TREES to Know in OREGON

Author
CHARLES R. ROSS
Farm Forestry Specialist
Federal Cooperative Extension Service
Oregon State College

Artist
HUGH HAYES
Civil Engineer
Oregon State Board of Forestry

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About This Book

Mostly, this book was written for Oregon boys and girls. It will assist teachers in the public schools and will serve the leaders and members of 4-H Forestry Clubs and other youth groups.

All of us—grownups and youth—need to acquaint ourselves with Oregon’s trees in a personal way. Our state has more trees and depends more upon forests for livelihood than does any other state. As goes the forest, so goes Oregon. To have the public keeping pace with forestry progress and supporting it intelligently is a challenging concept, and one to which this book is dedicated.

Mr. W. A. Eliot, author of Forest Trees of the Pacific Coast, and George Putnam’s Sons Publishing Company, New York City, gave permission for the use of many of the photographs of trees that appear in these pages. The author is also indebted to Mr. Eliot for many valuable suggestions for tree descriptions. At this writing Mr. Eliot is 88 years old and living in Denver, Colorado. Staff members of the School of Forestry, the Herbarium, and the Department of Landscape Architecture, Oregon State College, have contributed tree knowledge to this booklet. So have foresters of the State Forestry Department, the U.S. Forest Service, the Industrial Forestry Association, and the Oregon Forest Research Center.

This book has been considerably revised for the 1957 reprinting. Warren R. Randall, author of the Manual of Oregon Trees and Shrubs, acted for the School of Forestry, Oregon State College, in reviewing the text, a job he performed capably and helpfully. Quentin Zielinski, Horticulture Department, Oregon State College, wrote the section on fruit and nut trees.

1 1 1

An intelligent observation of nature stays by one, and there is always a desire to pass the knowledge on to someone else.

—Alice G. McCloskey, Department of Rural Education, Cornell University.
Trees stand at the head of the plant kingdom—just as man stands at the head of the animal kingdom. They are just as individual and alive as you are. Once you know a tree, it is your friend for life. And don’t overlook the trees close to home and along the streets. They are the trees you will know best of all. Let’s look at some of the good reasons for knowing trees.

**To increase your enjoyment of the outdoors.** The woods and fields call to us at all ages. To a boy, the woods mean adventure and exploration; he finds in imagination the stirring company of Robin Hood and Daniel Boone. To a grownup, the woods offer the kind of environment he particularly needs for recreation, with privacy and relaxation from the nervous strain of everyday modern life. Knowledge and love of the outdoors can bring you great satisfaction. Tree knowledge is a good start to increasing your fun outdoors.

**To make you more useful in your community.** Public opinion and personal examples are powerful forces. Be an informed person on conservation. Everyone uses our forests; everyone should help to protect and develop them.

**You may own or help operate woodlands someday.** There are more than 30,000 owners of small woodlands in Oregon. To those who know trees, growing woodland crops is a fascinating and profitable business.

**To improve your forest manners.** Anyone who knows and appreciates trees is sure to have good forest manners. That means playing safe with campfires and matches. It means leaving a note of thanks when you leave the woods. How? By cleaning up your campsite and never defacing property or hurting your friends, the trees. Be clean on the trail.

And on life’s trail, be encouraged by your friends, the trees. They stand erect, reach upward, and live to serve.
Table of Contents

CONIFERS (Trees with needle or scale-like leaves)

Douglas-fir (*Pseudotsuga menziesii*) ........................................ 10
Pines
  Lodgepole pine (*Pinus contorta*) ........................................... 12
  Knobcone pine (*Pinus attenuata*) .......................................... 13
  Ponderosa pine (*Pinus ponderosa*) ......................................... 14
  Jeffrey pine (*Pinus jeffreyi*) ............................................. 15
  Western white pine (*Pinus monticola*) ................................... 16
  Limber pine (*Pinus flexilis*) ............................................... 17
  Whitebark pine (*Pinus albicaulis*) ....................................... 17
  Sugar pine (*Pinus lambertiana*) ........................................... 18

“Cedars”
  Western redcedar (*Thuja plicata*) ........................................ 20
  Alaska-cedar (*Chamaecyparis nootkatensis*) .............................. 21
  Port-Orford-cedar (*Chamaecyparis lawsoniana*) ........................... 22
  Incense-cedar (*Libocedrus decurrens*) ................................... 24

True Firs
  White fir (*Abies concolor*) ................................................ 26
  Grand fir (*Abies grandis*) .................................................. 26
  Noble fir (*Abies procera*) .................................................. 28
  Shasta red fir (*Abies magnifica*) ......................................... 29
  Pacific silver fir (*Abies amabilis*) ...................................... 29
  Subalpine fir (*Abies lasiocarpa*) ......................................... 29

Spruces
  Sitka spruce (*Picea sitchensis*) .......................................... 30
  Engelmann spruce (*Picea engelmannii*) .................................... 30
  Brewer weeping spruce (*Picea breweriana*) .............................. 31

Western larch (*Larix occidentalis*) .......................................... 32

Junipers
  Western juniper (*Juniperus occidentalis*) ................................ 34
  Rocky Mountain juniper (*Juniperus scopulorum*) ......................... 35

Redwood (*Sequoia sempervirens*) ................................................ 36
Giant sequoia (*Sequoia gigantea*) ........................................... 36
Pacific yew (*Taxus brevifolia*) ............................................. 38

Hemlocks
  Western hemlock (*Tsuga heterophylla*) .................................. 40
  Mountain hemlock (*Tsuga mertensiana*) .................................. 41

BROADLEAF TREES (Also known as hardwoods)

Alders
  Red alder (*Alnus rubra*) .................................................... 42
  White alder (*Alnus rhombifolia*) .......................................... 43
  Sitka alder (*Alnus sinuata*) ............................................... 43
  Thinlineal (mountain) alder (*Alnus tenuifolia*) .......................... 43

Maples
  Bigleaf maple (*Acer macrophyllum*) ...................................... 44
  Rocky Mountain (dwarf) maple (*Acer glabrum*) .......................... 45
  Vine maple (*Acer circinatum*) .............................................. 46

Black (Douglas) hawthorn (*Crataegus douglasii*) .......................... 47
Oregon crab apple (*Malus diversifolia*) .................................... 47
### Oaks

- Oregon white oak (*Quercus garryana*)
- California black oak (*Quercus kelloggii*)
- Canyon live oak (*Quercus chrysolepis*)
- Tanoak (*Lithocarpus densiflorus*)
- Golden chinkapin (*Castanopsis chrysophylla*)

### Willows

- Scouler (mountain) willow (*Salix scouleriana*)
- Pacific (black) willow (*Salix lasiandra*)
- Peachleaf willow (*Salix amygdaloides*)

### Poplars

- Black cottonwood (*Populus trichocarpa*)
- Quaking aspen (*Populus tremuloides*)

### Other Native Trees and Large Shrubs

<table>
<thead>
<tr>
<th>Tree</th>
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<tbody>
<tr>
<td>Oregon ash (<em>Fraxinus latifolia</em>)</td>
</tr>
<tr>
<td>Oregon-myrtle (<em>Umbellularia californica</em>)</td>
</tr>
<tr>
<td>Water (red) birch (<em>Betula occidentalis</em>)</td>
</tr>
<tr>
<td>Cascara buckthorn (<em>Rhamnus purshiana</em>)</td>
</tr>
<tr>
<td>Pacific serviceberry (<em>Amelanchier florida</em>)</td>
</tr>
<tr>
<td>Pacific madrone (<em>Arbutus menziesii</em>)</td>
</tr>
<tr>
<td>Elders</td>
</tr>
<tr>
<td>Blueberry elder (<em>Sambucus glauca</em>)</td>
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<tr>
<td>Pacific red (redberry) elder (<em>Sambucus callicarpa</em>)</td>
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</tbody>
</table>

### Introduces Shade and Ornamental Trees

<table>
<thead>
<tr>
<th>Tree</th>
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<tbody>
<tr>
<td>Black walnut (<em>Juglans hindsii</em>)</td>
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<tr>
<td>Black locust (<em>Robinia pseudoacacia</em>)</td>
</tr>
<tr>
<td>Lombardy poplar (<em>Populus nigra italica</em>)</td>
</tr>
<tr>
<td>American elm (<em>Ulmus americana</em>)</td>
</tr>
<tr>
<td>Hawthorn (<em>Crataegus spp.</em>)</td>
</tr>
<tr>
<td>European birch (<em>Betula pendula</em>)</td>
</tr>
<tr>
<td>Norway maple (<em>Acer platanoides</em>)</td>
</tr>
<tr>
<td>Silver maple (<em>Acer saccharinum</em>)</td>
</tr>
<tr>
<td>Deodar cedar (<em>Cedrus deodara</em>)</td>
</tr>
<tr>
<td>Sweetgum (<em>Liquidambar styraciflua</em>)</td>
</tr>
<tr>
<td>Flowering plums (<em>Prunus cerasicera var.</em>)</td>
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</tbody>
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### Fruit and Nut Trees

<table>
<thead>
<tr>
<th>Tree</th>
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<tr>
<td>Apple, pear, cherry, peach, plum, walnut, filbert</td>
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The approved common names used in this book and the accepted scientific names in this table follow the U. S. Forest Service publication *Check List of Native and Naturalised Trees of the United States* by Elbert L. Little, Jr. (Handbook No. 41).
Tree Study

่าKnowing trees on sight. Many trees can be distinguished by one feature alone. For example, the Douglas-fir has tiny, 3-pointed bracts on its cones. No other tree in Oregon has these “pitchforks.” The easy way to identify a tree is to concentrate on the one feature that is different from other trees.

It is interesting to recognize trees by their shape, but that can be done only after long practice. No two trees are ever completely alike, even if they are both of the same species. When trees grow close together under forest conditions they are tall and slender, and they lose their lower branches. But trees grown in the open are likely to have broad crowns and limbs closer to the ground. Differences of soil, moisture, and exposure also affect a tree’s appearance.

Leaves on the same tree differ in size and color. Broad-leaf trees, like the maples, often have larger leaves on the saplings or sprouts than on older trees. The sapling, down near the forest floor where there is not much sunlight, puts out a big leaf to catch all the sun it can.

The distinctive feature is your clue. Certain characteristics are always the same in a tree species, and these we must know before we can correctly identify our trees.

Several tree families have members very much alike. It is difficult, and sometimes hardly worth while, to try to distinguish one member from another. The willows are that way, and so are some of the true firs.

Tree distribution. Maps in this book show where each tree grows. Don’t expect all of these range maps to be exact; there is much yet to be learned.

ząWhere the tree grows commonly. ąWhere the tree may possibly be found, but not abundantly.

Size of leaves and fruits. Most of the photographs of tree foliage and fruits in this booklet have small squares in the background. Each square represents one inch.

What’s in a name? Every tree has two names—its common name and its scientific name. The scientific name is usually the same anywhere or any time. But a tree can have a half dozen common names. Douglas-fir, for example, has been called red fir, Oregon pine, yellow fir, and several other names. Its scientific name is Pseudotsuga menziesii.
Needleleaf and broadleaf trees. The two big divisions of trees are the needleleaves and the broadleaves. Needleleaf trees are better known as coniferous trees, or conifers. The name coniferous, from the word "cone," means the seeds are borne in cones. Conifers are also called softwoods.

Broadleaf trees are frequently called hardwoods. Most hardwoods lose their leaves in the fall of the year. But all our western conifers, except the larch, are evergreens.

How a Tree Grows

The buds, root tips, and cambium layer are the growing parts of the tree. The tree breathes mainly through the leaves. Water containing a small quantity of minerals is absorbed by the roots.
How Nature Labels Trees

Types of Leaves
- SIMPLE BROADLEAF
- COMPOUND BROADLEAF
- IN BUNDLES (pine)
- NEEDLE LEAF
- SCALE (cedar)

Leaf Edges
- ENTIRE (smooth)
- TOOTHED
- LOBED

Twigs and Branches
- ALTERNATE
- OPPOSITE
- WHORLS

Bark
- SMOOTH
- RIDGES
- PLATES
Do You Want to Be a Forester?

If you want to become a forester, you should plan to attend college—a college or university that has a school of forestry approved by the American Society of Foresters. Normally, a forestry course takes four years.

Long before you enter college, however, there is much you can do to prepare yourself. Even in grade school you should try to do well in arithmetic and in your science and language subjects. In high school, take all the English and mathematics you can. Subjects like physics, chemistry, and biology will give you a good foundation for forestry. For that matter, this type of preparation is a good foundation for any career. Every forester has to know how to write good letters and clear reports; he needs to know how to speak the English language correctly and easily; he uses mathematics constantly.

In addition to knowing the technical side of forestry well, a forester must know how to get along well with other people, and how to work with them easily. In the woods and in cities, forestry work always involves other people. You should take part in student activities to gain skill in working with other people.

Before you make up your mind to become a forester, try to learn as much as you possibly can about the profession. The Dean of the School of Forestry at Oregon State College will be pleased to help you. He will send you information about careers in forestry and how to prepare for them. On request he will send your high school principal motion picture films dealing with forestry.
Douglas-fir

—it is the state tree of Oregon and grows in 35 of the state's 36 counties.

West of the Cascades you could guess that any evergreen forest tree is Douglas-fir and you'd be right eight out of ten times. East of the Cascades the species is common in middle and higher forest zones.

The cone everybody knows. Put a Douglas-fir cone among all cones of the Northwest and it would stand out. Only Douglas-fir has three-pointed bracts licking out between the cone scales like little tongues. The bract has been compared to a three-pronged pitch fork. Perhaps the most accurate picture comes from a 4-H forestry member who said it looks like the hind feet and tail of a mouse diving into a hole. Cones are almost always present either on the trees or under them.

Look at the twig ends. The bud, because it is sharp-pointed, identifies this tree. It is mahogany colored and shines like a highly polished shoe. Recognize the foliage by remembering also that needles come out bottle-brush style all round the twig and, though pointed, are soft to touch. Cut bark reveals distinctive two-tone colors. Sapling stands of Douglas-fir announce themselves from a distance, the uniform angles of the limbs making a striking pattern.

Naming the Douglas-fir. The first scientists to examine Douglas-fir were puzzled because of its resemblance to spruce, hemlock, yew, and true firs. It was given a scientific name that recalls the puzzle, *Pseudotsuga taxifolia*, which
translated means "false hemlock with yew-like leaves." Actually, the greatest of all western trees has no other Pseudotsuga (false hemlock) relative in the region. Its common name honors the intrepid botanical explorer, David Douglas, who found the species in 1825 near Portland. Lately, the international botanical authorities have decided that the scientific name should honor Archibald Menzies, another exploring Scotch botanist, who had reported Douglas-fir from British Columbia as early as 1797. The prescribed scientific name is now Pseudotsuga menziesii. Because of its 130 years standing Pseudotsuga taxifolia will continue in use too.

Douglas-fir vs. true firs. Until this tree got the name, the word "fir" referred to the balsam firs of the genus Abies. Abies has seven species in Oregon and many elsewhere in the world. They are particularly distinguished by blisters on the bark of young trees from which a fragrant balsam squirts if you stick them with your fingernail. Douglas has identical balsam-filled bumps. This fact led to its being wrongly named a fir. So the term "true firs" is applied to the Abies group in Douglas-fir country.

Tree of 1000 uses. The most abundant species in North America, Douglas-fir furnishes more products for man's use than does any other tree. Lumber, plywood, wood pulp and paper, fuel, and poles are leading divisions of these products. About four-fifths of the cut goes into lumber, but the trend is swinging to more fibre products and plywood and away from lumber. The lumber goes mainly into houses, farm structures, railroad timbers, docks, bridges, and industrial buildings, but there are scores of other uses. Some of them, like furniture, truck bodies, roof trusses, and cooperage, are themselves distinct industries. More than a fourth of all Christmas trees cut from American forests are Douglas-fir.

Douglas-fir is a giant. A mammoth, thousand-year-old tree, preserved on the Clatsop Tree Farm of the Crown-Zellerbach Corporation is believed the biggest standing Douglas-fir. It measures 15\(\frac{1}{2}\) feet in diameter at breast height, and 225 feet high to a broken top. The tallest Douglas ever recorded, and since fallen, was 385 feet. In fact, this exceptional Douglas may be the tallest tree on record.

Its arrow-straight branches are familiar on countless skylines and, as much as anything, have the meaning of home.
NEARLY EVERYONE can tell the pines from other trees, just because they “look different.” The pines look different because they have long, narrow needles bound in bundles which resemble whisk brooms. Actually, some whisk brooms are made of pine needles.

The cones of pines are also different from other conifers. They usually have thick, tough scales. Except for lodgepole pine, all the Oregon pines have unmistakably large cones. The foliage of pine trees is open, so that sunlight spills through to the forest floor. Firs, spruces, and hemlocks have such thick foliage that they shade out the sun from the ground beneath them. Pines congregate mostly in the dry areas of the state, where they hold out because they can send big roots down deep into the earth for moisture.

The one thing to remember in order to identify the pines positively is this: Pine needles grow in small bundles. To tell one Oregon pine from another, count the needles in each bundle.

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**Lodgepole Pine**

Lodgepole pine is easily identified because it is the only 2-needle pine native to Oregon. Also, its cones and needles are much smaller than those of our other pines. The egg-shaped cones are seldom longer than an inch or 2, while needles are 1 to 3 inches long. Furthermore, lodgepole’s nature is to form extensive forests of trees all about the same size, and often in dense thickets. So you can just about tell when you are in lodgepole country.

Where lodgepole pine grows. There are two types of lodgepole in the Northwest, the mountain form, and the coast form known as shore pine. The small shore pine stays within a few miles of the coast, and is not commercially important. Bushy and distorted in its frontline stand against ocean gales, and often picturesque, it does service in stabilizing sand dunes.

Lodgepole of the mountains—the real lodgepole—grows slim and straight to 80 or even 100 feet. The Rocky Mountain Indians made two trips to solve their housing problem; first, to the plains to kill buffalo for hides, then to the pine country for the poles to raise their lodges or tepees. Thus the name lodgepole originated. Early western explorers noted that such lodgepoles would be used for a lifetime, until worn out by weathering and handling. Other names sometimes given this tree are jack pine and scrub pine.
What lodgepole is used for. Lodgepole was formerly regarded as a weed species, despite the immense supplies of it in the West. That picture has changed. Though still used as formerly for fencing, fuel, crossties, cabin logs, and mine timbers, the larger trees go regularly to the sawmills. Lodgepole is fairly important in the pole business. Its greatest future may be in wood pulp for which it has a good fibre and for which large trees are not necessary. Pulp companies have been acquiring lodgepole areas.

Lodgepole’s tough little cones may hang on the trees unopened for many years.

Knobcone Pine

Knobcone pine is a three-needle pine that is considered rare in Oregon. Growing at 1000 to 2000 feet elevations in southwestern Oregon, this small-to-medium-sized pine seeks the sun. Even pure forests may be found on poor, dry, and sun-scorched ridges.

The ever-present cone—even saplings have them—is an oddity. Knobcone has been called “the tree that swallows its cones.” Clusters of cones, strongly curved downward, encircle the trunk and branches, held so tightly that the trunk may in time overgrow them. Here is the hardest and toughest of cones and probably the slowest one to open. Seeds in them may keep their vitality a half century after the tree dies.

Nature developed this tree to come back after fire, and many cones may not open at all without its heat. The one-sided cones are three to six inches long.
Ponderosa Pine

Ponderosa Pine is about as prominent east of the Cascade summit as Douglas-fir is west of it. The long needles are usually in bundles of 3 but occasionally you'll find two's as well as three's. Even four's and five's have been reported on young trees. Ponderosa's egg-shaped cones, 3 to 6 inches long, will not be confused with our other pines except possibly with the Jeffrey pine in southwest Oregon.

The bark of young pines is very dark but age makes ponderosa bark outstanding among trees. Large, flat, scaly plates form, coloring to yellow-brown, with many oldsters taking on a glamorous orange-red. Bark crevices of older trees have a pleasing smell, although people cannot readily decide what it is like. Try it yourself.

Where ponderosa pine grows. Ponderosa is one of the most widely distributed timber trees in North America. It prefers warm and sunny places but stands severe winters. In southwest Oregon, ponderosa pine grows down the western slope of the Cascades. Good forests occur with as little as 18 inches annual rainfall.
It's Oregon's No. 2 Tree

Oregon leads in ponderosa production. Ponderosa makes very desirable lumber. It is light, easy to work with machinery, doesn't split when nailed, and holds its shape. The higher grades make sash, doors, paneling, cabinet work, and similar things. This pine is the favored one for the immensely popular "knotty pine" interior walls. The lower grades make millions of boxes and crates, in which western fruits go to market.

Oregon produces the largest volume, with California just a pine needle-length behind.

More about ponderosa. This pine grows to a large size, and no other forest of our region can match the splendor of the older trees. Their bark fairly glows in the sunlight. There is enough color and beauty for a forest of make-believe where you might run into Hansel and Gretel, or even Smokey Bear. Naturally, the movie makers choose the photogenic ponderosa forests for their forest scenes. Vacationists choose ponderosa country because this tree grows where the summer climate is most agreeable to man himself.

Jeffrey Pine

Jeffrey pine is one of the two other Oregon pines with needles clasped in three's. It associates with ponderosa pine and resembles it in these ways:

- Long needles in three's (occasionally in two's)
- Attains large size (Jeffrey lumber is marketed as ponderosa pine.)
- Bark on big trees fissures into large plates.

It differs from ponderosa in having a thicker and much larger cone, one that resembles an old-fashioned beehive in shape. Jeffrey cones can vary strikingly in size from five inches to a foot in length, but the typical huge oval won't be mistaken. Cone scales have thorn-like prickles that curve downward. Those of ponderosa are straight. New twigs of Jeffrey have two things that Ponderosa does not have: a bluish-white powder and, when crushed, a smell suggesting a lemon-pineapple blend.

Although this sun-loving tree is widespread in California, not many Jeffreys wandered into Oregon. Of the more northerly points where it occurs, sites near Tiller, Glendale, and Riddle can be mentioned.
White pine has 5 needles to each bundle. For all practical purposes that will identify it in this state except in the southern Cascades where you find the sugar pine, which has 5 needles, too.

Here is how white pine and sugar pine differ:

White pine cones are 6 to 10 inches long. Sugar pine has bigger cones, 12 to 24 inches long.

The bark of large white pines is broken into small squares and makes a pattern like tile. Its color is greyish.

Sugar pine bark on large trees is broken into long plates, often resembling ponderosa pine. Its color is reddish brown.

The bark of sugar pine begins to break up into scales on trees as small as 4 inches in diameter. The bark of white pine is noticeably smooth on young trees.

This is the quick way a forester tells the two trees apart: He looks for cones first, if not on the tree, then under it on the ground. If he finds a cone he has found the answer. He knows too that white pine will bear cones when only 30 to 40 feet high. If the trees are too young for cones, then he examines the bark.
White Pine Tells Its Age

What white pine is used for. The carpenter enjoys working with white pine because it is a light, smooth, attractive wood that planes and saws easily. It goes into the more expensive lumber uses such as window and door frames, pattern stock, cabinet work, novelties, and match blocks. Knotty lumber of this species has made good as interior paneling.

More about white pine. Never abundant, this tree grows scatteringly in Oregon, usually at middle elevations, occupying a variety of sites. It gives away its age: Count the whorls of limbs on a white pine, and you know how old it is. Every year the white pine adds another whorl. (See page 8). Because the cones are slim and curved like fingers, it has been called “fingercone” pine.

A fungus, called white pine blister rust, attacks and kills 5-needle pines. But this fungus cannot attack the white pine and sugar pine unless there are currant and gooseberry bushes in the locality. The fungus spends the first stage of its life on the leaves of these bushes. The federal government, the states, and private landowners work together to remove the bushes in the important white pine areas.

**Limber Pine**

Limber pine grows in the Wallowa Mountains, an offshoot of the Rockies, and is seldom recognized by the casual visitor to the forest. It is another 5-needle pine, like white pine and sugar pine.

This small, lop-sided pine gets its name from the long, slender limbs, which are so limber that they can sometimes be tied in knots. Usually the limber pine is a stunted, low tree or shrub up near the timber line.

**Whitebark Pine**

Whitebark pine is a 5-needle pine seldom seen below 5,000 feet. It resembles the white pine, but it has silvery gray branches and a trunk that looks white on immature trees. The cones of the whitebark pine are only 2 to 3 inches long. Whitebark can stand terrific cold and wind. Usually distorted, often bush-like, it clings to the highest places a tree can endure. Timberline trees no taller than a man have been found to be 500 years old. Its twigs are as flexible as rope.
Sugar Pine

Sugar pine is the other big 5-needle pine in Oregon. Because white pine grows throughout the sugar pine range in the southwestern part of the state, you will want to be acquainted with their differences. The cones are the best key. Look for them on the ground if there are none on the tree. Young sugar pines have no cones, but white pines as small as 6 or 8 inches in diameter often have them. See also page 16. Sugar pine is reasonably common throughout its Oregon range, preferring moist, well-drained situations in the sun. Don't look for pure stands.

"The priests of pine." John Muir, the famous naturalist, admired the sugar pine. Observing these large trees in the forest, he said:

"They are ever tossing out their immense arms in what might seem the most extravagant gestures. . . . They are the priests of pine and seem ever to be addressing the surrounding forest. . . . The yellow pine is found growing with them on warm hillsides, and the white silver fir on cool northern slopes; but noble as these are, the sugar pine is easily king and spreads his arms above them in blessing while they nod and wave in signs of recognition."

What it is used for. Sugar pine belongs to a group known as soft, or white pines, which have light, soft, easily worked wood of high value. Sugar pine's uses are similar to those of white pine.

A narrow escape. David Douglas, the young Scotch botanist for whom the Douglas-fir is named, nearly lost his life on the day he found the sugar pine (October 26, 1826). Near Oregon City he had seen large pine seeds in an Indian's pouch, and he had gone into southern Oregon in search of the tree which grew such huge seeds. Near Roseburg in the county that bears his name, Douglas found the tree. To get some of the cones, he shot them down with his gun. Attracted by the noise, Indians came and threatened him, but he drew two guns and prepared to fight. They finally went away.
Sugar Pine Has Giant Cones

Its seeds are good to eat. The cones of the sugar pine are the largest of any pine in the world, although they are not as heavy as the fearsome, spiny cones of California's Coulter pine. It has an edible seed as big as a kernel of corn and the wing attached to the seed is from 1 to 2 inches long.

The name sugar pine comes from the sugary tasting globules of resin that exude from wounds. The Indians were fond of this resin, but they were careful not to eat too much of it because of its cathartic effect.

Sugar pines sometimes grow more than 200 feet high. Their long limbs form a massive crown and they are among the most majestic of trees.
FOUR SPECIES of trees in Oregon are called cedars (none of them are true cedars). It is easy to recognize one of these so-called cedars, but it takes a little knowledge to tell one from another. Their leaves form flat sprays like a fern. Hold a cedar twig in your hand and you can see the tiny scale-like leaves that overlap like shingles—they may remind you of fish scales.

Western Redcedar

To know redcedar, look at the cones. Unlike other cedars they are turned up and bent backward on the branch. Before opening they look like a smoker’s pipe. If you look closely at the under side of a single scale-leaf, you can usually see a tiny butterfly outlined by the frequent white spots there. Admittedly some imagination is needed.

Where redcedar grows. A tree that likes moisture, redcedar is only occasionally found on dry slopes. It needs other trees around it; it likes shade and deep woods. But it does not choose its own company. You will rarely find pure cedar forests; the tree usually grows scattered through the forests of Douglas-fir and hemlock.

What redcedar is used for. Redcedar serves in a variety of ways—as shingles, house exteriors, fence posts, poles, and boat hulls. Notice that each of these uses is one in which the wood is exposed to outside weather. Lumber made from heartwood of this tree resists decay and insects and is highly valued for this reason. Yet it can be said timbermen are more interested in other types of trees whose wood seems of greater value for the future.
Redcedar—Indians’ Favorite Tree

Lewis and Clark saw it. In their journal of the first overland expedition to Oregon, Lewis and Clark mentioned the redcedar several times: It "grows to an immense size . . . I saw several sticks today large enough to form elegant perogues of 45 feet." The explorers floated down the Columbia in 5 canoes they fashioned with fire and chisel from "canoe cedar." Of the stringy, fibrous bark they said, "The [Indian] women wear a short petticoat of the inner bark of the cedar which hangs down loose in strings nearly as low as the knee."

Indians liked it. The most important tree in the lives of the Pacific Northwest Indians, redcedar was used for canoes, totem poles, and plank lodges. Large canoes, which sometimes took years to hollow out, could carry 30 to 40 men. The redcedar bark was used not only for women's skirts but also for cords and fish nets.

The scientific name for redcedar, *Thuja plicata*, means "a tree with sweet-smelling wood whose leaves are folded and plaited."

Deer like to browse on western redcedar in the wintertime.

Alaska-Cedar

Alaska-cedar is generally found at high elevations in the western Cascades, but it is rarely seen south of Mt. Jefferson. It is a close relative of the Port-Orford-cedar. There are no white X's on the under sides of its scale-leaves as there are on Port-Orford-cedars. Alaska-cedar can be easily recognized by its range. Port-Orford-cedar will not be found native in that locality.

Alaska-cedar can be distinguished easily from other Northwest cedars by its bark, which flakes off in long narrow strips. It is a "scaly bark" cedar. It also has a "weeping" appearance due to its long, drooping sprays. It grows to medium size; its wood is very resistant to decay. It has some commercial uses, but the tree is rather scarce. It does important service in covering cold, high mountain slopes. Another common name is Alaska yellow-cedar; its wood turns yellowish when wet.
Port-Orford-Cedar

PORT-ORFORD-CEDAR occurs naturally in only one small part of Oregon—the southwestern corner. If you see it elsewhere, it will be a planted tree. Of all our evergreen trees, the Port-Orford-cedar has been the most popular for planting around homes and public grounds. You'll see it planted in every western Oregon county. About 1950 a cloud appeared in the shape of a killing root rot. This favorite tree now has a shadow over it. You might talk with a local County Extension Agent or forester before selecting this tree for planting.

In his Forest Trees of the Pacific Coast, Mr. Eliot describes the Port-Orford-cedar.

"It is one of the handsomest of our native trees, feathery—almost lacy—in appearance, with slender limbs slanting sharply upward to form a pointed crown. The foliage grows in flat sprays that neither turn stiffly on their axes as in incense cedar, nor hang fringe-like as in the western redcedar, but lie in a horizontal plane, dropping softly at the tips."

How to recognize Port-Orford-cedar. Port-Orford and redcedar look alike to the eye, but the cones will tell the difference. Port-Orford cones are round. They look like rough, hard berries before they open, and they hold a round shape even after they open. On the under side of each tiny scale-leaf you will see a white X. You can also learn to distinguish the Port-Orford from the redcedar by the way it holds up its sprays. The Port-Orford is not "lazy". It does not let its branches droop like the redcedar's.

Tree windbreaks shelter homes and cropland. Tree windbreaks are used throughout the world to shelter homes and croplands from severe winds. No better way is known. Port-Orford-cedar has been widely used in western Oregon as a windbreak.

To demonstrate the value of windbreaks, two county agents measured the wind velocity behind a 35' high cedar windbreak on the L. T. Evans farm in Multnomah county. The cold wind zoomed along at 27 miles per hour in the open but behind the windbreak it moved only 8-12 miles per hour.
More about Port-Orford-cedar. While there isn't much of it, the wood of Port-Orford finds uses similar to those of redcedar. You don't forget its long-lasting, spicy fragrance, which adds to its worth for lining clothes closets and making cedar chests.

The appearance of Port-Orford-cedar can be changed under cultivation. Nurserymen call this tree "Cypress" and have developed more than 100 ornamental varieties from the forest species.

What is Port-Orford's future? Such an attractive species will continue in use if the disease shadow doesn't darken; nevertheless, tree scientists recommend the use of other disease resistant native trees when possible. After infection trees apparently cannot be saved. They have been dying in scattered areas throughout western Oregon. It may help to protect Port-Orford if soil from elsewhere is not moved in where they are.
Incense-Cedar is plentiful in southern Oregon and it is easy to recognize. The cones are much different from the other cedars. Shown closed above, the cones, when they are open, look like Donald Duck's bill with his tongue sticking out.

Another distinctive feature of this cedar is its scale-leaves. They are much longer than they are wide. Our other cedars have leaves just about as wide as they are long.

A characteristic of incense-cedar is the peculiar way its very flat sprays are twisted. The whole tree looks as though it had been rumpled by the wind. Like the other Oregon cedars this tree has a stringy bark.

What incense-cedar is used for. A durable wood like redcedar, it serves in many of the same ways. But its value is less than Port-Orford or redcedar, and many incense-cedars have rot inside.
There are 6 true fir species (plus 1 variety) native to Oregon and they all look alike. It takes practice in comparing small details of their leaves, cones, coloring, and general shape to tell them apart.

All of our true firs have these characteristics:

- Cones grow erect on the topmost branches. If you see fat cylinders with blunt, round tops standing upright on these branches, it’s a true fir.
- Cones do not fall in one piece like the other conifers. They simply vanish into the air as their scales tumble off one by one when the seeds have ripened in the fall. The naked core of the cone remains standing on branches like a small, thin candle on a Christmas tree.
- Fir needles are stemless. When a needle drops off it leaves a tiny circular scar on the twig.
- Crowns of true firs are noticeably dense and pointed. They look like church spires in the woods. The subalpine fir is the sharpest, straightest tree spire in the world.
- Young stems have fragrant resin, or balsam, blisters.

W. A. Eliot, author of two books on Pacific Coast trees and birds, loves to share his knowledge of the out-of-doors.
Two kinds of fir are called white fir. The approved common name for one of them is grand fir. Even foresters sometimes have trouble telling the real white fir from the grand fir. Often they are so much alike the average person is satisfied to lump them together as white fir.

Grand fir, the one we see most often, is recognized by the foliage of the lowest branches. Needles here are arranged in 2 flat rows, as if they had been pressed in a book. The picture above shows such a branch of the grand fir.

One point to notice about the real white fir (sometimes called concolor fir, from the scientific name *Abies concolor*) is the way needles 2 and 3 inches long wave upward and spread out more or less uncontrolled. Needles of the other firs tend to be windswept in the same direction. Both white fir and grand fir have needles about twice as long as the other firs.

Grand fir needles are dark green above and white underneath. White fir needles are bright blue-green on all sides. Color, however, is a guide only to those who have made many observations and comparisons.
Grand fir needles have rounded tips, often notched. Usually they have a deep groove along the upper side. White fir needles are either rounded or pointed. Cut into white fir bark and you'll see a 2-color pattern not characteristic of grand fir.

**Popular Christmas tree.** Growers who have made plantings like both grand and white.

**Where the white firs grow.** The map shows the range of both white firs, but grand fir is the only one found at lower elevations, or in the Coast Range, or in the northern Cascades.

For most of us the helpful thing to remember is that grand fir is the only one of our true firs that comes into the valleys. White fir (concolor) ranges farther and requires less moisture than other western true firs. So it isn't surprising to find white fir out in the Steens Mountain country, where the antelope play. It and ponderosa pine are about the only trees reaching sawlog size there.

**Uses for white fir.** Lumbermen did not use much white fir in the past. But the demand for all kinds of timber has increased, and now white fir logs go to the sawmills. Older white firs tend to have defects that mean loss at the mill, but the lumber is good. White fir wood fiber makes excellent paper. The commercial future of these true firs seems to be in the direction of paper and hardboards.

**True firs and true friends.** The beautiful and fascinating true firs have little differences that set them apart from each other just as do your human friends' personal characteristics. The more you know about the characteristics of both types of friends the better pals they become.

Why do we call this group of trees "true" firs? As a matter of fact, everywhere else but here in the west these same trees are called balsam firs because of the tiny balsam pockets on the bark of young stems. We call them true firs to distinguish them from Douglas-fir.
One special label of the noble fir is the bracts that stick out between the scales of the cones. They cover the purple cone like so many green shingles—if a shingle can take the shape of a broad-based arrowhead.

Only one other Oregon true fir has cones with the protruding bracts—Shasta red fir. These two firs are practically twins. They are fairly well separated by their ranges, however. Both firs have cones much larger than those of other true firs—sometimes 8 inches long. You can spot the erect cones of the true firs, but to get your hands on a cone from this group so that you can examine it—well, that's a job for a squirrel. The cones do not fall to the ground, you remember. So it may not be easy for the inexperienced person to distinguish noble fir from its kin-trees.

If you can't get a cone, get a leaf. Noble fir's needles show certain differences to sharp eyes. They are short, stiff, and curve upward in a thick mass to make the twig look like a brush. With the brush goes a comb—the needles are spaced so regularly that from the undersides they appear as though they had been combed out. Now for a fine point: each needle runs parallel to the twig for about \( \frac{1}{8} \) inch before it curves away. Other true fir needles come out straight from the twig (except Shasta and California red firs, both limited to the southern Cascades).
Noble Fir Grows Tall

Where noble fir grows. Seen at medium to upper elevations the length of the Cascades (and on Mary's Peak); not common in southern Cascades.

More about noble fir. The largest and most valuable true fir, producing top quality lumber sometimes marketed as hemlock. David Douglas gave our true firs such admiring names as noble fir, lovely fir (or silver fir), grand fir, and magnifica (Latin name for red fir).

Shasta Red Fir

Shasta red fir—a variety of California red fir—is the true fir that is a dead ringer for noble fir. Yet you can tell them apart by examining a single needle. Shasta red fir needles have a ridge above, whereas each noble fir needle has a groove above. Shasta red fir grows on the high slopes and meadows of the Cascades, generally south of Lane and Deschutes counties. It grows on Wizard Island in Crater Lake. Red firs provide the famed "silvertips"—tops in Christmas trees.

The California red fir, mentioned above, does not have protruding bracts on the cones, as does her sister Shasta. We have mentioned that Shasta is a variety of California red. This means that the difference is not enough to deserve classification as a separate species. While it is more common in California, the California red fir straggles thinly only as far north as Crater Lake in Oregon.

Pacific Silver Fir

Pacific silver fir is fairly common in the northern Cascades and likely to be confused with noble fir. Know it by its range and the silvery white undersides of the needle. Tips of Pacific silver fir branches resemble the heavily furred paw of a cat or spaniel dog because of the way the dense needles point forward along the top of the twig. Branches shorten at high elevations to shed snow, so it resembles subalpine fir.

Subalpine Fir

Subalpine fir is very common, perhaps the most distinctive native tree in shape in the meadows and on the slopes of the high mountains. It is seldom found below 3,000 feet, and may be dwarfed near timberline. It's the only true fir having resin pockets within the bark.
MOST PEOPLE think the spruces, the Douglas-fir, and the true firs look alike. In a very general way they do. But look closer. Feel the needles. If you dropped from an airplane into the Northwest forest and felt tree foliage sticking you like pins, no need to wonder what tree it is. It would have to be spruce! Spruces have stiff, prickly needles, while the Douglas-fir and true firs have soft, pliable needle-leaves. Each spruce needle springs from a tiny woody pedestal; in fact this pedestal is one way of distinguishing the spruce. Spruce cones hang down from the branches like Douglas-fir—remember, the true fir cones stand up—but spruce cones don’t have Douglas’ pitchfork bracts. The scales of spruce cones, except Brewer spruce, are papery thin—another difference. And spruce bark is in scales. Douglas-fir and the true firs have ridged bark.
Sitka Spruce

Sitka spruce is rarely found native in the same range with Engelmann spruce. If the two trees did grow together, you could soon learn to tell them apart. Sitka needles are really “needles”—the stiffest and sharpest of any tree of our region. They bristle out in all directions like the quills of a startled porcupine.

Where Sitka grows. Sitka spruce is definitely a coast tree. Unlike most of our trees, it grows at higher elevations in northern Oregon than it does in the southern part of the state.

What Sitka spruce is used for. Sitka wood is said to be the strongest structural material in the world for its weight. During the war it was in great demand for making aircraft veneer. Sitka spruce serves best in such specialized uses, but no great amount of it is sawed into lumber. Of the paper-making woods, Sitka spruce and hemlock are kings, and most of the Sitka logs taken from the forest find their way to the paper mills.

Favorite of campers. The Sitka spruce is a favorite of campers in the wild. Tips of small limbs cut about 18 inches long, then piled evenly on the ground and covered with canvas, make the best bough beds.

Engelmann Spruce

A picture of the cones and needles of Engelmann spruce would show that they look like those of the Sitka spruce. Engelmann needles are mildly sharp, tend to curve towards the upper side of the twig, and are definitely 4-sided (Sitka needles flatter). And they often have an unpleasant odor when crushed. Engelmann spruce is a high mountain tree of the Cascades and the Blue Mountains. A height of 100 feet is pretty good for this tree. It is used for lumber and may see more use for pulp.

Engelmann spruce is tolerant. That means it will grow in the shade. That’s the reason you will find Engelmann spruces—little trees and big ones—closely mixed.

Brewer (Weeping) Spruce

Does this strange tree mourn because so few people ever push into the high solitudes of Josephine and Curry counties and glimpse its beauty? String-like branchlets 4 to 8 feet long hang down from its limbs. It’s a scarce tree, but you’d probably recognize it and be reminded of a weeping willow, or a very shaggy dog.
IN THE FALL of the year, the western larch is easier to recognize than an apple tree. Its needles turn a bright yellow and drop to the ground. After standing bare all winter, the larch blossoms out in new spring clothes of light green. No other western conifer has such a pale green; you can pick out larch as far away as colors can be told.

The larch’s habit of shedding its leaves is considered very odd behavior in the tree world. Most broadleaf trees, like maple and cottonwood, drop their leaves each year. But this larch is the only needle-leaf tree in Oregon that copies them. A second species, subalpine larch, is rumored growing high in the Wallowa and the Mt. Hood country. Any mountain climber who spies it will see a short, scraggy, storm-battered tree. Western larch is tall and straight. Notice its narrow crown, so open that every one of its short, horizontal limbs can be seen.

More about larch. The cones have single-pointed bracts that stick out like snake tongues. Western larch grows in the middle elevations of the areas shown on the map. The reddish bark on older trees is colorful like ponderosa pines.
Larch Is Different in Many Ways!

Needles in bundles. Like the pines, larch needles are bunched in clusters. There are 14 to 30 needles in each cluster—far more than any pine ever has. In fact there are so many needles in the larch clusters that they look something like old shaving brushes. The needles grow from little spur-like twigs. These spurs, like rows of tiny barrels, easily identify larch in winter.

What larch is used for. Western larch is one of the heaviest of the coniferous woods and is fairly durable in contact with the soil. Larch lumber is well-liked today, especially for general construction, and the tree continues to be valuable for posts, poles, mine timbers, and cross ties.

Shrubs That May Reach Tree Size

A plant that is usually a shrub may become a small tree under especially favorable conditions. By contrast, some trees may be held to shrub-size by extremes of cold, drought, or barren soil. So the division between trees and shrubs is anything but sharp. A U. S. Department of Agriculture text considers trees as “woody plants having one well-defined stem or trunk at least two inches in diameter at breast height, a more or less definitely formed crown of foliage, and a height of at least 10 feet. . . . Shrubs typically are the smaller woody plants, usually with several branches from the ground instead of one trunk.”

The following list includes some of the native shrubs in Oregon which sometimes, though rarely, grow to tree size. On page 69 you will find a discussion of others which more frequently become trees.

Manzanitas (Arctostaphylos)
Big sagebrush (Artemisia tridentata)
Sitka mountain-ash (Sorbus sitchensis)
Red-osier dogwood (Cornus stolonifera)
Western dogwood (Cornus occidentalis)
Snowbrush or sticky laurel (Ceanothus velutinus)
Tall Oregon grape (Mahonia aquifolium)
Redstem ceanothus (Ceanothus sanguineus)
Indian plum (Osmaronia cerasiformis)
Red-flowering currant (Ribes sanguineum)
Western Juniper

The Western Juniper is known by everyone who lives in eastern Oregon. It has a characteristic short, bushy shape, dark blue “berries”, and tiny scale-like needles. The needles are scratchy to the touch, and they are always dotted with resin.

Juniper berries are really cones that never open. They take two years to mature and have a whitish coating that can be rubbed off. The resin inside these berries has a strong, distinctive odor of its own.

Where juniper grows. In the “treeless” regions east of the Cascades you are seldom out of sight of the juniper. It touches endless miles of dry hills with a bit of color and life. The juniper polka-dots the landscape of eastern Oregon.

It’s an imitator. Juniper is one of our most interesting trees. Have you ever noticed how the juniper has no typical form like other trees? It assumes different forms, as though to impersonate other trees. The juniper’s color also makes it unusual and attractive.

If you are asked to name the trees in Oregon that grow oldest, think twice before you reply. The answer is: western juniper.
Juniper Is the Camel of Trees

More about juniper. The juniper is welcomed by man and wildlife, although stockmen complain that the trees are spreading in some areas and reducing their grazing land.

The juniper is the “camel” of our trees. It can live with less water in drier climates than any other Oregon tree. Where it has moisture, the juniper will grow more than 50 feet tall.

What juniper is used for. An excellent post wood, juniper is valued for its long life in the fence line. Birds and small animals feast on its berries. It takes years to mature. Large junipers are cut for novelty and cabinet manufacture and pencil stock.

This tree is often called Sierra juniper, but is listed as western juniper in the U.S. Forest Service Check List of native trees.

Other Oregon junipers. Four junipers are native to Oregon, but chances are you’ll see only the western. The other three are Rocky Mountain juniper, described below; common or dwarf juniper that grows like a matted vine on Cascade heights (and has also been found on the Coast); and the California juniper that laps over into Jackson County. Resembling western juniper, the California type has much larger “berries,” up to ½-inch diameter, and a deeply folded trunk.

Rocky Mountain Juniper

We know of one place where this common tree of the Rocky Mountains has strayed into Oregon. Oliver Matthews of Salem, Oregon’s leading tree explorer, believes it is found only in the Wallowa River Valley. See them along the road to Wallowa Lake.

Rocky Mountain juniper has a more pointed and narrow crown than western juniper. The latter usually has a blunt or broken top. Rocky Mountain juniper has squarish, 4-sided twigs. Western juniper has round twigs. Rocky Mountain juniper doesn’t have a resinous foliage; western juniper does.
THESE magnificent Pacific Coast giants are not generally regarded as Oregon trees. Yet they have a place in this book because of their meaning to the west. As the oldest and largest of living things, they are of interest to everybody.

The redwood belongs to Oregon as well as California. There are three fine groves of redwood located in Curry County.

The natural range of the giant sequoia, however, is limited to central California in the Sierra Nevada Mountains. Many of them have been planted as ornaments in the Northwest. At Forest Grove, Oregon, planted giant sequoias are now nearly 150 feet high.

Redwood and giant sequoias are closely related species. They are different species of sequoia just as lodgepole and ponderosa are different species of pine. Giant sequoia is also known as bigtree.
Giants of the Forest

How to know redwood. Redwood needles are two-ranked on the twig. They make a flat spray like fern or cedar boughs. Flat and stiff, the needles look like tiny bayonets. Redwood cones are barrel-shaped and scarcely an inch long.

How to know giant sequoia. Leaves are completely different from those of the redwood. Giant sequoia leaves are short, thick, and pointed—actually unlike any other of our coniferous trees. Cones are 2 to 3 inches long, at least twice as long as redwood cones.

If you stand off and study the difference between giant sequoia and the redwood, you will notice immediately that giant sequoia foliage is more bunched at the ends of the branches. The trunk, bark, and wood of the two trees are much the same.

Where redwood grows. In Oregon, redwood grows in the area marked on the map, and then southward for 500 miles on the Pacific slopes of the California coastal mountains. The redwood is a tree of the fog belt.

What redwood is used for. Redwood goes into millwork and products that require quality lumber. It is in special demand for ties, flumes, shingles, silos, and posts—uses where resistance to insects and rot is vitally important. Redwood forests are the fastest growing of any conifers in the United States. The redwood sprouts vigorously, something unusual for a conifer.

More about redwood. The tallest redwood on record was 375 feet. (A taller Douglas-fir has been recorded, but on the average, redwoods are the tallest of American trees.) Giant sequoia grows bigger around than redwood but does not grow as tall. It has been said that giant sequoia stands at the head of the whole plant kingdom—the largest and the oldest of all living things.

"Words hardly express the sense of awe and even reverence that arise as one stands in the presence of these mighty trees that were seedlings in almost prehistoric times. The dozens of great boles reaching skyward, the carpet of ferns touched by a light, dim even in the middle of the day, the feeling of littleness one has in such majestic surroundings—it is all a picture not to be forgotten soon."

—W. A. ELIOT, Forest Trees of the Pacific Coast
As you become better acquainted with trees, you will observe that they are much like people. The Pacific yew, for example, is not unlike some of the world's timid people. He likes to be inconspicuous. The yew is a retiring little fellow who likes the deep shade under larger trees, or seeks to hide himself in thickets and brush.

The yew is a small tree, usually not over 25 feet high. (Under certain conditions, yews will grow to 75 feet or more.) But because the yew grows mainly under other trees, we call it an under-tree.

Where the yew grows. The yew likes shady dells, stream banks, and moist flats at medium and low elevations.
Yew Wood played an important role in history.

The leaves of the yew are the key to its recognition. They are flat and shaped like a 2-edged bayonet. There is a resemblance to the redwood's needles, except yew needles have a threadlike stem. Redwood needles have a noticeable white bloom on their undersides.

Yew has a short, usually twisted trunk, and ragged indefinite shape. Its sprawling branches just grope around in the shadows. The reddish purple bark may catch your eye, though. The bark is rough, scaly, and very thin.

What yew is used for. Yews of other lands furnished bows for ancient armies and our tough, springy Pacific yew is prized for bow-making today. The wood has a pretty rose-red color and is in demand for cabinet work. Yew is one of our most durable woods in contact with the soil, so is an outstanding fence post.

Exception to the rule. We classify the yew as a coniferous tree but it is an exception to the cone-bearing rule. Instead of a cone it has a sweetish, fleshy fruit that looks like a big red huckleberry with a hole in the end. Birds go for it. Botanists call it an aril.

The yew has male and female flowers on separate trees. If one tree is off by itself, pollination may not be possible and no seed will be produced. All conifers except yew and juniper have male and female flowers on the same tree and pollinate themselves.

Yew is believed to have the darkest green of any evergreen needles, and is planted ornamentally.
Western Hemlock

Mother Nature put a waving banner at the very top of the western hemlock to make the identification of this tree easy. The leader, or topmost twig, droops over like the end of a buggy whip. If you’ve never seen a buggy whip ask your father or grandfather. All the other trees that resemble the hemlock have erect leaders.

Hemlock has flatter, thinner needles than any other conifer. And hemlock needles are blunt—as blunt as the end of your finger.

There are two kinds of hemlock needles on the twig—long ones and short ones. The long needles are lined up in separate rows on two sides of the twig. The short ones have their own disorderly rows along the top of the twig. The tall soldiers and the short soldiers are not in step with each other. Examine a hemlock twig and you’ll see this peculiarity at once.

Hemlock cones along with redwood’s are the smallest of any borne by our needle-leaf trees. They are an inch or less in length.
The Cinderella Tree

What hemlock is used for. Hemlock can be called the "Cinderella tree." As late as the 1930's lumbermen said the hemlock wasn't worth cutting. The fast growing paper industry has changed all that.

Hemlock makes fine quality pulp and paper, and it is now in demand for making rayon. Hemlock makes good lumber and its bark is rich in tannin.

More about hemlock. Among the most tolerant of our trees, hemlock seedlings are able to come up under other trees and up through brush and weeds. The trees grow close together and they grow fast—so the hemlock makes an excellent crop for the tree farmer.

Hemlock stands suggest a grave and thoughtful mood. In draws and shaded glens the trees stand close together and shut out the light.

This is the forest primeval
The murmuring pine and the hemlocks . . .
. . . stand like Druids of old
with voices sad and prophetic
—Longfellow

Mountain Hemlock

Mountain hemlock is the one other hemlock found in Oregon. It is a tree of the high Cascades, often found at timberline braving the fury of mountain storms. Generally it grows above the range of its brother, western hemlock, but not always. You can see it is a "star spangled" tree, for needles are clustered at the ends of shoots to give the impression of stars.

Mountain hemlock needles stand out from all sides of the twig, unlike the two-ranked needles of western hemlock. Mountain hemlock needles are not flat like those of the western hemlock, and its cones are usually two or three times as long. But it has a droopy leader like western hemlock. Foresters do not have to remember these details. They recognize mountain hemlock by its pretty foliage.
The Alders
—they are the most common broadleaf trees in Oregon.

THE ALDERS like moist surroundings and there are few creeks in western Oregon not overhung by them. Their peculiar woody cones identify the alders almost as surely as a flat tail identifies a beaver.

Oregon has four alders. Leaf traits help in identification where their ranges overlap. Incidentally, alder leaves are shed while still green. Alders add nitrogen to the soil in the manner of legumes.

The large, abundant red alder is commercially important. It grows fast in rich moist soil. But foresters must fight it as a weed on hills where it prevents restocking of the more valuable conifers. The wood is valued for furniture, papermaking, cabinet work, paneling, and woodenware. Its wonderful machinability makes it ideal material for toys and hundreds of novelties.
Alders: Red, White, Sitka, and Thinleaf

Red Alder outnumbers all the other broadleaf trees in western Oregon and is our most important hardwood. To identify red alder, look at its leaf. The edges are slightly rolled under and they are notched or toothed in their own peculiar way—large and blunt. Other alders have spear-pointed, fine teeth.

Red alder has a gray-white trunk with black patches. It looks like a white post that a boy with muddy hands and feet might have tried to climb. You can see and recognize this trunk from a distance. Young stems may have dark bark, however.

Where red alder grows. Red alder especially likes the hills in the fog belt near the sea. In such locations it will climb slopes for some distance in solid thickets. It is an aggressive seeder.

Where red alder gets its name. The sapwood of red alder takes on a reddish stain when freshly cut. Young Indian bucks used to play sick by chewing the inner bark because the juice colors saliva as red as blood.

White Alder is very much like red alder, except usually smaller, and many people do not think of it as a different tree. White alder has brown bark that usually becomes scaly near the ground on older trees. The leaves and bark identify it. Leaves are finely and sharply single-toothed but are wavy-edged so that some edges come close to being double-toothed. Edges don’t have the rolled-under tendency of red alder.

Sitka Alder is not a common tree but it can be found above 3,000 feet elevations. It likes moist places, often forms dense thickets, and is more often a shrub than a tree. Seeds have thin gauze-like wings, whereas the other alder seeds lack definite wings. Its leaves resemble those of mountain alder, but have finer teeth, in fact, almost a feathery leaf margin.

Thinleaf (Mountain) Alder is another high mountain tree and quite similar to Sitka alder. Growing near streams and other wet ground, this abundant alder of eastern Oregon woods seeks light and is more likely to be in pure clumps than in mixture with other species. Leaves are double-toothed, coarse—not fine like Sitka. Bent leaf stems are characteristic.
Bigleaf Maple

THREE MAPLES are native to Oregon: bigleaf, vine, and Rocky Mountain maple. All of them have winged seeds attached in pairs. These pairs of seeds are called "keys" by botanists, and they are indeed the keys to the identity of the maples.

THE "KEY" TO MAPLE.

Bigleaf maple gets its name from the size of its leaves. They are usually 6-12 inches in diameter but can stretch to 15 inches on occasion. Along with its big leaves, bigleaf maple has an extra long leaf stem. Its seeds are big too. The seed pairs, or keys, are attached like Siamese twins and form a V. They are about 2 inches long. Unlike other maples the seed cover is hairy.

Like an open hand. The leaf of the bigleaf maple resembles a human hand with the fingers outspread. The leaf has 5 lobes; the hand has 5 fingers.

Where bigleaf maple grows. One of the more common broadleaf trees of western Oregon, bigleaf prefers rich moist soil in the valleys and foothills. A forest grown tree may develop a surprisingly long, clear trunk. The open-grown bigleaf looks entirely different, spreading out like an enormous bush.
Oregon's Favorite Shade Tree

Uses for bigleaf maple. Bigleaf maple is probably the most common shade tree in western Oregon. You will see it spreading a carpet of shade over parks and schoolyards and nestling over backyards like a broody hen. Its wood makes some of the most handsome furniture produced in the west. Furniture makers keep their eyes open for the prized figured woods such as the quilted and curly grains in maple wood. Burls are prized for veneer-making. Most of them go to Italy and France to be worked by skilled craftsmen. We have learned that bigleaf makes nice flooring. Experimenters have found this tree will produce maple syrup, but our springs lack the cold nights and warm days that stimulate the heavy sap flow that is necessary.

This tree produces huge crops of seed, and you will often see squirrels, birds, and other small creatures enjoying a picnic beneath a bigleaf maple.

Rocky Mountain (Dwarf) Maple

It's easy to know Oregon's three maples. This one's leaf is different. Just remember the small maple leaf with three main points. Think of the emblem of Canada—a maple leaf of this same shape. (It's on the Canadian penny.) To this little fellow 20 feet is pretty tall. After all he's a "dwarf."

Usually this tree (or shrub) forms a clump of slender stems, with up-pointing branches. It is also called dwarf maple. Some plant students recognize more than one variety, because the leaf shape differs now and then. They consider the Oregon variety Douglas maple.

Where does it grow? The dwarf maple is said to grow in the whole wooded portion of the state. But it is hard to find in the Coast Range and some other areas. One good place to see it is along roads in the higher country of southern Oregon. It seems to like rocky places, canyon walls, and mountain creeks, yet often hides here and there in the deep woods.
Vine Maple has a leaf that makes it easy to identify this star-spangled tree. Its seed wings take the shape of a canoe, its leaf is a pinwheel, and some stems are like vines. No other tree or shrub in the Northwest woods equals its glowing fall colors. This half shrub, half tree is always wearing something red—red leaves, twigs and shoots, and reddish seed wings.

Where vine maple grows. Look for vine maple as an understory tree or shrub. A very tolerant tree, it survives heavy shade. You seldom see one taller than 25 feet, or standing erect with a straight trunk. When timber trees are logged, presto—vine maple may completely occupy the best tree-growing land.

Octopus of the brush. In heavy shade the vine maple will have its long, crooked stems creeping over the ground in search of light. Limbs occasionally root where they touch the ground. To Northwest woodsmen, there is no obstacle course like a vine maple thicket. Over a century ago French-Canadian trappers called it “devil wood.” But woodsmen use vine maple for pot hooks, reflectors, and cooking sticks. It won’t burn when green.
**Black (Douglas) Hawthorn**

The Hawthorns are a very large and confusing group, but Oregon has only one native species that is widespread—black, or Douglas hawthorn, also known as black haw. This hawthorn is found along fence rows, on the edges of fields and roads, and in open places in woodlots. In eastern Oregon it follows the creeks out into the dry country, mixing with other small trees. It likes moist locations; it may be a small tree, or a shrub in thickets.

The black hawthorn can be identified by its strong thorns and by the toothed leaves that sometimes start to divide into lobes. It has white blooms and clusters of fruit like little black olives. About the only other native tree with which it might be confused is the Oregon crab apple.

The Columbia hawthorn, found in northern Oregon east of the Cascades, has thorns twice as long as the black type, and produces a red fruit.

**Oregon Crab Apple**

All of the cultivated apples were developed from small, bushy trees known as wild apples or crab apples. Oregon crab apple is the only apple native to the Pacific Coast. We have it only in western Oregon. It is common in coastal thickets, and it likes fence rows and edges of woods.

Oregon crab apple would be a snap to identify except for the black hawthorn. Both look alike, but black haw goes east of the mountains and crab apple doesn't. Distinguish these two by the needle-like thorns of the haw; crab apple has sharp spurs—but nothing you could call a true thorn. The crab apple leaf varies—sometimes has shallow lobes, other times not. The crab has ⅛-inch pinkish “cherries,” that are edible but sharp tasting. The flowers, of course, are apple blossoms.
OREGON has three oaks of tree size and the tanoak, a tree that is almost an oak. They all live west of the Cascades except for a few white oaks that somehow popped up on the eastern slopes of Mount Hood.

The only native oak found north of Eugene is the Oregon white oak.

Acorn goes with the oak like “quack” with “duck.” If the tree has an acorn, it’s an oak—or a tanoak. After you know the tree you’re looking at is an oak, you can tell by its leaf which species it is.

The oaks are divided into two classes: white oaks and black or red oaks. White oaks have leaves with rounded lobes; black oaks have spine-tipped leaves. Black oak wood is less resistant to decay than white oak. The pith (center) in oak twigs is star-shaped.

The lion stands for courage, and the oaks stand for strength. Oaks have a world-wide reputation for physical sturdiness because of their powerfully built trunks and limbs.

Southwestern Oregon has four other oaks so rare you’ll probably never see one. The Brewer oak, a variety of white oak, the Sadler oak, and the huckleberry oak, known by its huckleberry-like leaves, are shrubs only. The oracle oak may get to be a low tree.
Oregon White Oak

Oregon white oak can be recognized by its shape. In the Willamette Valley where this tree is common on the low hills, open-grown white oaks have a "trimmed" look, especially in winter. Landscape artists are fond of depicting the sturdy, spreading white oak. It closely resembles the white oak of eastern America, a species likely to be chosen America's favorite tree. It resembles also that king of European oaks, historic English oak.

A fighting tree. Dr. W. F. McCulloch of the Oregon State College School of Forestry calls the Oregon oak a tough, fighting tree. "Saw down (with much perspiration) an Oregon oak," he says. "Buck it up (more perspiration) into short lengths. Then attempt to chop it. The wood will spit the axe right back at you. That's how tough it is!"

On dry hills, where it is often seen, white oak is short and scrubby. But on good bottom land it ordinarily grows 60 feet high and higher, with a great, wide crown. Handsome groves of white oak are found in the Willamette Valley but two southern counties, Douglas and Josephine, have more than half of the timber-size white oak in Oregon.

You can recognize it. No other oaks in the Northwest have rounded lobes. Some white oak leaves are mildly pointed as our picture shows, but not spine tipped.

Garry oak is another common name for this tree. Because Nicholas Garry, secretary of the Hudson's Bay Company, helped botanist Douglas, his name is remembered.

More use is coming. Fine flooring, shipbuilding, crossties, and charcoal are bigger uses seen for Oregon white oaks. The seasoning process takes an extra step or two, but it has good hardwood qualities. It is used for tool handles, wedges, ladder stocks, and various small articles. A heartwood post near Eugene served 100 years, believe it or not. As a fuel white oak is unsurpassed. It burns clean and makes a lasting fire.

All kinds of woodland creatures eat white oak acorns. Indians gathered them for food. The leaves have a protein content almost equal to alfalfa hay and are browsed by livestock, mule deer, and other animals. After a disastrous snowfall in 1880, Willamette Valley settlers saved many of their cattle by feeding them white oak twigs and bark.
California Black Oak

California Black Oak has a thin leaf with spiked points. For a broadleaf this tree grows large—up to 85 feet high with a trunk 40 inches in diameter. You will find it in dry locations. Its foliage is shiny and dark green. California black oak seldom grows straight, but leans like a sailor who hasn’t found his “land legs.” The name refers to its very dark bark.

The black oak acorn looks like the head of a little man from the frozen North with a thick fur cap pulled down over his ears. The Oregon white oak acorn, on the other hand, shows more of the “face”—it wears a little beret. An interesting but sometimes confusing fact about acorns: They are not all alike even on the same tree. White oak acorns mature in 1 year, blacks in 2 years.

The California woodpecker does a curious thing to this tree. He drills holes in the bark just right to hold the acorns, and hammers in the acorns. Many such “food lockers” are seen in Jackson county.

As a group, black oaks like the sun and like to live where it is warm and dry. Black oak appears more frequently as you near California. Douglas, Josephine, and Jackson counties contain nearly all the black oaks in Oregon.

Uses of black oak. Today the black oak is used principally for fuelwood. But it has possibilities for use as flooring, furniture, hardware, and various other products. Like the black oaks in general, California black oak trees tend to develop rot with age.
Canyon Live Oak

CANYON LIVE OAK has a split personality. Two kinds of leaves grow on the same tree and both kinds are small. One leaf looks very much like holly. The other leaf has a smooth edge or it may have several points along the edge that look slightly misplaced. The younger the tree, the more holly-like leaves it will have.

This tree’s name tells us something important about it. Live oak refers to an oak that is evergreen—it stays green all winter. Canyon refers to the place where this oak is most often found—it likes to grow along canyon sides and bottoms.

Canyon live oak has soft, scaly bark like Oregon white oak, but it is a red oak just the same.

Along canyon bottoms or other places where it has room to grow, canyon live oak reaches 80 feet in height. Like most other trees, it assumes a shape according to the space it has to grow in. At times this tree is unusually stubby with a wide-spreading crown. There are enough sawtimber-size trees to form a modest commercial stand, mostly in Josephine County. Having lost its former usages for wagon parts and farm implements, the heavy, tough wood may find a use in specialty products.
TANOAK has an acorn that's really different. Bristles stick out around the cup. Mature leaves of the tanoak are thick and leathery, with shallow creases like a washboard road. The leaf margins have teeth, although not very prominent ones.

Look closely. To identify this species remember the feel and the shape of its evergreen leaf: leathery, fuzzy, and bluntly pointed. Tanoak resembles chinkapin when both trees are covered with their striking white flowers. But the chinkapin leaf, with its smooth margins and a conspicuous yellow coating underneath, is readily distinguished.

The tanoak is not a true oak species, but it is closely related. It likes moisture and is found only on the Pacific slope of the Coast Range. Shrub forms go high into the Siskiyou mountains.

Curry has the tanoaks. Curry County has almost 2 billion feet of tanoak sawtimber. Many trees are 2 to 3 feet in diameter. Little commercial use has been developed for all this oak timber. The Oregon Forest Products Laboratory says this oak makes excellent furniture, flooring, and hardwood plywood, and looks good for shipbuilding.

Tanoak, the name tells us, once tanned hides (but always lost its own hide). Countless trees were peeled to extract tannin from the bark. The leather industry now gets tanning materials more cheaply elsewhere.
Golden Chinkapin

CHINKAPIN has a spiny burr that you won't confuse with the fruit of any other tree. The burrs contain yellowish brown nuts that are good to eat.

Golden chinkapin. The name means something because chinkapin's leaves are coated with golden yellow fuzz underneath. It's so distinctive you'll know it when you see it. The leaves are evergreen, leathery, 2 to 4 inches long, and tapered at both ends. The creamy, white flowers last late in the summer, covering the foliage like a snowfall. They appeal to the eye more than to the nose.

Chinkapin, a tree of California and Oregon, occurs over most of western Oregon below 4,500 feet, and at points on the east slopes of the Cascades. In northwest Oregon and in high country it is a low shrub. In our southwest corner, especially in Douglas County, trees 80 to 100 feet high and up to 4 feet in diameter are found. Looking like ornamentals, the shiny, dense, pyramids of chinkapin stand out on forested hills, especially when many other broadleaves are bare.

Other features. Chinkapin has excellent qualities for furniture making and for hardwood plywood. We can't expect any sizeable industry to develop because the timber-size trees aren't abundant enough. Some Oregon boat builders prefer this wood because of its durability and bending qualities.
The Willows

Six native willows attain tree size, and there are several other willows in the shrub class. All of the willows resemble each other in so many ways that only a botanist can tell them apart. On the other hand, young willows even in the same species will not resemble each other at all times.

Graceful leaves. As a group the willows have features that set them off from the other broadleaves. Most have slim, gracefully pointed leaves. When an artist draws candle flames for Christmas cards, he often shapes them like willow leaves. His flames curve slightly—just like many willow leaves.

Willows have tiny, ear-shaped growths (or false leaves) at the bottom of each leaf stem. Most species have these only in the spring or early summer. Flower buds opening in late winter reveal the universally known “pussy willows.” Willows can be distinguished from other trees, during the proper season, by their winter buds that are covered by a single cap-like scale, or hood.

Willow bark has a bitter taste, and willow fruits, like those of the poplars, consist of capsules strung out on a stem. Each capsule contains tiny cotton-covered seeds.

They love water. Most willows love moist ground. They stand water as well as any tree in Oregon, and even grow well on poorly drained land. We observe east of the Cascades that willow proves useful because of its alkali tolerance.

Willows have great vitality. They grow persistently from cut stumps, and they sprout easily from pieces of branch or root. Furniture and baskets are made from willow sprouts or rods produced in one season. These annual shoots have great strength and flexibility. Older branches, on the other hand, break easily. Even-burning willow is sought by woodsmen for campfires and camp stoves, and dead trees are usually available.
Scouler (Mountain) Willow

The abundant Scouler willow is named after the Scotch naturalist and physician, John Scouler. It is also known as mountain willow, because it grows in high mountains as well as at low elevations. Still another name is fire willow, from its habit of springing up in burned areas.

Leaves are one-third as wide as they are long and tend to be oval or football-shaped. This willow often grows like a forest tree, standing erect and unforked, and moving into the deep woods. It may reach 40 to 50 feet in height.

Pacific (Black) Willow

Pacific willow and the Scouler willow seem to be the most common willows in western Oregon. Both may also be found east of the Cascades. Pacific willow is a black-barked tree clustering around wet places. Usually 20 to 30 feet high, it can reach 60 feet and a 24-inch diameter. The slim, pointed leaves have a curving, off-center twist. Other names are yellow willow, and black willow.

Peachleaf Willow

Peachleaf willow is said to be the only large willow common in the drier parts of eastern Oregon. And that’s about the only place you’ll see it in this state—along the streams and around farm homes. The long, drooping branchlets give it a weeping appearance. Leaves have the pointed, candle-flame shape.

Other Willows

Among other Oregon willows that can be classified are small sandbar willows along our rivers. They stand a lot of flooding and may reclaim sandbars. Sometimes their narrow leaves are hardly wider than a fountain pen. The pea-green color is a feature worth noting. The Hooker, or beach willow along our coast has leaves one-half as wide as long. The silky willow of western Oregon also has the wider leaves, many being pear shaped.
The Poplars---
Members of the Willow Family

Now we have a problem in names. Poplar is a broad name that takes in all the species of the genus *Populus* (or the branch of the willow family known as *Populus*).

The black cottonwood, or northern black cottonwood, is the principal poplar native to Oregon. The only other native poplar (except the rare narrow-leaf cottonwood of the Steen’s Mountain area) is the aspen.

**Introduced poplars.** We have well-known introduced poplars. The Lombardy poplar, like an upraised finger on the landscape gets your attention anywhere. It is a variety of the black poplar, a native of Europe. The eastern cottonwood and the Carolina poplar are from the eastern United States. Their leaves are broad triangles like the historic pyramids with conspicuous teeth suggesting steps for climbing the pyramid. The white poplar from Europe and western Asia is known by its small maple-like leaf undercoated with a snow-white down. Silver poplar is a variety seen in Oregon. Another variety is the Bolleana, a sort of little brother of the graceful Lombardy.

Male trees are selected for shade and landscaping to avoid the unsightly “cotton” showered all over the place by female trees.
Black Cottonwood
---a Friend of the Pioneers

Know the black cottonwood by its leaf, one of the most graceful of all leaves. It tapers like a slim pear and has finely toothed edges. The leaves flash their silvery-white undersides when stirred by the wind—something you can notice from a distance. There is perfume all around when the long, shiny buds open. They are coated with a sweet-smelling balsam that is responsible for local names of “balm” or “bam.”

The taller broadleaves lining western Oregon rivers are usually this species. It is the tallest western broadleaf tree—giants 7 feet thick and 200 feet high were known in the Columbia river flats. Black cottonwood is also a familiar tree along streams east of the Cascades.

Along the Oregon trail. To pioneers on the old Oregon trail the cottonwood was a most important tree. For nearly 1,000 miles of their journey it was the only shade tree to be found. Cottonwoods still help to make prairie farms and villages attractive. In western Oregon the cottonwood is used commercially for paper making, plywood, and excelsior manufacture.

Facts About Poplars

- Their leaves have a shape like the outline of a top, or a pear. They like to flutter.
- Their leaves turn a clear yellow in autumn, leaving projecting leaf scars that gives twigs a knotty appearance.
- Poplars have a bitter bark and a light, soft wood. They are fast-growing and moisture-loving.
- Male and female flowers are each borne on separate trees.
- The flowers are long catkins that hang down from the twigs. When fertilized by insects the female flowers develop tiny capsule fruits strung out on the stem like a little necklace.
- The capsules split open and fill the air with “cotton”—tiny seeds covered with long, white hairs.

How to grow a poplar. Like willow, it can be grown from a fresh, green twig stuck into moist ground with buds upright. Take a 16-20 inch switch from a young branch or shoot.
Quaking Aspen

Aspen grows in more states than any other tree, but we find it only in scattered areas in Oregon. You're more likely to see it east of the Cascades, in openings or around the edge of the woods.

The only tree known by the way it moves, aspen can be distinguished by its chalky-white trunk with the black bumps. But the leaf has the gimmick that identifies aspen—a ribbon-shaped, flexible leaf stem that is flattened at right angles to the leaf blade (see the photograph above). The slightest breath of wind sets the leaves to dancing. The names trembling aspen and quaking aspen have followed this tree from Arizona to Alaska and to the Atlantic Ocean.

Important to wildlife. Although bitter as quinine to our taste, the inner bark of aspen is the beaver's favorite food. He stores aspen cuttings for winter meals. Many other animals eat the bark and buds; large animals, including livestock, browse the shoots and sprouts.
OREGON ASH has two features seldom associated with our broadleaf trees: A compound leaf and opposite branching. (See page 8). Its compound leaf usually has 5 to 7 leaflets. Some woodsmen consider it good luck to find an ash leaf with an even number of leaflets—like finding a 4-leaf clover.

**Fruit, bark, size.** An easy way to identify the ash is by its fruit, called a samara. The seed with its wing is shaped just like a canoe paddle. Ash bark is criss-crossed with ridges and resembles a closely woven net. The tree grows as large as the white oak and in some locations will reach 70 to 80 feet high. It likes the plentiful moisture of stream banks, sloughs, and rich lowlands.

**Sportsman’s wood.** Ash is the sportsman’s wood. Baseball bats, oars, arrows, skis, and many other kinds of sports goods are made from eastern ash. Oregon ash has a similar wood, now used principally for furniture, handles, and oars. It will make beautiful and serviceable flooring.

Look at an axe handle or baseball bat and you will notice the wood rings are wide. Wide rings indicate growth during youth. Ash wood of this sort is stronger than that from narrow-ring wood and is preferred for the manufacture of sports equipment and tools.
Oregon-myrtle
(California-laurel)

Oregon-myrtle is marked by three characteristics: The odor of its leaves, its olive-shaped fruit, and its densely matted foliage. When bruised, myrtle leaves give off a powerful scent of camphor. If inhaled deeply it pains the sinuses. To overcome chill, Hudson’s Bay Company trappers made a comforting tea from myrtle leaves.

Myrtle often grows in the shape of a big pincushion when out in the open. It seems to hunch itself into a ball for protection against the wind. But in the forest myrtle grows straight and tall, Oregon-myrtle can be a big tree with a trunk 5 feet through, but most mature trees are about 2 feet in diameter at breast height. It is another of our evergreen broadleaves like madrone and chinkapin.

What’s in a name? On the north side of the Oregon-California state line this tree is always called Oregon-myrtle. On the south side of the line no one would think of calling it anything but California-laurel.

Actually the tree is not a myrtle (Myrtaceae family) nor even a true laurel (laurus genus) but it is included in the laurel family (Lauraceae). It’s the only species of its genus in the west. From the true laurel of southern Europe, (Laurus nobilis) the Greeks made crowns to signify victory and honor.
A famous wood. California-laurel is the approved common name, but the tree is in business to stay as Oregon-myrtle, or “myrtlewood.” It is a marvelous wood for carving, one that is beautiful, easily worked with tools, and polishes like marble. Dozens of small woodworking shops in southwestern Oregon turn out bowls, trays, and other products.

Finished myrtlewood is the highest priced of western hardwoods. The big celebration in 1876 marking completion of the first transcontinental railroad tells us something about the fame of this distinctive wood. The golden spike was driven into a tie of myrtlewood.

Water (Red) Birch

Water or red birch is a slender, graceful tree with shiny, copper-brown bark. Its leaf is rather round and has a sawtooth edge—not unlike a circular buzz saw. Its cones look like fat caterpillars and fall during the summer scattering their tiny, two-winged seeds.

The most widely known birches have white, papery bark. But not the red birch. Its copper colored bark is distinctive. Young twigs are green and covered with shiny dots of resin. Remember this small tree is the only birch to be seen in Oregon—except rarely in the northeast corner of the state where the northwestern paper birch is found. The paper birch, a northerly tree, has leaves more pear shaped than round and a layer-type bark. It can be seen along the Minam River.
THE WORD "cascara" means "bark" in Spanish. The name probably came from the early Spanish explorers who learned of the medicinal properties from California Indians. Cascara bark contains a powerful drug that is used to make laxatives and tonics. The Northwest alone produces the entire world supply. To meet this demand an estimated four to five million pounds of cascara bark are collected every year. A tree 6 inches in diameter at breast height will produce 12 to 15 pounds of bark, dry weight—enough to furnish one dose each to more than 2000 people.

Cascara Buckthorn

ONE DETAIL will identify the cascara buckthorn—its naked buds. Other tree buds have an armor of close-fitting scales, but cascara’s are shielded only by a fuzz of rusty brown hairs. The oblong leaf is also distinctive. Feel the veins—they stick out like the ribs of a boat. Grouse, raccoons, and other wildlife take the cherry-like fruits before we see much of them. Green or red at first, they ripen to a blue-black color. The hard seed inside is not digested and birds serve to scatter them beside roads and fields, and along fence rows. Cascara has a smooth gray bark resembling young alder.

An understory tree. Cascara likes moist locations and is partial to deep shade. It mixes with the maples and red alder in western Oregon, and reaches a height of 20 to 40 feet under the better moisture conditions—if it has escaped the bark peelers.

Cascara conservation. Cascara sprouts vigorously when cut, if the stump is not peeled. Bark peelers, therefore, will perpetuate their business by cutting down the tree before stripping it, so that the stump is not peeled.
Bud, flower, and fruit all aid in identifying it.

Pacific Serviceberry

Pacific serviceberry is found throughout Oregon growing on all kinds of ground, from moist lowlands of western Oregon to dry mountain slopes east of the Cascades. In drier sections serviceberry is likely to be found wherever there is enough moisture. Its wide occurrence is one reason for including it in this booklet. It may reach 30 feet in height, but it is most commonly found in shrubby form and often in thickets.

Indians dried and packed the berries for winter use and also pounded them with meat to make pemmican. Bears are especially fond of serviceberries—but so are other mammals and birds. Serviceberry is good browse for livestock and game animals. A second species, the Saskatoon serviceberry, is quite similar to Pacific serviceberry and generally shrubby.

How to know it

- It unfailingly draws attention in early spring with one of the earliest flower shows seen in our woods. It puts out dense clusters of snowy-white flowers.
- The fruits are really miniature apples about the size of large huckleberries. They are red to black according to ripeness and, like apples, are marked on top by remains of the flowers.
- The best identification is the small, roundish leaf with the upper half saw-toothed.
- Even the bud helps in identification; it has prominent scales and is pointed almost like a thorn.
Pacific Madrone

A botanist who accompanied the explorer George Vancouver to British Columbia in 1792 first described the Pacific madrone in these words: “Its peculiar smooth bark of a reddish brown color will at all times attract the notice of the most superficial observer.”

Success story coming up? Madrone wood has been used very little. The tree occurs in a coastal belt 75 to 100 miles wide. There are large trees in southwestern Oregon, perhaps \( \frac{1}{2} \) billion feet of sawtimber size. The Oregon Forest Products Laboratory says few hardwoods anywhere in the world have the qualities of its wood. Attractive cherry color, good machining, fine grain, a handsomely figured veneer—all make it suitable for furniture, flooring, and novelties.

Upper stems, limbs, and twigs of madrone have bright reddish colors that quickly identify it, even from a distance. The species is just as easily spotted by the way its bark is always peeling.

It is sometimes said that madrone sheds its bark instead of its leaves although the leaves are shed, too, along about the middle of their second summer. Madrone is an evergreen related to the rhododendron and has the same kind of thick, leathery leaves. Clusters of orange-red berries appear in the fall, each like a tiny orange. Birds feast on them.

This tree is most interesting for its handsome appearance. It is often transplanted to gardens and parks.
Elders, or Elderberries, are small trees or shrubs usually 10 to 20 feet high, growing in clumps of several stems. When conditions favor it, individuals may reach 30 feet or even higher. Elders are easily recognized in the leafy season by the compound leaves, by brightly colored berries, or by the flowers.

The blueberry elder or blue elderberry, grows throughout the state and has these characteristics:
- Prefers to grow in the open—a very definite trait.
- Frequent forest openings, fields, and roadsides.
- Blooms all summer long; has fragrant, large, flat-topped flower clusters of creamy-white color.
- Has for fruit, bunches of blue berries with white coating.
- Eaten regularly by Indians; sometimes made into “huckleberry” pies or into jellies—not tasty.

Pacific Red (Redberry) Elder

The redberry elder grows west of the Cascades only and abundantly along the coast. It has these characteristics:
- Prefers shade.
- Has yellow-white flowers in rounded or pyramidal bunches.
- Blooms in spring; not through summer.
- Has fruits much like grapes, sporting one of the finest reds ever seen in any forest—definitely not edible.

A third elder, the blackhead elder, seldom reaches the 10-foot height entitling it to be called a tree. It grows in eastern Oregon, generally at higher levels and has black berries.
**Wild Cherries**

Oregon's wild cherries have the same shiny brown twigs and narrow leaves you associate with domestic cherry trees. Indians would polish strips of cherry bark to a rich red to brighten their basketry. Bark of all cherries has a bitter taste. All our species tend to be shrubby and thicket-forming in the drier country. The bountiful white flowers are guaranteed to catch the eye.

**Bitter Cherry.** You find bitter cherry throughout Oregon, but more commonly west of the Cascades. In our rain forests it may grow to small log size.

**Common Chokecherry.** Common chokecherry is occasionally found in western Oregon and is all over eastern Oregon. The tree student must look closely to tell it from bitter cherry. You look for these features:

- Chokecherries grow in long bunches like grapes. Bitter cherries are borne in small clusters along the branches. (See the pictures).
- Chokecherry has two tiny nodules or glands on the leaf stem. Bitter cherry has the two projections on the base of the leaf blade, although just barely so.
- Chokecherry has a scaly bark. Bitter cherry has a smooth bark. Fruits of bitter cherry are not edible, but chokecherries were much eaten by Indians. While absorbed in eating chokecherries the Indian woman Sacajawea was captured by another tribe and taken east where Lewis and Clark found her.

**Klamath Plum.** The Klamath plum of Klamath and Lake Counties is our third wild cherry. Superb, tart preserves are made from its inch-long fruit. The big plum identifies the species.
Curlleaf Cercocarpus

The Mountain mahogany (curlleaf cercocarpus) of eastern Oregon and the southern Cascades has a silky streamer 2 or 3 inches long attached to its fruit, so recognition is easy when these are present. Tiny evergreen leaves with margins curled under are proof positive the year around and make identification easy, besides giving curlleaf its name. Mountain-mahogany lives among the hottest, roughest, and driest exposures of eastern Oregon, occupying places too rocky for almost any other tree.

Facts about curlleaf

- **Form:** Usually twisted and unshapely because of its struggles with forces of nature, including browsing animals. Twigs are stiff, almost thornlike. Leaves have a resinous odor.
- **Fruit:** A hard little seed with a feathery tail.
- **Wood:** Beautiful mahogany color, taking a high polish, very hard; so heavy it won't float; a wonderful fuel.

Birchleaf mountain-mahogany. In the southwest Cascades and Siskiyou Mountains grows the birchleaf mountain-mahogany. It is very much like the related curlleaf in size and habits but differs in having a toothed leaf, resembling an undersized alder, or birch leaf. The tails are white.
Pacific Dogwood

No one will mistake a Pacific dogwood during the flowering season because it has the most brilliant white blooms in our forests. Dogwood flowers are small and inconspicuous but they have large petal-like scales, or bracts. Four to six of these showy white bracts surround each button-like cluster of tiny greenish-yellow flowers.

A dogwood leaf, like the flower, is also unmistakable. Its veins curve to follow the outline of the leaf—a pattern suggesting circles inside of circles. When the tree is bare, the opposite branching (page 8) and symmetrical appearance of the twigs help in identification.

Dogwoods usually grow 20 to 30 feet high, but it is not uncommon to find one as tall as 50 feet or even taller. They are smooth looking trees with thin bark of an ashy brown or reddish color. Old dogwoods have bark that is broken into small, thin scales resembling an alligator hide.

The wood is heavy, hard, and fine-grained with practically no use at present, although it is suitable for turning and for small cabinet work. Skewers, or "dags," were once made from its wood, giving it the name "dagwood" that later became "dogwood."

Look for dogwood and you find color: its white blooms, clusters of bright red fruit, and foliage that runs from green to orange, red, and purple.
"Full many a flower is born to blush unseen and waste its sweetness on the desert air." So it is with most of Oregon's champion trees—largest of their species. They stand virtually unseen and unappreciated by human eyes. Not so the champion Pacific Dogwood at 3235 Harrison Street in Milwaukie, Oregon. This gracious queen of flowering trees receives the homage of numerous discerning visitors, especially near May 1 when it's covered with showy blossoms. According to official measurements recorded by the American Forestry Association it rises to 100 feet, spreads 45 feet, and measures 6 feet 11 inches around at breast height.

This tree is worth seeing, and its admirers increase as tree lovers learn about it and come to register its beauty in memory and on color film.

Other Native Trees

The shrubs that grow to tree size mentioned on page 33 do so only rarely. There are others that frequently reach 20-30 feet or even higher. Some you can find easily in Oregon; others you'll have a hard time finding. These often grow large enough to be called trees:

**Hackberry (Celtis reticulata)**, as a tree up to 40 feet high, is found in canyons and bluffs east from The Dalles. Upper leaf surface feels like sandpaper.

**Modoc Cypress (Cupressus bakeri)** may reach 40 feet in height; it's found in Josephine County. Foliage resembles juniper; cones like Port-Orford Cedar.

**Smooth Sumac (Rhus glabra)**, in arid canyons of northeast Oregon, is seldom over 15 feet high. Compound leaves (13-21 leaflets); vivid red in fall.

**Blueblossom (Ceanothus thyrsiflorus)** in southern Coast Range; leaves look varnished; colorful blue flowers can be rubbed to make a soap-like lather.

**Silktassel (Garrya elliptica)** in Coast counties south from Lincoln grows on slopes and foothills. Resembles manzanitas but has opposite leaves.

**Pacific Rhododendron (Rhododendron macrophyllum)**, a familiar evergreen shrub and tree, grows in moist areas of the Coast Range and Cascades.

**Pacific Waxmyrtle (Myrica californica)** always grows close to seacoast. Dark, evergreen, leaves—when bruised—emit resinous odor, waxy berries.

**California Hazel (Corylus cornuta var. californica)** resembles the cultivated filbert and is a very common, many-stemmed shrub in western Oregon.
Introduced Shade and Ornamental Trees

WHILE most of our trees are "native Oregonians," a great many of the shade and ornamental trees are not. Dozens of species have been introduced from the eastern United States and foreign lands for our yards, streets, and public grounds. Some of these immigrants are therefore interwoven more closely with our daily lives than are native trees.

The next pages will acquaint you with some, but by no means all, of our imported trees. A complete list would be large indeed since the favorable climate of western Oregon permits such wide variations. We have merely tried to select ones you are most likely to see, but do not mean to imply that these are recommended over others. Since we see the introduced trees every day, it might be a source of personal satisfaction to recognize them by name, as well as sight. A listing of ornamental trees and shrubs for landscaping in Oregon may be found in Extension Bulletin 758, available from your County Extension Agent.

Black Walnut

Given room the black walnut tree develops an immense, rounded head, yet you see quite a bit of light through it. It's easy to recognize the large compound leaf, 10 to 24 inches long with 15 to 23 leaflets and the deeply grooved nut. Leaves and nuts are both aromatic, like the walnut of our commercial orchards, with the black bark and the dark outer hull of the nut probably being responsible for the tree's name. From the hard, thick-shelled black walnut a kernel can be extracted (with difficulty) to furnish a delicious flavoring for ice cream and candies.

Oregon black walnuts are actually of two kinds. The Hinds, or California black walnut (*Juglans hindsii*), is believed more common in Oregon, but the renowned American black walnut of the eastern United States, America's Number 1 cabinet wood, was brought in by early settlers and is also present. These two are not easily distinguished here.
Black Locust

Settlers took the black locust all over the United States because they loved the lavish, fragrant, sweet-pea flowers of this legume. This native of the southern Appalachian and Ozark highlands has now been planted in all our counties.

It is distinguished by compound leaves, 8 to 14 inches long; short, wicked thorns; and flat, brown seed pods. The young leaves are said to show the most beautiful green of any broadleaf when they are seen in the sunlight. Thorns occur only at leaf nodes and may not be present on large trees. The black locust grows rapidly, reaching a large size and is used in windbreaks. Its wood can provide very durable posts.

Lombardy Poplar

Everyone can know the Lombardy poplar by its slim, columnar shape—like an exclamation point rising from the landscape. Close up, you can note its up-pointing branches and rather triangular leaves with slender, flattened leaf stalks making them “fluttery.” Lombardy is a variety of the black poplar of Europe and Western Asia. It is an example of a clone, a plant derived from a single seedling and propagated only by cuttings. Trees are male only.

American Elm

A large tree of unforgettable form, the American elm resembles the spray of a fountain, or a bursting skyrocket. It grows naturally throughout eastern United States and is especially prominent in the lovely old towns of New England. The American elm is planted in most Oregon cities. Because of our dry summers the imposing spread of eastern broadleafs occurs only where moisture is available. Know the elm by its form; its lopsided, double-toothed leaf; and flat, gauzy-winged fruit—the original “flying saucer.”
Hawthorn

Hawthorns, haw, or thornapples are the only trees having conspicuous thorns and sharply toothed single leaves. The flowers are small roses, followed by clusters of small apple-like fruits, or haws that are edible but overly seedy. The group occurs throughout the world and includes a vast number of species and varieties; identification of a particular species is a botanist’s headache. Oregon is thought to have only one native species, the black, or Douglas haw. See p. 47.

Best known of the cultivated haws in Oregon and elsewhere, is the English haw. The leaf is usually 5 lobed; flowers may be pink, red, or white.

European Birch

This birch from Europe and Asia Minor is one of the more common ornamentals on Oregon lawns. It is a favorite with many because of its clean white bark, drooping branches, and its medium size—20 to 60 feet. Numerous cultivated varieties have been developed. A very common form is the cutleaf weeping birch which has a deeply lobed leaf and stringy weeping branchlets. Its leaf suggests the outline of a Douglas-fir Christmas tree. The fruiting cone is shaped like a miniature weiner and is filled with winged seeds.
Maps

Norway maple (*Acer platanoides*), a native of Europe, shades many Oregon streets and lawns. It resembles the native Oregon bigleaf maple but does not get as large. This description also applies to the leaves. It, and bigleaf, are the only maples whose leaf stems contain milky juice.

Schwedler's maple, a smaller variety of the Norway maple, has foliage of a rich, dark red color.

Silver maple (*Acer saccharinum*), from the eastern United States, is also widely planted as a shade tree. The leaves identify it as they are fancily cut with deep indentations and show a silvery-white color underneath. Silver maple takes a wide-spreading form with the trunk dividing near the ground into big, mostly upright limbs.

Deodar Cedar

True cedars are native only to the Old World and this is one from the Himalaya mountains. To the unobserving eye, Deodar might pass for a native fir or larch but a closer look at the needles shows the Deodar to be entirely different. It has bristling short needles bunched at the end of short spur branches. And Deodar has a big cone upright on the branch like our true firs. The long horizontal branches extend to the base of the tree.

Few people are able to distinguish Deodar from the Atlas cedar (*Cedrus atlantica*), another true cedar introduced as an ornamental. Atlas has needles ¼ to 1 inch long; Deodar’s are 1 to 2 inches long. The Cedar of Lebanon, a less common introduction, resembles Atlas cedar quite closely. Its fame comes from association with the Bible.
Sweetgum

The sweet- or "star leaf" gum tree is an ornamental from the southeast easily identified by its 5- to 7-pointed leaves that suggest stars. Two other features also help identify it. The twigs develop corky ridges, and the fruit is a peculiar spiny ball about the size of a quarter that hangs on the tree into winter. When fall weather is favorable, sweetgum's parade of color is unsurpassed. We say "parade" because one bright color follows another—scarlet, orange, wine, yellow, brown, purple, and other tones.

Flowering Plums

Distinguished by their fine display of pink or white flowers and colorful reddish to purplish foliage the flowering plums may attain heights of 20 to 25 feet. They have a dense head of steeply ascending branches, finely toothed leaves, small, purplish red plums, and some varieties have barbs. Among the varieties that have been propagated is the fairly common Pissardi plum with pink flowers and garnet-brown foliage.

Although an entirely different species, the flowering crabs or crab apples (Malus species), are small decorative trees resembling the plums. They have red flowers, bronzy-red foliage, and persistent dark red drupe fruits.
Fruit and Nut Trees

Apple

Oregon’s, and the nation’s, leading fruit tree is the apple. Earliest recorded history mentions it as the “gift of the gods.” The apple is most easily identified by the characteristic round fruit known as a pome, a fleshy fruit having seed borne within cells, or carpels, at the core. There are many species of apples and several thousand varieties. You’d probably know an apple leaf because you’ve seen them so often. They are oval, mostly pointed at tip and rounded at base, soft and dull. The large, showy flowers are borne in clusters of 5 or 6 in each group. Some apples are called “crabs”; these are usually small in size but are appreciated for their attractive flowers and spicy fruits.

Apple seeds are spread by animals and birds so that trees frequently escape to fence rows, abandoned fields, and even cutover forest land. Fruits of these so-called “seedling apples” show much variation in size, flavor, and color. They are devoured by deer and other wildlife.

Pear

The pear is another traveler like the apple, having come to us from Western Asia and China. Pear trees are strong and upright, sometimes being 50 or more feet high. The leaves are oblong, borne on short spurs, hard in texture with prominent veins, and have a bright green color. Pear fruit varies in shape from round to oblong but like the apple and quince, it is a pome type having an inner core containing brown seeds. The white flowers appear in dense clusters with 4 to 12 flowers in each. Over a thousand varieties have been named but only a half dozen are grown commercially. Oregon is a leading producer of pears.
Cherry

Cultivated varieties of sweet and sour cherries are kin to the wild chokecherry and to the laurels. The trees are tall and erect with reddish brown bark which peels off in rings. Cherry flowers are showy, being creamy white, and borne on long stems in dense clusters of 4 to 8 blossoms. Fruits may be red, yellow, or black, heart-shaped or pointed. Cherries, like peaches, apricots, and plums, are known as stone fruits with the seed enclosed in a hard stony shell.

Peach

The peach is one of our introduced fruit "cousins" from China, making its way to America in the 16th century. The tree is twiggy, with slender limbs, and usually bears one to three buds at a node or joint. The pink flowers are solitary, and appear before the leaves. Peach trees are shorter, generally under 20 feet in height, and more round than apples and pears. Dozens of varieties are known, including red, yellow, and white-fleshed types, with some having purple leaves and double flowers that are planted as ornamentals. An interesting close relative is the smooth type of peach, called a nectarine, that has lost its "whiskers."

Plum

The many types of plums come from three continents, Europe, Asia, and America, and differ in characteristics of the buds, flowers, and fruits. Our best known plum is the Italian prune. Plums have attractive white flowers borne in dense clusters on flower stems about one inch long. Fruits come in a variety of colors from almost black through shades of red, purple, blue, green, yellow, and white. Our native American plums (some in Lake and Klamath counties) are small in size and tart in flavor.
Walnut

These trees grow to heights of over 100 feet. The native white walnut trees bear small, female flowers which develop into the nuts, and separate male flowers called "catkins" which produce the needed pollen. Walnuts are one of our most popular trees for street plantings for both shade and the nut crop. There are dozens of varieties or kinds. The species actually originated in Asia rather than England, but was distributed and popularized by the English several centuries ago. Everyone knows the choice fruit or nut of this tree and the large compound leaves with from 5 to 7 leaflets on one leaf stem also make identification easy. Leaves, twigs, and fruit hulls have a strong odor and easily stain the hands.

Filbert

The filbert is closely related to our common wild hazelnut found along country roadsides. It is a deciduous woody shrub easily recognized both in winter and summer. In winter the tree bears long male catkins that shed pollen between December and March. Female flowers resemble a large bud having three or four red whiskers sticking out from the end. The word filbert is supposed to mean "full beard," referring to the husk covering the nut. Dozens of varieties are known. The nuts vary in shape from round to oblong and from small (1/4 inch) to large (1 inch) in diameter. Each nut is enclosed in a leafy "basket" called an involucre.
Oregon Forest Facts*

Who Owns Oregon Forests?

<table>
<thead>
<tr>
<th>Ownership of Commercial Forest</th>
<th>Western Oregon</th>
<th>Oregon (19 counties)</th>
<th>Eastern Oregon</th>
<th>Oregon (17 counties)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal (ownership or trustee-ship)</td>
<td>15,067,000</td>
<td>6,907,000</td>
<td>8,160,000</td>
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</tr>
<tr>
<td>State</td>
<td>758,000</td>
<td>722,000</td>
<td>36,000</td>
<td></td>
</tr>
<tr>
<td>County or Municipal</td>
<td>282,000</td>
<td>253,000</td>
<td>29,000</td>
<td></td>
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<tr>
<td>Private</td>
<td>9,768,000</td>
<td>6,630,000</td>
<td>3,138,000</td>
<td></td>
</tr>
</tbody>
</table>

Ownership of Commercial Forest

<table>
<thead>
<tr>
<th>How Many Owners? How Big Are They?</th>
<th>Western Oregon</th>
<th>Oregon</th>
<th>Eastern Oregon</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of private owners</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 to 99 acres</td>
<td>21,853</td>
<td>835,000</td>
<td>1,916</td>
<td>48,000</td>
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<tr>
<td>100 to 499 acres</td>
<td>8,088</td>
<td>1,582,000</td>
<td>2,328</td>
<td>508,000</td>
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<tr>
<td>500 to 1,999 acres</td>
<td>1,139</td>
<td>901,000</td>
<td>576</td>
<td>514,000</td>
</tr>
<tr>
<td>2,000 to 4,999 acres</td>
<td>98</td>
<td>319,000</td>
<td>113</td>
<td>316,000</td>
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<tr>
<td>5,000 and larger</td>
<td>99</td>
<td>2,993,000</td>
<td>47</td>
<td>1,752,000</td>
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<td></td>
<td>31,277</td>
<td>6,630,000</td>
<td>4,980</td>
<td>3,138,000</td>
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</table>

Oregon's Share of the National Timber Resources

Net sawtimber volume on commercial forest land, Oregon 451 billion board-feet†
Net sawtimber volume on commercial forest land, United States 2,005 billion board-feet

*All figures on this page from National Timber Resource Review, Forest Service, U. S. Department of Agriculture, January 1, 1953.
†International 1½-inch log rule. Includes live sawtimber trees 11 inches and larger, d.b.h. and salvageable dead sawtimber.

78
Oregon's Forest Growth

Current annual sawtimber growth ........................................ 3.6 billion board-feet*
(Misleading when compared with cut, because much forest is old growth in which losses offset growth.)

Probable future annual sawtimber growth .................. 9.5 billion board-feet†
(When old growth is replaced by younger forests. Assumes continuation of present trends in forest management.)

Potential annual growth under intensive forest management .................................................. 15.8 billion board-feet†
(With full production from every acre. Would require ideal conditions for forest management, not economic at present.)

Oregon's Timber Production

<table>
<thead>
<tr>
<th>Year</th>
<th>1939</th>
<th>1946</th>
<th>1950</th>
<th>1953</th>
<th>1955</th>
<th>1957</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total log harvest (Scribner log rule)</td>
<td>5.5</td>
<td>7.6</td>
<td>7.89</td>
<td>8.59</td>
<td>9.72</td>
<td>7.48</td>
</tr>
<tr>
<td>Lumber sawed by Oregon mills</td>
<td>4.8</td>
<td>6.3</td>
<td>8.24</td>
<td>8.42</td>
<td>8.85</td>
<td>7.17</td>
</tr>
</tbody>
</table>

How the 1955 Oregon Timber Harvest was used:¶
Lumber 75%, pulp and paper 9%, plywood 15%, other 1%.

An estimate of how the 1959 Oregon Timber Harvest was used indicates little change from 1955 figures.

Number of forest industries covered by State Unemployment Compensation Commission, 1958—2,822.**
Included 827 sawmills and planing mills, 1565 logging outfits, 208 plywood and veneer, 53 paper, composition board, etc., 78 furniture.

Estimated value of forest products after manufacture at Oregon plants, 1957 ........................................ $1,005,450,000¶
Wages paid by forest products industries, 1957 ................ $ 384,708,758¶
Wages paid by all manufacturing industries, 1957 ............. $ 640,809,842¶

Note: In 1957 forests furnished 60% of our payroll from manufacturing industries. For many years the forest industries have provided two-thirds or more of this payroll but a 1956-1958 slump in lumber shows its effect. Compare also 1955 and 1957 log harvest and lumber production. Lumber activity was rising briskly as 1959 opened.

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* Timber Resource Review, 1953
‡ Oregon State Board of Forestry.
§ West Coast Lumbermen's Association and Western Pine Association. (Note: log rule and lumber measure are not comparable.)
¶ Industrial Forestry Association.
** Oregon Unemployment Compensation Commission, for covered industries.
Forest Protection

Oregon forest lands under forest-fire protection by federal, state, and private agencies, 1958 ......................... 31,686,000 acres*

Percent of protected area burned: 1950, 0.08%; 1952, 0.10%; 1954, 0.03%; 1955, 0.15%; 1956, 0.05%; 1957, 0.04%; 1958, 0.06%.

Prevention and control of forest fires is still the number one forestry job. Oregon's good record is maintained by much effort, money, and vigilance. An alert and fire-conscious people help most of all.

Protection of forests from insects and diseases is vital. We are finding they kill over 10 times the volume of timber killed by fire, and cause a vast additional growth loss.


Oregon Forest Firsts

Among the 50 states, Oregon leads in:

- Commercial forest land
- Forest growth capacity
- Annual timber cut
- Total timber volume
- Deer taken by hunters (1954-1956)

- Lumber manufacture
- Plywood manufacture
- National forests (commercial forest area)
- Total forest income

Forestry Activities for Young People

For fun and satisfaction, few activities have more to offer than doing something yourself in forestry. This page tells about organized forestry activities offered to Oregon youth.

The Oregon Green Guard. Youth activity of the Keep Oregon Green Association has a dual aim—to make youth conscious of the necessity both to eliminate man-caused fires and to otherwise protect our natural resources. The program does not duplicate or interfere with the work of any established group or organization. Boys and girls, 8 to 16, are eligible to join. Members receive a manual for recording achievements, a badge, stickers, etc. Each guard acts on his own. There are no fees, dues, or other costs. Write the Keep Oregon Green Association, P.O. Box 471, Salem, Oregon, for membership application blanks.
4-H Forestry Clubs. Both town and rural boys and girls are eligible. You can get information from your County Extension Office. A standard 4-H club has five or more members, an adult leader and holds 10 or more meetings or trips.

This project has four divisions, of which the 4-H Forester is usually taken first. 4-H Foresters take hikes, attend district forestry camps, visit forestry interest points, collect and exhibit forest specimens, and choose options from a wide range of interesting forestry activities. Other divisions are the 4-H Woodsman, 4-H Ranger, and 4-H Tree Farmer.

Boy Scouts. Using the Portland Area Council as an example we find all ranks from Second Class through Eagle require actual participation in conservation projects, increasing in difficulty with higher rank. Forest Conservation is the most popular in this area and the Forestry Merit Badge, the most-sought conservation award. Other Oregon Scout Councils also provide many opportunities to plant trees, pick cones, prune trees, and do similar work under forestry experts.

Public Schools. High schools and elementary schools throughout Oregon, especially the science classes, have developed various ways of helping boys and girls experience forestry activities. Included in the programs are tours of forest industries and of forest management operations, planting trees, forest fire control campaigns, anti-litter and anti-vandal campaigns, and other ways of getting on-the-ground experiences encouraging understanding and appreciation of Oregon's forests.

Other Group Activities. Boys enrolled in the Future Farmers of America study farm forestry and frequently take reforestation, pruning, thinning, growing seedlings, or something else as their specific project. The Camp Fire Girls and Girl Scouts enroll thousands of girls who devote time to learning outdoor skills and to general forest appreciation.
The Farm Forest

Contrary to what many people think, growing timber is not all big business. Oregon has 9.1 million acres of privately owned commercial forest. A full count in 1953 showed that 5 million acres were spread over 35,000 ownerships, each under 5,000 acres. And 98% of the owners had less than 500 acres each. Two of three private owners are farmers.

These are the small woodlands or farm forests—the forests you see most often because they are nearest towns and highways. Local business and employment depend on small forests; one-fourth of Oregon’s huge timber cut comes from them. But small woodlands everywhere have lagged in forest management and there is a big job ahead to improve their condition.

Tree farming is profitable. Actually the farm forest is only now being appreciated for what it is really worth. In the cheap timber era of yesterday, tree farming wasn’t profitable. Today there are few enterprises that look brighter. Plenty of small owners know this fact and are showing what can be done. For example, Clackamas County’s 1956 “woodland farmer of the year” contest turned up quite a number of smart tree farmers. One man started thinning 40-year-old Douglas-fir in 1950 under guidance of a forester. He and his teenage boy felled and logged the trees. By 1956 thinnings had returned $10,000 from a 20-acre forest. And he still had a good, fast-growing stand. Tree farming helped to build a modern home and to send the boy to college.

300 Acres Supports Family. Another man had 300 acres of woods from which the family was making its entire living on a sustained-yield basis. To get maximum income from small trees and salvage material, a one-man sawmill was being operated. Christmas trees were intensively worked; a large understocked area left from earlier logging was being restocked little by little. The owner of this foothills farm has decided to go entirely to trees and is closing out crops and stock. Another enthusiastic tree farmer recently bought 80 acres of logged land. He is energetically planting the openings and doing a thorough job of thinning and pruning the sapling stands.
Small Owners Face Problems. Our little forests are steadily converting to good forest management practices despite tough problems that often face them. Many areas are under-stocked, or have only small trees and these will need time for restocking. Heavy pressure to clear-cut immature trees comes from varying causes and is one of the worst influences.

Woodland Owners Fortunate. At the same time, farmers are realizing that a woodland has advantages such as the following:

- A good stand of Douglas-fir will earn as much per acre as most field crops, if the farmer works it himself.
- Trees don’t require fertilizer, irrigation, cultivation, or fencing.
- The tree crop won’t spoil. Woods do not suffer unless neglected for long periods. The owner is not tied to the place.
- Trees hold soil, conserve water supplies, and serve as windbreaks.
- The well cared for forest adds beauty and adventure to the countryside and becomes a source of pride to its wise owner.
- Values from timber growth may have an income tax advantage when compared to other investments.
- Demand for timber appears stronger than for any other crop. No surplus exists and none is foreseeable; this is a major consideration for most potential tree farmers.

Professional Assistance a Good Investment. Quite often the small timber owner benefits from professional forestry assistance. Farm foresters are employed by state and federal governments to give this kind of service and timber growers can contact them through the field offices of the State Forestry Department or through local County Extension Agents. Private forest consultants will contract for the management of forest tracts or for specific jobs in managing and marketing timber.
These Are the Champs

How big is the largest living specimen of Douglas-fir, of ponderosa pine, of other species familiar to us in Oregon? The American Forestry Association, 919 17th Street, Washington 6, D.C., is the continuing sponsor of a Big Tree Contest that holds nationwide interest. The Association's 1955 report on Big Tree Champions recognized 318 American trees as the largest living members of their particular species.

Twenty-one Oregon champions are listed below:

<table>
<thead>
<tr>
<th>Species</th>
<th>Approx. date reported</th>
<th>Circumference at 4 ft.</th>
<th>County where found</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sitka alder</td>
<td>1945</td>
<td>1'2&quot;</td>
<td>Clatsop, Saddle Mountain Park.</td>
</tr>
<tr>
<td>Silver buffaloberry</td>
<td>1951</td>
<td>2'7&quot;</td>
<td>Malheur, west of McDermitt.</td>
</tr>
<tr>
<td>Bitter cherry</td>
<td>1956</td>
<td>7'6&quot;</td>
<td>Lincoln, one mile northwest of downtown Toledo.</td>
</tr>
<tr>
<td>Western chokecherry</td>
<td>1941</td>
<td>2'10&quot;</td>
<td>Yamhill, near town of Yamhill.</td>
</tr>
<tr>
<td>Oregon crab apple</td>
<td>1941</td>
<td>5'4&quot;</td>
<td>Clatsop, on Nehalem River.</td>
</tr>
<tr>
<td>Baker cypress</td>
<td>1939</td>
<td>10'2&quot;</td>
<td>Josephine, near Miller Lake.</td>
</tr>
<tr>
<td>Pacific dogwood</td>
<td>1945</td>
<td>6'11&quot;</td>
<td>Clackamas, in Milwaukie.</td>
</tr>
<tr>
<td>Blackbead elder</td>
<td></td>
<td>2'2&quot;</td>
<td>Columbia, near Prescott.</td>
</tr>
<tr>
<td>Port-Orford-cedar</td>
<td>1941</td>
<td>27'2&quot;</td>
<td>Coos, on Squaw Creek.</td>
</tr>
<tr>
<td>Bigleaf maple</td>
<td></td>
<td>28'</td>
<td>Lane, near Hayden Bridge.</td>
</tr>
<tr>
<td>Vine maple</td>
<td>1945</td>
<td>5'7¼&quot;</td>
<td>Marion, Willhoit Mineral Springs.</td>
</tr>
<tr>
<td>Knobcone pine</td>
<td>1939</td>
<td>9'1&quot;</td>
<td>Josephine, Steve Park Trail, Rogue River National Forest.</td>
</tr>
<tr>
<td>Shore pine</td>
<td>1953</td>
<td>9'1&quot;</td>
<td>Curry, at Flora's Lake.</td>
</tr>
<tr>
<td>Narrowleaf cottonwood</td>
<td>1950</td>
<td>6'</td>
<td>Harney, on Little Cottonwood Creek.</td>
</tr>
<tr>
<td>Brewer spruce</td>
<td></td>
<td>12'2&quot;</td>
<td>Josephine, near Miller Lake.</td>
</tr>
<tr>
<td>Scouler willow</td>
<td>1953</td>
<td>9'5&quot;</td>
<td>Marion, Silver Creek Falls State Park.</td>
</tr>
<tr>
<td>Pacific yew</td>
<td>1938</td>
<td>12'7&quot;</td>
<td>Yamhill, near Cherry Grove.</td>
</tr>
<tr>
<td>Oregon ash</td>
<td></td>
<td>18'</td>
<td>Multnomah, near Burlington.</td>
</tr>
<tr>
<td>Northern black cottonwood</td>
<td></td>
<td>25'</td>
<td>Benton, near Corvallis.</td>
</tr>
<tr>
<td>Ponderosa pine</td>
<td></td>
<td>27'1&quot;</td>
<td>Deschutes, near Lapine.</td>
</tr>
<tr>
<td>Hooker willow</td>
<td></td>
<td>9'10&quot;</td>
<td>Clatsop, near Cannon Beach.</td>
</tr>
</tbody>
</table>
The first 17 trees were nominated by Oliver Matthews; the next two by T. J. Starker; and the remaining two by Donald F. McKay and George M. Hansen, respectively.

Under the contest rules three measurements are required: circumference at 44 feet outside bark, height, and crown spread. For more detail write for the Association's "How to Measure a Tree."

Our 30 million acre forest probably has many champions awaiting discovery—a real challenge to men of the woods. For example, no subalpine fir at all was listed in the 1955 report. And Oregon may have specimens larger than certain champions claimed by other states, as illustrated by these few examples:

<table>
<thead>
<tr>
<th>Species</th>
<th>Circumference</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incense-cedar</td>
<td>36'</td>
<td>Rogue River National Forest, California.</td>
</tr>
<tr>
<td>Sierra juniper</td>
<td>42'</td>
<td>Stanislaus National Forest, California.</td>
</tr>
<tr>
<td>Western larch</td>
<td>24'</td>
<td>Near Kootenai National Forest, Montana.</td>
</tr>
<tr>
<td>Oregon white oak</td>
<td>25' 6&quot;</td>
<td>Near Mendocino National Forest, California.</td>
</tr>
<tr>
<td>Lodgepole pine</td>
<td>19'</td>
<td>Sierra National Forest, California.</td>
</tr>
</tbody>
</table>

*Some Oregon foresters believe that new measurements of this tree and the thousand-year old giant referred to on page 11 will show the Oregon tree to be the "champ." Accurate measure of a massive trunk on a steep slope can be a difficult thing. We call for new certified measurements of both trees!!

I have read many definitions of what is a conservationist, and written not a few myself, but I suspect that the best one is written not with a pen but with an axe. It is a matter of what a man thinks about while chopping, or while deciding what to chop. A conservationist is one who is humbly aware that with each stroke he is writing his signature on the face of the land.

—Aldo Leopold, Sand County Almanac.
EXPLORATIONS investigating the plants of the Northwest wilderness were crammed with adventure. The Lewis and Clark expedition penetrated this wilderness in 1805. President Thomas Jefferson was confident that reports from the expedition would be accurate. He wrote that Meriwether Lewis had "a fidelity to truth so scrupulous that whatever he should report would be as certain as if seen by ourselves."

Lewis, soldier and scout, also evidences the eye and language of a botanist. Here is a sample from his journal: "The leaf of this thorn is small . . . the leaflets petiolate, acutely pointed, having their margins cut with unequal angular incissures." The journal often notes large trees. A fir in Clatsop County was "42 feet in girth at the height of a man's breast."
The English Royal Horticultural Society sent 26-year-old David Douglas to the Pacific Northwest to study and obtain samples of its plants. He headquartered at Fort Vancouver from 1825 to 1827 and returned for the summer and fall of 1830. This Scot's botanical work made history and is recalled by names such as Douglas-fir, Douglas maple, and Oregon's Douglas County. His travels were often arduous; in fact, he once wrote, "In England people shudder at the idea of sleeping with the window open; here, each individual takes his blanket and with all the complacency of mind that can be imagined throws himself on the sand or under a bush."

Another venturesome Scot, Archibald Menzies, 1754-1842, was first to report the Douglas-fir scientifically. Botanically trained, Menzies was with Captain George Vancouver's ship during its exploration of the British Columbia coast during the summer of 1792. Thomas Nuttall, 1786-1859, was an early botanist-explorer who came overland to Oregon with Captain Wyeth's party in 1834. Pacific dogwood (Cornus nuttalli) and other plants recall his reportings.

John Muir, 1838-1914, was fascinated by California's Sierra wilderness as a young man and devoted over 50 years to exploring the area and writing about it. Though he spent only a short time in Oregon, his descriptions of the true firs, sugar pine, Sequoias, and other Pacific trees are widely read. In many instances his books have inspired people to travel into woods and mountains. "Who could ever guess that so rough a wilderness should yet be so fine, so full of good things?" he wrote; "one seems to be in a majestic, domed pavilion in which a grand play is being acted with scenery and music and incense."

In our present century persons with a great knowledge of western plants began to appear. George Sudworth, of the early U.S. Forest Service, acquired a knowledge of western trees hardly equaled by any man. His 1908 book, Forest Trees of the Pacific Slope, is still in demand. During recent decades, Oregon has had a tree explorer extraordinary—Oliver V. Matthews of Salem. For 30 years he has searched for unusually interesting Oregon trees and shrubs. Days of rugged searching preceded his photographing the giant weeping spruce of the high Siskiyous, but he finds little cascara as fascinating as any of the larger trees. Mr. Matthews has said, "I found out years ago I could not make money, but I can have fun—and this is it."

May you, too, have fun knowing the trees of Oregon.
SINCE the Keep Oregon Green Association was organized in 1941, man-caused forest fires have dropped from 1,300 a year to about 700, and acreage burned has been reduced from 125,000 to less than 10,000 acres annually.

This public-sponsored organization is dedicated to the prevention of man-caused forest and range fires. Activities of Keep Oregon Green are carried on by 36 county committees. Members distribute fire prevention material, and post signs. They give talks to schools, granges, service and community groups, build window displays, man booths at fairs, and spread the message every way they can. Newspapers, along with radio and television stations have been the backbone of this amazing, state-wide, educational public service program. It is one of Oregon’s top public service activities and is supported almost entirely by individual contributions.

Keep Oregon Green Association
Post Office Box 471
Salem, Oregon