

THE PYROLAS OR WINTERGREENS OF SASKATCHEWAN

Arch C. Budd

In our Province we find five species of Wintergreen or Pyrola, but only in shaded, moist locations. They are low growing plants with creeping roots and evergreen leaves, borne near or around the base of the flowering stem. Generally they are considered to be members of the Heath family (Ericaceae) but some authorities, Agardh, Britton and Brown, Rydberg, etc. make a separate family, Pyrolaceae. The nodding or pendent flowers are borne in a long, narrow raceme and have 5 petals, 5 sepals and 10 stamens. The long style generally protudes from the flower and is often curved. The flowers are followed by almost globular capsules which are divided into 5 cells and open from the base to discharge the seeds. The oil of wintergreen so commonly used as a flavouring is derived from another plant of the Heath family, the Checkerberry, (Gaultheria procumbens.) which is not found in Saskatchewan.

The following key and descriptions, which are taken from my book, soon to be published, will serve to distinguish the various species.

1. Style not protuding conspicuously from flower, and straight. (4) *P. minor.*
Style conspicuously protuding from flower. 2.
2. Flowers crowded on to one side of the stem (secund): style straight. (5) *P. secunda*
Flowers not all on one side of the stem; style curved. 3.
3. Petals pink or purplish in colour. (1) *P. asarifolia*
Petals white or greenish. 4.
4. Leaf blades round, usually shorter than leaf stalks. (2) *P. chlorantha*
Leaf blades oval, usually longer than stalks. (3) *P. elliptica*

(1) *Pyrola asarifolia* Michx. PINK WINTERGREEN

A plant from 6 to 15 inches high with leathery, shiny, basal leaves, cordate at the base and from 1 to 2 inches wide. The flowers, from 7 to 15 in number, are pinkish, up to 1/2 inch across when fully opened, and have 5 sepals, 5 petals and a protuding style. They are borne in an open raceme and are generally nodding. Fairly common in moist woods throughout the province. The variety *P. asarifolia* Michx. var. *incarnata* Fern. differs from the type by having leaf blades rounded or tapering at the base in place of being cordate. It is found in similar localities.

(2) *Pyrola chlorantha* Sw. GREENISH-FLOWERED WINTERGREEN

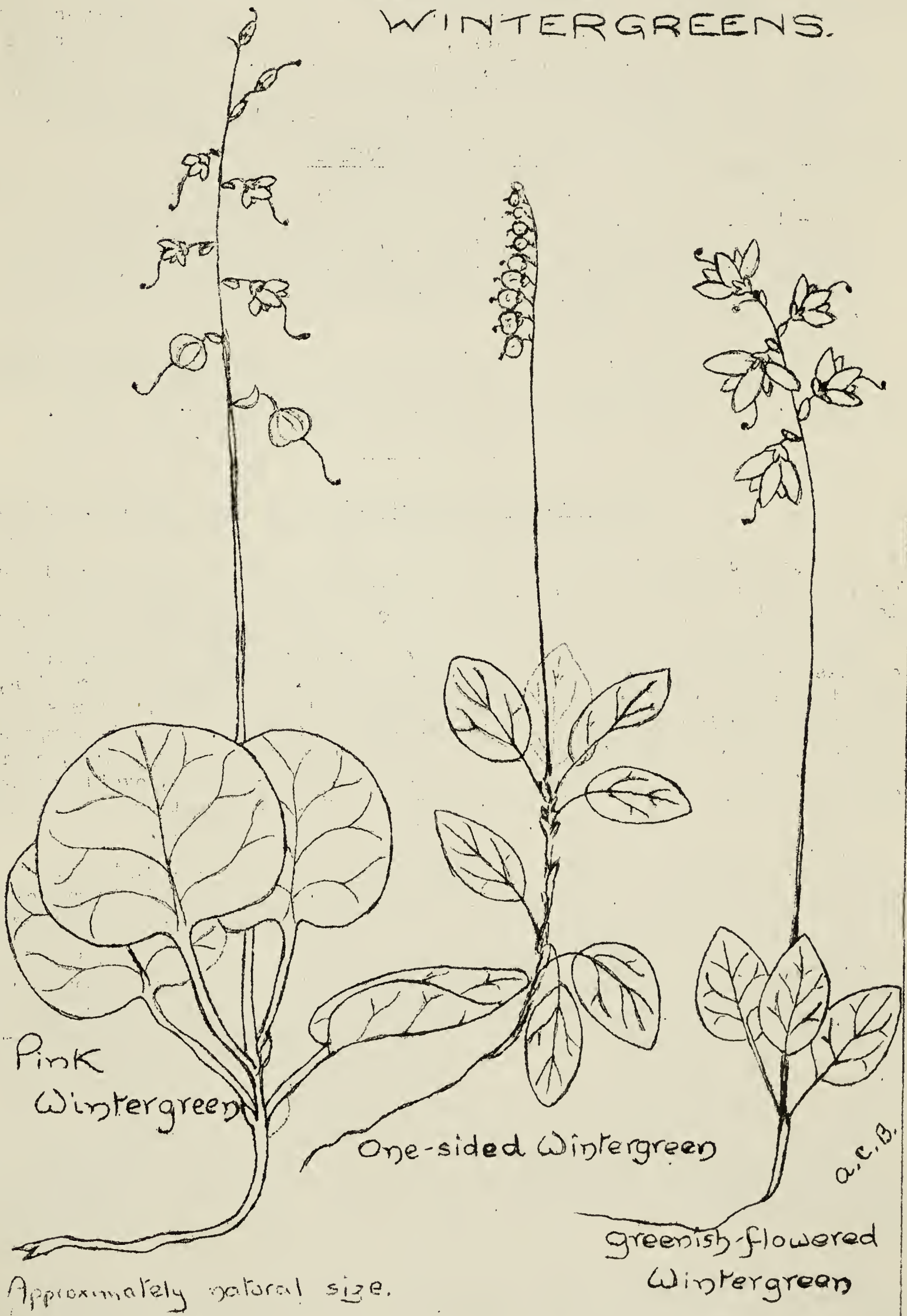
This species has round or broadly oval basal leaves, rounded at the apex. The leaves are thick and dull surfaced and grow on rather long stalks; the blades are from 3/8 to 1 1/2 inches wide. The flowers are greenish-white, about 1/2 inch across when opened, and borne racemosely on a stem from 4 to 12 inches high. There are from 3 to 10 flowers in an inflorescence. It is found in moist coniferous forest areas throughout the province.

(3) *Pyrola elliptica* Nutt. COMMON SHINLEAF

This species is similar to *P. chlorantha* but the leaf blades are oval, somewhat pointed at the apex and with the stalks shorter than the leaf blades. The leaves are much longer, from 1 1/2 to 3 inches in length. The flowers are very similar to *P. chlorantha* and are generally from 7 to 15 in an inflorescence. Fairly common in rich woods, particularly in the northern portion of Saskatchewan.

SASKATCHEWAN

WINTERGREENS.



Pink Wintergreen

One-sided Wintergreen

greenish-flowered Wintergreen

a.c.B.

Approximately natural size.

THE PYROLAS OR WINTERGREENS OF SASKATCHEWAN (Cont'd)(4) Pyrola minor L. LESSER WINTERGREEN

A small species with thin, dark green, oval or rounded leaves that are from 3/8 to 1 1/4 inches long, and which grow on fairly long basal stalks. The flowers are small, about 1/4 inch across, white or faintly pinkish, and are borne in a rather crowded raceme on a stem from 2 to 8 inches high. Occasionally found in woodlands in the Cypress Hills.

(5) Pyrola secunda L. ONE-SIDED WINTERGREEN

A rather small species, generally growing in colonies from a branched root-stalk. The leaf blades are thin, oval to lanceolate, pointed at either end and from 1 to 2 1/2 inches long. The flowers are small, about 1/4 inch across and crowded on to one side of the short stem, which is from 3 to 10 inches high. Fairly common in woodlands and bluffs throughout the whole of the province.

In the Cypress Hills, I have noticed that the Greenish-flowered Wintergreen is the earliest of the Pyrolas to come into bloom and that it is generally in the darker, and denser coniferous forest, amongst the Lodge-pole Pines.

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THE ORIGIN OF THE CYPRESS HILLS By August J. Breitung,
Ottawa.

The Cypress Hills is one of the most interesting areas in Western Canada for the study of Natural History. In 1947 the writer made a study of the flora of that area. It is considered one of the most unique areas in Canada.

These hills form an elevated plateau or series of plateaux situated in southwestern Saskatchewan and southeastern Alberta. The topmost formation, being the most recent, is known as the Cypress Hills formation. It was laid down in the Tertiary period and is of alluvial deposition. This is composed chiefly of hard, coarse conglomerates and interbedded with hard, grey, coarse sandstone. In general, this consists of smooth, well-rounded, ovoid boulders, cobbles and pebbles in a hard, grey, coarse matrix. The boulders are as much as 8 inches in maximum diameter, but average considerably less.

Erosion has cut the plateau so that a number of rocks underlying the Cypress Hills formation are exposed. In contrast, these are of a very soft nature of Paleocene and Cretaceous time and consist of shales, silts and sands.

There is much controversy as to the extent of the Cypress Hills in early Oligocene Time. The Cypress Hills formation was laid down in a freshwater environment. It was transported from the Rocky Mountains in the Tertiary Period. During the uplifting of the Rocky Mountains, vast glaciers accumulated and when the climate became ameliorated, their melting created enormous streams bringing with them gravels, silts and sands, thus creating an enormous fan eastward out across the plain as far east as the Dakotas.

Evidence of its alluvial deposition is from the smoothly worn, river sorted conglomerates. These decrease in size from west to east as the water carried the lighter material farther. In addition, the plateau having a west to east decline of 15 feet per mile indicates that it was an eastward flowing current.

Attempts have been made to determine the former height of the Rocky Mountains by calculating the force required to produce currents sufficiently strong to transport the larger boulders 200 miles to the east. It may be