The TALLEST TREE THAT GROWS

By EDGERTON R. YOUNG

IN THESE days, when the reforesting of the waste lands of our country is becoming a question of such national importance, the study of the relative value of different species of trees is naturally very essential.

Scientific parties are scouring the earth in search for new plants, fruits and vegetables to add to our enjoyment and happiness. A good degree of success has already attended their efforts, and doubtless much more will yet be accomplished by them.

Owing to the rapidly increased price of timber and lumber, the matter of forest-growing is of vital interest to the great corporations like the railroads, manufacturing and building companies, that must have, for their very existence, vast quantities of timber and lumber. The timber required by the railroads for the one item of railroad ties, not taking into consideration the quantity used in the construction of cars and buildings, consumes the output of many hundreds of thousands of acres of timber lands every year.

While undoubtedly the valuable trees indigenous to America will be most largely replanted and utilized, many others that are not natives of this continent, when found by experiment to be easily grown and of value, will also be imported and largely cultivated.

In the case of the eucalyptus this has already been done, and so extensively is the tree now grown in California, and so many and valued are its uses, that it will be news to multitudes to hear that there still live many who remember when it was first brought into that state by the late Bishop Taylor from distant Australia, its original home.

EUCALYPTUS GLOBULUS, SANTA BARBARA, CALIFORNIA

EUCALYPTUS GLOBULUS (THE BLUE GUM): CALIFORNIA

EUCALYPTUS VIMINALIS: CALIFORNIA

EUCALYPTUS 76 FEET IN CIRCUMFERENCE

It was a surprise, as well as a revelation, to find on our recent visit to Australia that in that far-away land, under the Southern Cross, were growing trees that towered in the air 150 feet higher than the great Sequoia, the famous red wood of our American west; and yet such is the fact, as some specimens of the Eucalyptus amygdalina reach to the great height of 480 feet. Specimens abound that are from 120 to 200 feet in circumference. They are practically of no use for commercial purposes, as the expense of cutting down such enormous trees and then getting their logs split up into pieces that can be handled is so great that these monsters are passed by the thrifty lumbermen for the smaller ones that are more easily handled.

The Eucalyptus amygdalina is the tallest, if not perhaps the largest, tree that grows. Specimens over 400 feet high are frequently found, while some have been measured towering up to 470 and 480 feet. The timber of these great specimens is easily worked, and, as it does not warp readily, is much used in carpentry.

The eucalyptus tree is a genus of trees and shrubs of the natural order of Myrtacea, embracing about 150 species. All but four of them are natives of Australia and Tasmania only. The eucalyptus trees are so abundant in many parts of Australia that over vast areas they are practically the only trees visible. The fact that the fully developed trees are destitute of symmetry and beauty robs the great Australian wooded regions of that attractiveness and charm which gives such pleasure and delight to the primeval forests of America.

One striking characteristic of several varieties of the eucalyptus is that, while they never seem to shed their leaves, they cast or slough off their bark in long strips every year. The leaves, which have a leathery appearance, contain a considerable quantity of volatile oil. The tincture or oil extracted from them has a bitter aromatic taste and is extensively used as a remedy for various diseases.

On the young shoots of many species the leaves in pairs are opposite to each other, as they appear on ordinary plants, while on the older branches the leaves are arranged alternately and grow in such a way that they present their edges to the sun. This seems to be nature's provision to protect them from the intense heat of the tropical sun of those lands where they most flourish.

The Eucalyptus globulus, generally called the blue gum, from its bluish-green leaves, is the variety most successfully grown in California. It has also been introduced and flourishes in India, Natal, Egypt, Algeria, and in various parts of southern Europe and in some other warm countries. It cannot stand the frost, and so must be classed among tropical trees. Perhaps only in the state of Florida and California can we expect to see it in perfection in this country; yet although its introduction into California has been of but recent date, already its value to that state has been very considerable.

Some of the species of eucalyptus are much more valuable than others. There is also a great diversity both in their appearance and worth. One of the most valuable is the Eucalyptus marginata, popularly called the Jarrah wood. It grows to a great size and its timber is so hard that it is found to be especially valuable in the construction of wharves, as it resists the attack of the ship worms and borers that are so destructive to ordinary wood. Because of this quality it also enters largely into the construction of ships and is utilized in other marine uses.

Some varieties of the eucalyptus yield a kind of astringent gum or resin called Vino, while from others a species of manna—a hard little, sweet substance—is obtained in considerable quantities. As an antidote against malaria and as being valuable in warding off or dissipating malaria in regions where malaria abounds, the eucalyptus has obtained a considerable reputation. Expert opinions seem to be divided as to the way in which its beneficent results come about. Some think it is the result of the volatile oils which these trees give off through their leaves, acting as a neutralizing and even destructive power against the malarial matter in the atmosphere; others maintain that its beneficent results are caused by the fact of the trees being such rapid growers, and the great quantity of water they thus absorb and then give off purifies the atmosphere. Whatever may be the cause, the fact is evident that their presence in goodly numbers, planted in malarial regions, has produced most beneficent results.

The Roman Campagna especially has been greatly benefited, so much so that large portions once considered almost fatal to human life, and shunned and feared, are now the abodes of numbers of people who find, since the introduction of the eucalyptus trees, but little traces of the dreaded malaria that for ages once caused those regions to be so shunned and deserted.

In the low malarial regions around the Cape of Good Hope and in some similar unhealthful regions around Algiers and elsewhere, the same benificent results have followed the introduction of the eucalyptus trees.

As yet no variety has been discovered that is able to withstand even a moderate frost, but the fact that millions of these trees can be raised so easily and quickly in California and Florida and perhaps in the warm places on the Gulf of Mexico, and that its timber can be so widely utilized, is a matter for congratulation to all who are interested in the conservation of our forests and also in the introduction of new varieties of trees that will add to the timber wealth of the country.

In general, eucalyptus may be successfully planted in the sections of the United States suitable for the culture of citrus fruits. They are grown in nearly all the agricultural sections of California, along the coast of southern Oregon, and to a limited extent in Arizona. New Mexico and western Texas. Several species have also been planted in Florida and along the Gulf coast. Here, however, occasional frosts have killed or severely damaged the trees, and for this reason planting has been discouraged.

The blue gum (Eucalyptus globulus) has a phenomenally rapid rate of growth. Seedlings stands will average a height growth of 50 feet in 6 years and 100 feet in 10 years. Under very favorable conditions individual trees have reached a height of 125 feet and a diameter of 36 inches in 9 years. In sprout stands growth is even more rapid; trees frequently reach 3 inches in diameter and 35 feet in height in 8 months, while in 3 years a diameter of 7 inches and a height of 70 feet are often attained. In California, under favorable conditions, trees have attained a height of 175 feet and a diameter of 5 feet in 25 years. Although sometimes irregular in form, the tree tends to develop a straight, gradually tapering, unforked stem. In plantations the trunks become rapidly cleared of branches to a considerable height, but in the open, trees branch more widely and gradually develop a short crown of massive, spreading branches.

Blue gum is practically immune from disease. Where trees are reproduced by sprouts, the old stumps frequently decay slowly at the heart, while the sprouts remained unaffected. Growing trees are not attacked by insect enemies, but felled timber lying unbarked upon the ground is subject to injury by a wood-mining insect.

Blue gum rarely suffers any breakage of the limbs by winds, and the spreading root system renders the trees very wind-firm.

Fire is the greatest source of injury to eucalyptus plantations. Both the natural characteristics of the trees and the conditions within planted groves render them peculiarly susceptible to fire injury. The large quantity of litter—dry leaves, branches and shredded bark—which accumulates beneath a stand is extremely inflammable. The bark of eucalyptus is so thin that the trees are injured even by light surface fires.

The wood of blue gum is very heavy, hard, strong and tough, but is not durable in contact with the soil. It is close-grained, and is split with difficulty after it has dried. It is less elastic than hickory, but it has been demonstrated by mechanical tests that seasoned blue gum timber is a little inferior in strength and stiffness to the best second-growth hickory. In appearance it closely resembles the wood of hickory and ash.

Blue-gum timber is utilized for a great variety of purposes in California. The wood is excellent for fuel, and in the treeless valleys has been the chief fuel supply for many years. In southern California the steady demand renders commercial planting for fuel very profitable. Eucalyptus timber has been extensively used in California for wharf piling. Blue-gum piles are in use in nearly every port on the California coast, and extended trial has shown that they resist the attacks of marine borers which destroy timber in sea water longer than other species commonly used for piling. Blue-gum timber has also been used to some extent for fence posts and telephone poles. The wood is not suitable for this purpose, however, on account of its short life in the ground. Seasoned posts last a little longer than green posts, and timber cut from the heart is more durable than sapwood.

Blue-gum timber has been used to a limited extent to determine its value for railroad ties. The results thus far obtained indicate that it compares favorably with second-grade pine-tie timber.

The lumber has been extensively used for vehicle stock and for wooden parts of agricultural implements. It is also made into insulator pins for electric wiring, and is used for furniture and cabinet work, hardwood flooring, trip-hammer beams, the levers of windlasses, and the blocking for oil and wine presses, wood paving, pulley blocks and belt wheels.

The extensive utilization of gum lumber has hitherto been prevented by the scanty supply of timber of merchantable size and by the difficulty experienced in seasoning the lumber without warping and checking. It is believed, however, that in the seasoning of gum no greater difficulties will be encountered than in seasoning of any other hardwood of similar density and strength.

A product of considerable importance derived from blue gum is the oil distilled from the leaves. Eucalyptus oil is recognized as a valuable drug and is extensively used by pharmacists and physicians.

In many valleys of California eucalyptus windbreaks are considered absolutely necessary to insure the successful production of crops. They have been most extensively used to safeguard citrus orchards from strong and destructive winds in southern California, but they are now being established also for the protection of vineyards and orchards of deciduous fruits, olives and walnuts. The blue gum excels other species for windbreak purposes on account of its height and the rapidity of its growth. The tall shafts of the trees bend before the wind and act as a cushion to deflect it upward over the orchard, whereas ordinary wind-break trees form a more solid wall, and the wind draws downward, forming eddies near the leeward side.

Eucalyptus reproduce readily by both seeds and sprouts. The trees bear seed in abundance annually, and under favorable conditions natural reproduction is freely established. Trees also sprout vigorously from both the stump and the roots, either after cutting or in response to injury. In California commercial groves are almost invariably reproduced by sprouts.

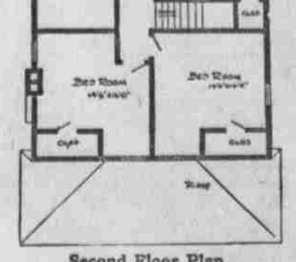
Plantations should be started with young trees and not by direct sowing. The opinion is generally held that eucalyptus seedlings are so difficult to raise that their propagation is impracticable except for expert nurserymen. In point of fact, blue gum is one of the most easily propagated species.

The American Home

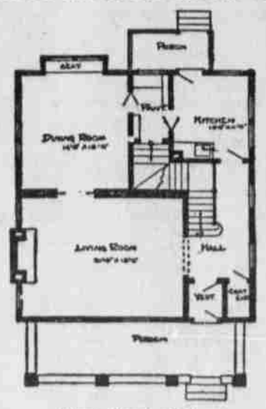
WILLIAM A. RADFORD Editor

Mr. William A. Radford will answer questions and give advice FREE OF COST on all subjects pertaining to the subject of building for the readers of this paper. On account of his wide experience as Editor, Author and Manufacturer, he is, without doubt, the highest authority on all these subjects. Address all inquiries to William A. Radford, No. 194 Fifth Ave., Chicago, Ill., and only enclose two-cent stamp for reply.

Some general observations on home building will not be out of place for the benefit of the intending builder before describing the plan shown in this connection. The long-felt want for an artistically expressed and conveniently arranged small house is being filled. The man with $2,500 to $5,000 which he wants to put into a house can now have a cottage which will, in design and plan, express his individuality. And it is true that the house should reflect the taste of its owner or occupant. Home builders have come to realize that a house should possess individuality without being freakish. The hammer and saw square box of a house, or the frightful creation with eaves extending out barely six inches, never sells, let alone being a place for a habitation. Architects as a rule are putting forth their best efforts in the line of designing houses that will be artistic and beautiful to look upon. The architect realizes that, first of all, the plan must be arranged to meet the needs of the family. The court of last resort in the planning of a house should not be the architect, should not be the man of the house. The final dictum must be given and is given in most cases, by the wife and mother. And provided what she wants is within the bounds of architectural limits, let her have it, for she is there the whole livelong day and ought to have the last say, as she will anyway. Another thing, the design will be influenced by the site the building is to occupy. These points decided, the restrictions lie only in the materials to be used, and the amount of money to be spent. It is safe to use the materials found in the immediate vicinity. They will harmonize with the landscape better. A brick house is as much out of place in the woods as a log bungalow would be on a city boulevard. Most houses are the result of thought and study, and one of the chief factors to be considered is the site itself. There should be a generous living room placed so that it will have the benefit of the afternoon sun, if possible. A dining room is well placed if it has a good eastern exposure. The placing of windows in groups of two or three or more, give a pleasing appearance to the side walls, which form centers of interest that attract the eye. Casement windows are cheaper than the double hung sash, give twice the ventilating area, and are very attractive with their small square or diamond panes which suggest protection to the inmates from the inclement weather without. Casement windows should be made to open out. Windows should always be placed in two sides of a room to furnish ventilation, if possible. The kitchen and pantry windows should be higher from the floor than the other windows. In placing windows and doors in a room, see that sufficient wall space is left for the furniture. Many a room has been built in which space could not be found for a bed. Have all the floors and stair treads of hardwood if possible. They cost less than soft wood and carpets, and from every standpoint of health, beauty, service and economy in time and labor of housekeeping, are far superior. Oak and maple make the best floors, but hard comb grain pine floors are quite presentable if the better ones are not obtainable.



Second Floor Plan



First Floor Plan

Now as to the design of the house shown here. In size it is 30 feet 6 inches wide and 34 feet 6 inches long, exclusive of porches. This house is planned for finish in cement stucco. A wide porch with massive pillars extends across the front. This itself is a feature and affords a relief from the familiar porch columns one sees on every hand. Massiveness is the impression the porch gives. And the outside chimney gives a hint of the great fireplace within, and tells its own story of the cheery rooms of the house. Entrance is had into a good-sized hall, from which a stairway leads to the second floor. The living room is 21 feet long and 15 feet 6 inches wide. The dining room back og the living room is 14 feet wide and 15 feet long. This room has a window seat. The kitchen is accessible to the dining room through a pantry of ample size. On the second floor are four bedrooms, each provided with a clothes closet and a bathroom.

The Albatross.

The power of flight possesed by the albatross, that wanderer of the sea, is wonderful in the extreme. It spends its life, with the exception of a few weeks given each year to nesting, entirely at sea, and is on the wing practically all the time. Furthermore, it does not progress by flapping its wings as most birds do, but seems to soar at will, rarely, if ever, giving a stroke of the wing, seeming to need no impetus. At nesting-time which is early in the year, the albatross repairs to some isolated island such as the Crozet islands in the southern Indian ocean, Tristan da Cunha, in the South Atlantic ocean. Here they congregate in thousands, building their nests and hatching and rearing their young. The nests are built on the ground in an open situation. They are mound-like in appearance, and have a slight depression on the top. They are made of mud and grass, and about 18 inches in height. The albatross lays but one egg, which is quite large, being from four to five inches in length. The shell is rough, creamy white in color, and speckled with numerous brownish spots. When disturbed on the nest they clatter their bills, making a very loud noise, which, when taken up, by thousands of birds, becomes deafening.

A Humble Invention.

To forget the inventions of the hour is an impossibility. They are before one at every turn, and many of them contain possibilities vast and much discussed. For that reason it is well occasionally to contemplate some invention of the past which works unremittingly and inconspicuously for the welfare of mankind. Consider the air brake. How many, when they take a journey by rail, ever take thought of the device which stands ready to insure safety from possible accidents? All are so used to the sibilant noise below the cars that they never consider its portentousness. Yet by this application of the power of compressed air, tens of thousands of lives have been preserved, and railroad travel has been made more expeditious. All this is arrant truism; not a word of it but what has been said scores of times before. But we like to dwell upon the air brake as one of those typical inventions which are doing their work faithfully and humbly while recent creations get the glory and applause.—Collier's.

The Russian Jewels.

The splendor of the Russian jewels exceeds all powers of description; we know that Catherine the Great's coronation robe was so heavily laden with gems that it took twelve chamberlains to support it. The czar's throne, which belonged to the last emperor of Constantinople, is of finest ivory studded with precious stones, and that of the czarina contains 1,222 rubies and 875 diamonds, besides pearls and turquoises.

Send Good Joke Down Line

Telegraphers Said to Be Responsible for Quick Way That Stories Travel.

"Now that's something I've often wondered about," said the old commercial traveler to a Philadelphia Ledger man. "How does a new joke travel over the country so quickly? I've heard the explanation that it is we commercial travelers who spread them. But that isn't how it's done; it doesn't make any difference if we travel on a through express, we frequently find that a brand new story we heard in Philadelphia has reached San Francisco ahead of us."

"The explanation is simple enough," said the old telegrapher. "It simply means that electricity is faster than steam; while you were traveling to 'Frisco on the railroad the joke was traveling there on the telegraph wire."

"No; no one goes to the expense—that's on the telegraph company. You see, it's this way: The operators at all the big telegraph centers over the country have a speaking acquaintance with each other. They call each other by first names, though the chances are that they haven't the slightest idea of each other's appearance. During the night the wires are often quiet. Now, suppose a message has just been sent from New York to this city; for the time being there is nothing more to be dispatched, and no other operator is trying to get the wire. In this case the telegraph instrument in Philadelphia is likely to click off; 'Say, Jim, I just heard a new story. It's a good one.'

"When Jim gets Jack at Chicago or Pete at St. Louis on an idle wire, the new story is passed along. And so in a single night a cracking good story may be passed from New York to San Francisco.

"But I'm afraid that stories won't circulate now as quickly as they used to. You see, the companies have wakened up to the fact that many of their wires are idle during the night, and so they have instituted the 'night letter' service—telegraphing at night a 50-word message at the same price that dispatches a 10-word message in the day."

An Insinuation.

"Mary, Mary, take the parrot downstairs at once. The master has lost his collar button."—Christian Register