the leaf length; if leaf blades are tapered to the base, and if stems are not hairy (rare plants in fields, lawns, or gardens), the plant is —

Wild Pansy (Johnny-jump-up) *Viola rafinesquii* Greene

1. The KIDNEY-LEAVED VIOLET (*V. renifolia*, Fig. 2) is relatively uncommon in Saskatchewan, occurring in moist woods in the Cypress Hills and the southern edge of the northern forest. The flowers are small, about 1/3 to 1/2 inch long including the short spur, borne on leafless stems which are usually shorter than the leaves. The petals are white, all beardless, with the lower ones red- or purple lined. The seed pods are purplish and contain brown seeds. The leaves are kidney shaped, 1 to 3 inches wide, usually hairy at least beneath, with rounded teeth, and borne on leaf stalks arising from upright rootstocks that are slender when young but become thick and scaly with age.

2. The CROWFOOT, LARKSPUR, or PRAIRIE VIOLET (*Viola pedatifida*, Fig. 2) is widespread on prairies and exposed banks in the southern third of Saskatchewan, but is seldom abundant at any site. The most characteristic feature of the violet is the leaf which is divided nearly to the base into segments and these segments cleft again into narrow lobes. The leaves have rather short stalks which arise from short erect rootstocks. The flowers are large and showy, 1/2 to 1 inch long, 1 to 1 1/2 inches wide, borne on erect leafless stems mostly overtopping the leaves. The petals are bright purple with the lateral and lower petals long-bearded. The seed pods are yellowish-grey containing light brown seeds.

3. The NORTHERN BOG VIOLET (*V. nephrophylla*, Fig. 2) is one of our most common bluish violets in bogs, marshes, and moist woods. It has round to heart shaped or kidney-shaped leaves, 1-1/2 to 2-1/2 inches across, bluntly pointed, and smooth-surfaced, lacking hairs. The flowers are large, 1/2 to 1 inch long, borne on leafless stems which are about as long or somewhat longer than the leaves. The leaf stalks arise from a short, thick rootstock. The petals are violet-coloured, the lower three whitish at the base and bearded, and the lowest one with only a short spur. The seed pods are green with olive-brown seeds. A white-flowered form of this species is rare, but has been collected at Wallwort, Sutherland (Saskatoon) and Rosthern Saskatchewan.

4. The GREAT-SPURRED or SELKIRK'S VIOLET (*V. selkirkii*) is a rare plant in the province known only from Amisk Lake and the Cumberland House area in northeastern Saskatchewan. This violet is rather small and delicate with a long slender rootstock bearing heart-shaped leaves with narrowed basal sinuses and rounded teeth. The flowers are about 1/2 inch long, borne on leafless stalks. The petals are pale bluish-violet, all beardless, with the spur of the lower petal about 1/4 inch long as the blade. The seed pods are short, often dotted with purple, with buff coloured seeds.



NORTHERN
BOG VIOLET



KIDNEY-LEAVED
VIOLET



CROWFOOT VIOLET



FIELD PANSY



YELLOW PRAIRIE VIOLET



EARLY BLUE VIOLET

2

2. Habit sketches of six Saskatchewan species of Violets.

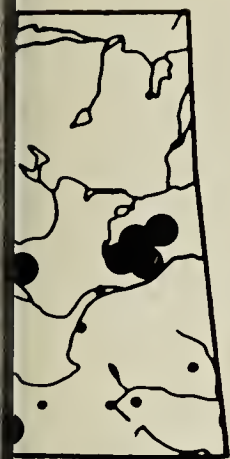
5. The MARSH VIOLET (*V. palustris*, Fig. 1) is a rare plant of wooded areas Saskatchewan which has been reported from Prince Albert National Park, Muenster, McKague, Wallwort, Candle Lake and the Hasbala Lake area. This delicate plant has long slender rootstocks and numerous runners which bear long-stalked, kidney-shaped leaves 1 to 1-1/2 inches broad, smooth-surfaced, with shallow rounded teeth and broad basal sinuses. The flowers are about 1/2 inch long, borne on leafless stems which are usually shorter than the leaves. The petals are pale violet with darker purple veins. The lower petal has a short pouch-like spur. The seed pods are green with greyish seeds. A white-flowered form occurs in the species but has not been reported from Saskatchewan.

6. The YELLOW PRAIRIE VIOLET (*V. nuttallii*, Fig. 2) is a fairly common plant of the prairies in the southern third of Saskatchewan. The leaves are finely hairy, smooth or wavy-margined, narrowly lance-shaped to sometimes broadly egg-shaped, usually tapering to short stalks. Most of the leaves arise basally from a short stout rootstock, but at least some occur on the aerial stems which bear the flowers. The flowers are about 1/2 inch wide, 1/4 to 1/2 inch long, borne on stems that are more or less leafy. The petals are bright yellow with the lower three purple-veined at the base and often brownish tinged on the outside. The lateral petals are often somewhat bearded and the lowest petal has a short spur. There are both narrow-leaved and broad-leaved forms of this species. The forms with leaves rounded at the tip and not tapering to the base are sometimes separated as another species, *V. vallicola* A. Nels., but this does not seem warranted.

7. The WHITE WOOD VIOLET (*V. rugulosa*, Fig. 1) is a common species in aspen and other woodlands, often forming extensive patches. The flowering stems bearing several to numerous leaves, arise from slender rootstocks and from the many long runners which are present. The heart-shaped leaves have rounded teeth and long stalks. The large flowers are borne on the upper portion of the stem on stalks shorter than the leaves. The petals are up to 1/2 inch long, white to violet, with yellow bases, the lower ones purplish-veined. The lateral petals are long-bearded and the lowest one has only a short spur. The rough-surfaced seed pods are covered with fine hairs and contain brownish seeds.

8. The EARLY BLUE or HOOKED SPUR VIOLET (*V. adunca*, Fig. 2) is a common plant in Saskatchewan on both moist low prairies and open pine woods. The leaves are mostly basal from a woody rootstock, but the flowering stems usually bear several leaves, although the earliest flowers may be on leafless stems. The leaves are nearly circular or elliptical, 1/2 to 1 inch wide, hairy-surfaced, with shallow rounded teeth, on either short or long stalks. The stipules are mostly toothed at the base. The flowers are 3/8 to 5/8 inch long, with blue or deep violet petals, the lower three are often whitish-based and with darker purplish veins. The lateral petals are white-bearded. The spur of the lowest petal is conspicuous, about 1/4 inch long, slender, and often somewhat hooked. The white-flowered form of this species has been reported from Rosthern. A form with hairless leaves and untoothed stipules has been reported from near Flin Flon, Manitoba.

9. The FIELD or WILD PANSY (*V. arvensis*, Fig. 2) is an introduced European annual plant that occurs only rarely in Saskatchewan on sandy soil in or near gardens or cultivated fields. It has been reported only from Wilkie, Tisdale and Canora in the province. The flowering stems are leafy, often branched from the base, hairless on the angles, and bearing small flowers about 1/2 inch long and 1/3 inch wide. The petals are pale yellow, often with purplish tips, and about as long as the sepals. The spur of the lower petal is short. The stipules are leaflike, nearly as large as the leaves and their edges are dissected from the base into narrow segments. The lower leaves are nearly circular or egg-shaped, tapering at the base and rounded at the tip. The upper leaves are narrower. The seed pods are nearly round, containing brown seeds.



V. renifolia
**ONEY-LEAVED
 VIOLET**



V. pedatifida
**CROWFOOT
 VIOLET**



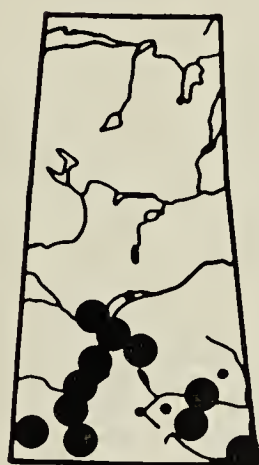
V. nephrophylla
**NORTHERN BOG
 VIOLET**



V. selkirkii
**GREAT-SPURRED
 VIOLET**



V. palustris
**WET
 VIOLET**



V. nuttallii
**YELLOW PRAIRIE
 VIOLET**



V. rugulosa
**WHITE WOOD
 VIOLET**



V. adunca
**EARLY BLUE
 VIOLET**



V. arvensis
FIELD PANSY



V. tricolor
PANSY



V. rafinesquii
WILD PANSY

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3. Distribution maps showing locality records of each Violet (*Viola*) species in Saskatchewan.

10. The PANSY (*V. tricolor*²) is a large-flowered annual plant introduced from Europe, which is commonly cultivated and may casually reseed itself in and around gardens. The cultivated pansy is the product of horticultural hybridizations and many different colour and size forms occur. The flowers of escaped plants are usually 1/2 to 1 inch wide, although the flowers are often larger under cultivation. The petals are widely spreading, about twice as long as the sepals, variously multicoloured with purple, yellow and white, and with yellow centers. The upper petals are usually darker coloured than the lower ones. The flowering stems are leafless and often branched from the base. The lower leaves are circular or heart-shaped; the upper ones are narrower. The stipules are leaf-like, about as long as the leaves, and the edges are dissected from the base into narrow segments. This species sometimes is also called Heart's Ease, Ladies-Delight or Johnny-jump-up.

11. The WILD PANSY or JOHNNY-JUMP-UP (*V. rafinesquii*) is a rare introduced annual plant from Eurasia. The only Saskatchewan report has been from a grain field at Tisdale. The plants have slender, leafy flowering stems which are hairless and often branched at the base. The leaves are small, only 1/4 to 1/2 inch wide. The lower leaves are nearly circular, smooth, shallowly round-toothed, rounded at the tip. The upper leaves are narrower and long-tapering to the base. The stipules are leaf-like, almost as long as the leaves, and lobed at the base. The flowers are small, less than 1/2 inch long, long-stalked, with bluish-white to creamy petals which are nearly twice as long as the sepals.

The known distribution of the eleven violet species in Saskatchewan is shown on the maps of Figure 3. Each map dot indicates a documented locality record. The distribution maps were prepared from published records and specimens in the Fraser Herbarium. They still reveal a paucity of specimen records for many of the species. The discovery of new locality records, especially of the rarer violet species or forms is of considerable interest to us and we would welcome any such reports particularly if documented by a pressed dried specimen. Any such information may be addressed to the Fraser Herbarium, University of Saskatchewan, Saskatoon.

Additions to the FLORAL LIST Of Saskatchewan - 1972

by JOHN H. HUDSON*

Although I did not accomplish as much botanizing in the field season of 1972 as in some former years, yet a modicum of records never or seldom reported for Saskatchewan came my way this summer. These will now be set forth. The collection numbers are those of the author. Duplicates have been deposited in the Fraser Herbarium of the University of Saskatchewan (SASK) and, except for No. 2774, in that of the Department of Agriculture at Ottawa (DAO).

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No. 2772. *Lotus corniculatus* L.
Bird's-foot Trefoil, Saskatoon, S. edge
SE 1/4 34-36-V W.3rd, south side
Highway No. 5 between Cumberland
and Preston Avenues, June 16, 1972
abundant with brome grass, quack grass
and yellow sweet clover. This legume
may be recognized by its general
similarity in habit to yellow alfalfa
even to the yellow flowers borne in
rounded heads. However, the heads are
axillary on long stalks, not terminal
and the flowers are much larger, some
1.5-2 cm long overall, with a corolla
bright yellow tinged with brown on the