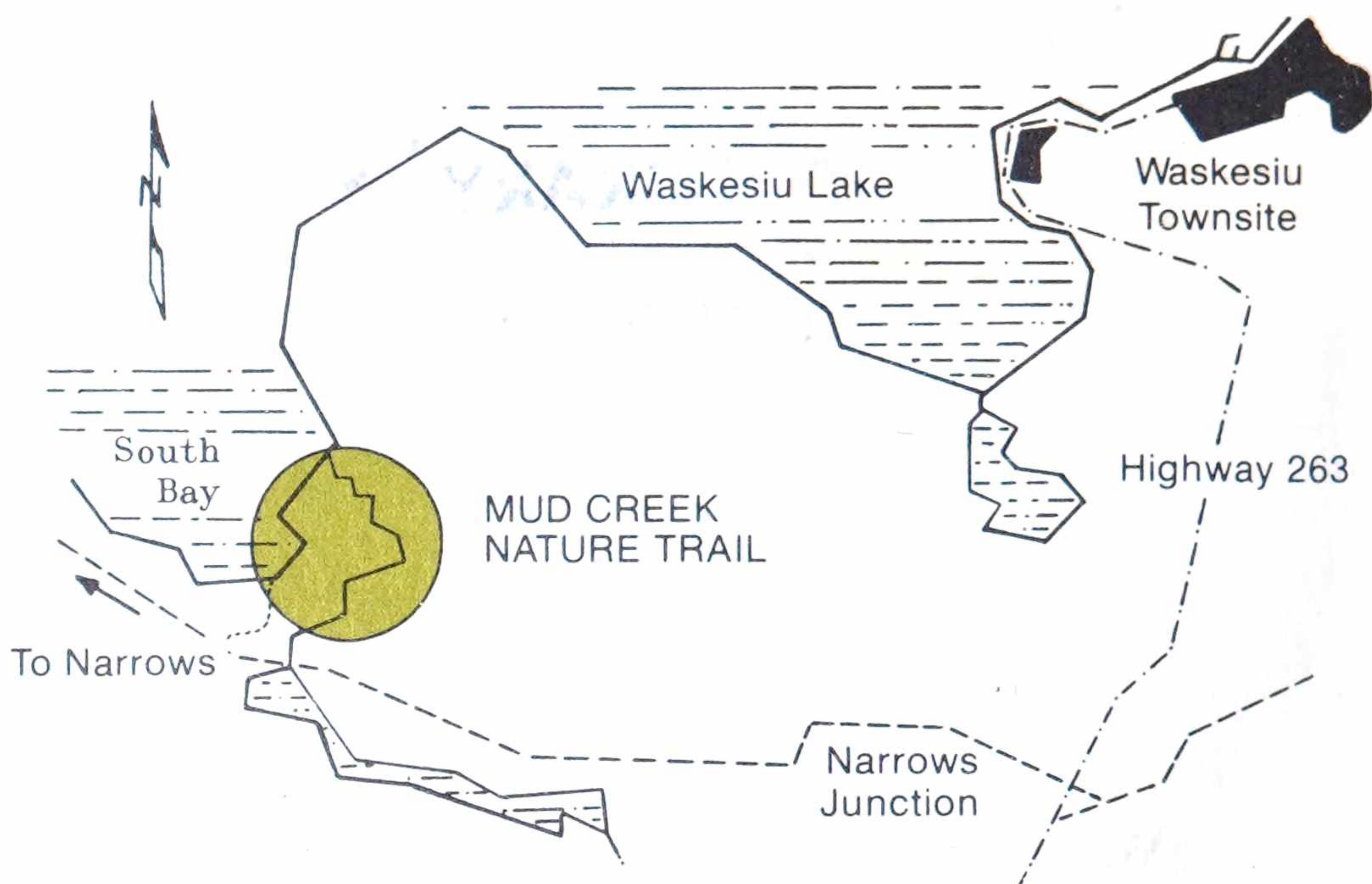


# Mud Creek

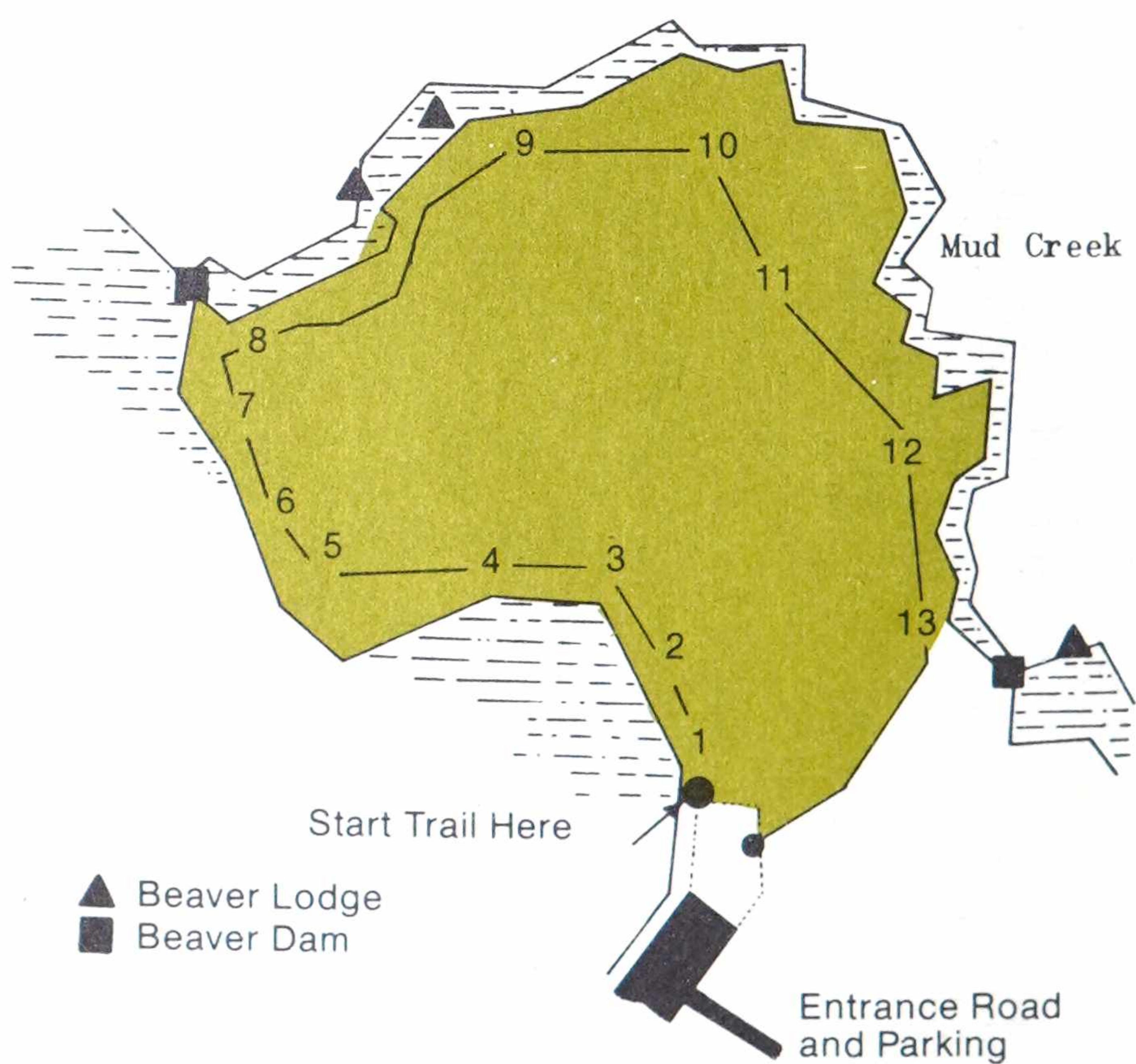
Self Guiding Trail

Prince Albert National Park





## MAP OF MUD CREEK NATURE TRAIL



## MUD CREEK NATURE TRAIL

### General Information

*Where?*—The Mud Creek Nature Trail begins in the South Bay at the Trail sign.

*How Long?*—An easy circle walk, well-marked, just under a mile.

*Damp?*—No. Foot bridges have been built over damp areas.

*Poison Ivy?*—No.

*Mosquitos?*—Yes, sometimes annoying, sometimes not present.



### INTRODUCTION

Each National Park contains some important aspect of the Canadian environment, and is preserved forever for the people of Canada. In Prince Albert National Park one important feature is the change from prairie to aspen parkland to boreal forest — all within park boundaries. The prairie is in the extreme south-west section of the park. Here, on the Mud Creek Nature Trail, you are in the area where aspen parkland meets boreal forest. Along the trail you will see examples of both these types of environments. Go slowly and quietly — you will enjoy your walk more, and you may see some animals.

If those who walked this trail before you had picked the flowers and plants you are looking at, they would not be here for you to enjoy. Please leave them undisturbed for the next visitor.

## STOP 1

You are in an area typical of the aspen parkland. The two types of trees on your right are the main trees found in the parkland. The tree with the rough bark and sharp-pointed leaves is the balsam-poplar. Further back, the tall straight trees with light green bark are trembling aspen. The trembling aspen prefers a dry area while the balsam-poplar is found in more moist areas.

Look up. Look at the leaves of the trembling aspen. See how they flutter or tremble in the slightest breeze. Because these leaves tremble and the trees are well-spaced, they allow light to reach the forest floor. This is why so many plants are growing here. Some of the most prominent plants are:

1. Alder—the tall broad-leaved shrub bearing cones.
2. Wild Rose—large pink flowers—July; rounded “hips” or fruit—August.
3. Canada Anemone—a white flower, 1 inch in diameter, 10 inches high—July.
4. Fireweed—large spike of pink flowers—August.
5. Vetches—finely dissected leaves, either purple or whitish flowers.
6. Tall Lungwort (*Bluebells*)—groups of blue, bell-like flowers—July.
7. Young Birch—reddish bark changes to white when tree is several years old.



*Canada Anemone*



*Fireweed*



*American Vetch*



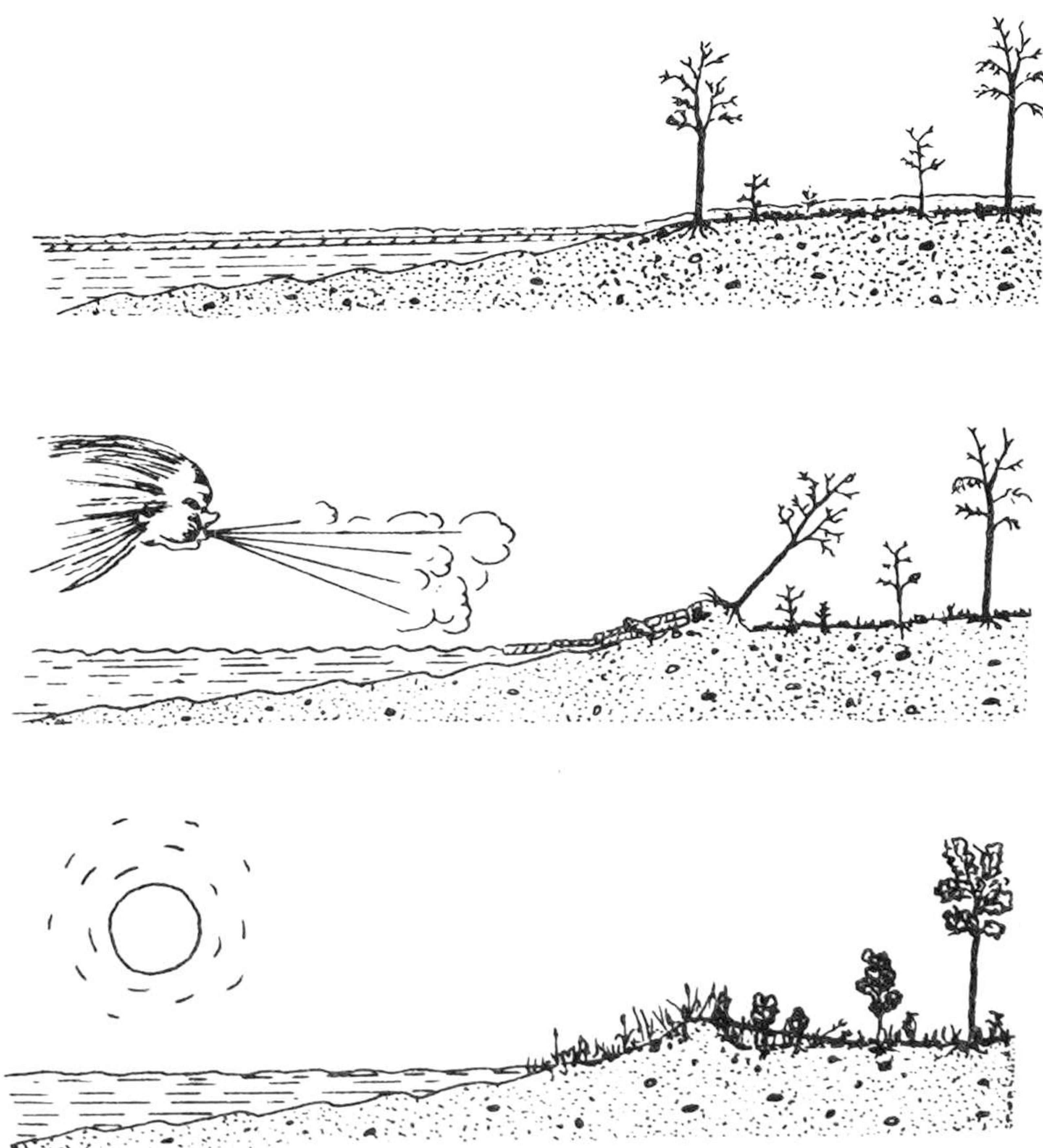
*Tall Lungwort*

## STOP 2

The ridge you are standing on was not here a few years ago — it has been pushed up by the ice.

In the spring of the year, just after break-up, ice floats on the surface of the lake. When the wind blows the ice into a bay such as this one, it presses against the shore. As more and more is blown against the ice already in the bay, pressure builds. Here, under this pressure, the ice pushed up a ridge — the ridge you are standing on. The ridge was then stabilized by vegetation.

Ice still pushes against the shore in spring. Look for the fallen spruce just past Stop 6. It is a victim of a recent ice push.



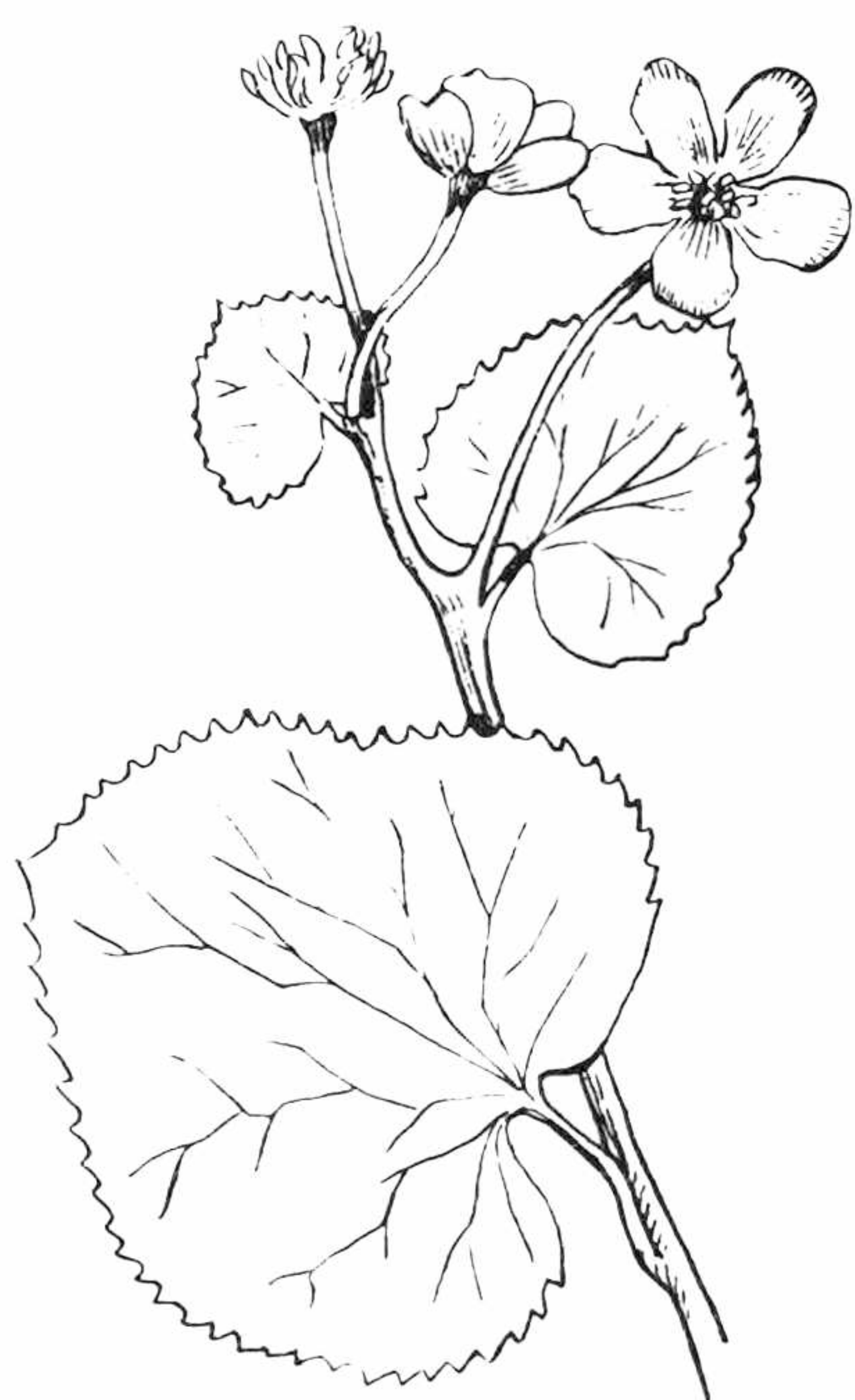
*Ice Push Effect*

### STOP 3

You are now in a wet boreal forest environment. Here are the coniferous trees that prefer damp sites. The larch or tamarack has relatively few needles while the darker black spruce has more. Associated with these trees are other plants which need plenty of moisture:

1. Marsh marigold—large round leaves—yellow flowers in June and early July.
2. Mint—purple flowers in August.
3. Water Hemlock—cluster of small white flowers—late July, August.
4. Sedges—long coarse, grass-like leaves.
5. Water Smartweed—leaves about 4 inches long, floating pink flowers.

Here, too, is the alder you noticed at Stop 1. Like the evergreens it bears its seeds in cones. Yet, like the broad-leaved (deciduous) trees, the tamarack sheds its needles annually.



*Marsh Marigold*



*Wild Mint*



*Water Hemlock*

## **STOP 4**

Look far back into the forest . . . at the forest floor.

What do you see?

A few plants hugging the ground.

Dead leaves.

Nothing else.

It's dark compared to the open areas you just left. One of the first differences you notice when you walk from aspen parkland to boreal forest is reduced light and scarcity of plants. Look just in front of you—there's an opening in the forest. Look at all the plants. Now, further back again . . . no plants; light makes a difference.

The dense needles of the spruce leave the forest floor in shadow. And not only in summer. During the winter the needles catch the snow, making a snow shadow — just as less light reaches the floor of the boreal forest, so does less snow. Many small mammals — the mice and voles — which are active in winter, depend on snow for insulation. In the cold boreal forest region they need a deep layer of insulating snow. They cannot live beneath the dense stands of evergreens, because the snow is not deep enough to provide the insulation they need. Just as most plants cannot live on the forest floor in summer because of the light shadow, so small mammals cannot survive in the winter because of the snow shadow.

## **STOP 5**

Aspen and spruce go well together. If an area of boreal forest becomes open, light reaches the forest floor and allows young aspen to grow. Once the aspen are growing, they allow less light to reach the forest floor. The spruce cannot stand a lot of light when young, and the shade of aspen allows them to grow. Once the spruce become large and numerous, they again shield the forest floor, and no young aspen can survive. As the old aspen die, spruce are left as the only trees.

That is what has happened here. Look into the forest. There are a few old trembling aspen dying, among the spruce.

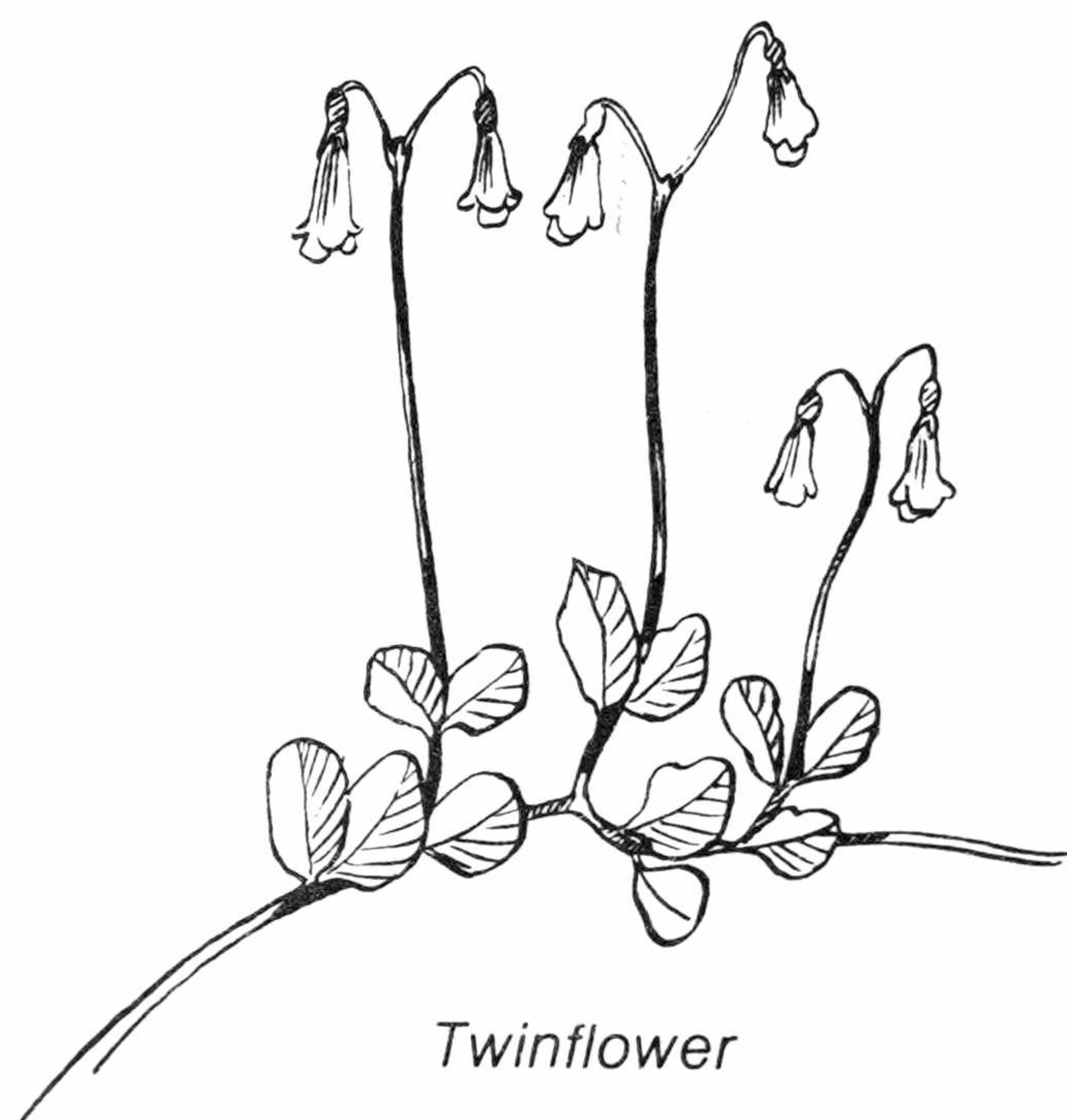
But what killed the spruce trees? How did an opening come to be in the first place?

The answer is in the charred remains of a former forest around you.

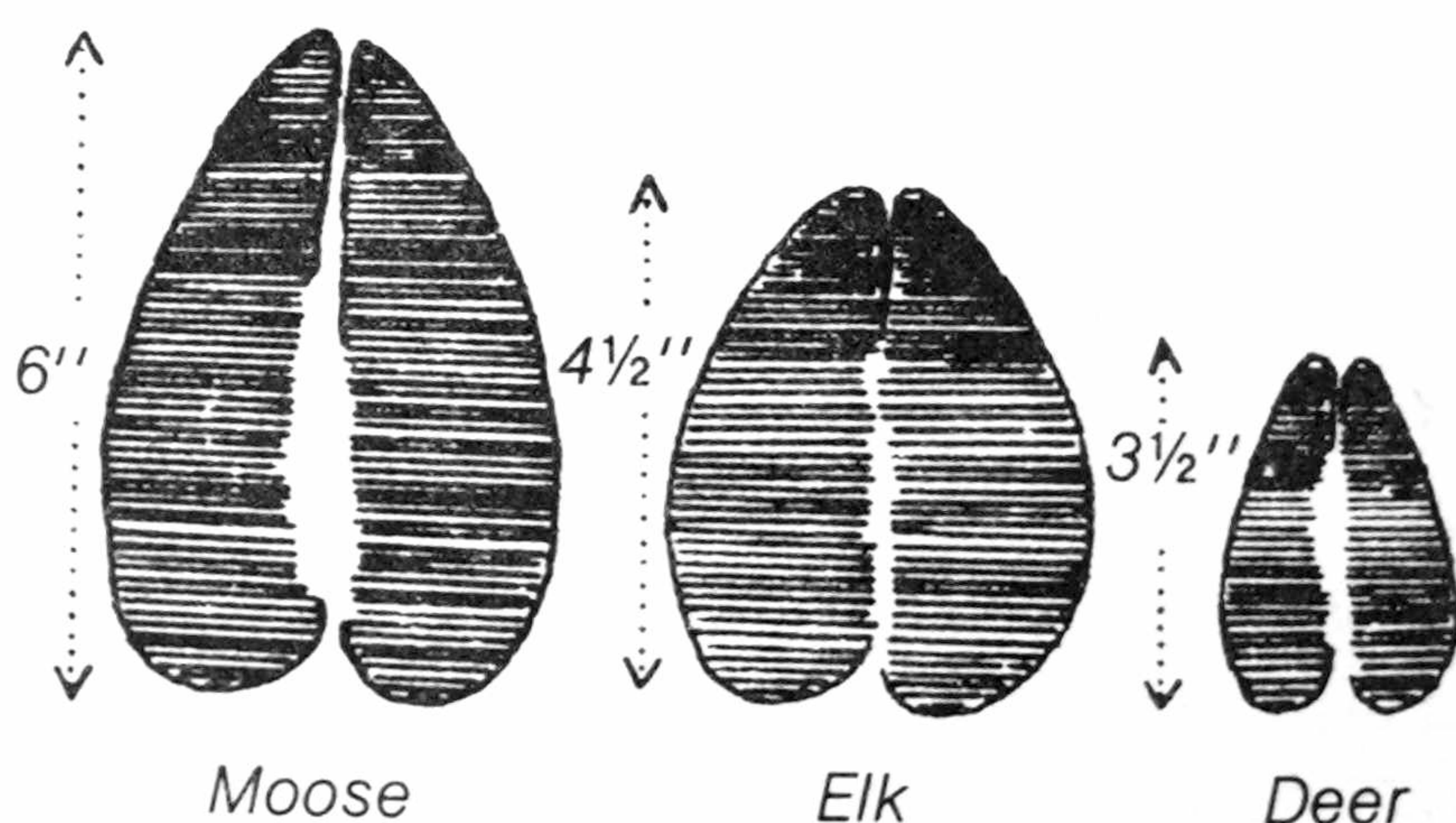
## STOP 6

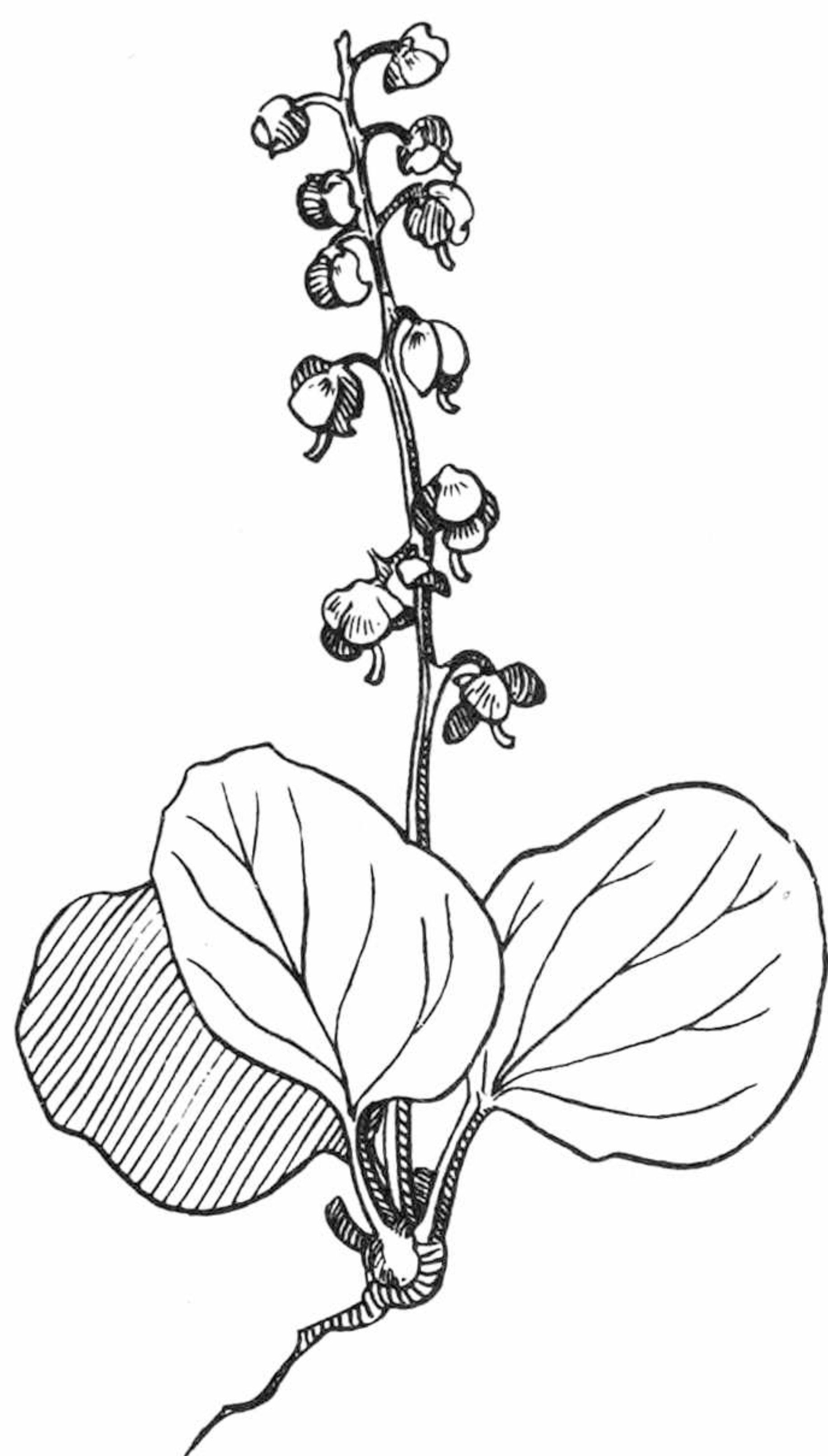
You are again walking along an ice-push ridge, but this one is more broad and less damp than the one mentioned earlier. This ridge is rich in boreal forest plantlife:

1. Twinflower—2 pink flowers per stem usually found in large numbers — July.
2. Bunchberry—low single white “flower”; 4 or 6 leaves — later, a group or bunch of red berries — June, July, August.
3. Pink Pyrola—a spike of pink flowers 6-8 inches high — June, July.
4. Wild Strawberry—flowers in early July.



Watch for animal tracks as you walk along; moose use this section of trail regularly. Can you see where they have been eating?

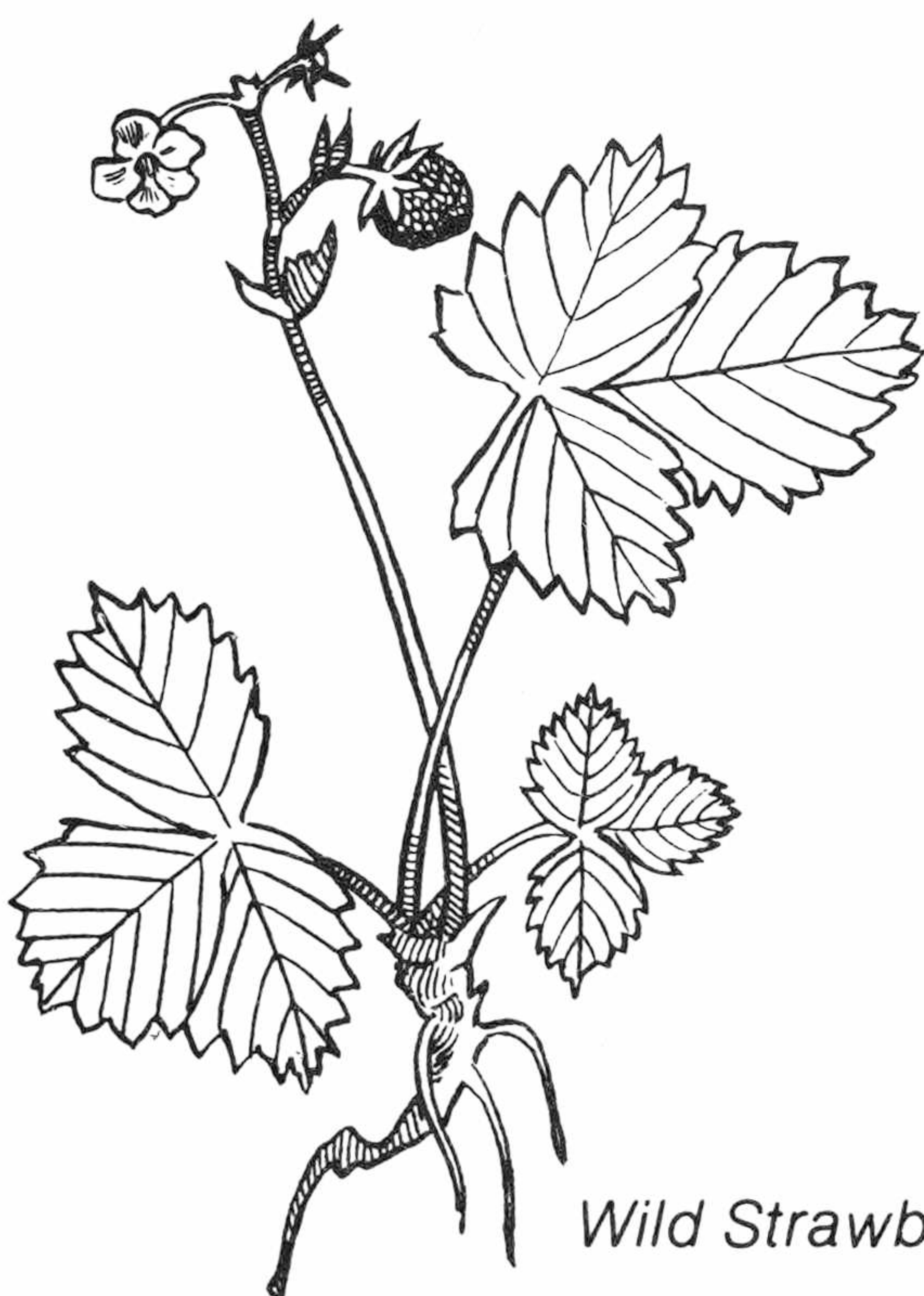




*Pink Pyrola*



*Bunchberry*



*Wild Strawberry*

## **STOP 7**

Here, during the fall of 1970, beaver began cutting trees. Previously this area was partially shaded by the aspen, and several of the plants that live in the shade of these trees began to grow: twinflower, pink pyrola. Now that the trees are gone, these plants will disappear. Grasses are already beginning to take advantage of the additional sunlight.

You may have noticed that elk have been eating the bark of the aspen. Normally the tender bark near the top of the tree is not available to the elk, but the beaver were unable to move the heavier parts of the trees they felled, and the elk have taken advantage of this food.

Those parts of the trees which the beaver could move were likely used as part of their winter food supply. Later, the stripped pole would become part of a dam or lodge. The lodge consists of a circular room which may be 5 feet in diameter and 2 feet high, and is entered from underwater. Here, safe from predators and cold, the beaver spend the winter. In spring, the kids are born and are soon working with the adults.

Summer tasks of the beaver include repairs to the lodge and gathering a food pile for the winter. In summer, when a greater variety of plants are available, beaver add some of these to their diet. As well as such plants as duck-weed, waterlily roots and arrowhead, they have been known to eat raspberries — canes and all.

## **STOP 8**

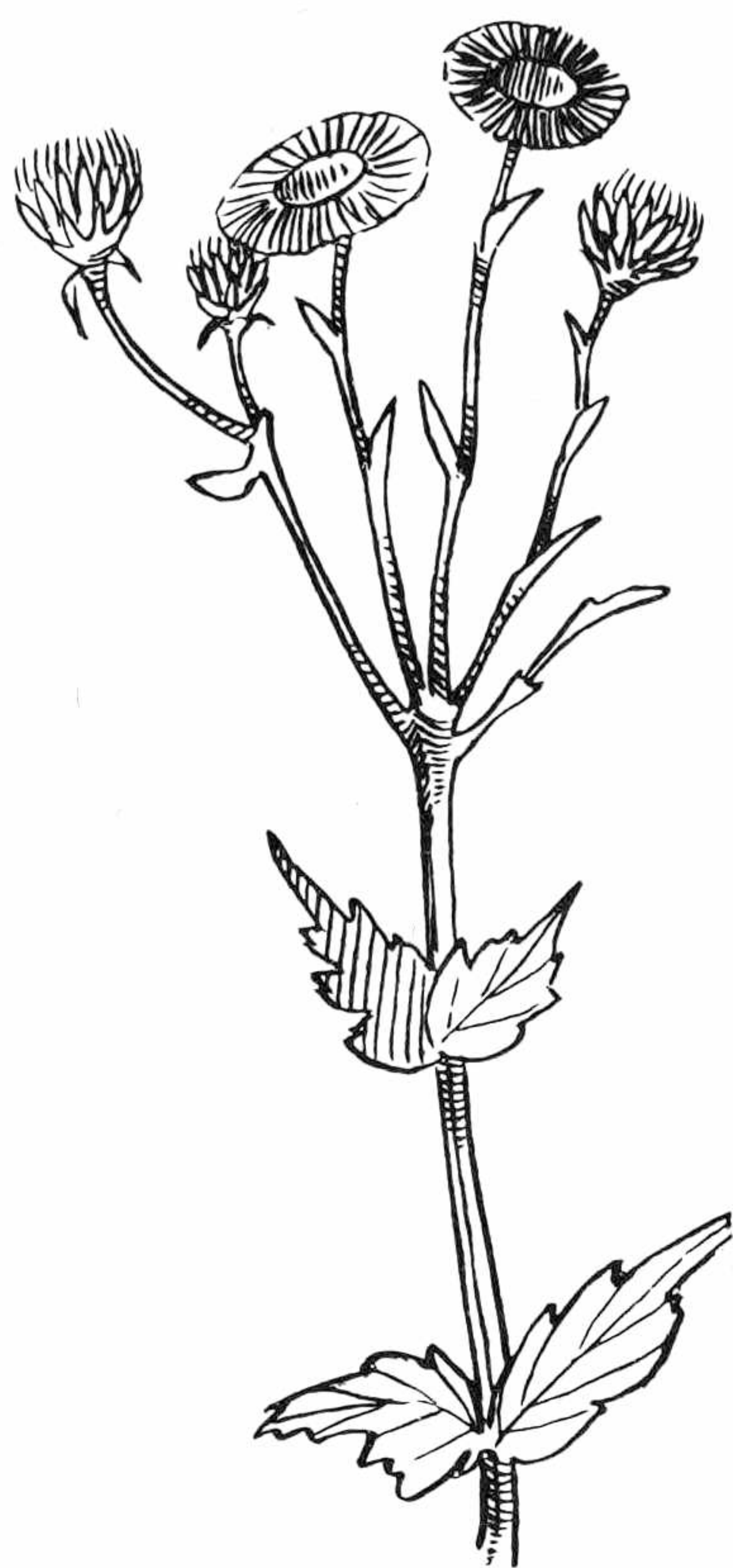
Open areas such as this occur where beaver have removed the trees. As a result, a greater variety of plants can live here.

1. Gooseberries — lobed leaves and thorned stems — green berries turning reddish purple when ripe.
2. Strawberries.
3. Raspberries.
4. Hawkweed — tall plant with a flower head like a dandelion.
5. Baneberry — red or white berries on a spike about one foot from the ground — mid-summer — poisonous.
6. Blueberry — berries in August.
7. Tall Lungwort — drooping blue flowers — July.
8. Wild Mint — square stem — purple flowers at base of leaves.
9. Horsetail — feather-like plant — one foot high, light green — in the wet forest ahead.
10. Wild Rose.
11. Canada Anemone.
12. Thistles.
13. Grasses.

The trail now leaves the lakeshore to follow Mud Creek. As you walk along look for beaver lodges — you will pass two of them. If you walk quietly, you may see beaver or other wildlife.



*Gooseberry*



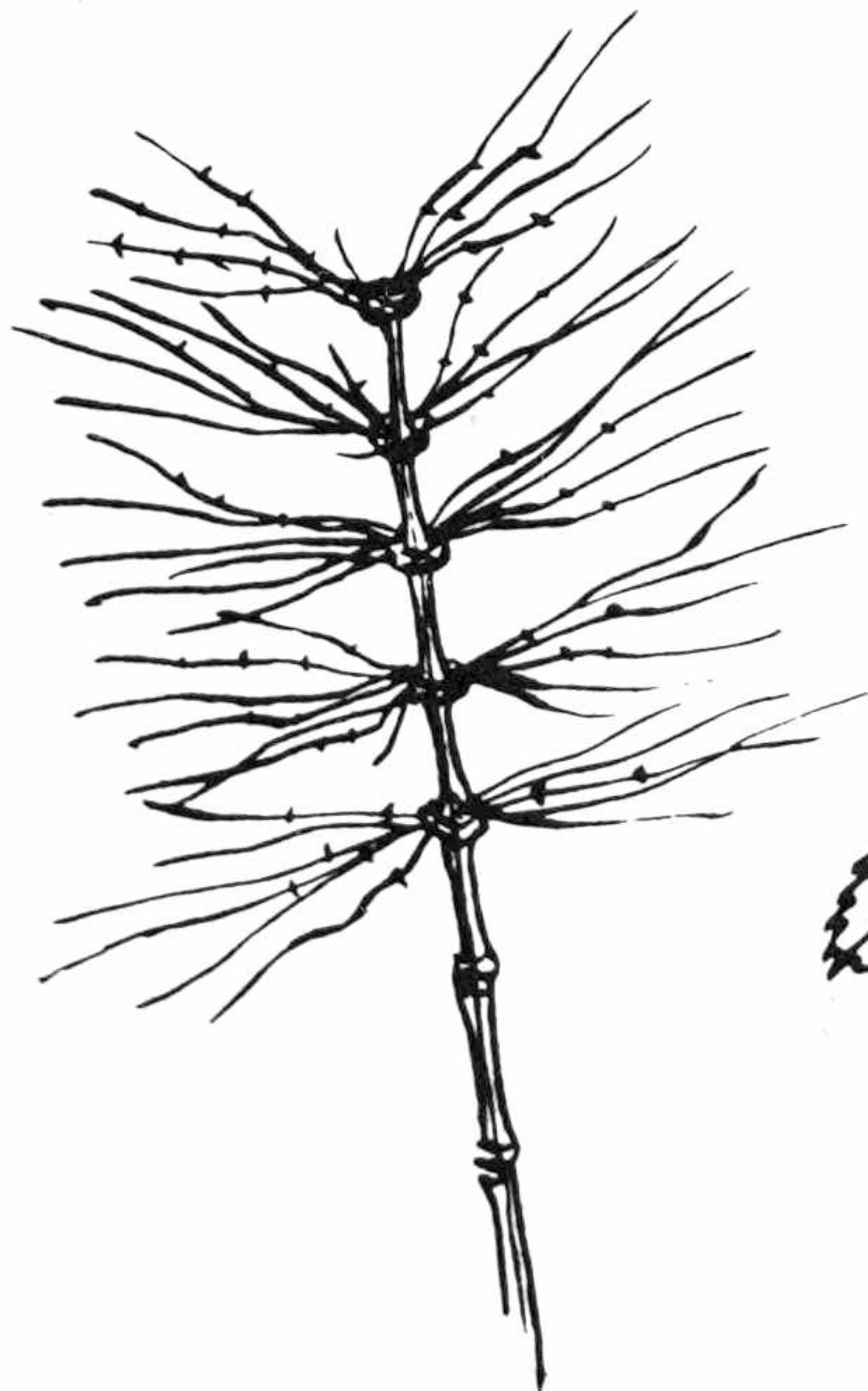
*Hawkweed*



*Baneberry*



*Blueberry*



*Horsetail*



*Wild Rose*

## STOP 9

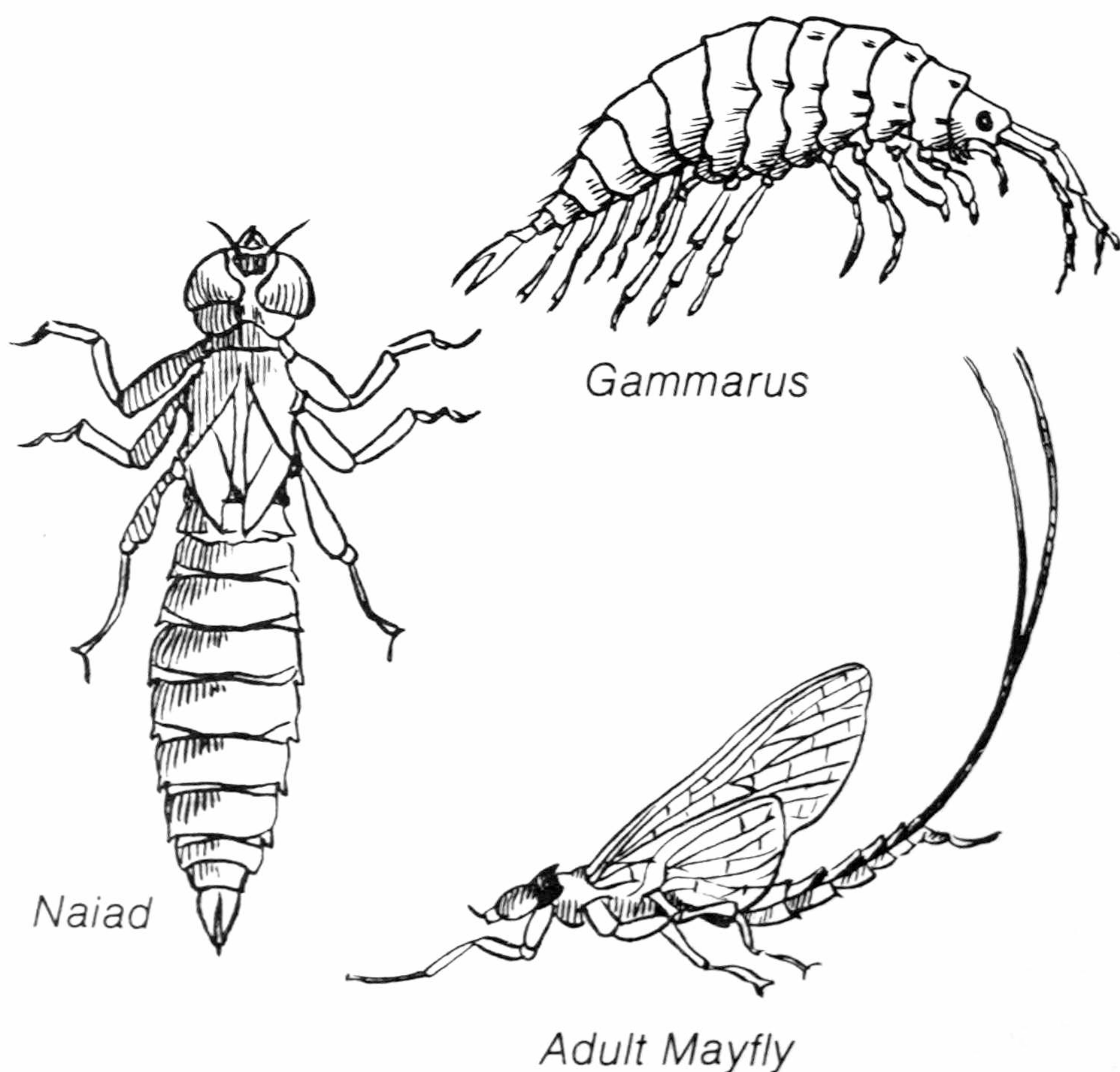
The slow meander you have been following is home to more than the apparent beaver. For millions of invertebrates the presence of Mud Creek is life itself. Only a week ago many of the hovering dragonflies you see were nymphs, called naiads, swimming in the water. They hatched from eggs deposited in the water weeds growing along the shore. After a year or more the naiads will crawl up on these weeds and shed their entire outer skin and emerge as mature dragonflies.

What do naiads feed on? Anything smaller than themselves including *Gammarus*, a common shrimp-like crustacean; mayflies; and snails — all found in Mud Creek. These, in turn, feed on other forms of life.

*Dytiscus*, a diving beetle, is another common inhabitant of Mud Creek. Its larva — the water tiger — is well named, for no species is more fierce. Grabbing anything from small fish to *Lymnea*, a fresh-water snail, the water tiger sucks the body juices of its prey.

Fish use this stream to spawn — the great blue heron catches frogs and young fish.

You can now understand the food chain that is involved in Mud Creek; a chain upon which many life forms depend, an interdependent community not easily seen, but perhaps even more dramatic than the forest around you.





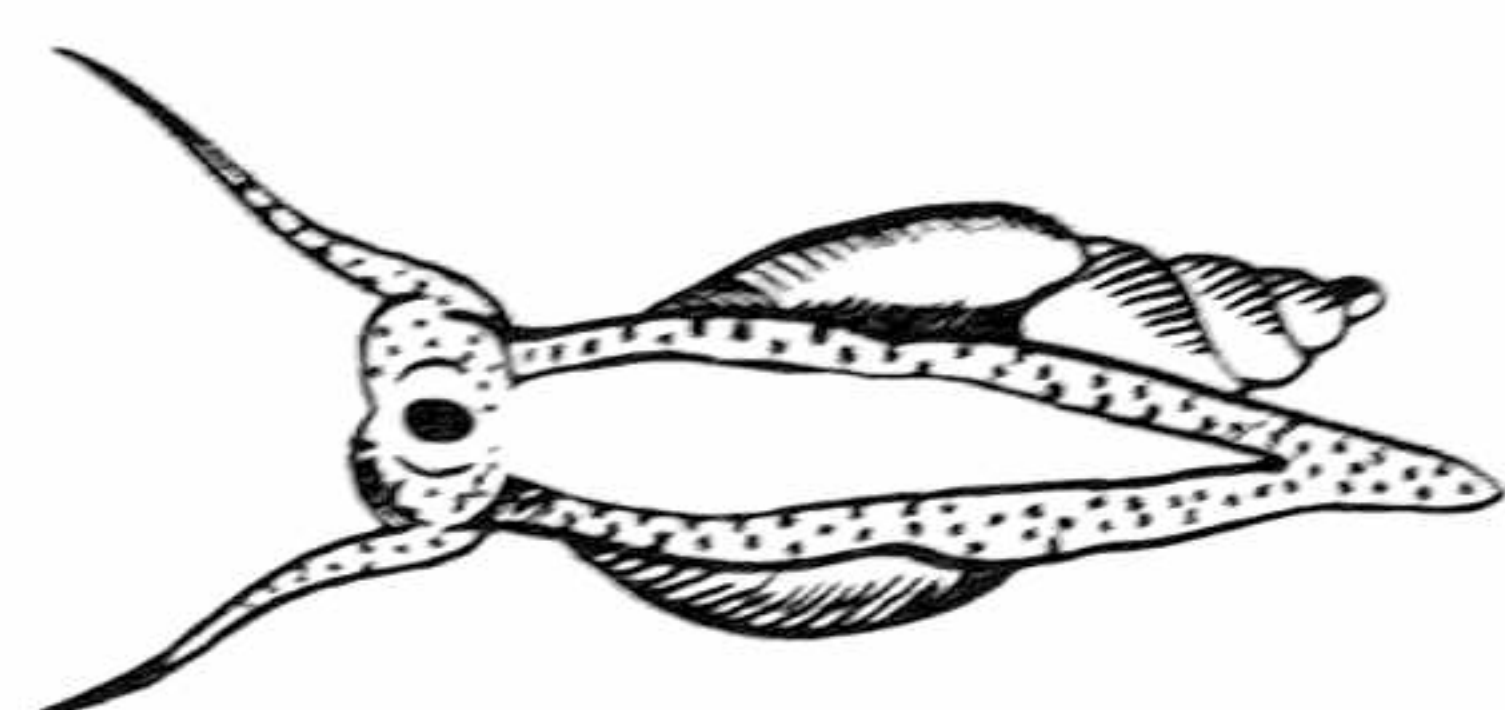
*Mayfly Nymph*



*Lymnea*



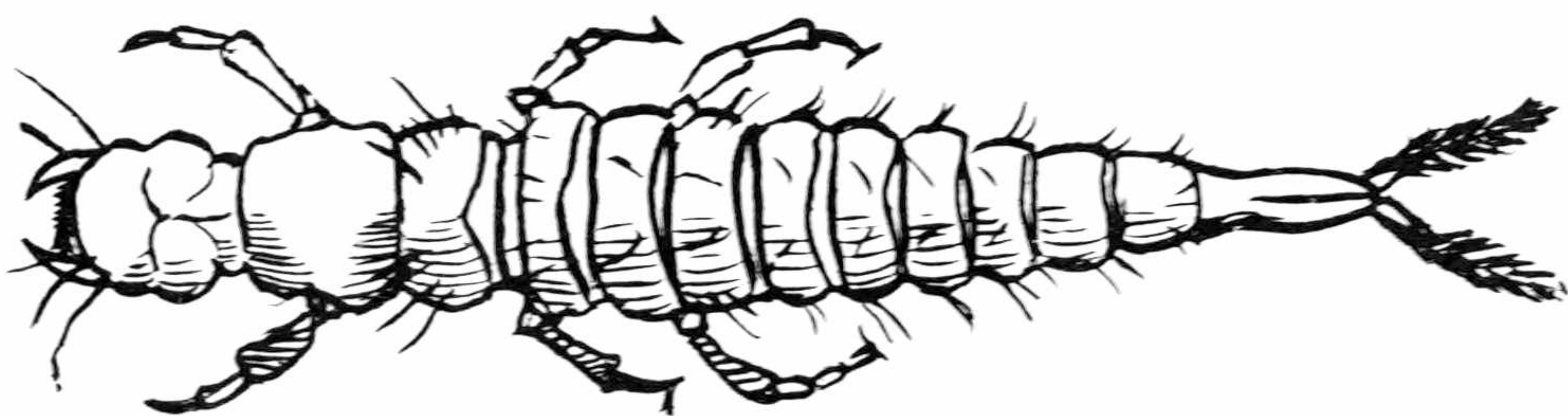
*Water Beetle  
(Dytiscus adult)*



*Pouch Snail  
(Physa)*



*Magnified View of Smaller Organisms  
(100 times, approximately)*



*Water Tiger (Dytiscus larva)*

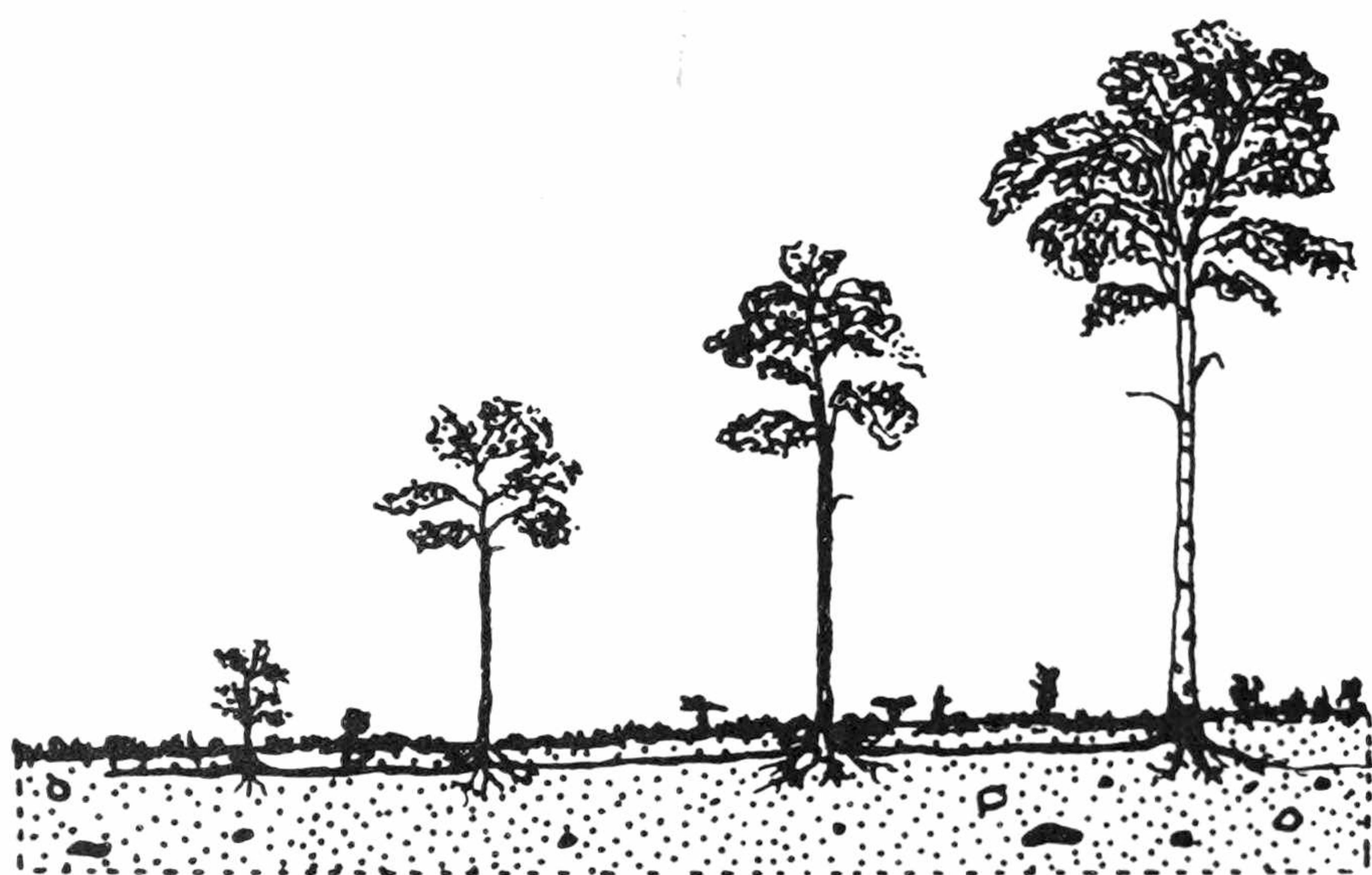
## STOP 10

Trembling aspen live on dry, upland areas. These trees probably became established here following a fire which killed the spruce. Only rarely do aspens grow from seed. However, after a fire, the freshly exposed mineral soil, moist-

ened by a rain, provides an ideal seedbed. Here and there a few seedlings could begin to grow, and assure the success of this forest.

The most common method of reproduction in poplars is by suckering — new shoots form on the roots of existing trees and become new trees. Suckering is encouraged by fire or other disturbance. Once a few aspens become established in a burned-over area, their success is almost certain, even if a second fire should kill other types of plants.

Because aspen reproduce by suckering, all the trees which arise from interconnected roots have a number of similarities. In the fall all trees in a cluster (called a clone) take on autumn colours at the same time. The timing of the colour change varies from one clone to another, creating a patchwork effect. In spring, all trees in a clone flower at the same time, and produce male or female flowers, because all trees in a clone are the same sex.



## **STOP 11**

Have you noticed the bark on the trembling aspen? On one side it is white and on the other, light green. Rub the white side with your finger.

White.

Like Chalk.

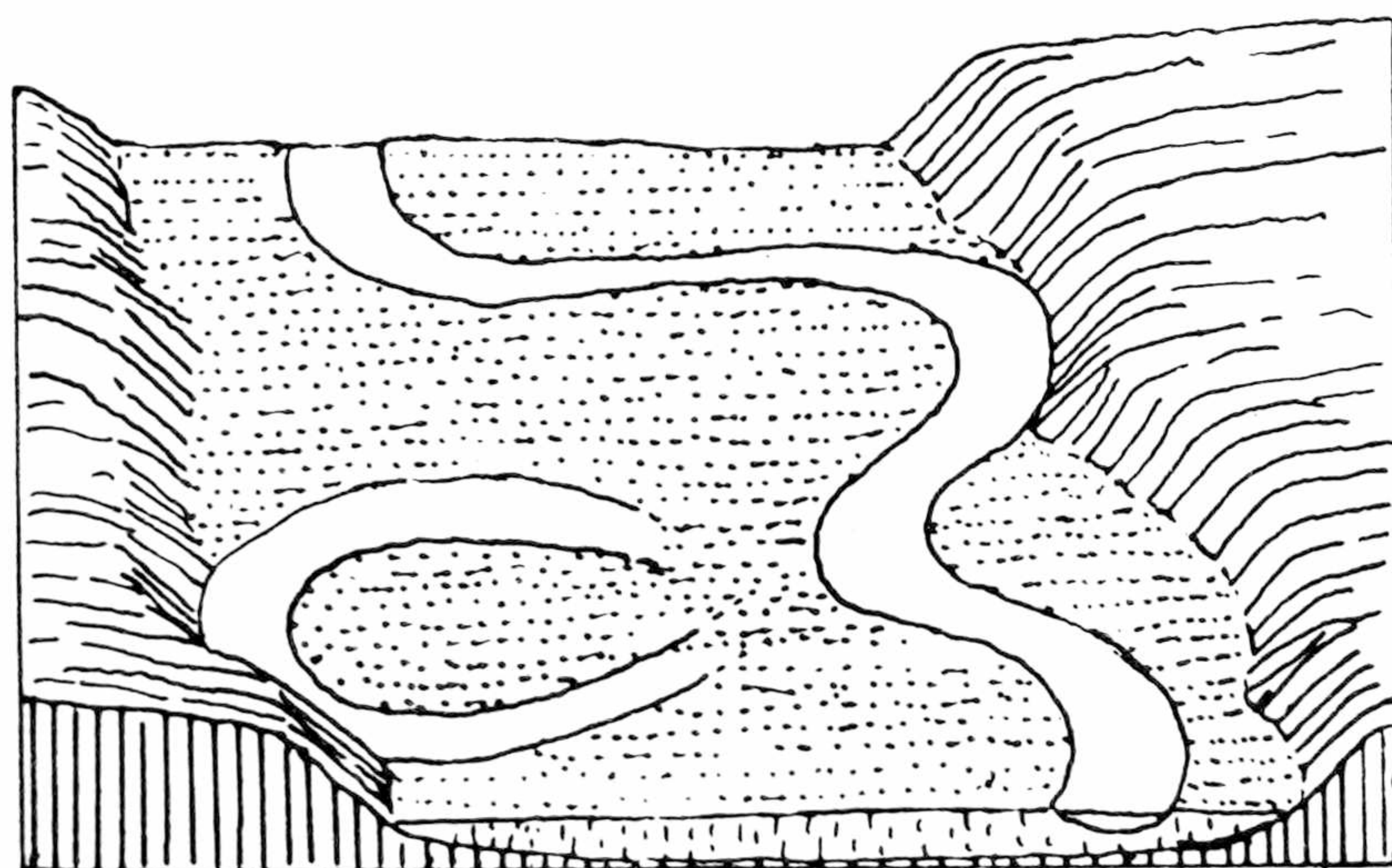
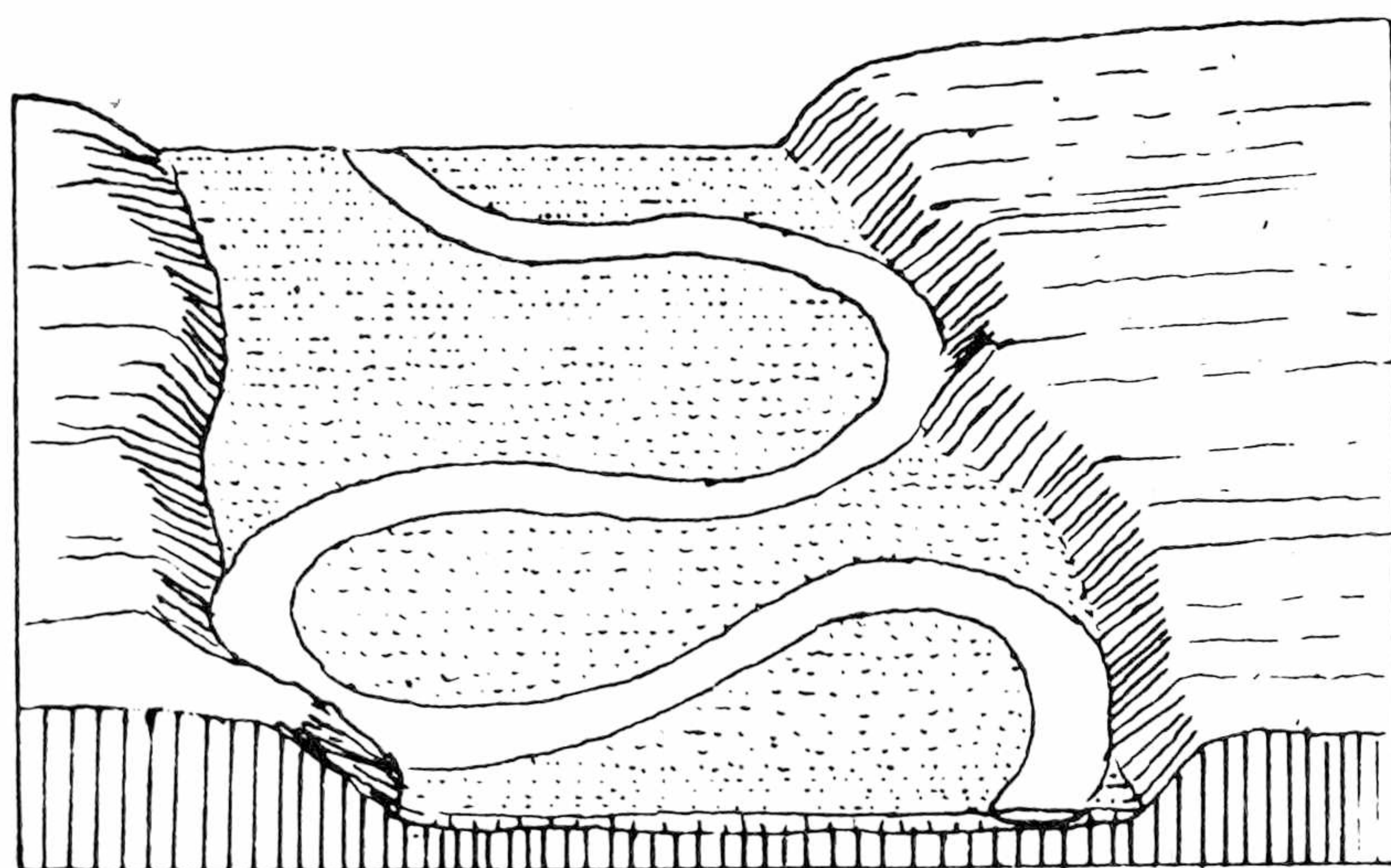
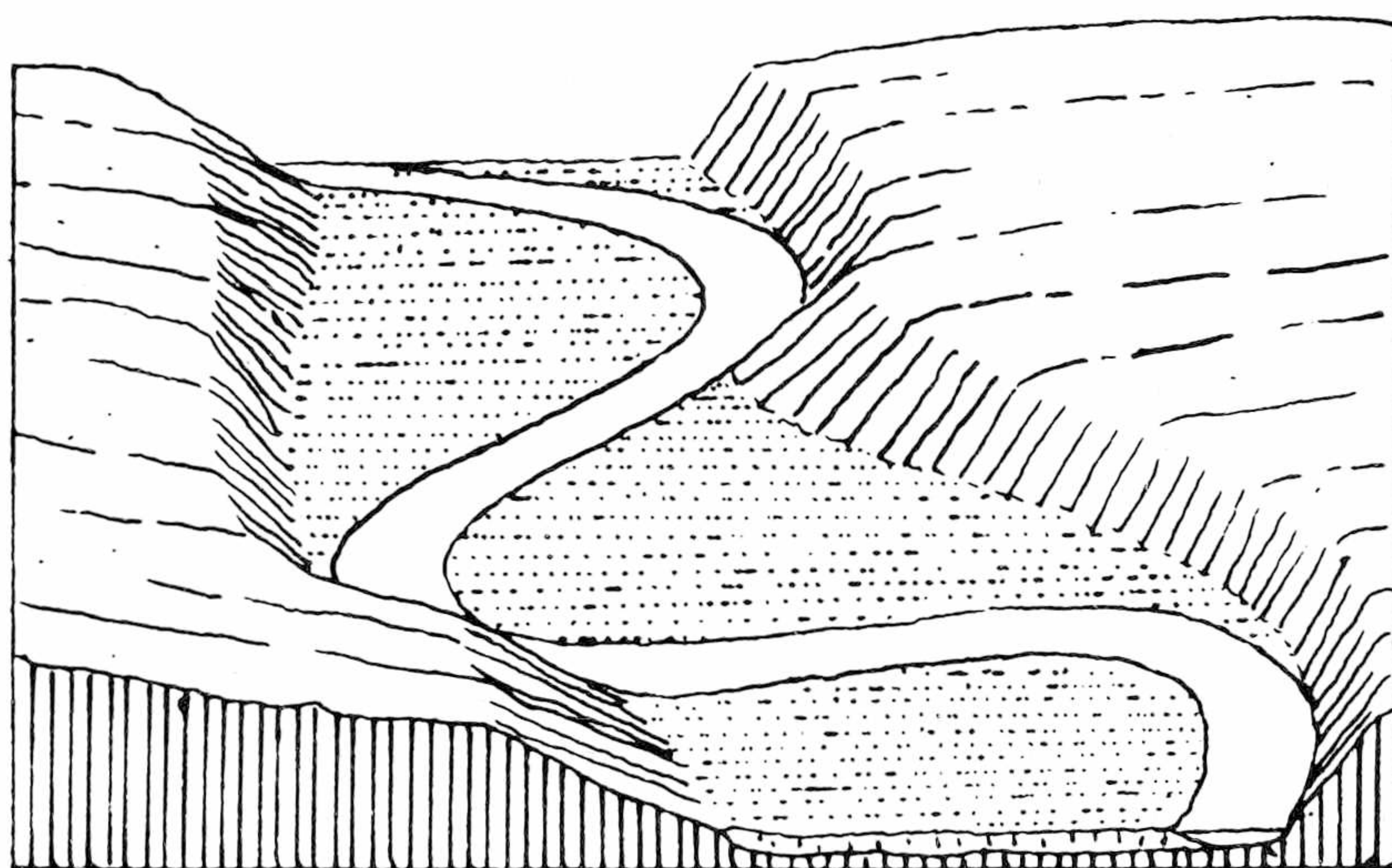
The white bloom may act as a protective mechanism. In the spring, the days are warm and nights are cold — below freezing. The warm sun on the aspen stimulates the rise of sap from the roots. This sap would freeze when the temperature fell at night and in freezing would burst the bark of the tree. The white bloom is located on the side of the tree that receives sunlight. Look at the tree again.

The white bloom is only on the side of the tree facing openings. Here it reflects the spring sun and the tree doesn't warm up as quickly as it would without the bloom. Therefore the sap doesn't rise until the nights are warmer.

## **STOP 12**

The meanders or bends along streams like Mud Creek are not static — they migrate downstream.

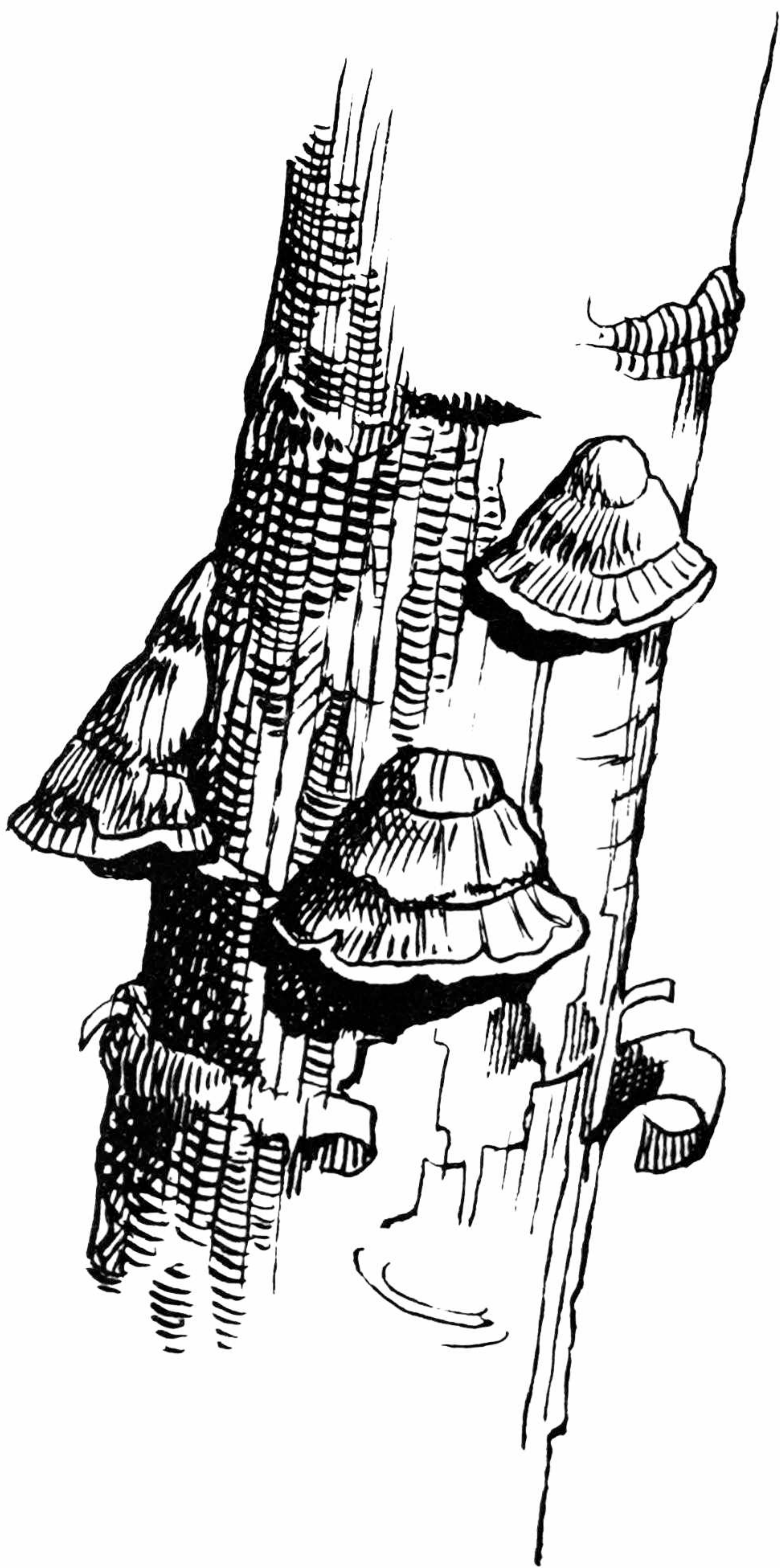
The meander in front of you is like a horse-shoe. Soon the two ends of this section will join in a straight line, cutting off the bend where water now flows. Further along, a new meander will form. In this way one disappears and another is formed just downstream; migrating meanders.



## STOP 13

A large valley for so small a stream!  
Once, rivers in this region carried more water than they do today, and they were able to cut deep valleys. However, the amount of water grew less, and rivers became smaller and smaller. Instead of rushing torrents travelling straight paths, they became slow wanderers, meandering, in large valleys.

Occasionally Mud Creek becomes swift again. If a very wet spring occurs, the river overflows, and covers the flat valley bottom. The valley bottom can also be flooded if beaver build a dam, and a beaver-caused flood may have killed the birch. The trees would then be vulnerable to the fungus which you can see growing on the dead stubs. As they rotted, the wind flexing the trees caused the birch to bend and finally snap at the point of greatest strain. Because the birch were all about the same height, their dead stubs now stand at the same level.



Follow the trail to the right through the aspen woods to the starting point.

If this is your first walk on the Mud Creek Nature Trail — or your twenty-first, you have only begun to know it. Return when the sarsaparilla turns in late August, when whistling swans sail overhead in May, or in the soft silence of January snow. Or, return tomorrow. Walk quietly and slowly. The trail changes with the years, the seasons, the days, and the hours. Whenever you walk it again, the trail will not be the same as it is today.

*If you enjoyed this walk, you may want to take part in other activities offered to you by the Park Interpretive Program. You will find a schedule of activities—conducted hikes, car caravans and illustrated talks—at the Information Centre, the park office and the Nature Centre.*



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# NOTES