

The Persistent Emigrant

Frank Simerly

Ye who would pass by and raise your hand against me, harken ere you harm me. I am the heat of your hearth on the cold winter nights; the friendly shade screening you from the summer sun; and my fruits are refreshing draughts quenching your thirst as you journey on. I am the beam that holds your house, the board of your table, the bed on which you lie, and the timber that builds your boat. I am the handle of your hoe, the door of your homestead, the wood of your cradle, and the shell of your coffin. I am the gift of God and the friend of man.

Anonymous

OF ALL THE MANY trees introduced into California, none have the colorful and interesting history of the eucalyptus that we have come to take so much for granted. We see them in our gardens, protecting our orange groves from the wind, and planted along the highways, but how many of us really appreciate them? The gum trees are in fact so widely planted and seen in such large number that many people have assumed the plants are native to California, which of course, is not the case.

All eucalyptus come to us from Australia, New Guinea, and Tasmania. They were first discovered by a young botanist, Joseph Banks, who was one of the naturalists accompanying Captain Cook when that famous explorer discovered the east coast of Australia in 1770.

The word eucalyptus is from the Greek and may be translated "well hidden." The name was suggested by the cap-like structure which completely hides an immature bloom. Botanists have since classified over 600 distinct species and it is generally felt that the number is destined to be amended upwards.

When a Californian discusses the eucalyptus or gum tree, he most usually is referring to the blue gum, *Eucalyptus globulus*. Like many of us, he is apt to be unaware of the great variety within the genus. He will have noted gums towering over 150 feet here in California, but may not have seen the giants

found in Australia that are nearly 300 feet high. Even less familiar will be the many plants that never achieve a height exceeding 10 or 15 feet (better classified as shrubs), and the small, multiple-trunked trees Australians call mallees. The mallees generally achieve a height of approximately thirty feet at maturity.

The diversity of the trees is not confined to the proportions of their growth but may also be seen in the foliages which often differ from youth to maturity and include a multitude of shapes and colors. Leaves can be found in almost every shade of green and even grey. The unusual flowers are also varied. Many are so small, such as the *E. pulverulenta* flowers, that they are hardly noticed; others are so large and brilliant that they demand attention. Most striking are the bright red flowers of *E. rhodantha*, often found with dimensions of up to three inches across. One of the most desirable mallees for the home garden is *E. erythrocorys* which has yellow flowers that are covered by two scarlet caps prior to opening.

THE AUSTRALIANS have made many uses of the trees that are said to constitute almost 85 percent of Australia's forest regions. The wood is an excellent fuel and makes fine charcoal. It is used as paper pulp and furnishes raw material for the cellulose industry. It is made into fibreboard and into plywood and is a beautiful veneer. Apart from these uses, the wood has been

utilized in the paneling of railroad sleepers, as crossties, mine timbers, fences, and pier pilings. They have, in fact, been tried in almost every conceivable item that could be made from wood.

The trees are also valued for the essential oils derived from their leaves. The oils are combined in pharmaceuticals, stain removers, solvents, disinfectants, and are used as raw material for synthetic thymol and menthol. They are also valuable as perfume fixatives and are substituted for bergamot essence and are used for hyacinth scent in perfumery.

The fact that there are eucalyptus in bloom almost every month of the year and that the flowers are frequented by bees demonstrates their usefulness in the production of honey. Eucalyptus honey is of excellent quality.

The tree that influenced our California landscape more than any other introduced tree found its way into our country over a hundred years ago. It is not known who should be credited with the introduction or even when the first plants entered California, but there are records of fourteen varieties that were planted in 1856 by William C. Walker in his Golden Gate Nursery in San Francisco.

The planting of eucalyptus began to snowball in the 1870's after the Central Pacific railroad was completed and large numbers of settlers began to migrate to California. Seedlings were selling for as much as ten dollars each, but as greater quantities became available they dropped to twenty-five cents each. Large plantations were developed. One in Hayward contained 170,000 trees. The citrus industry got its start just after the Santa Fe railroad was completed in 1885 and it didn't take long for the citrus growers to utilize the gum trees to protect their orchards from the withering Santa Ana winds.

PRIOR TO THE 1900's, eucalyptus had been used primarily for firewood, windbreaks, highway and home

plantings. But in 1904 there was the scare of an impending hardwood famine and the eucalyptus was suggested as the solution. Along with the suggestion that hardwood would bring a premium price was one that presented the eucalyptus tree as the answer to the problem. The eucalyptus timber boom that followed was the product of this line of reasoning and the gums were discussed as "get rich" trees.

Corporations were formed to exploit the situation. The many virtues of the tree were described in magazines, newspapers, and books. The Eucalyptus Timber Corporation printed pamphlets to encourage investment in its companies. Many of the big planters and promoters were sincere but there were also many who were nothing more than profiteers. A standard procedure of the latter was to purchase poor land for as little as \$15 an acre, plant gum trees, and then sell the improved property for as much as \$250 an acre, with the claim that in ten years the timber yield would be worth \$2,500 an acre. By 1912 there were 50,000 acres planted to eucalyptus in California.

Adding to the esteem of the omnipresent gums was the widespread superstition that they helped to control malaria. They actually did stop malaria in the Bakersfield area. Their thirsty roots dried up swampy areas that had been breeding places for mosquitos. However, the knowledge of malaria at that time was almost nil and the reason for the decline of malaria when gum trees were present wasn't discovered until later.

Although the eucalyptus was accorded many powers to heal, the superstitious belief in the tree never reached the fever pitch in the United States that it achieved in Spain. "In Cordova, young gum trees were stripped of their leaves and it was impossible to keep them alive until guards were posted to protect the trees. In one Spanish town there was a regulation prohibiting the picking of the eucalyptus leaves without an official per-

Photo: Frank Simerly



E. globulus — the largest and most widely planted eucalyptus in California. This specimen is located just south of the South African section at the Arboretum.

mit issued only on evidence of the medical need of the applicant.” (Abbot Kinney, *Eucalyptus*, p. 135.) Californians agreed to the extent that better health seemed to accompany the planting of a gum tree.

There are many uses for eucalyptus oils in medicine today but the list is nominal compared to those published at the turn of the century. “According to one San Francisco doctor, the 136 cases of various diseases he treated with eucalyptus extract were either cured or showed improvement. Diseases treated included remittent fever, typhoid fever, valvular diseases of the heart, dysentery, chronic diarrhea, gonorrhea and dropsy.” (Abbot Kinney, *Eucalyptus*, p. 158.)

The discovery of the true cause of malaria ended the planting of the gum tree for its curative power. It is still used, however, to drink up excessive soil water and also has oils used in pharmaceuticals. The eucalyptus timber farmer of the early 1900’s probably felt he was accomplishing two feats at one time. He was improving the climate about his home as well as growing the trees that would stave off the hardwood famine.

ALTHOUGH several eucalyptus species had been planted by the turn of the century, only one (*E. globulus*) was planted with a commercial end in view. The unusual blue gum was considered a “Jack in the Beanstalk” tree.

It is still considered one of the fastest growing trees in the world. Almost 90 percent of the gum trees planted in California prior to the 1900's were the blue gums.

By 1910 there were at least 100 companies in the Southwest dealing in the ubiquitous gum tree. At the Chicago World's Fair specimens were displayed to show the utility of the hardwood. The wood had been worked into various boards and implements for the exhibit.

As trees reached a suitable size, Californians, eager to show their value, cut them and tried the wood in every imaginable way. Pilings made from the trees were tried all along the coast. The wood was utilized for flooring, veneer, beams, wagon wheels, and fence posts — in most every case with disappointing results. "An experiment made with the blue gum by the Southern Pacific Company showed it to be above average for a tie in all respects but one. It checked to such an extent that room could hardly be found to bolt down the rails." (Abbot Kinney, *Eucalyptus*, p. 39.)

It soon became clear that the blue gum is not the best of timber for general purposes. It is only second rate for ship building and pilings. It does not last well in the ground or in the water. The leaves do not give the highest yield of oil nor is it the best honey-making tree for bees. It does rate high in all these things but not high enough for commercial use.

The eucalyptus grower of the 1900's was truly disappointed by his disheartening experiments. Complete disillusionment came in the early part of the century when the U.S. Department of Agriculture printed several circulars giving the results of eucalyptus experiments. The department found that most of the difficulty was due to improper aging of the lumber and the time it took to cure the wood made its commercial use impractical. They also found that the Aus-

tralians did not use the blue gum nearly as much as other species. It was discovered that the trees cut in Australia for the mills were on the average, 100 or more years old, and were easier to cure because of their age. The Australians had difficulties in curing their lumber but, as they had few trees to compete with the gums, they had little other choice.

The marks of the great eucalyptus experiment are still borne by the Southwest. It is almost impossible to travel through any of the densely populated areas without seeing them, the patriarchs dominating the landscape and standing as monuments to our colorful past. The experiment is by no means ended.

Although the blue gum has practical limitations, it is one of the wind breaks still being used for our citrus groves. It is also effective along highways. There are even experiments indicating that the blue gum has value as semi-chemical wood pulp.

BUT WHAT OF the many other species of the gum tree? There are more than two dozen that have proven desirable for home landscaping and that can be found in most nurseries. They include: *Eucalyptus caesia*, *E. citriodora*, *E. torquata*, *E. viminalis*, *E. ficifolia*, and several others. The florist trade is using large quantities of the *E. pulverulenta* foliage for flower arrangements. Many new species are being used in highway plantings to create sound barriers as well as a more beautiful drive. And we would certainly be remiss if we didn't mention the more than 300 species of eucalyptus being tested at the Los Angeles State and County Arboretum in Arcadia. Undoubtedly many of the trees will prove themselves both adaptable and desirable for planting in the southland.

In 1963 the Arboretum introduced *E. calophylla* into the nursery trade and is

Photo: Frank Simerly



E. pauciflora — a prospective Arboretum introduction.

planning on introducing at least two more species by the end of next year. *E. pauciflora* is one of these species. It is an attractive tree that grows to the moderate height of thirty feet making it suitable for home use. It has a vase-shaped growth habit, lovely white bark that attracts attention and it is one of the most frost-hardy of the gums. Another promising eucalyptus is *E. lindleyana*. It is as broad as it is high, about forty feet, and has a beautiful weeping habit. We rate *E. preissiana* highly at the Arboretum but have been unsuccessful in acquiring viable seed so that we can test it further. This plant will grow twenty feet or so in height and has handsome chartreuse flowers. We have many more horticulturally fine eucalyptus that are still being evaluated for possible introduction.

The eucalyptus has a bright future in agriculture as well as horticulture. A 1955 publication of the Food and Agriculture Organization of the United Nations was devoted to the gum trees and in it Marcel Leloup, Forestry Division Director, says, "The creation of new forests by planting is one of the more important problems facing the foresters of the world. They are constantly in search of tree species capable of rapid growth, high yields, able to survive under a variety of conditions and useful for the protection of soil and water resources as well as other special products. One of the most versatile and interesting of such tree groups is the genus *Eucalyptus*, now widely planted in every continent of the globe."

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