

Burls and Bittersweet

Nature Trail Guide

Riding Mountain National Park



Life in the Eastern Hardwood Forest

The Bulls and Bittersweet Nature Trail is located on the north side of #19 Highway, 21.8 miles east of the Interpretive Centre in Wasagaming and 0.2 miles west of the east entrance to Riding Mountain National Park. The parking lot is situated at the far end of a 0.8 mile scenic access road. The trail is 1.4 miles in length and follows Dead Ox Creek in a figure 8 course with three bridges crossing the stream.

The life zone through which this trail passes is the deciduous hardwood forest characteristic of southeastern Canada and the eastern United States. In Riding Mountain National Park this forest community occurs along the base of the Manitoba Escarpment up to an elevation of at least 1,400 feet above sea level.

Some of the species of plants which reach the northwestern limit of their range in the hardwood forest of Riding Mountain National Park are climbing bittersweet, Canada plum, Virginia creeper, tall coneflower and hog peanut. Occurring with them are many species of birds and mammals typical of the eastern half of North America. Examples are broad-winged hawk, great crested flycatcher, chestnut-sided warbler, gray squirrel, eastern chipmunk and short-tailed shrew. A walk along this trail under a dense canopy of elm, oak, ash and maple can be a unique experience when these deciduous woodlands are compared with the evergreen forest of the highland, only a few miles distant.



Coneflower

1. Moods of a Stream

Dead Ox Creek received its name during the early years of settlement when one of the pioneers, hauling logs out of the forest, lost his valued animal near this location. The clear waters of this stream can change from a quiet brook to a raging torrent in a few hours. This happened on the night of June 5, 1971 when 6½ inches of rain fell on its headwaters. Broken shale and rocks as large as 10 lbs. moved downstream with the current.

2. Primary Dam

Most beaver dams along this stream were destroyed by the storm of June 5, 1971. This tumbled mass of sticks and logs was the uppermost dam of the resident beaver colony. It received the full force of the torrent and today lies as a broken ruin.

3. Shale-filled Beaver Pond

Once this was a placid pond where beaver lived out their lives. As a result of one storm the pond is now filled to a depth of six feet with broken shale. Already young trees have sprouted in the moist silt. In a few years a forest will be growing here. Thus, the power of nature to alter the landscape is demonstrated before our eyes.

4. Giant Aspens

These wooden pillars, soaring over 70 feet upward, are examples of the growth the trembling aspen can attain when all the factors necessary for its survival occur in abundance — rich soil, moisture and sunlight. The pillars of every temple eventually fall. Beavers have gnawed into the bases of these trees, perhaps for no better reason than to wear down their ever-growing teeth. What the beavers have started, insects and fungi will complete. A pile of sticks on the bank at this point covers the entrance to the beaver's former home — a burrow in the bank.

5. Secondary Dam

This is the dam which held back the waters of the beaver's main pond. The amazing strength of this network of sticks, rocks and mud withstood the floodwaters, causing them to burst around the south end of the dam. With the abrupt loss of flow, stream borne debris was deposited here. As a result, this shale-filled beaver pond is now abandoned.

6. Tertiary Dam

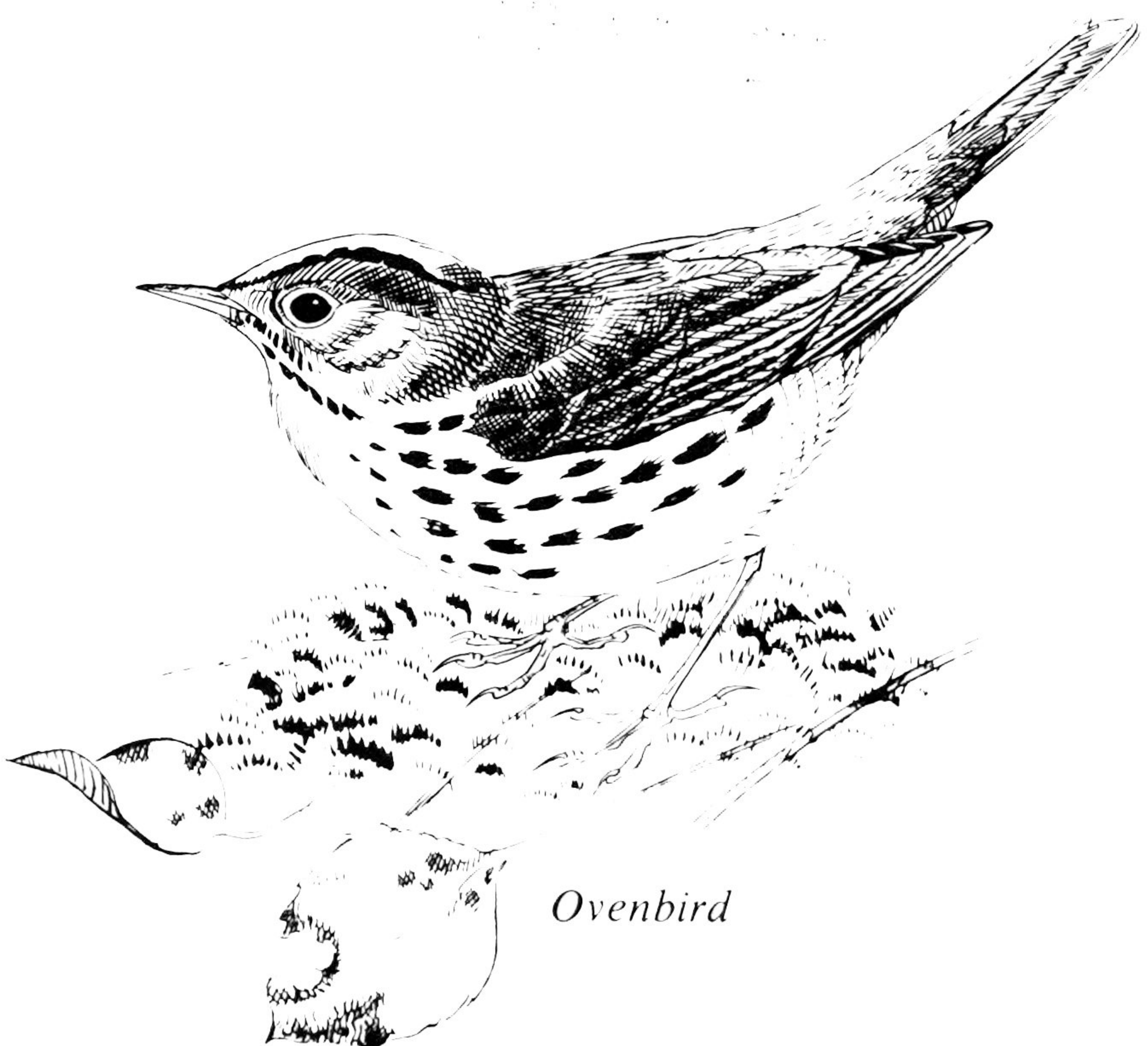
This dam was constructed to back the water up against the secondary dam and thus partially relieve the outward pressure of the impounded main pond. This engineering principle is frequently used by beavers to reduce the stress on their highest dams.

7. Reflecting Pond

Look down to the mirror surface of this pond. Revealed here are the changing patterns of forest and sky. In autumn the maple leaves settle on its surface, creating a picture of perfect tranquillity. Occasionally gurgles and spouts disrupt the quiet surface. These are caused by the springs that drain out of the banks or up from the bottom of the pond.

8. Mountain Maple

Examine the leaves of this maple. They resemble the leaf on the Canadian flag but belong to a different species — the mountain maple instead of the emblematic sugar maple. Mountain maples thrive along stream banks and in shady, moist ravines. They occur all across southeastern Canada and are near their northwestern limit at this point. In September the orange and yellow leaves add their splash of colour to the stream banks. White-tailed deer feed on the leaves and buds, beavers and snowshoe hares enjoy the bark, grosbeaks and finches feed on the seeds in fall and winter.



9. Scarecrow Elms

Can you find the “scarecrow” elms? What factors do you think have caused these twisted forms — wind, ice, snow, falling trees, fungus disease, feeding by deer and other animals?

10. Death of a Giant

This giant poplar crashed to the ground with a thunderous groan during a storm on July 1, 1970 when winds reached 76 m.p.h. Many of the forest giants eventually bring about their own death by rising high above the level of the surrounding trees where the winds can catch them. It will take many years for the remains of this tree to return to the soil.

11. Hybrid Poplars

In the forest along the base of the Manitoba Escarpment two closely related species of poplars meet and hybridize — these are the balsam poplar of the cool highlands and eastern cottonwood of the plains. In this narrow zone, the two produce vigorous progeny which reach a height of over 80 feet. One of these specimens can show every combination of characteristics of its parents; for example, the leaves vary in form all the way from the fine-toothed, heart shape of the balsam poplar to the coarse-toothed, triangular shape of the eastern cottonwood.

12. Virginia Creeper

The Virginia creeper, also called thicket creeper, climbs upward towards the sun using its hook-tipped tendrils to secure a hold. In September those leaves which are exposed to direct sunlight turn brilliant scarlet, while others in the shade become orange or yellow. The blue berries of this vine are eagerly consumed by birds, which in turn spread the seeds through the forest. The Virginia creeper has five-parted leaves which distinguishes it from the famous “leaves of three” of the poison ivy, which is common in this area. For your safety, please stay on the trail!

3. What are Burls?

One of the most striking features of this area are the rough swellings on the hybrid poplar trees. These abnormal growths are called burls. No one really knows the reason for their occurrence, except that it is due to some foreign substance in the wood.

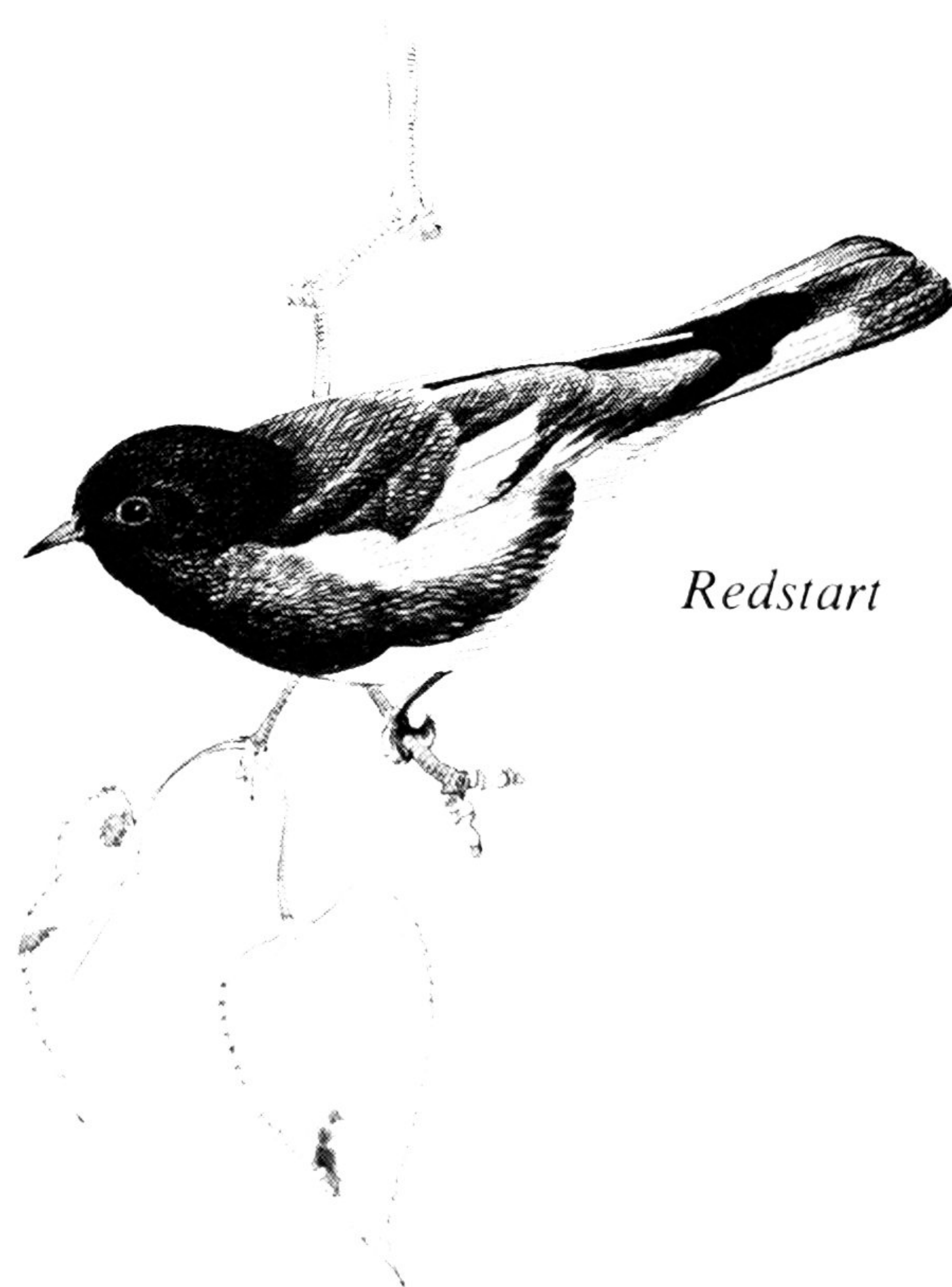
Whatever the cause, the result is a cancer-like growth of the woody tissue. This disease is not fatal except when fungi invade the burls, thus weakening the tree and causing it, eventually, to come crashing down.

14. Can you find the Bittersweet?

This vine has a soft, pliable wood. When one of its tender young branches touches a support, it immediately twines around the tree or shrub in a snake-like grip. At this point it climbs high into the trees on either side of the trail. In September and October the large clusters of orange pods split open to reveal bright red fruit. This plant has also been called “waxwork” because its freshly opened fruits appear more like man-made ornaments than part of a living plant. Collection of bittersweet branches for sale as dried decorations has reduced or exterminated this species in many areas.

15. Nannyberry

The nannyberry is a small, crooked tree with an irregular, spreading crown. Found along lakeshores and riverbanks, nannyberry is native to the deciduous forests of southern Canada from New Brunswick to Saskatchewan. The purplish fruit, which hangs in clusters at the ends of the branches, is much enjoyed by ruffed grouse, robins and cedar waxwings. The red and orange leaves make this one of our most colourful trees in autumn.



Redstart

16. Corkscrew Tree

How did this elm happen to grow in this unusual shape? Many trees in this area support climbers such

as the virginia creeper and twining honeysuckle. This particular specimen still supports a thick bittersweet vine. These vines do no harm to a fully-grown tree, but a flexible young sapling can be permanently distorted by their coiling grip.

17. Red Ash

The red ash is a common hardwood tree of river valleys across southern Canada from Nova Scotia to Saskatchewan. It occurs in several varieties — this one, with fuzzy leaf-stalks and leaf-veins, is known as northern red ash. This is a small tree, normally reaching 30 feet in height. Its greyish-brown bark is easily recognized by the many vertical ridges which crack horizontally at the base of the mature tree to produce a “checkered” pattern.

18. White Elm

This graceful tree is one of the best known hardwood species and one of the easiest to recognize. The dark, ridged trunk usually subdivides into several main branches a short distance above the ground. Here the branching has taken place below ground, resulting in five trunks. The ascending limbs divide repeatedly to form the spreading crown for which the white elm is famous.

The Dutch elm disease has caused widespread destruction of this species in eastern North America. In 1971 this disease was still unknown in Manitoba, but had been recorded nearby in Minnesota. Spores of the fungus responsible for Dutch elm disease are transported by bark beetles. Because of severe winter weather and our location on the extreme northern edge of the elm’s range, it is hoped that this disease will never invade the park.

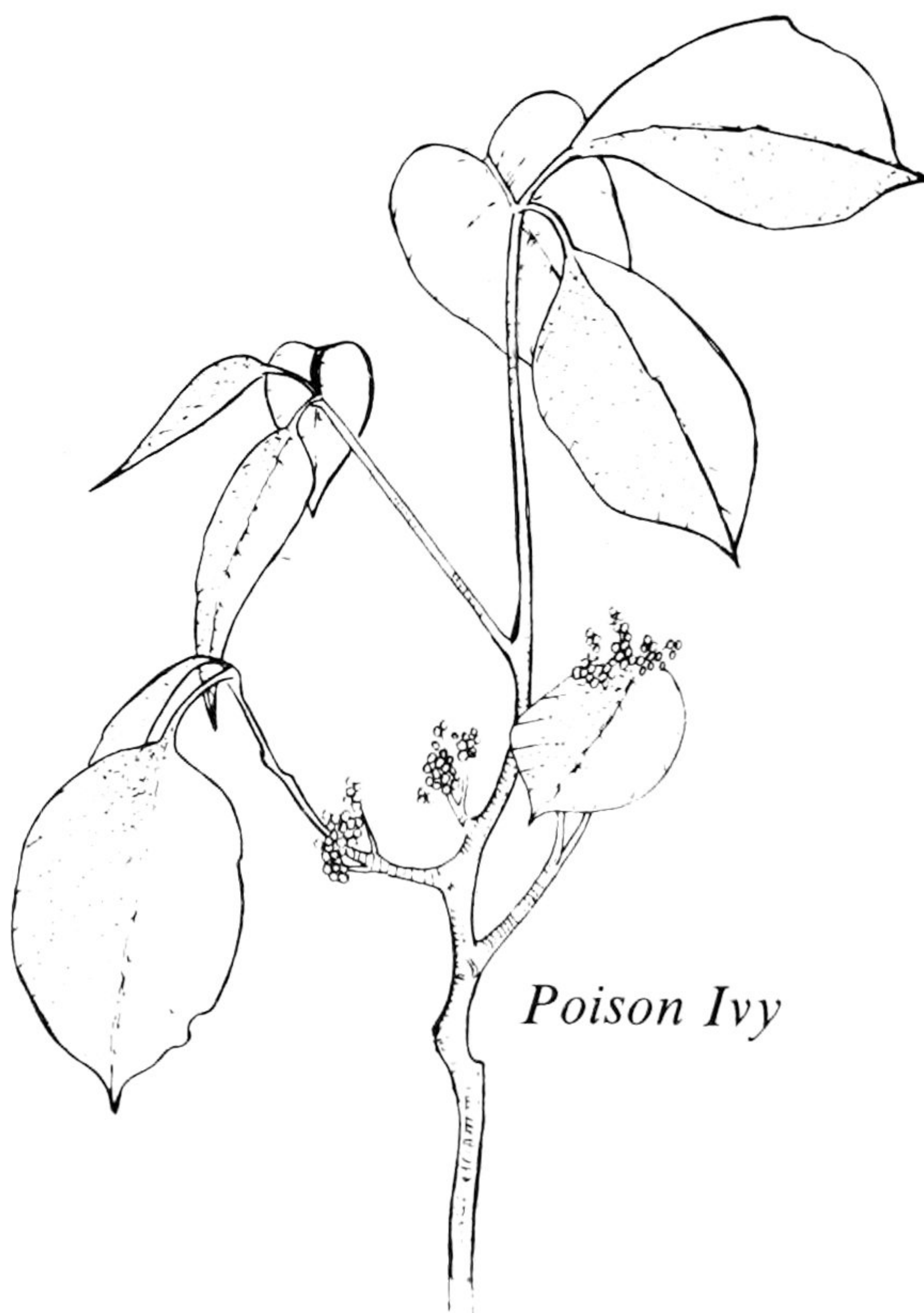
19. Bur Oak

The bur oak is always recognizable by its deeply notched leaves, corky-twigs and twisted, gnarled branches. This tough and durable species will grow on dry sandy soils and exposed shale slopes where its deep tap-root penetrates down to the waterline. The leaves of the bur oak turn deep copper brown in autumn, indicating the presence of tannic acid. Porcupines seek out the tannin-rich bark as one of their favourite winter foods. Members of the deer

family enjoy feeding on the twigs and buds. As a result this tree is often stunted and disfigured. It is also known as scrub oak for this reason.

20. The Incredible Willow

This shady area is an abandoned creek channel, commonly called an oxbow. Moisture-loving plants thrive here. Beware — many people are sensitive to the touch of the poison ivy. The beautiful ostrich fern, which received its name from the resemblance of its leaf to an ostrich plume, can also cause skin irritation. The tall peachleaf willow before you is one of the most unusual trees along this trail. In most parts of Canada it grows as a shrub or a small twisted tree. In southern Ontario and Manitoba, it will reach 40 feet in height, the largest of our native willows. This upright specimen is nearly 50 feet high, a true giant of its kind.



21. More Burls

These two hybrid poplars display an unusually abundant growth of burls. New shoots, put out by the root system of the original burl tree, almost always contain burls right down to the ends of their smallest branches. This indicates that the causative agent, or its secretion, is able to spread throughout the internal system of the tree once it has gained entrance to the living wood.

22. Paradise Lost

Once this was the home of a family of beavers.

Countless hours were required for the construction of the dam, which rose nine feet above the stream-bed. Dead trees and felled logs indicate the former height of the water behind the dam. On the shores a “bank lodge” was constructed, with underground tunnels leading into the pond below the waterline. This lodge is now obscured by a dense plant growth.

After a series of unusually heavy snowfalls in April of 1970, spring meltwater found a weak spot in the dam and opened a gap from top to bottom. Immediately after the pond had drained away the adult beavers moved upstream to construct the series of dams seen at the beginning of the trail. What remains here today are the ruins of a once-beautiful home. This destruction is quickly being covered by a variety of pioneer plants — cut-leaved ragwort, evening primrose, joe-pye weed, fleabane daisy and golden corydalis.

23. How a Stream Changes

The course of a stream is determined during periods of high water when the volume of runoff may be one hundred times greater than the normal flow. Also, almost all movement of silt, rock and debris takes place at this time. Highest water levels occur during summer storms, such as that of June 5, 1971. At this point the stream is very actively battling against the land. The force of the water strikes directly against the bank, undercutting it and causing it to collapse. The material worn away from the land is carried downstream and eventually redeposited. Here we see how nature works in endless cycles of construction and destruction.

24. Berries and Nuts

In late May and early June this hillside is covered with a mass of fragrant blossoms. Growing here are saskatoon, choke cherry, pin cherry, high-bush cranberry and beaked hazelnut. Each species has its own time of ripening; first saskatoon and pin cherry in July, choke cherry in August, then cranberry and hazelnut in September. Bears relish this continuing feast. Broken bushes and seed-filled droppings along the trail are certain signs of the black bear. These animals are shy of people. Normal human noise is usually sufficient to keep them at a distance. If one is sighted, shouting will generally bring about his

immediate retreat. Cautious withdrawal is advised in the presence of a female bear with young.

25. Wild Plum

This small tree is the Canada plum, a native species which bears pink and white blossoms and delicious fruit. From May 15 to June 5, it is one of the first members of the annual flowering parade. The fruit matures in September and is another species much enjoyed by the black bear. The Canada plum can always be recognized by its grey flaking bark, short thorn-like twigs and broad-toothed leaves which taper to a slender tip.

26. First Viewpoint

From this viewpoint, we look downward onto the meandering course of Dead Ox Creek. Easily seen are the “pools and riffles” which are typical of this type of stream. During periods of high water, gravel and shale are deposited behind obstructions in the stream-bed. In low water, the stream trickles over this barrier in the form of a riffle. Behind the riffle a pool is formed.

Dead Ox Creek is a short stream, only 6½ miles in length from start to finish. It begins in a bog high on the mountain and descends through a 250 foot deep gorge to disappear into the shale deposits on the plain east of the park boundary.

27. Acorn Alley

Bordering this section of the trail are a number of small oaks. These trees supply acorns to the red squirrel which, in this deciduous forest, is deprived of its favoured diet of spruce cones. The eastern chipmunk is another rodent which climbs these trees to harvest the acorns. The acorns of the bur oak are distinctive in that the cup is made up of bristly scales which account for the species' name.

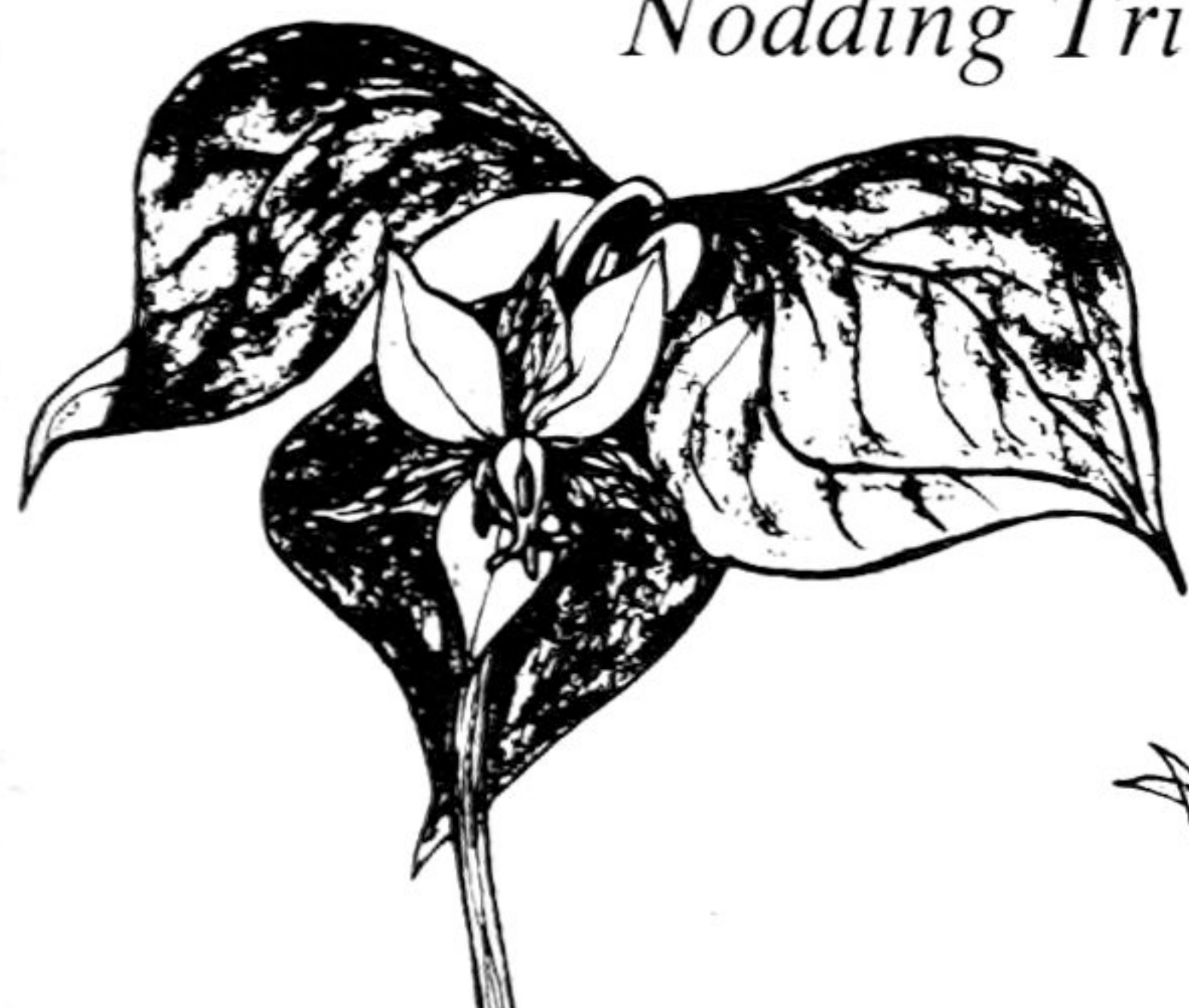
28. Hazel Hollow

In this depression the trembling aspen is dominant. Wherever this tree is found, the shrub layer will contain an abundant growth of beaked hazelnut. The nuts of this species are encased in a covering which extends outward in the form of a tube or beak, thus its name. Squirrels, chipmunks and deer mice eagerly seek these nuts for their winter food supply.

29. Second Viewpoint

Looking into the treetops across the stream from this point gives us a bird's-eye view of the forest. Every natural community has its own structure and design. The tallest trees such as white elm, trembling aspen and white birch form the "canopy." Below them is an "understory" of small trees — nannyberry, speckled alder and Manitoba maple for examples. Below these is the dense "shrub layer" including such species as beaked hazelnut and red-osier dogwood. On the forest floor is the "herb layer" which contains such abundant plants as tall coneflower, sarsaparilla, baneberry and fringed loosestrife. The soil itself is another distinctive layer where fungi and bacteria thrive and where all life begins and ends.

Nodding Trillium



*Canada
Mayflower*



*Star-flowered
Solomon's-Seal*

30. Manitoba Maple

This tree is a maple in disguise. The divided leaves are more like those of an ash than of a typical maple. However, the paired keys will always identify this species as a true member of the maple family. These seeds remain on the trees well into the winter and furnish abundant food for flocks of evening grosbeaks. The Manitoba maple is found along stream banks across the southern part of the prairie provinces. The blackened trunk is not due to fire, but is characteristic of older specimens of this species.

31. Black Bear Hollow

The name of this location is derived from events which took place here on May 31, 1970. Partly buried

beneath the leaves in this depression, a young wapiti calf was found, half-eaten by a black bear. That night the bear returned to finish his meal. This sequence of events was a tragic but necessary act in the natural drama of the forest. Without any control of their population, wapiti would increase tremendously in numbers until the forest was stripped of all vegetation within reach. Without predators, starvation takes over as the dominant control of wapiti populations. Starving animals severely damage their forest home, predation brings quick death to the prey while the rest of the community is left unharmed.

32. Death and Decay

What happens after a plant or animal dies? This poplar stump demonstrates the process of decomposition by which once-living material is returned to the soil. Fungi, such as mushrooms, molds and mildews, are one important group of decomposers. They are the third link that makes the cycle of producer-consumer-reducer complete and self-sustaining. Not only are mushrooms vital to the natural balance of the forest, they are beautiful. One interesting fungus which grows on this stump is the white and shaggy bear's-head fungus. On birch logs and trunks, look for the pale, ringed birch bracket fungus.

33. Alder Glen

Numerous speckled alders grow along the banks of Dead Ox Creek. Although this species is normally a shrub, under favourable conditions, such as at this site, it can reach 25 feet in height. The grey speckled bark yields a rich orange pigment which was used by the Indians as a dye.

A new beaver dam has been constructed above the bridge near this point. This is the primary dam of an amazing series of ten built by the beaver colony during the summer of 1971 to replace the filled ponds upstream. A new bank lodge was also constructed a short distance downstream from here in August, 1971.

34. Tree Strangler?

Here a bittersweet vine is seen climbing more than 30 feet up the trunk of a poplar tree. As it grows, its coiling grip tightens. It is rare for a bittersweet to choke or deform its host — it is a short-lived plant

compared to the tree on which it grows. However, due to its appearance, French-Canadians have named this vine the “tree-strangler.”

We hope you enjoy your hike on this forest trail and that you will come back often to see its beauty through all the seasons of the year. As you walk the short distance back to your car, stop often to look, listen, smell and touch. About you are the creatures that have the ability to adapt and survive. From them we may learn to better use and live upon our changing planet Earth.



Indian and
Northern Affairs
Parks Canada

Affaires indiennes
et du Nord
Parcs Canada

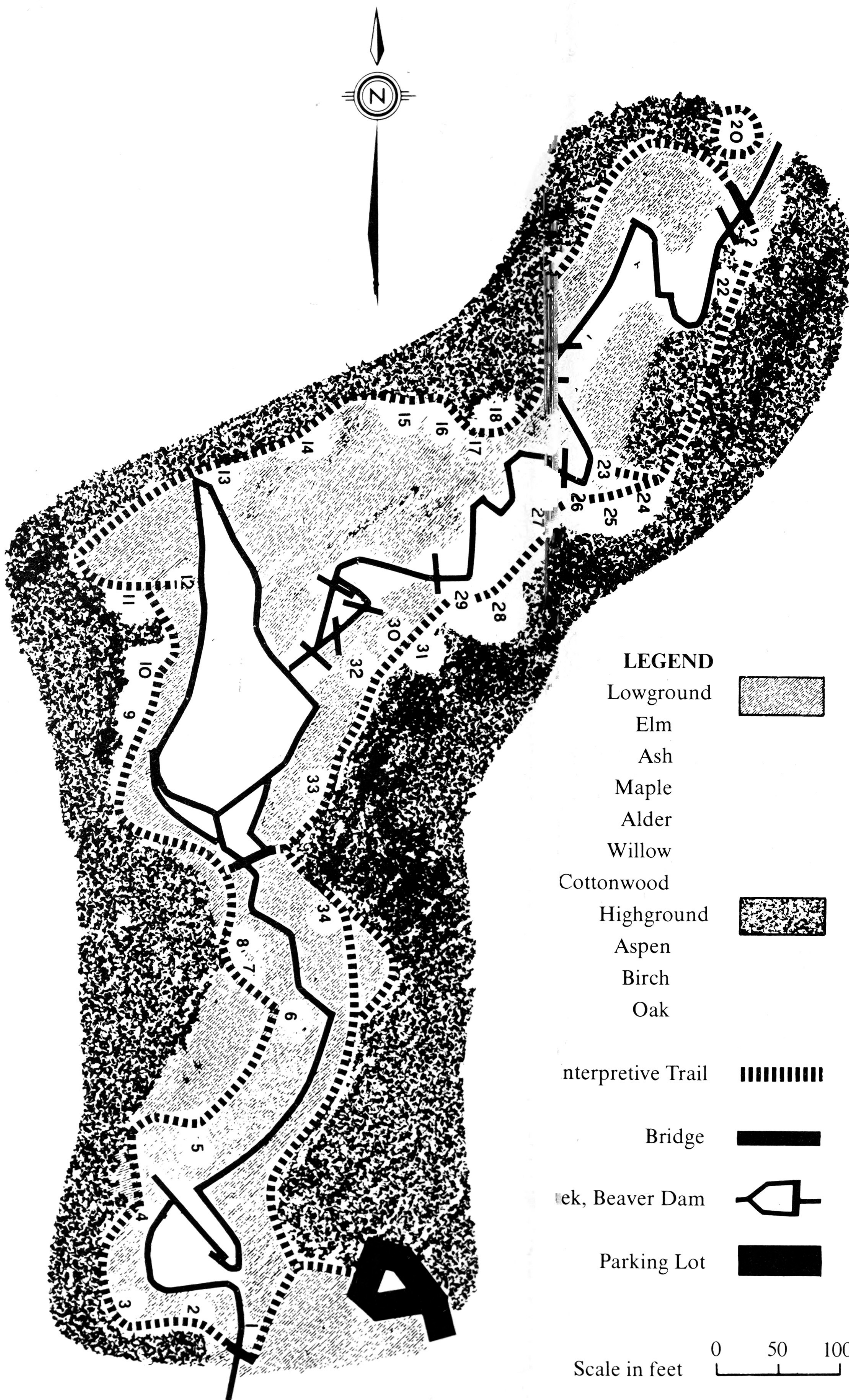
Published by Parks Canada under authority of
the Hon. Judd Buchanan, PC, MP,
Minister of Indian Affairs and Northern Development

© Information Canada, Ottawa, 1975

Catalogue No. R61-2/5-24

INAD Publication No. QS-R009-000-BB-A1

Printed on recycled post-consumer waste paper



LEGEND

Lowground
Elm
Ash
Maple
Alder
Willow
Cottonwood
Highground
Aspen
Birch
Oak



Interpretive Trail



Bridge



Creek, Beaver Dam



Parking Lot



LÉGENDE

Basses-terres
Orme
Frêne
Érable
Aulne
Saule
Peuplier
Hautes-terres
Tremble
Bouleau
Chêne

Sentier interprétatif

Pont

Ruisseau, digue de castors

Terrain de stationnement

Scale in feet 0 50 100 Echelle en pieds