

Plant Portrait . . .

Coast Redwood

Leonid Enari

IN HIS ARTICLE, "Finding the Mt. Everest of All Living Things," in the July 1964 issue of the National Geographic, Dr. Paul A. Zahl describes the discovery of a new world's tallest tree, a coast redwood. He tells how, in October 1963, he came to towering trees along Redwood Creek in the northwestern part of California's Humboldt County, how he measured the seemingly tallest tree in the grove, how his computations resulted in 370 feet, how he had doubts about the accuracy of his computations, and how he finally hired professional surveyors to check his figure. He was right. When three surveyors a few days later finished their work, their computations completely changed the tree world's hall of fame. The four tallest trees in the grove, as attested by the surveyors' jointly signed statement, showed heights of 367.8 feet, 367.4 feet, 364.5 feet, and 352.3 feet. This ranked them as the first, second, third, and sixth tallest trees in the world. The height of a coast redwood in Rockefeller Forest, thought so far to be the world's tallest, is only 356.5 feet, ranking it now as the fourth.



Sequoia sempervirens at Arboretum.

The principal home of the coast redwood lies in a narrow belt ten to thirty miles wide along the coast of the Pacific from Curry County in the southwest corner of Oregon to Monterey County in California. The area is distinguished by frequent fogs in summer, heavy rainfall in winter, and mildness of temperatures. In Humboldt and Del Norte Counties, where the fogs are thickest and the rains heaviest, the coast redwood forests are the mightiest.

Throughout its range, the coast redwood is commonly the dominating tree. On the flats and river banks, it forms nearly pure stands, crowding out all other species. On the slopes, it is usually associated with Douglas fir, lowland fir, western hemlock, tanbark oak and madrone.

As the redwood slopes are relatively open, there is a dense undergrowth of salal, huckleberries, Oregon grapes, thimbleberry, salmonberry, rhododendrons, ferns and others. Even poison oak has found places to grow, clinging to the bark of trees and climbing from 50 to 150 feet.

The coast redwood (*Sequoia sempervirens*) typically has a straight, tapered bole that rises clear for more than a hundred feet and a crown of horizontal branches that may occupy from a third to a half of its total length. This, however, is not always its common form. In old forests, the crown may consist of a few long, flat limbs, or of a mass of little branches reaching from the ground to the top of the tree.

The wood is clear red-brown in color,



Grove of coast redwoods at Descanso Gardens.

soft, brittle, strong, and most important, extraordinarily resistant to rot and insects, qualities possessed in like measure by few other woods, not even that of the Big Tree of the Sierras. It is used for construction, finishing, shingles, railroad ties, telephone poles, and many other things. The chief difficulty in working redwood lies in the seasoning process. The tree absorbs so much moisture that the butt log will sink in water. Left in the sun, logs require three to four years to dry.

The leaves are flat, sharp-pointed, stiff, of unequal lengths on the same twig, and measure from one-third to about one inch. The foliage is of a bright, deep yellow-green. Each season's growth remains on the tree for about three or four years.

Cones are small as compared to the size of the tree. They mature in one year and open and shed their seeds starting in September.

The redwood forest is of the selection

type; that is, it contains trees of widely varying ages and keeps itself stocked by production under its own shade from seeds and suckers. As the seed requires more light to germinate and grow than the forest usually affords, the stands are chiefly maintained by suckering from old trees. The suckers manage to survive year after year by connection with their parents and to make a slight increment of wood. When the old trees are felled, more light is let in and the suckers shoot up with all their native vigor. They will endure a astonishing amount of shade. In stands of second growth, so dense that not a ray of sunlight can enter, saplings 6- to 8-feet high can be found growing from stumps, bare of branches or foliage except for a few inches of pale-green crown at the top. In very dark, damp places in the virgin forest one may find clumps of suckers as white as sprouts from a potato in a cellar.

The enemies of the coast redwood are



SEQUOIA SEMPERVIRENS

Branch of coast redwood. (Drawing by Patty Lawson)

few and it suffers from these less than other trees. Wind can only rarely uproot them, and fire, the greatest enemy of all trees, though it may kill whole stands of young growth, is unable to penetrate the fireproof sheathing of shaggy bark with which the old trees protect themselves. In the damp northern part of the redwood belt the forest is too wet to burn. Farther south, during August and September when the land is dry from lack of rain, fires are frequent. Even then, however, unless the conditions are exceptional, they seldom are a threat to the old coast redwoods.

The coast redwood was first reported by Fray Juan Crespi, the chronicler of the Portola expedition which had been sent from New Spain (Mexico) to establish missions in what was then called Upper California. In the diary of the expedition, he mentions that on October 16, 1769, the expedition traveled over plains and low hills, well-forested with very high trees of a red color, and that because none of the expedition recognized them, they were named redwoods.

Specimens of a coast redwood tree were taken to England in 1795 by Archibald Menzies, a surgeon and botanist of the Vancouver expedition. When Aylmer Bourke Lambert, an English botanist, finally examined them in 1823, he placed the new species into the genus *Taxodium* and called it *Taxodium sempervirens*. The name, however, was changed by Stephan Endlicher, an Austrian botanist who in 1847 decided that the tree named by Lambert represented a genus distinct from *Taxodium*. He gave it the genus name *Sequoia* but retained Lambert's species name. It is stated that Endlicher chose the generic name *Sequoia* to honor Sequoia, the son of a Cherokee woman by a German colonist, who invented a Cherokee alphabet and taught many of his people to read and write their own language.

The National Park Service estimates that of two million virgin acres of coast redwoods, only 15 percent is left. And of these 300,000 acres, only about 50,000 acres lie within public parks and groves. At the present rate of logging, all the available virgin growth may be cut in half in the next fifty years. It seems like the danger of losing this forest, which was old when the world was young, is coming closer and closer. To replace it will take hundreds if not thousands of years.

Entering into a virgin coast redwood forest is an unsurpassed experience. It is a world of darkness, silence, and tranquility where time has no meaning and where one feels the closeness of the Creator. The impact is almost spiritual, for believers and for nonbelievers alike.

Coast redwoods can be successfully grown in many areas outside of their natural range. One of the best growing places is in, or directly next to, a lawn. Away from lawns, the trees need regular summer watering at least for the first five years.

At the Los Angeles State and County Arboretum, coast redwoods are found in quadrants N/7, N/8, N/9, and N/13. The largest specimen is in quadrant N/9 (east of the Coach Barn). It is 148 feet high and its three trunks measure 9'3", 8'6", and 6'4" in circumference. A fourth trunk was cut off some time ago. This tree is believed to have been planted by E. J. Baldwin in the 1880's. Coast redwoods can also be observed at Descanso Gardens in La Canada and South Coast Botanic Garden on Palos Verdes Peninsula.

Dr. Enari, author of this series of articles on plants at the Arboretum, is a senior biologist in the Department's research division, taxonomist, chemist, teacher, and author of a number of textbooks on botany.



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