

Rain Forest Nature Trail



OLYMPIC NATIONAL PARK

• WASHINGTON •

*This is the forest primeval. The murmuring
pines and the hemlocks,
Bearded with moss, and in garments green,
indistinct in the twilight,
Stand like druids of eld, with voices sad
and prophetic,
Stand like harpers hoar, with beards that
rest on their bosoms.*

from *Evangeline* by H.W. Longfellow



HOW TO USE THIS TRAIL

This self-guiding trail is about three-fourths of a mile long. It is a loop trail that will bring you back to the starting point.

Follow the lettered markers. They are keyed to the lettered paragraphs in this booklet, starting on this page.

You will also find small numbered markers along the trail. These correspond with numbers in the list of plants starting on page 11.

As you read the story of the forest in this booklet, you will see it illustrated along the trail with living examples. This is the story of the Olympic Rain Forest—the most luxuriant forest growth in any temperate climate. Here in Olympic National Park it is preserved for your enjoyment and for the enjoyment of all Americans now and in the future.

DO NOT BE A LITTERBUG

Paper and other rubbish make the trail unsightly.
Please use the trash can at the trail entrance.

* * * * *

PLEASE DO NOT PICK OR BREAK PLANTS

There Are No Poisonous Snakes Here

INTRODUCTION

This is Rain Forest. It has developed as a result of the mild and wet climate. Similar forest parallels the Pacific Coast from Alaska to California, but its finest development is here in the western valleys of the Olympic Mountains. The principal rain forest trees have here attained their largest size.

The term "rain forest" is more commonly applied to forests in heavy rainfall regions of the tropics. The precipitation here of 130 to 150 inches per year is more than in most tropical American regions. The plants and animals of this forest are of different kinds, of course, than are found in tropical rain forests.

A forest is more than a stand of trees. It is a complex community composed of many living things—trees, shrubs, annual plants, ferns, mosses, lichens, fungi, microscopic plants, and also animal life (large and small)—all living, growing and dying in relation to environment. It has been said that a forest is like an enormous umbrella with holes in it. The climate (temperature, moisture, light) under the "umbrella" is different from the climate in the open.

Although you may see few animals, many animal species live in this forest. The forest litter contains a large population of mice, shrews, and salamanders. Insects of many kinds live in the litter, in dead snags, and in living trees. Large mammals, including Roosevelt elk, Columbian black-tailed deer, black bear, and cougar make their home in this valley. Birds of many species are present.

A natural community like this is complex not only because it contains so many species but also because each kind affects some or all the other kinds. It can be compared to a city where the well-being of the whole community depends on the proper functioning of all the parts.

It is the wholeness of nature — all its parts and processes — that is conserved in the national parks.

A. The Tall and Majestic Trees All About You are Sitka Spruce (*Picea sitchensis*). Sitka Spruce is the most characteristic large tree in the Olympic Rain Forests and here it reaches its greatest size. The largest one in the Park is 13 feet 4 inches in diameter. It is located about 4 miles up the Hoh River trail from the Hoh Ranger Station.

Sitka Spruce is mostly a lowland tree along the Pacific Coast from Kodiak Island, Alaska to Northern California. Its bark is scaly, purplish-gray to silvery.

B. Red Alder (*Alnus rubra*) has grayish-white bark and leaves with conspicuous veins and toothed edges. It is one of the first plants to grow on gravel bars along streams, on burns, and on logged-off land. It does not form a permanent forest but is a pioneer that prepares the soil for other species. Like legumes it has gall-like nodules on its roots inhabited by nitrogen-fixing bacteria. Atmospheric nitrogen is converted into compounds that plants can use.

Red Alder is a coastal tree from the Aleutian Islands to Southern California. In this region it attains its greatest size. The bark is one of its loveliest features. Its whiteness is in reality crustose lichens (*like-ens*) growing on the bark. The bark of the young trees is greenish because it does not yet have lichens on it.

HOW OLD IS THIS FOREST?

C. During the Last Ice Age (*Pleistocene Epoch*) a glacier extended down the Hoh Valley perhaps as far as the present highway, U.S. 101. The glacier widened the floor of the valley. At this point the nearly flat floor is a mile wide. As the climate became warmer the glacier retreated up the valley — perhaps 11,000 years ago. River floodwaters have deposited sediments, thus producing flood plains on the valley floor.

Taft Creek meanders over this relatively recent flood plain, the sort of clear, deep stream that is characteristic

of the rain forest. Its water comes from springs, about 500 yards above this point, which are fed by rainwater falling on the forested bench beyond the creek. The Hoh River, in contrast to Taft Creek's clarity, is usually milky due to the glacial silt it carries from the Hoh Glacier.

D. Stream Terrace. This bank was cut by the flow of water, probably the Hoh River which has changed its course many times in the centuries since the glacier's retreat. The bench at the top of the terrace represents a former level of the Hoh Valley. Notice the water-rolled and rounded cobbles as you walk up the trail. (After climbing for about 100 yards the trail levels off again and remains fairly level for the remainder of the walk.)

Side trails, such as you see here, looking like "short cuts," are elk trails. You can see them following across Taft Creek directly below and climbing the bank on the far side. Please stay on the graded and surfaced "human" trail through the forest, leaving the elk trail natural — and not adding to trampling of plants and disturbance of the soil.

E. Trees 200-300 feet tall and free of limbs 50 to 100 feet are common in the rain forest. Upper limbs "shade out" lower limbs providing a system of self-pruning.

But the trees you see here today are the result of a long succession of plants that have lived here since the ice left. Lichens were first, simple, hardy plants that are "pioneers" in getting a toe hold on bare rock and gravel. For generation after generation, they etched the rock with their weak acids, breaking it down and adding their own decaying organic material to build up a thin layer of soil. Mosses began to grow next. The soil deepened, and became capable of holding more moisture. Taller plants began to grow, and to create shade. The soil became more moist and deep. Trees invade the ground thus prepared, and because the climate is so favorable they grew fast, attaining large size and great age.

Climax conditions have not quite yet been reached right here. Douglas-fir is still abundant, but it is not reproducing. The forest is too shady for its seedlings. However, spruce and hemlock seedlings and young trees, which require shade, will replace mature trees. Rain Forest, the end result of a centuries-long plant succession, will thus be perpetuated indefinitely.

If you examine the ground of the stream terrace as you climb the trail, you will find various early stages of forest succession: bare ground, gravel supporting lichens and mosses, leafy flowering plants, tree seedlings.

F. Erosion continually wears away the surface of the earth — slowly, inexorably. Where rainfall is as high as it is here, the effects would be vastly accelerated if it were not for the heavy plant cover. Trees and bushes catch rain-

drops, slowing their earthward fall. During a rain and for hours afterward, pearly drops hang from needle tips and leaves, dripping slowly, gently. The forest floor is spongy, absorbing water, holding it, and releasing it slowly.

Wherever the soil is bare, stripped of its plant canopy and its organic duff, it is subjected to the unbroken force of the rain and erodes quickly. This is why it is important to stay on the trail provided. Otherwise, with thousands of people visiting this section of the forest each year, a maze of gullying paths would soon damage the forest and detract from its appeal.

G. Douglas-Fir (*Pseudotsuga menziesii*) can be identified by the bark, which on large trees is very rough with thick ridges and deep furrows. Where the cones are present you will have no difficulty distinguishing this tree from other conifers. Between the scales there are ribbon-like bracts with three points.

The largest known specimen of Douglas fir is located in the Park 3 miles up the Queets River trail. The tree on your left here is 250 feet tall and 23 feet 6 inches in circumference.

H. Birds are Part of the Forest Community. This forest provides suitable habitats for several species, and the birds help to keep the forest healthy by feeding on insects that otherwise could become destructive.

Most of the birds will be heard and not seen.

THE WESTERN WINTER WREN, a tiny, dark-brown bird, is present all year and may be seen flitting about among the fallen trunks and upturned roots. It sings a prolonged trill from the top of a snag or small tree especially during nesting season.

When all is quiet you may hear the silence broken by the long, drawn-out note of the VARIED THRUSH coming from the top of a tall tree. It has been described as having "the quality of escaping steam." The note may be repeated at a higher and again at a lower pitch.

If you see a big, black, crow-sized woodpecker with a white streak down each side of the head and neck, it is the WESTERN PILEATED WOODPECKER. The male has a scarlet tuft on top of the head. It likes the deep forest where there are many snags in which to hunt for insect larvae.

The HAIRY WOODPECKER is a medium-sized, black and white bird that may attract your attention by its tapping on a dead tree as it searches for food beneath the bark.

The DOWNY WOODPECKER is a smaller edition of the Hairy. Both species have white outer tail feathers, but on the Downy they are barred with black.

A coarse and loud guttural croak coming usually from above the forest is that of the RAVEN.

The GRAY JAY or camp robber may appear on a nearby branch as if inquiring about prospects for a picnic. This gray bird, slightly larger than a robin, is usually silent.

Other birds which you may see or hear include: ROBIN, JUNCO, CHICADEE, SOOTY GROUSE, STELLER'S JAY, NUTHATCH, RUSSET-BACKED THRUSH, and possibly others. Along the river may be seen several additional species including the BALD EAGLE, AMERICAN MERGANSER, RED-TAILED HAWK, and others characteristic of forest edges and streams.

WHAT HAPPENS TO FALLEN TREES?

I. Death and Decay are as Natural as Life and Growth.

Death due to old age, to insect damage, and to windthrowing, is normal in a forest. Even in a mature forest, these losses are neutralized by growth. The large snag (dead, standing tree trunk) on the right may have been 500 years old when it died.

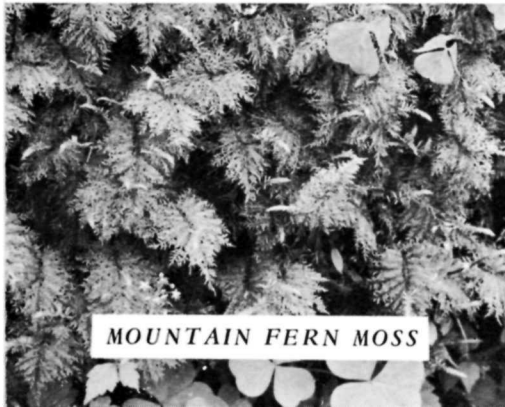
J. Fallen Trees Play a Unique Role in the Olympic rain forest. They become nurseries for a new generation of Sitka spruce and western hemlock trees. Tree seedlings, which cannot compete with the ground plants, can survive on the moist, rotting logs. This log has many small seedlings of both species, illustrating the beginning of the rain forest tree cycle.

You will see considerable evidence of this as you proceed along the trail.

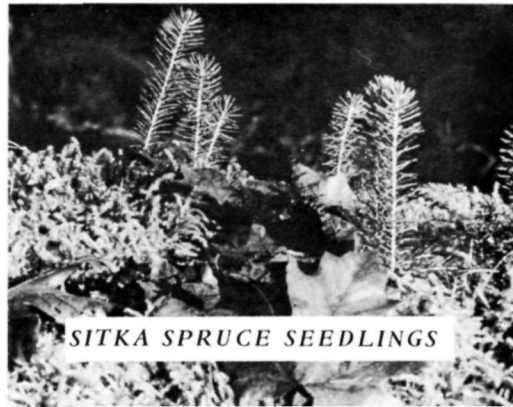
K. The Carpets and Cushions of Mosses and Liverworts that you see everywhere are made up of many species. Altogether, about 100 species have been found in the rain forest of Olympic National Park. Some have not been reported elsewhere in the State of Washington. Others are rare in all of North America. Their presence contributes to the unique aspect of the Olympic Rain Forest. Most of them are known only to specialists and do not have common names.

Few would thrive in the open even with the abundant rain that falls here. Their well-being depends on the forest climate and the presence of the particular habitats that suit them. In turn, they serve the total forest by protecting the soil from washing and by conserving moisture during dry periods.

The mosses on the left are typical of the forest floor. Those on the right are characteristic of new soil. The roots of this windthrown tree have exposed new soil.



MOUNTAIN FERN MOSS



SITKA SPRUCE SEEDLINGS

L. Western Hemlock (*Tsuga heterophylla*) is commonly associated with Sitka spruce and the two together comprise the bulk of this forest. It is the largest of the American hemlocks and it too attains its greatest size in the Olympic rain forests. A tree 27 feet 2 inches in circumference, located in the East Fork Quinault River Valley, is the largest on record.

The tree on the right at this point and the next two on the right are western hemlocks. If you can see the top of the tree, you can identify western hemlock by the long, lash-like leader that nods over at the tip. The foliage is soft and graceful, and the needles are short, blunt, and unequal in length. The cones, abundant on the trees or on the ground beneath them, are about three-fourths of an inch long.

M. Vine Maple (*Acer circinatum*) is an important member of the rain forest community. It is so named because its weak stems are crooked and sprawling. The branches may take root where they touch the ground. The arches formed by the trunks and branches with their cushions and curtains of moss add much to the forest's beauty.

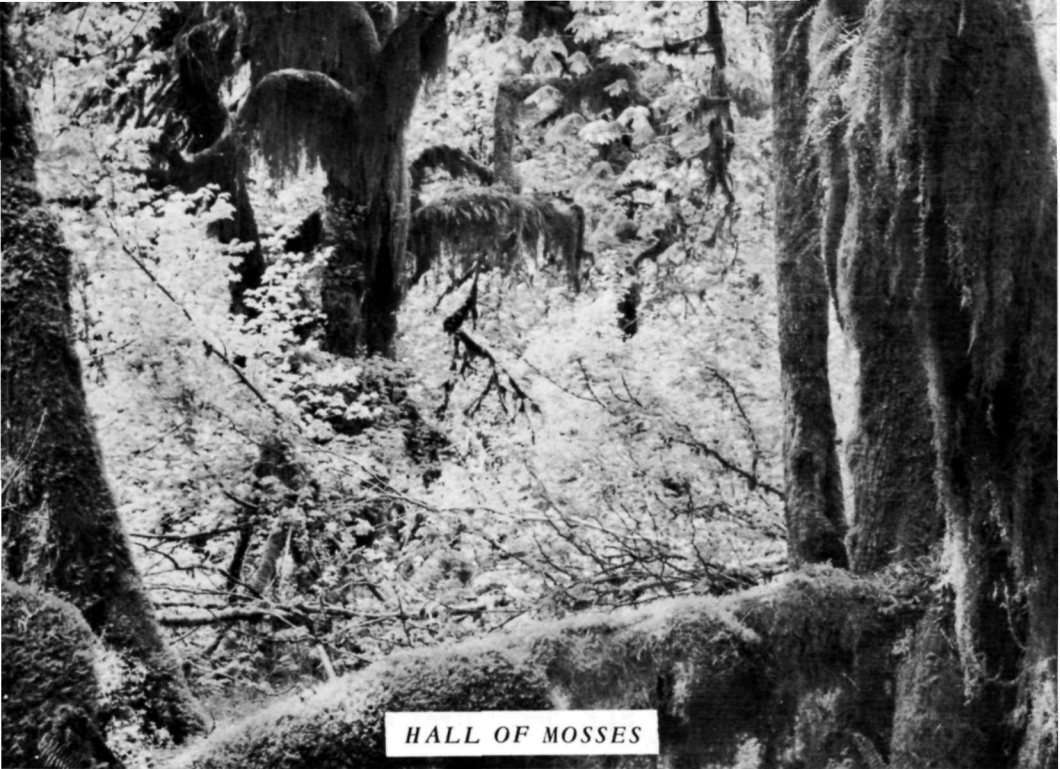
N. The Young Trees Growing Here are Sitka spruce, the species which, along with western hemlock, particularly characterizes rain forest. Mild temperatures, high rainfall, and deep shade are its primary requirements for growth. These it has here.

You can estimate the age of these trees by counting the branch whorls, or "stories." Each represents one year's growth. Most of these trees are 5-15 years old. A sure way to recognize them as spruce is to touch the stiff, prickly foliage.

O. On the Right is an excellent example of how the rotting logs serve as nurseries for young trees. Intense competition for light and growing space is eliminating the weaker individuals. As the trees grow, they extend their roots over the log and down into the ground. Eventually, the old nurse log crumbles away leaving the new generation of trees straddling its remains. Colonnades of trees with swollen bases stand as evidence that they started in this way. Most of the trees on this nurse log are spruce, with a few hemlock.

P. This Grove of Moss-draped Trees, their branches touching overhead, has been named the Hall of Mosses. It is probably the best known single point in the Hoh Rain Forest, but it actually is typical of all Olympic rain forests and is repeated many places.

BIGLEAF MAPLE (*Acer macrophyllum*), such as you see here, can be distinguished from vine maple by its sturdy trunk and much larger leaves, sometimes measuring a foot across. More than any other tree, it is hospitable to mosses, lichens, and ferns: **EPIPHYTES**, a term which means **UPON A PLANT**. The reason for this evidently is connected with the chemistry of its bark, the pH being favorable.



HALL OF MOSSES

Epiphytes are characteristic of humid regions. Most manufacture their own food and so do not rob the plants which they grow upon, as parasites do. Sometimes here they grow so profusely and hold so much water that their weight breaks the limbs of trees — and so brings tree top food to the forest floor for elk and other animals.

Eighteen species of epiphytes are found in the Hall of Mosses; 70 species have been identified in the rain forest as a whole. Not all of these are true mosses. The dominant moss-like plant which forms curtains on the undersides of the limbs is not a moss, but a clubmoss, a close relative of ferns. It is OREGON SELAGINELLA (*Selaginella oregana*). The fern growing in the trees is LICORICE FERN (*Polypodium vulgare*). It grows as much as 250 feet above the ground, most commonly in bigleaf maples, but also in alders, Douglas-fir and others.

The growth here is profuse, but fragile. Its beauty is easily destroyed. A moment's thoughtlessness can destroy a century's growth. This is a spot to enjoy with eyes and hearts, and to leave untouched, undamaged, for others to enjoy also.

You may want to take pictures. Exposures need to be longer than in the open, and a tripod is a good idea for steady support. Even in the rain or on a cloudy day, the forest here appears luminous. This is due to light being reflected from the mosses and maple leaves.

Q. Watch and Listen for Small Animals as well as for birds and elk, deer, and bear. Most likely to be encountered is the DOUGLAS SQUIRREL. It lives in the trees, using a hole in the trunk or building a nest of twigs. The seeds of maple, Douglas-fir, and Sitka spruce are the main sources of food. You very likely will find piles of cone scales marking where a squirrel has fed, taking a cone apart to get the seeds at the base of the scales.

FLYING SQUIRRELS also live in this forest but are seldom seen, being nocturnal. SKUNKS and RACCOONS are here. You may find their tracks pressed in the mud or in the sand of the river bar. Weasels, shrews, and deer mice are common. Mounds of earth in grassy clearings mark Townsend mole burrows.

If you see a snake, it is either a GARTER SNAKE or the uncommon RUBBER BOA. Both are harmless. No wildlife should be molested. All are part of the natural forest community and contribute to its balance.

R. Nurse Logs Disappear in Time as you can see here. Under the three trees (Western Hemlocks) on the left, the nurse log is crumbling. It has disappeared completely under the stilted Sitka spruce on the right.

S. ROOSEVELT ELK are natives of the rain forest. Olympic National Park contains an estimated 4,000 to 5,000 elk. They particularly frequent the western valleys. In early summer, some of them migrate to the mountain meadows where they remain until fall snow forces them back to the lowlands. Elk are social animals, gathering in herds consisting of a few to as many as 100 or more animals.

ELK
CALF



Elk signs, such as footprints in the mud, trails through the forest, browsed shrubs and trees, and excrement are

visible everywhere. Notice how the SALMONBERRY (*Rubus spectabilis*) in this clearing has been browsed by elk. If it were not for the browsing and trampling by the elk, the rain forest would be more densely filled with understory plants. It appears that the elk help maintain openings such as this.

T. This Sitka Spruce Is 300 Feet High. Its circumference is 25½ feet at 8 feet above the ground. Tree circumference is usually measured at 4½ feet above the ground, but a higher point was selected here in order to get above the swollen base. The swollen base indicates that the tree started on a fallen tree or stub. Its age is estimated to be 500 years.

U. The Nurse Logs Produce Trees in Straight Lines. Notice the line of trees here. One is a Sitka spruce, the rest are western hemlock.

V. Western Redcedar (*Thuja plicata*) can be distinguished from other cone-bearing trees of this forest by its reddish, stringy bark and by its foliage which consists of tiny overlapping scales instead of needles. A fairly large tree is about 20 feet to the left.

Western redcedar is not common in the rain forest of the valleys but on the coastal plain near the ocean it is common. The largest specimen on record is 66 feet in circumference and is located near Steamboat Creek in the Pacific Coast area of Olympic National Park.

W. Brown Cubical Rot Fungus (*Fomes pinicola*) is consuming the Sitka spruce snag on the left. You can see only the bracket-like fruiting bodies of the fungus. The larger part consists of felt-like filament layers feeding within the wood.

In addition to the fungi that have bracket-like fruiting bodies, there are many others, including fleshy and colorful mushrooms, molds, mildews, and bacteria. Some are parasites on living trees, but the majority are saprophytes, living on dead plants. Saprophytes perform a useful function by feeding on dead plants and returning them to the soil. Without this destruction, the forest would become cluttered with dead trees.

Because the bark still clings to this snag, you cannot see much of the ultimate effect of the rot in the form of brown cubes, but it can be seen along the trail on other snags and logs in which decay is more advanced.

X. Lichens (like-ens) are plants composed of an alga and a fungus that have formed a partnership. The alga, having chlorophyll, manufactures food for the partnership. The fungus absorbs water and minerals and provides protection. So both benefit from this arrangement.

At Station B, your attention was directed to the lichens which form the white crust on the trunks of red alder. They

are crustose lichens. There are also bush-like (fruticose) lichens and leafy (foliose) lichens. Lying unattached on the ground is a *LOBARIA OREGANA*, large foliose lichen that looks like two-toned lettuce (light green on one side, ivory on the other). It grows in the crowns of the trees, but some of it breaks away and falls to the ground. A total of 68 species of lichens have been found in the Olympic Rain Forest, most of them growing on the trees.

Notice the Sitka Spruce cones on the ground. They are 2 to 3 inches long and have thin papery scales.

Y. Sphagnum Moss (*Sphagnum sp.*) generally grows in bogs and forms peat. The rain forest is not only wet enough to permit its growth on the ground, but also on moist logs. It keeps growing above and dying below. It decays slowly and thus forms thick cushions. PLEASE do not disturb it. This species is *SPHAGNUM GIRGENSOHNII*. Look for it on the logs a little farther along the trail.

Z. Shallow and Widespreading Roots are Characteristic of trees in wet climates. They do not always anchor trees firmly enough against winter storms, as the jumble of down trees here indicates. Notice the upturned roots off the trail to your left. (The trunk of this tree was sawn through to make the trail safe.)

Notice, too, the rapid growth rate and slow decay rate indicated by large fallen spruce and Douglas fir where the trail has been cut through. By counting the annual growth rings at the center of sawn cross section you will see that these trees grew to be about 20 inches in diameter in their first quarter century. These first growth rings are almost 1/2-inch apart, but notice how those toward the outside of the trunk become closer and closer spaced, indicating a declining rate of growth as the tree became older.

It will take hundreds of years for these trees to decay, largely due to their being water-soaked, which tends to retard decay. During these centuries, they will become nurse logs, giving rise to future generations of forest trees. They are in a sense "bridges," spanning the years.

We see them today as prostrate trees. Growth rings mark their pasts, acting as tangible ties to the days 200-300 years ago when only the Indians knew this valley. In the tomorrow of successive decades and centuries, our descendants will walk here. First-comers will see a thick carpeting of mosses and seedlings vigorously competing for space on these logs. The next generation will see a tight row of young spruce and hemlock, sending roots through and over these logs into the soil. Ultimately, our descendants will see here a stately colonnade of new forest giants, their stilted roots and swollen buttresses testifying to their moldered nurse log beginnings.

THE NUMBERS ON THE SMALL STAKES CORRESPOND
TO THE NUMBERS IN THE FOLLOWING LIST

FERN FAMILY

1. **Woodfern** (*Dryopteris*). The fronds of Woodfern are thin stemmed and triangular in outline. It is not evergreen.

2. **Ladyfern** (*Athyrium filixfemina*). This non-evergreen fern has fronds to 4 feet long and 10 inches wide. They are widest at the middle and taper toward both ends. The fronds are clustered like those of Swordfern.

3. **Western Bracken** (*Pteridium aquilinum*). This non-evergreen fern grows to 6 feet in height. Each frond rises singly (not clustered) and is branched. This easily distinguishes it from the Ladyfern. It is the most abundant fern on this trail.

4. **Deerfern** (*Struthiopteris spicant*). This fern has two kinds of fronds, sterile and fertile. The sterile ones are evergreen and form a low rosette. The fertile fronds appear in the spring from the center of the plant and may rise to a height of 2 or 3 feet. When the fertile fronds turn dark they have the fancied resemblance to deer antlers.

SEDGE FAMILY

5. **Panicled Bulrush** (*Scirpus microcarpus*). This large sedge is widely distributed in swamps and wet woods.

LILY FAMILY

6. **Smith's Fairybells** (*Disporum smithii*). The creamy white to somewhat greenish flowers generally appear in pairs on this plant which grows 1 to 3 feet tall.

7. **Beadruby** (*Maianthemum dilatatum*). It is also called "Wild lily-of-the-valley." Each stem has one or two waxy, heart-shaped leaves. A spike of small white flowers rises above the leaves. The berries are first mottled with brown, but change to red when ripe. It is one of the most abundant flowering plants on the forest floor.

BUCKWHEAT FAMILY

8. **Dock** (*Rumex*).

BARBERRY FAMILY

9. **Deerfoot Vanillaleaf** (*Achlys triphylla*). After death of the plant the leaves have the fragrance of vanilla which accounts for another name, "Sweet-after-death." It has a single, fairly large leaf of three segments at the top of a slender stem.

MUSTARD FAMILY

10. **Angled Bittercress** (*Cardamine angulata*).

SAXIFRAGE FAMILY

11. **Trefoil Foamflower** (*Tiarella trifoliata*). This plant has several long-stemmed leaves growing from the base and

one growing from the slender stem. Each leaf has three leaflets. Notice the thread-like petals of the delicate white flowers.

12. Alaska Fringecup (*Tellima grandiflora*).

13. Menzies Tolmiea (*Tolmiea menziesii*). This is also known as "Youth on Age" because of its habit of sprouting new plants from buds that form at the ends of the leaf stalks.

ROSE FAMILY

14. Trailing Raspberry (*Rubus pedatus*). This is a tiny, thin, trailing vine on the ground with white flowers and bright red "jewels" of berries.

15. Salmonberry (*Rubus spectabilis*). Where protected from elk this plant grows to 6 feet tall. It is distinguished by its satiny, brown stems, red flowers, and salmon to dark-red fruits.

WOOD-SORREL FAMILY

16. Oregon Oxalis (*Oxalis oregona*). This small plant with clover-like leaves is the most abundant forest floor flowering plant in many areas. Oxalic acid gives the leaves a pleasant sour taste. The white, five-petaled flower blooms in the spring or early summer.

VIOLET FAMILY

17. Pioneer Violet (*Viola glabella*).

PARSLEY FAMILY

18. Pacific Waterdropwort (*Oenanthe sarmentosa*). Also known by several other names such as Wild Celery, Wild Parsley and Water Parsley, this plant is common in wet places.

HEATH FAMILY

19. Woodnymph (*Moneses uniflora*). This plant is only 2 to 4 inches tall and bears a single, white, fragrant flower.

20. Ovalleaf Whortleberry (*Vaccinium ovalifolium*). Also called Blue Huckleberry, this shrub grows to 6 feet tall. Its leaves have smooth edges and are shaped like the lengthwise section of a hen's egg. The edible berries have a bluish bloom.

21. Red Whortleberry (*Vaccinium parvifolium*). Also called Red Huckleberry, this shrub may be easily identified by the angled, green twigs. Its berries are red and edible.

PRIMROSE FAMILY

22. Western Starflower (*Trientalis latifolia*). This delicate plant can be remembered by the whorl of leaves at the top of the slender stem. Pale pink flowers on thin stems arise from the center of the leaf whorl.

WATERLEAF FAMILY

23. Waterleaf (*Hydrophyllum tenuipes*). This soft, fuzzy plant has delicate, lavender flowers with protruding stamens and pistils.

MINT FAMILY

24. **Common Selfheal** (*Prunella vulgaris*). This square-stemmed, blue-flowered plant may bloom all summer.

FIGWORT FAMILY

25. **Common Monkeyflower** (*Mimulus guttatus*). The flowers are a rich yellow with crimson dots in the throat, and are finely bearded.

COMPOSITE FAMILY

26. **American Adenocaulon** (*Adenocaulon bicolor*). Notice the contrast between the deep green upper and the silver lower surface of the leaves. Another common name for it is "silver-green." The name "Pathfinder" is also used because of the path left by a person walking through patches of this plant.

COMMON MOSSES

27. *Dicranum scoparium*.
28. *Eurhynchium oreganum*.
29. *Homalothecium nuttallii*.
30. *Hylocomium splendens* (Mountain Fern Moss).
31. *Mnium insigne*.
32. *Mnium menziesii*.
33. *Neckera menziesii*.
34. *Pseudoisothecium stoloniferum*.
35. *Rhytidiadelphus loreus*.
36. *Rhytidiadelphus triquetrus*.
37. *Plagiothecium undulatum*.
38. *Antitrichia curtipendula*.
39. *Pogonatum contortum*.

LIVERWORTS

40. *Porella navicularis*.
41. *Scapania bolanderi*.
42. *Conocephalum conicum*.

This booklet is produced by the
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OLYMPIC NATIONAL PARK
PORT ANGELES, WASHINGTON

A non-profit organization cooperating with
the National Park Service
in preserving and interpreting the Park.

We hope that this nature trail has helped you to understand and enjoy Olympic National Park. Your suggestions as to how this trail and its guide booklet may be improved will be appreciated.



OTHER NATURE TRAILS IN THE PARK

Marymere Falls Nature Trail – Lake Crescent
Alpine Wildflower Nature Trail – Hurricane Hill