

THE NATIVE ROSES OF SASKATCHEWAN

by VERNON L. HARMS*

Among the more common as well as showy wildflowers of Saskatchewan are the various species of native roses which grow on the prairies, in the woodlands and along roadways. Their blooming adds a profusion of colour and variety to the landscape. The roses are also attractive in fruit stage with their usually bright red "hips". These conspicuous flowering plants are familiar to all nature lovers; yet it is unfortunate that the amateur naturalist is immediately confronted with a great difficulty of distinguishing the various species of native roses. The present article is written in an attempt to lessen this difficulty.

The roses are generally considered to be a taxonomically confused group. In the past, botanists recognized numerous North American species within the genus *Rosa*, but today it is usually thought best to combine many of these into far fewer, really good, supposedly self-perpetuating, natural species. There is considerable confusion about the identity of the species of Saskatchewan roses which is mainly due to apparently frequent hybridization between species and to a considerable variability within each species. While most of this variability within species is probably genetically based, some of it, at least, appears environmentally induced by growth in different habitats. This variability makes it hard to clearly define the different species. However, I still believe that despite these difficulties our species of native

roses are reasonably distinct and can usually be identified both in the field and in the laboratory.

Although numerous species of native roses have often been recognized in Saskatchewan, and even Boivin in his recent *Flora of the Prairie Provinces* (Part I)¹ still accepted six species, I believe it is taxonomically best to consider all of these forms as belonging to only three good species. These three species are (1) the **Wild Prairie Rose** (*Rosa arkansana* Porter, including *R. suffulta* Greene, *R. alcea* Greene, *R. lunnellii* Greene, *R. subglauca* Rydb., *R. bushii* Rydb., *R. heliophila* Greene and *R. pratincola* Greene), (2) **Wild Woods Rose** (*Rosa woodsii* Lindl., including *R. fendleri* Crepin, *R. terrens* Lunnell, *R. macounii* Greene, *R. fimbriatula* Greene, *R. sandbergii* Greene, *R. ultramontana* Heller, *R. grosseserrata* A. Nels., *R. salictorum* Rydb., *R. pyrifera* Rydb., *R. puberulenta* Rydb., *R. lapwaiensis* St. John and most previous Saskatchewan reports of *R. blanda* Ait.), and (3) the **Wild Prickly Rose** (*Rosa acicularis* Lindl., including *R. bourgeauiana* Crepin, *R. butleri* Rydb., *R. engelmanni* S. Wats. and *R. sayi* Schwein.). Another species which has been reported for Saskatchewan is the Smooth Rose (*Rosa blanda* Ait.) but, while this is evidently a valid species to the east of us, all specimens reported to be this species from Saskatchewan that I have seen would appear to represent an extreme, nearly prickless form of either the Wild Woods Rose or sometimes the Wild Prairie Rose.

Rose plants are shrubs or semishrubs with the main stems either

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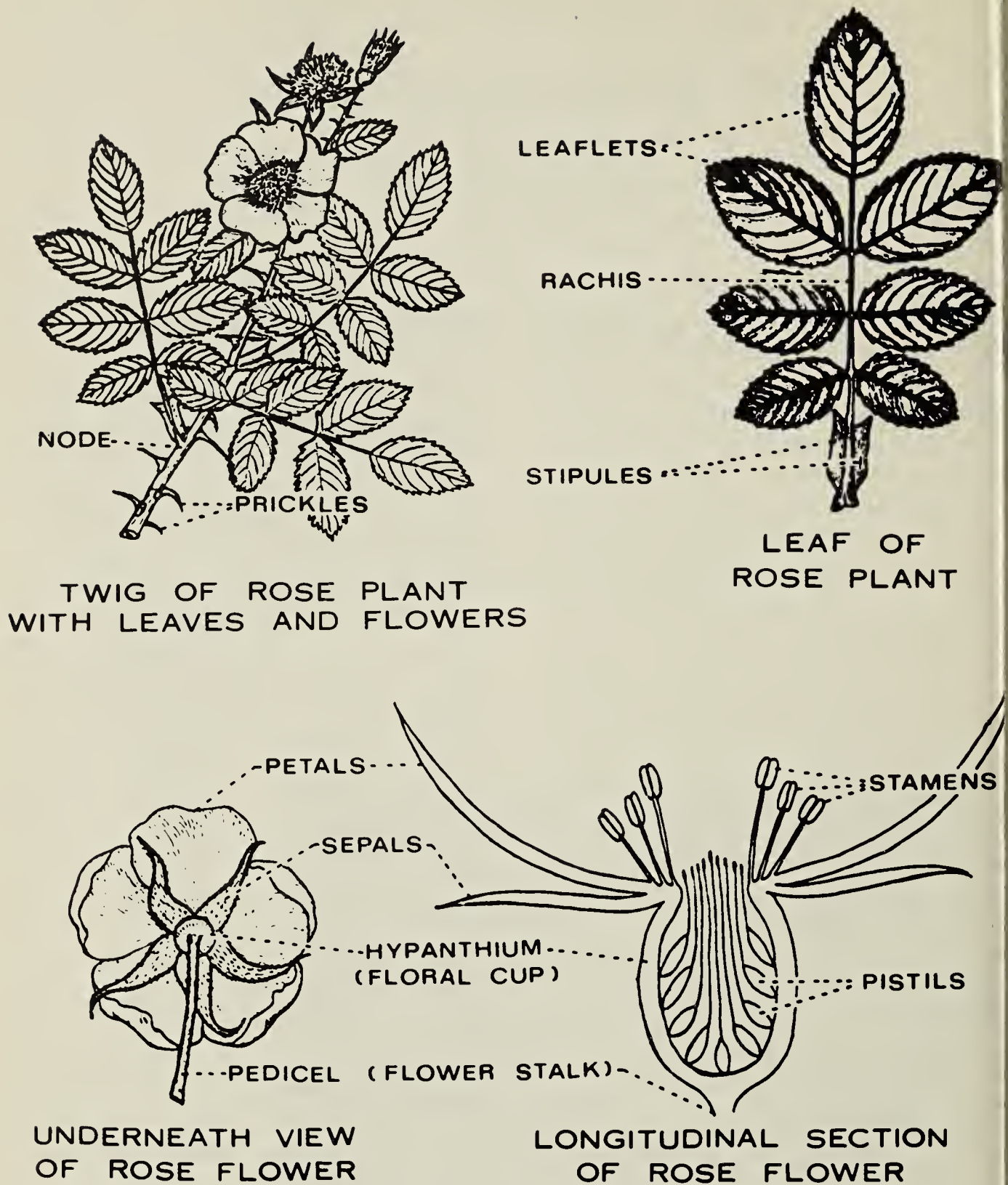


Fig. 1. Stem, leaf, and flower parts of a rose plant.

woody or semiherbaceous. The stems are more or less prickly. The leaves occur singly at the stem nodes and are spirally arranged around the stems. The leaves have prominent stipules and are compound with 5 to 11 leaflets along a rachis (see Fig. 1). The wild rose flower is large and has an exaggerated floral cup (hypanthium)

on whose rim are borne five partially fused, persistent, green sepals, five separate, early deciduous, pink to red (or rarely white) petals, and numerous stamens. The numerous simple pistils are borne on the inside of the floral cup with their long styles extending out of the opening at the top (see Fig. 1). The ovary of each pistil develops

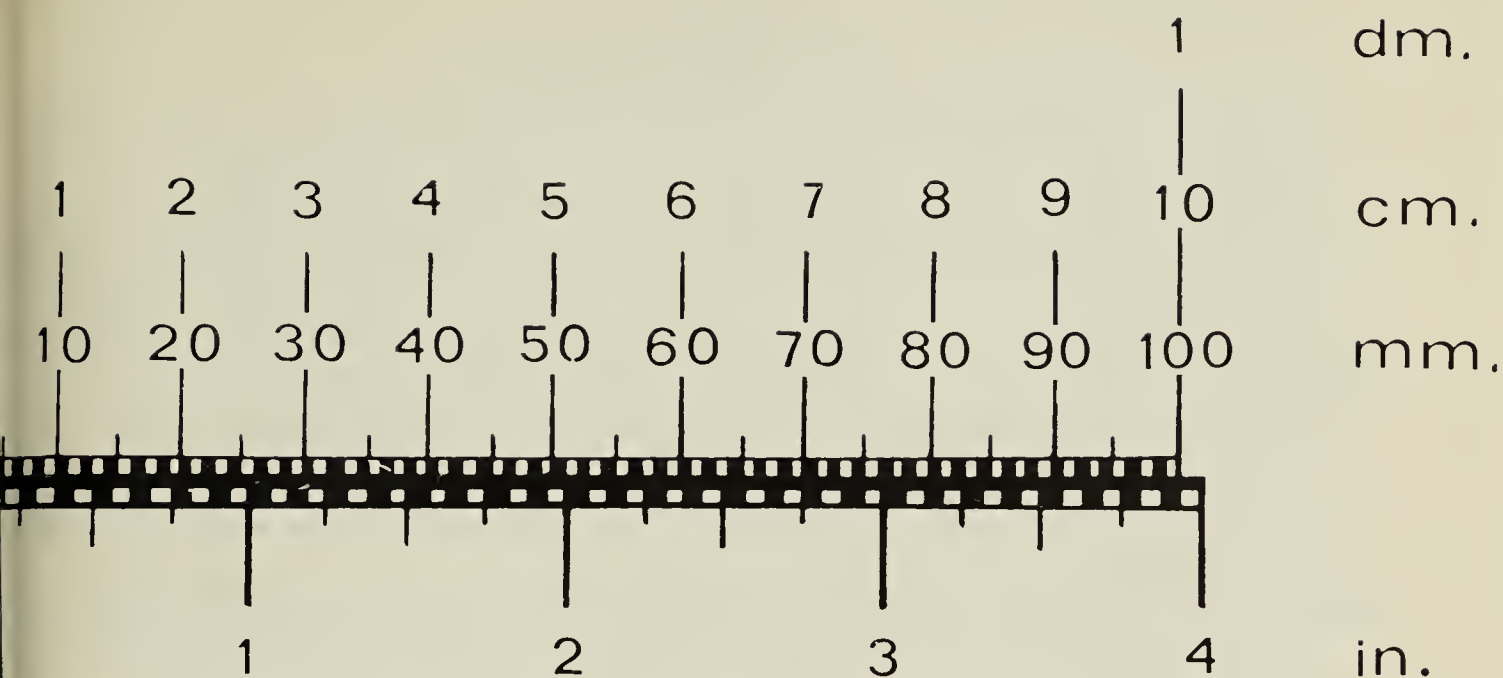


Fig. 2. Comparison of metric measurements with inches.

into an achene (the 1-seeded true fruit). The entire floral cup turns reddish to reddish-purple when ripe and is called a rose "hip" or, loosely, the rose "fruit". Rose "hips" are a good source of Vitamin C and may be used for making jelly, jam, and syrup. Native peoples in the north have long used them as a supplementary food source.

The differences between the three native species of Saskatchewan roses which are accepted here are shown in table 1. Measurements in this chart are given in the metric system since this is the language of the botanist and soon will be for all of us. However, the conversion of the metric system to inches is shown in Fig. 2 for the convenience of everyone. While a comparison chart such as this one is probably the best means for fully comparing and contrasting the characters of the various species and may also be used for the identification of unknown specimens, an easier method for species' identification is the use of a taxonomic key. Such an identification key to separate our Saskatchewan species of roses follows. In using this key, first make a choice between the

number 1 leads (alternatives in the couplet); if the choice is the second of these number 1 leads, move on to the choice between the number 2 leads. In this way one will arrive at the correct species' identification. A magnifying glass (at least 10X) is necessary in order to properly see the hairs and glands on the leaf parts and elsewhere.

Each of the three native roses is illustrated in Figure 3. However, most of the distinguishing characteristics among the species of roses are too small to show on such drawing; these are indicated in the comparison chart and identification key.

There are some variations in each of our species that appear worthy of taxonomic recognition. Within the **Wild Prairie Rose**, plants with completely hairless leaves are recognized as variety *arkansana*. Most of our Wild Prairie Rose plants in Saskatchewan belong to variety *suffulta* (Greene) Cockerell with the leaf stalk, rachis and undersurface of the leaflets quite densely hairy and sometimes the former sparsely glandular. Rarely occurring are some plants with more strongly glandular stipules, leaf stalk and rachis and these have often been

IDENTIFICATION KEY FOR THE NATIVE SASKATCHEWAN
SPECIES OF ROSES

1. Main stems semiherbaceous, mostly dying back to ground level annually; generally unbranched, terminating in a round-topped cluster of several many flowers; stem prickles short, to 3 mm (1/8"), all slender and weak; leaflets mostly 9-11, mostly less than 2.5 cm (1") long, not glandular beneath or on teeth; stipules, leaf stalk, and rachis mostly non-glandular except for the stipule teeth **Wild Prairie Rose** (*Rose arkansana*)
1. Main stems woody, persistent through winter, much branched; the flowers form on short lateral branches or longer terminal branches from previous year's stems; stem prickles longer, to 5 mm (1/5"); leaflets mostly 3-7, usually more or less glandular beneath; stipules, leaf stalks, and rachis usually more or less glandular
2. Prickles below the stipules clearly differentiated, usually longer, stouter, with swollen bases, often flattened or recurved; stem prickles dense below becoming sparser above, some slender with thin flat bases, some stout and flattened with swollen bases; leaflets smaller, mostly shorter than 2.5 cm (1"), usually acute at base; stipules, leaf stalk, rachis and leaflet undersurface only sparsely glandular; flowers small, 2.5 - 4 cm (1 - 1-1/2") in diameter; sepal length mostly 1-1.5 cm (about 1/2"); "hips" nearly spheric without neck below, 6-12 mm (1/4-1/2") in diameter. **Wild Woods Rose** (*Rosa woodsii*)
2. Prickles below the stipules not differentiated; stem prickles uniformly dense to summit, all slender with thin flat bases; leaflets larger, mostly longer than 2.5 cm (1"), with bases obtuse or rounded; stipules, leaf stalk, rachis, and leaflet undersurface strongly glandular; flowers larger, 4-6 cm. (1-1/2 - 1-1/2") in diameter; sepal length mostly 1.5-3 cm. (1/2 - 1 1/5"), hip spheric without neck, or else elongated ellipsoid or pear-shaped with a distinct neck 10-20 mm (1/2-1") in diameter. **Wild Prickly Rose** (*Rosa acicularis*)

separated as a distinct species, *R. alcea*, but this does not seem warranted. Boivin, in contrast to other authorities, distinguishes *R. alcea* as a type with flowering branches from persistent woody stems of the previous year.¹ However, I would consider such plants with the stems persisting through the winter, rather than dying completely back to ground level, as probably only an environmental form of the Wild Prairie Rose in more protected sites. Such occasionally persistent woody stems usually tend to produce short flowering branches the following year bearing fewer flowers and blooming earlier than usual for the species.

Within the **Wild Woods Rose**, plants with hairless and glandless leaves have been distinguished as variety *woodsii*. Such plants are widespread but not too common. Most of our Saskatchewan plants of the Wild Woods Rose belong to variety *fendleri* (Crepin) Rydb. with more or less hairy and usually somewhat glandular leaves with gland-tipped teeth. Taller plants reaching 3 meters (6-1/2 - 10') and entirely lacking gland-tipped teeth are distinguished as variety *ultramontana* (Wats.) Jeps., but this is a Rocky Mountain form apparently not to be expected in Saskatchewan. Another form with numerous, unusually large stout, flattened prickles on the main

TABLE 1

Comparison chart showing the differences among the native species of roses in Saskatchewan.

	Wild Prairie Rose <i>Rosa arkansana</i>	Wild Woods Rose <i>Rosa woodsii</i>	Wild Prickly Rose <i>Rosa acicularis</i>
Plant height	(1-)2-4 dm.* ($\frac{1}{2}$ -1 $\frac{1}{2}$ ')	5-10(-15) dm. (1 $\frac{1}{2}$ -5')	5-10(-15) dm. (1 $\frac{1}{2}$ -5')
Main stems	semiherbaceous, thin, mostly dying back to root annually	woody, persistent through winter	woody, persistent through winter
Stem branching	unbranched to little branched	much branched	much branched
Density of stem prickles	dense below, becoming less so above	dense below; fewer or rarely none above	uniformly dense to summit, even on short lateral flowering branches
Nature of stem prickles	straight, slender, weak, unequal; to 3 mm long	straight to curved; some slender, some stout and flattened; to 5 mm long	straight, slender, very unequal, not flattened; to 5 mm long
Prickles below stipules	not differentiated	clearly differentiated pairs; often longer, stouter, and flattened; straight or curved	not differentiated
Leaflet number	(7-)9-11, crowded	5-9, crowded	(3-)5-7, not crowded
Leaflet length	1-2.5(-3) cm	(1-)1.5-2.5(-3) cm	(1.5-)2.5-5 cm
Leaflet base	mostly acute	mostly acute; sometimes obtuse	obtuse or rounded
Leaflet margin	sharply saw-toothed	coarsely to sharply saw-toothed	coarsely and irregularly toothed
Leaflet teeth	not glandular	glandular or not	always glandular
Leaflet surface	not glandular beneath	sometimes glandular beneath	usually glandular beneath
Leaf stalk and rachis	hairless to usually fine short-hairy; rarely glandular	mostly fine short-hairy; sometimes bristly or sparsely glandular	fine short-hairy and strongly glandular
Stipule pair width	3-9 mm	(3-)4-7(-10) mm	6-12(-15) mm
Stipule surface	non-hairy to usually soft hairy, rarely glandular	usually hairy and only sparsely glandular	hairy and densely glandular
Stipule margins	smooth to sometimes glandular-toothed	only sparsely glandular-ciliate if at all; usually glandular-toothed	densely glandular-ciliate and glandular-toothed
Flower position	terminating main stem of season, or rarely on short lateral branches from previous year's stems	on short lateral branches from previous year's stems	on short lateral branches from previous year's stems
Flower no.	(2-)3-many in round-topped cluster	(1-)2-3(-6)	mostly solitary, rarely 2-3

Flower diameter	3.5-6 cm	2.5-4.0 cm	4-6 cm
Flower stalks	stout; hairless to loosely long-hairy or glandular	slender; hairless, rarely glandular	slender; hairless, rarely glandular
Hypanthium diameter in flower stage	4-5 mm	3-5 mm	3-4.5 mm
Sepal length	(1-)1.5-2(-3) cm	1-1.5 cm	1.5-3 cm
Sepal basal width	3-5 mm	2-3.5 mm	2-4 cm
Sepal surface	glandular	hairless to fine short-hairy, sometimes glandular	glandular
Sepal position	erect to spreading in fruit	erect to spreading in fruit	erect in fruit forming a beak
Petal length	(12-)15-25(-28) mm	(10-)15-20(-23) mm	(15-)20-30(-35) mm
Mature hip shape	nearly spherical	nearly spherical	spherical without neck to ellipsoid or pear-shaped with distinct neck
Diameter of mature hip	8-15 mm	6-12(-15) mm	10-20 mm
Achene length	4-5 mm	3-4 mm	4-5.5 mm
Blooming time	extended, late June - August	short, late June - mid-July	short, mid-June - mid-July
Habitat	open sandy prairies and plains	forests, edges of woods, and prairies	forested regions
Reported Chromosome Number ²	2n = 28	2n = 14	2n = 42

*Metric number in parenthesis is an unusual extreme and unusual value.

stem, and stout, strongly recurved prickles below the stipules on the branches has been separated as variety *terrens* (Lunnell) Breitung. A form with bristly rather than smooth "hips" is recognized as forma *hispidula* (Turner) Boivin. The wide range of habitats that the Wild Woods Rose occurs in from forests to dry prairies results apparently in considerable environmental variation within this species. The leaf and flower parts appear somewhat smaller and the stem prickles are fewer but often thicker on plants of the dry prairies than on forest plants. However, this environmental

variation is not considered worthy taxonomic recognition.

Within the **Wild Prickly Rose**, the typical variety *acicularis* has elongate ellipsoid to pear-shaped "hips" with distinct neck below the sepals. More common in Saskatchewan, however, is variety *bourgeauiana* Crepin with nearly globose "hips" which are strongly rounded at both ends and have a less well developed neck.

The distribution in the province of the three native Saskatchewan Roses is shown in Figure 4, based upon specimen records in the Fraser Herbarium.



WILD PRAIRIE ROSE
ROSA ARKANSANA

WILD WOODS ROSE
ROSA WOODSII

WILD PRICKLY ROSE
ROSA ACICULARIS

Fig. 3. Habit sketches of native rose species in Saskatchewan.

herbarium and other herbaria in the province. The resulting distribution maps tend to distort the actual distributions somewhat, at least as far as frequency is concerned; collecting in the province has been highly uneven, having been concentrated around the botanical centers of Saskatoon, Regina, and Swift Current, and least in the whole northern half of the province. In particular, the Wild Prickly Rose is undoubtedly much more abundant and widespread in the north than the distribution map indicates. The Wild Prairie Rose is found in prairie regions throughout the southern part of the province. The Wild Woods Rose (or Common Wild Rose) is characteristic of both woodlands and prairies primarily in the southern half of the province where it is quite abundant but also extends in reduced numbers to northernmost Saskatchewan. It occurs with the Wild Prairie Rose on the prairies and with the Wild Prickly Rose in woods.

The Wild Prickly Rose is most characteristic of the boreal forests of northern Saskatchewan where it often represents a dominant undershrub, especially in upland forests, but in this province it also occurs in aspen woodlands quite far south of the boreal forest.

Each of our native rose species will apparently hybridize with any of the others if given the opportunity. The Wild Prairie Rose appears quite distinct wherever it grows in the province but it does hybridize, especially with the Wild Woods Rose. The Wild Woods Rose and the Wild Prickly Rose apparently hybridize frequently and produce numerous confusing intermediates. For instance, in the Saskatoon area, many plants of the Wild Woods Rose, which is the common woodland and prairie edge species of the region, appear introgressed with characters from the Wild Prickly Rose. Often one may

DISTRIBUTION IN SASKATCHEWAN



WILD PRAIRIE
ROSE

ROSA ARKANSANA



WILD PRICKLY
ROSE

ROSA ACICULARIS



WILD WOODS
ROSE

ROSA WOODSII



PUTATIVE HYBRIDS

ROSA WOODSII
X R. ACICULARIS

Fig. 4. Distribution of native rose species in Saskatchewan based in herbarium specimens

even find that some parts of a shrub will reveal the characters of the Wild Woods Rose while other parts of the same plant have the characters of the Wild Prickly Rose. Mostly, the hybrids show various degrees of intermediacy between the two parent

species revealing some of the characters of both throughout. The Saskatchewan distribution of putative hybrids between these two species is shown in the last map of Figure 4 based upon the specimens in the Frase Herbarium and other herbaria in the

province. Specimens nearest the Wild Prickly Rose but showing some characters of the Wild Woods Rose are indicated by open, rather than closed, circles on the distribution map of the Wild Prickly Rose. Specimens nearest the Wild Woods Rose but showing some characters of the Wild Prickly Rose are indicated by open, rather than closed, circles on the distribution map of the Wild Woods Rose. Specimens of the Wild Prairie Rose which are somewhat similar to the Wild Woods Rose are indicated by

open circles on the distribution map of the Wild Prairie Rose.

¹BOIVIN, B. 1967. *Flora of the Prairie Provinces. Part I.* Reprinted from *Phytologia* Vol. 15: 357-359.

²HITCHCOCK, C. L., A. CRONQUIST, M. OWNBEY, and J. W. THOMPSON. 1961. *Vascular Plants of the Pacific Northwest. Part 3.* Univ. of Washington Press, Seattle. pp. 164-171.

Editor's Note. These three roses are treated in relation to Alberta in the September, 1973, *Blue Jay*.



Bumblebee on Gaillardia

Gary W. Seib