

Literature Cited

1. Mazé, P., *Ann. Inst. Pasteur* 28:1 (1914).
2. Valle, B. L. and Altschule, M.D., *Physiol. Rev.* 29:370 (1949).
3. Finch, A. H. and Kinnison, A. F., *Tech. Bull. Arizona Agricultural Exp. Sta. No. 47, 407* (1933).
4. Bear, F. E., *Agr. and Food Chem.* 2:244 (1954).
5. Bergh, Helge, *Chem. Abstracts* 48:7709a (1954).
6. Viets, F. G., Jr., Boawn, L. C. and Crawford, C. L., *Soil Sci.* 78:305 (1954).
7. Hoyman, W. G., *Am. Potato J.* 26:256 (1949).

THE REDWOODS AND THE "BIG TREES"

When nature dealt out her gifts, she endowed California with a number of extraordinary things. But none is more startling than the two species of sequoias—the redwood, world's tallest tree, and the big tree, largest and oldest living thing known.

Sequoias are the venerable ancients of the vegetable kingdom. They thrived in vast forests 100 million years ago when the earth was dominated by 30 ton dinosaurs and fearsome flying reptiles. Some 45 species of fossil sequoias have been found in the rocks throughout the northern hemisphere. But little by little the sequoias lost their hold, until today only the redwood and the big tree remain, the last living representatives of their giant, lusty race. They are found only in California.

The redwood and big tree are brothers under the bark and have a general family resemblance, but each has a distinctive and individual personality of its own. They even prefer completely different surroundings. The redwood grows in a narrow, 500 mile belt bordering the mild, foggy coast of central and northern California into southern Oregon. It never climbs above an elevation of 3,000 feet. The big tree, on the other hand, likes the spartan environment of winter cold and deep snows in the mountains and is found only in seventy-odd scattered groves stretching for 240 miles along the west slope of California's lofty Sierra Nevada, from elevations of 3,500 to 8,500 feet.

Someday, to take your mind off taxes, wars and presidential elections, pace off a distance of 36 feet on lawn or sidewalk. Or, if you have the space, measure a circle with a circumference of 101 feet. The first is the diameter, the latter the girth of the General Sherman tree, patriarch of all sequoias. Then imagine it extending into the air 272 feet, equal to a 25 story hotel, and weighing 6,172 tons, about the same as a good sized ocean freighter. When you have digested these incredible figures and accepted its age at around 4,000 years, you will be ready to believe that there is enough timber in the General Sherman tree to build 45 five room bungalows or to construct a box completely enclosing the liner Queen Elizabeth—if there were any reason for such a ridiculous undertaking.

The redwoods of the coast are supertrees, too, but they cannot compete in size and age with these mountain monsters. The biggest redwoods measure up to 23 feet in diameter, although the average is from 10 to 15 feet. Also their life span of 1,500 to 2,000 years makes them youngsters compared with the big trees. But in height the redwood is supreme. The founders tree at Dyerville Flat, commemorating the three men who started the save the redwoods movement, towers 364 feet—the tallest accurately measured tree in the world. The big trees stand as ponderous individuals or in impressive groups among pines and fir. The redwoods grow close ranked in massed twilight forests of almost tropical luxuriance.

It is a tossup which sequoia is the more remarkable tree. But not to the lumberman. While the wood of the big tree is coarse and brittle, fit only for low grade uses, such as grape stakes, the redwoods produce grade A lumber which is growing in popularity throughout the country. This difference in the commercial usefulness between the two sequoias has resulted in 90 per cent of the big trees living peaceful, undisturbed lives in protected federal and state reservations, while most of the virgin redwoods are destined to succumb to ax and saw in another generation.