

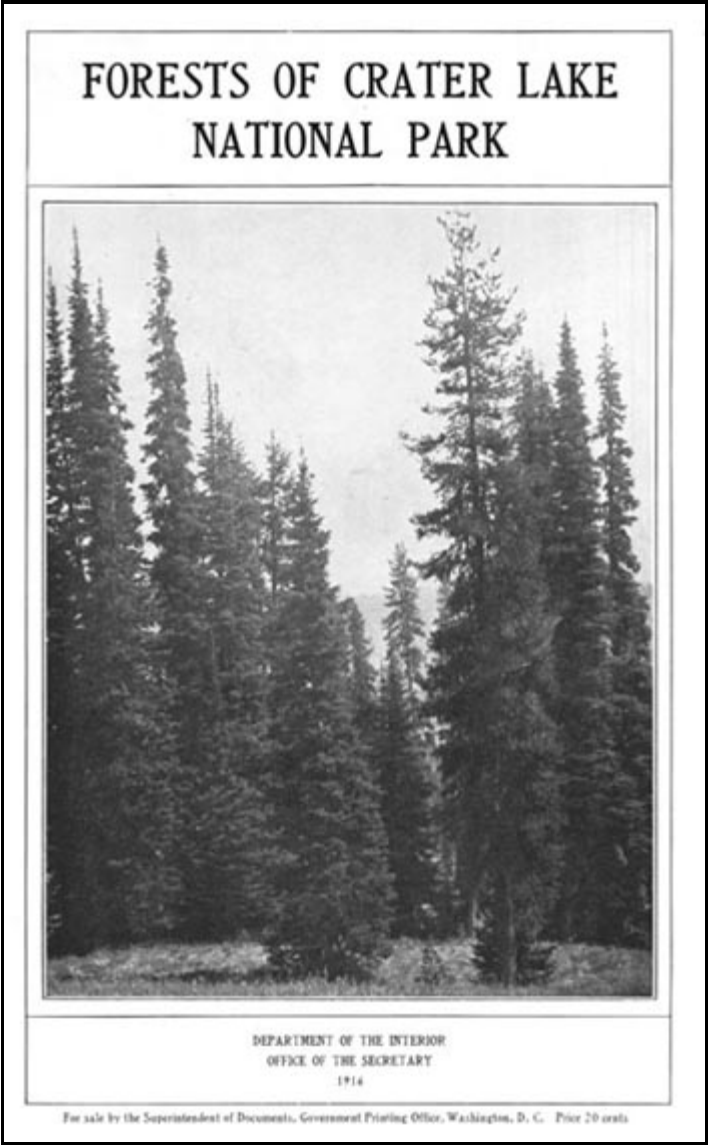
CRATER LAKE

Forests of Crater Lake National Park



FORESTS OF CRATER LAKE NATIONAL PARK

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United States Forest Service



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INTRODUCTION.

Among the many natural wonders of the Northwest there are few that produce more profound and lasting impressions than Crater Lake, of southern Oregon. This marvelous body of water lies near the summit of the Cascade Mountains, about 65 miles north of the Oregon-California line, in the heart of one of the most interesting mountainous forest regions of the State.

Briefly, Crater Lake is a deep body of clear, fresh water, contained within the caldera or crater of an extinct volcano. Surrounding the lake, which is about 5 miles in width, the steep cliffs forming the inner slope of the crater rise abruptly to a height of 1,000 to 2,000 feet, and from the rim the outer slopes lead way more gently on all sides. The outer slopes of the crater are generally conceded as being the remains of a lofty peak that once occupied the place where the lake now lies. This mountain, whose outer slopes alone now exist, has been given the name of Mount Mazama.

In the region around Crater Lake there are numerous volcanic peaks, which lift their forest-clad or rocky and barren heads from 7,000 to nearly 9,000 feet above the sea. At their feet break forth a multitude of springs—some gently seeping up through marshy meadows and moss-covered banks, other gushing from rocky founts in veritable torrents. In these springs are born rushing streams that have carved great canyons to the south, east, and west, forming the headwaters of the Klamath and the Rogue Rivers.

Over all of the region, excepting the summits of the highest peaks, is spread a wonderful array of evergreen trees, clothing the slopes with dense, solemn forests, or dotted around mountain meadows, canyons, and crater rim.

In order to insure the permanent natural condition of Crater Lake, and its forests, streams, and mountain peaks, the National Government, in 1902, set aside as a national park an area embracing 159,360 acres, in which Crater Lake occupies nearly a central position. To this wonderland hundreds of visitors are attracted every year—geologists, who find a rich field in its craters, canyons, and lava flows; botanists, studying its trees and flowers; but more than all, those who find rest and inspiration in camping and traveling through the wildness of its mountains and forests.

Several good routes are available to those wishing to visit the park. From Medford, Oreg., on the main line of the Southern Pacific Railroad, wagon or automobile may be taken for 82 miles over the Rogue River road, reaching the park at the western entrance. From Ashland, south of Medford, the Dead Indian road leads across the Cascade Divide to Pelican Bay or Upper Klamath Lake, but this road is not a main thoroughfare and does not permit of automobile traffic. A road leads north from Pelican Bay past Fort Klamath, ascending Anna Creek and reaching Crater Lake National Park at the southern entrance. From Klamath Falls, on a branch line of the Southern Pacific, the journey may be made by wagon or automobile to Fort Klamath, or by boat from Klamath Falls to Agency Landing, on Agency Lake, then by automobile or stage to Fort Klamath and to the park. A new wagon road, entering the park

from the east side and following Sand Creek, makes Crater Lake readily accessible from Chiloquin, on the Klamath Falls branch of the Southern Pacific Railroad.

Crater Lake National Park is surrounded on three sides by the Crater Lake National Forest, which lies mostly on the summits and upper slopes of the southern Cascade Mountains. Any road that may be taken first passes through the forest before entering the park.

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THE FOREST COVER.

Second to the wonderful blue lake in the crater of the former Mount Mazama, the most attractive feature of the park is its heavy mantle of beautiful coniferous forests. Within the confines of the park there are represented more than a dozen cone-bearing species—pines, firs, hemlocks, and others—growing in pure bodies or mingled together, forming a confused, broken cover. The few broad-leaf trees that climb this high in the mountains are mostly small and shrubby, forming all underbrush in the open forests and thickets in the moist ground along the streams.

The various trees of the southern Cascades are not generally scattered throughout the mountains, but are distributed in fairly well defined zones at different altitudes, depending upon the temperature and amount of moisture they require. East of the Cascade Range the general elevation of the south-central Oregon plateau is between 4,000 and 5,000 feet, and here the climatic conditions are widely dissimilar from those that prevail on the western side, where the surface is several thousand feet lower in the valleys of the Rogue and Umpqua Rivers. For this reason the typical forests on the east and west slopes differ greatly in composition, and from each side merge into a nearly common type of forest on the summit of the range.

Crater Lake National Park, on account of its position, therefore, has mainly the characteristic forest cover of the higher mountains, but within a few hours' ride from any entrance the tree species found are those common in the lower portion of either the eastern or western Oregon region.

At the lowest elevations in the Rogue River Valley and on the Klamath side the forests are composed of species that endure warm summer temperature and thrive in the dry and powdery soil. Here the predominating tree is western yellow pine, which on the west slope occurs mainly with scrubby oaks, madrona, and small Douglas fir. On the Klamath side, where the general elevation is higher, yellow pine is very abundant and forms magnificent forests either alone or associated with Douglas fir, white fir, lodgepole pine, sugar pine, and incense cedar.

As one ascends the west side the composition of the open yellow-pine forest changes at middle elevations to more dense stands, in which Douglas fir is the most abundant tree. Here also are other species, such as western hemlock, western red cedar, white fir, and lodgepole and sugar pine, that prefer the cooler and more moist situations.

By the time the park is reached many of these trees become fewer in number, and their place is taken by trees of the higher altitudes. The dense forests around the edges of the park and on the lower slopes of the former Mount Mazama have a large number of species, among them several of the true firs, Douglas fir, lodgepole pine, Engelmann spruce, mountain hemlock, and western white pine.

Climbing still higher, to the very rim of Crater Lake, and up the slopes of the surrounding peaks, the forest becomes more scattered and the trees smaller and more stunted. Only a few

species endure the low temperature, high winds, and deep snows at these altitudes, the principal ones being alpine fir, mountain hemlock, and white-bark pine.

Very often scattered trees are found far above or below the general limits of their range. Alpine species descend cool, moist canyons far down into the drier yellow-pine region, and the trees of the lower country occasionally reach far up into warm favorable areas at the higher altitudes.

No matter which route may be taken to reach the park, this gradual change from one forest type to another is very evident, and this transition offers much to excite the curiosity and interest of the observer.

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DESCRIPTIONS OF SPECIES.

WESTERN YELLOW PINE (*PINUS PONDEROSA*)¹

¹This species is known as yellow pine in Glacier and Yellowstone National Parks.

In the first forests that are encountered bordering the various roads leading to Crater Lake the attention of the traveler is claimed by noble trees with cylindrical, yellowish-brown trunks and rounded or spire-shaped heads, dotted throughout brush-covered areas, or stretching in open bodies over the hills and higher slopes. This tree is western yellow pine (*Pinus ponderosa*), a species that is at home throughout much of the southern and eastern Oregon region (figs. 1, 2, and 3).



Fig. 1—Western yellow pine (*Pinus ponderosa*)

Western yellow pine in old age forms a magnificent straight, stout, round trunk, and carries its heavy limbs far out from the body, forming a cylindrical or flat-topped crown. On large trees the bark usually is not over 2 inches in thickness and is broken up into large plates by deep, narrow furrows. The surface of the bark is composed of small irregular scales, whose yellowish-brown color gives to the trunks of forest-grown trees their soft, warm tone. Younger trees have thicker, dark-brown bark that is divided into rounded ridges, and the crowns as a rule are more conical and pointed.

This species is a three-needle pine; that is, its long, flexible needles are bound in clusters of three, which are thickly disposed in tufts near the ends of the twigs. Yellow-pine cones are oval, from 3 to 5 inches in length, and usually occur in small clusters at the ends of the branches. Two years are required for their development, and during the second autumn the prickly cone scales spread widely, liberating the seeds, shortly after which they fall to the ground. The soft carpet of needles beneath old yellow pines usually is thickly studded with the rich chestnut-brown cones. As a rule yellow pine does not begin to produce seed until the trees are 40 to 50 years old, and after this age quantities of seed are produced only every two or three years.

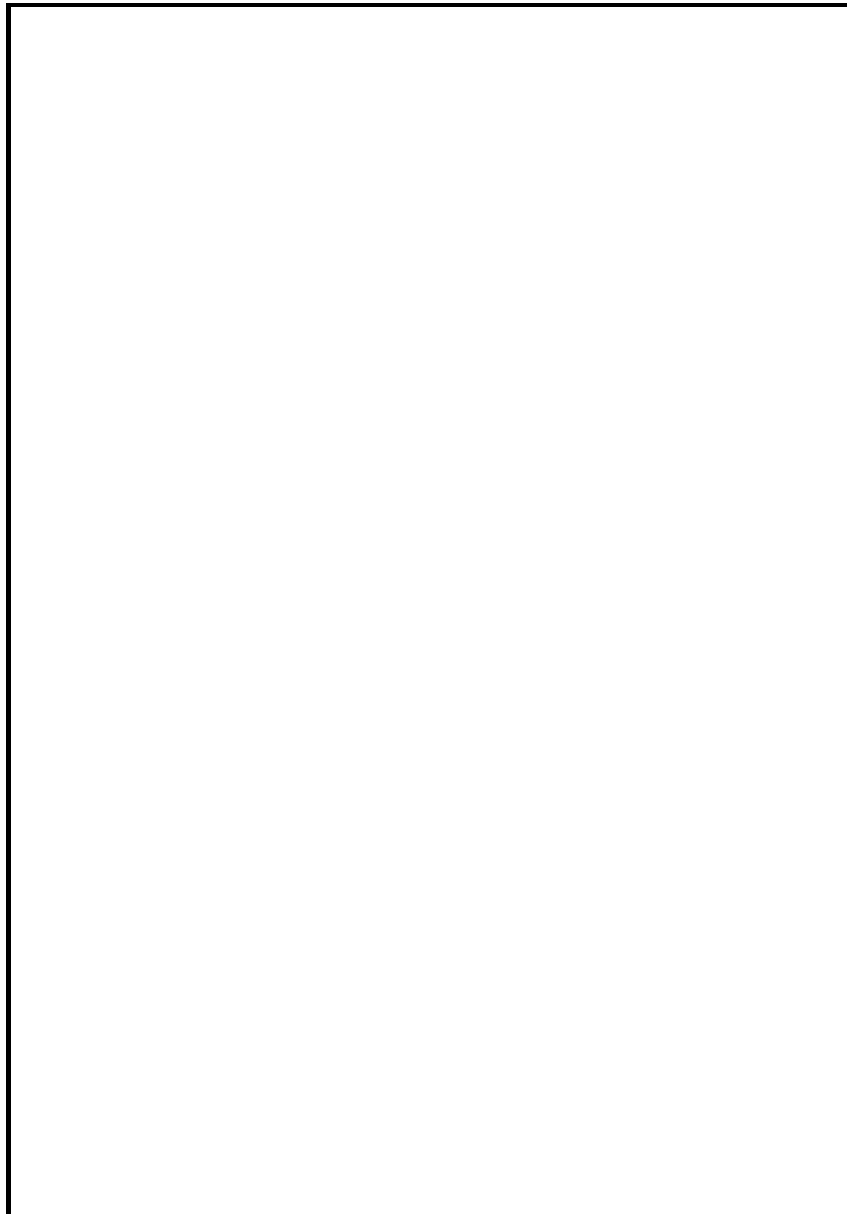




Fig. 2—Western yellow pine (*Pinus ponderosa*) 70 inches in diameter

Yellow pine is one of the most widely distributed trees of North America. From the Black Hills of the Dakotas its range reaches westward nearly to the Pacific Ocean, and, braving rigors of the climate of southern British Columbia, it extends southward through the coast States and Rocky Mountain region to the hot and arid mesas of Lower California and Mexico. Usually it prefers regions where the summers are warm and dry, and it will take hold and do well on any except wet soils.

Throughout much of its range this tree is highly prized by the lumberman on account of the excellent quality of timber its straight, clear trunks produce. In eastern Oregon it is by far the most important timber tree, and this also is true throughout much of California and in many portions of the Southwest. In 1911 western yellow pine ranked sixth in the lumber production of the United States.





Fig. 3—Western yellow pine (*Pinus ponderosa*)

Barring accidents in the form of damage from forest fire, insect attacks, and fungous diseases, a yellow pine may reach a mature age of 400 to 500 years, attaining a diameter of 30 to 40 inches and a height of 100 to 150 feet. The average mature tree in the Fort Klamath region is about 36 inches in diameter and 120 feet in height. The age of such trees usually is between 350 and 400 years, and on average they contain about 2,500 feet board measure of merchantable timber. Tall trees, having a diameter of 4 to 5 feet, when felled and converted to lumber, may produce from 6,000 to 7,000 feet board measure, or enough to build a modern frame house of good size.

Along the Anna Creek Road yellow pine forms a considerable part of the magnificent forest up to an elevation of about 5,000 feet, but beyond this elevation it is replaced by other species that thrive better in the more moist soil and humid atmosphere of the higher country. Most of the park lies above 5,000 feet, thus excluding yellow pine, except in a narrow strip along the southern edge that ends shortly above the south entrance. Approaching the park from the west side, the traveler will see an abundance of fine yellow-pine timber from the foothills near Medford to the upper part of the Rogue River drainage.

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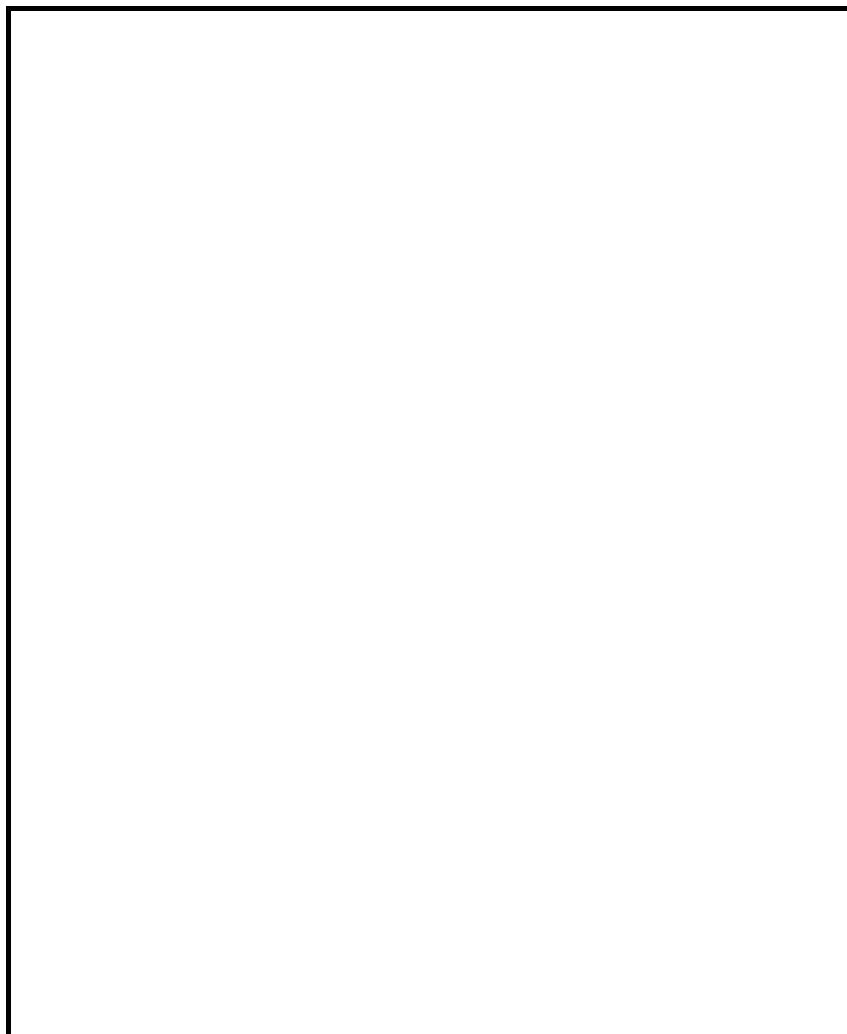


DESCRIPTIONS OF SPECIES.

SUGAR PINE (PINUS LAMBERTIANA)

Yellow pine can not, however, have the claim of being the largest and most kingly pine of the Northwest. This distinction belongs to one of its associates, the sugar pine (*Pinus lambertiana*) of Oregon and California. Around Crater Lake National Park this tree occurs mainly on the lower mountains on the Fort Klamath side, and also on the west slope in the Rogue River drainage extends up to an altitude of about 4,000 feet. It is found only in the extreme southern portion of the park as a rule, extending slightly higher than the yellow pine.

Sugar pine (figs. 4 and 5) seen and recognized once never is forgotten. Forest-grown trees, with their massive, slightly tapering bodies, their open crowns of long, huge branches standing out at right angles from the trunks, and, above all, the clusters of huge cones suspended gracefully from the upturned branch tips, give to this species an individuality that none of its associates possess.



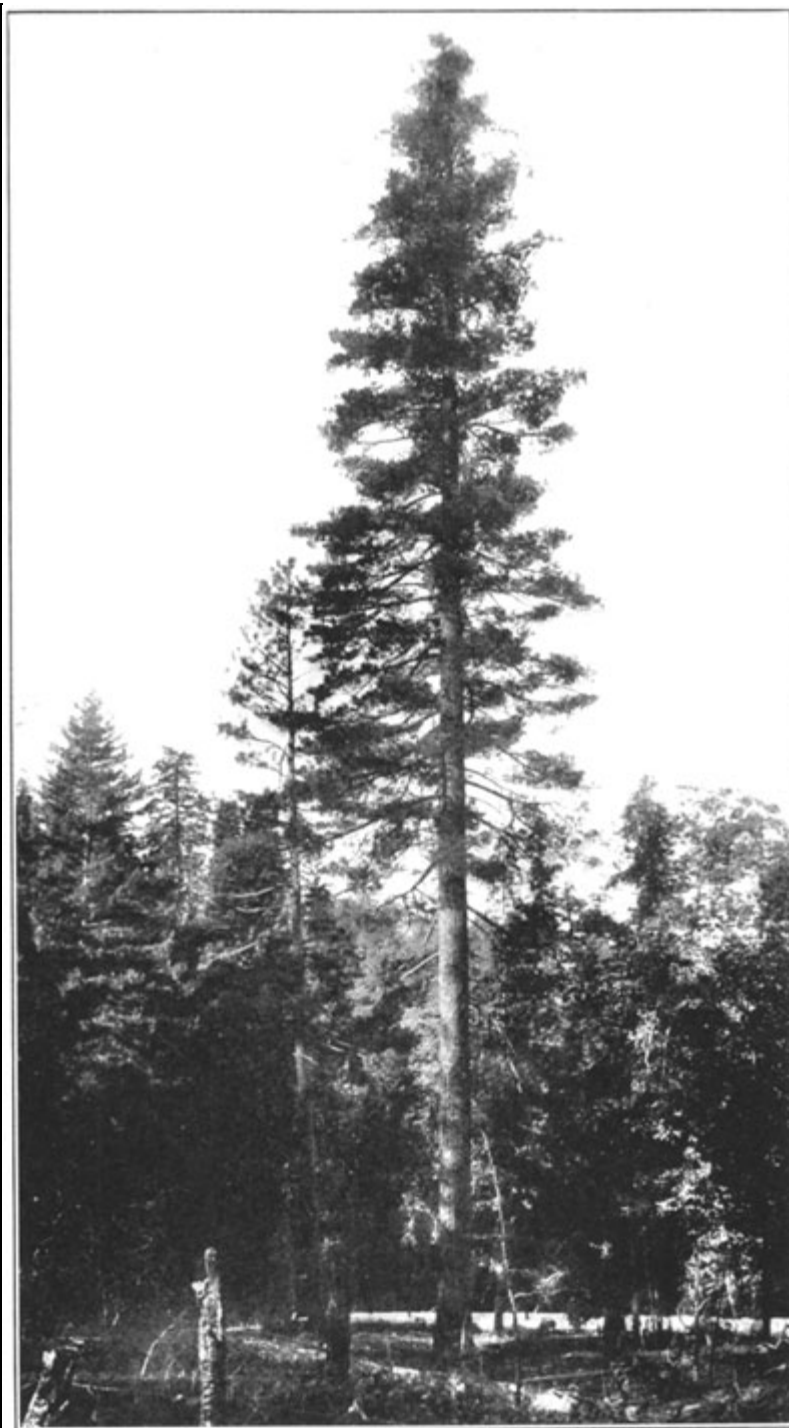


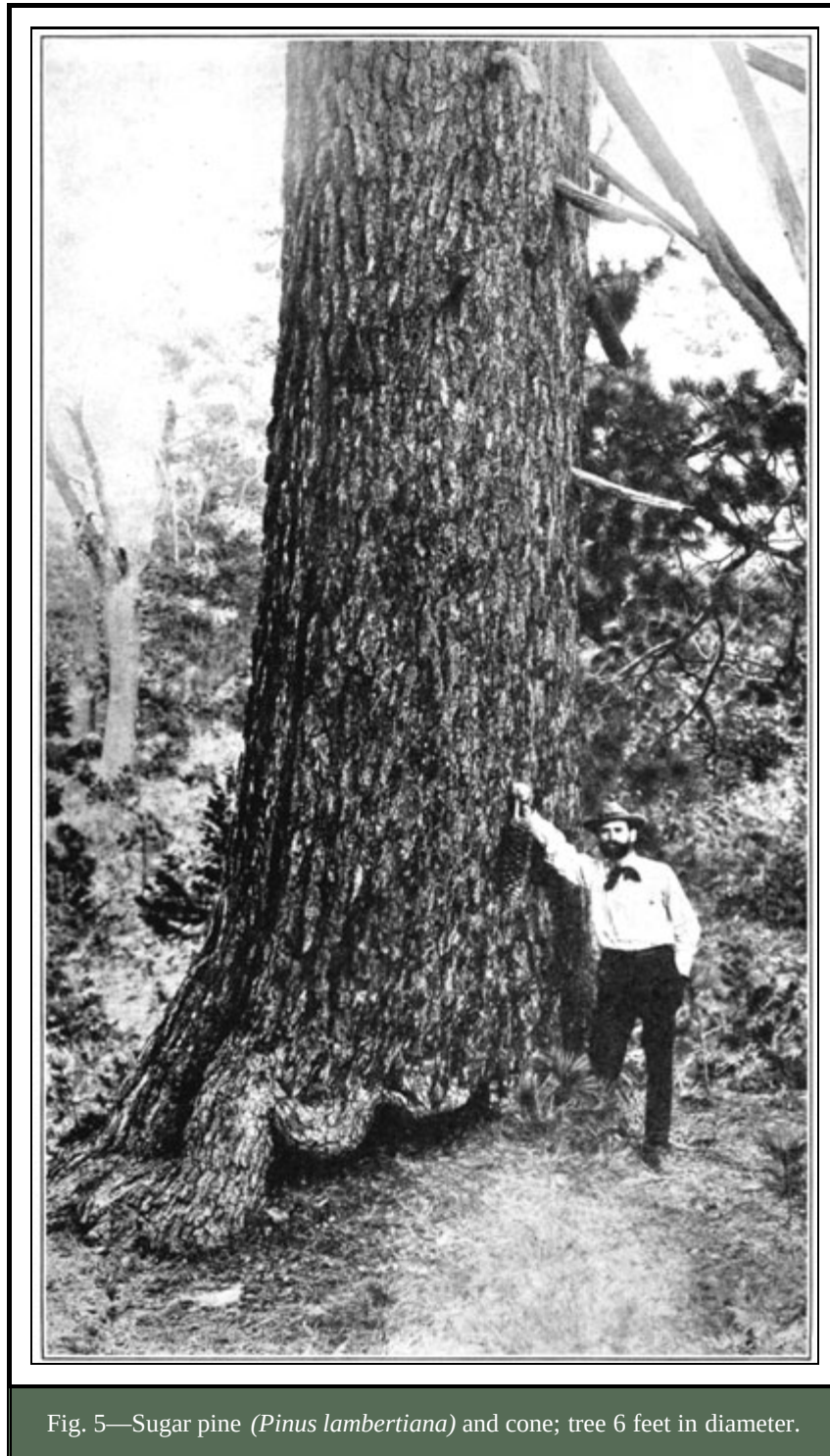
Fig. 4—Sugar pine (*Pinus lambertiana*) 61 inches in diameter.

The trunks of young sugar pines taper rather rapidly and they are partly clothed with small branches. In their later years the bodies fill out, forming smooth, slightly tapering columns, and all branches are lost except those on the upper part of the tree. On trees of medium and large size the bark is thick, deeply broken up into furrows, and plates covered by reddish and cinnamon-brown scales.

The slender needles of sugar pine are from 2-1/2 inches to 4 inches in length and are deep blue-green in color with a tinge of gray. They are bound in clusters of five, a characteristic of the true white-pine group to which this tree belongs. The huge cones hang on the branch tips for two years before the seeds are liberated, and then fall during the third spring and summer.

Usually their length is from 12 to 20 inches, and when their smooth brown scales are fully expanded they are from 1 to 6 inches in diameter.

Sugar pine is found only in Oregon, California, and Lower California, on both sides of the Cascades, from middle Oregon south, mainly along the Cascade Mountains and Sierra Nevada, and also, but to a less extent, in the Coast Range. Nowhere does it form pure forests, but always associates with other species, such as yellow pine, white fire, incense cedar, and Douglas fir.



The wood of sugar pine is soft, pale brown in color, and is greatly valued in the lumber industry. It ranks twenty-fourth in the lumber production of the United States, and California produces nearly 98 per cent of the amount cut.

The largest trees occasionally are from 4 to 7 feet in diameter, and lift their topmost twigs nearly 200 feet from the ground. In and around the park the usual size of the mature trees at 200 or 300 years of age is about 3 feet in diameter and 150 feet in height. A tree of these dimensions will scale about 2,000 feet or more, board measure.

Little wonder it is that the cupidity of the lumberman has led to a rapid exploitation of this noble tree. While it is inevitable that it should be largely cut, on account of the great value of the wood, let us hope that many of the largest monarchs may be preserved to add dignity to the future forests of the two States within which it occurs.

There are fine groups of sugar pine at many points along the road from Medford to the park. One tree especially that may be seen about 8 miles north of Prospect is nearly 8 feet in diameter and contains 25,000 feet, board measure, of timber. In ascending Anna Creek, the traveler who does not leave the road will fail to see the finest sugar pines. It is well worth while to wander out into the forest away from the stream, and there find the tree at its best, towering among the yellow pines and firs and scattering its great cones among the ceanothus and chinquapin brush at its feet.

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