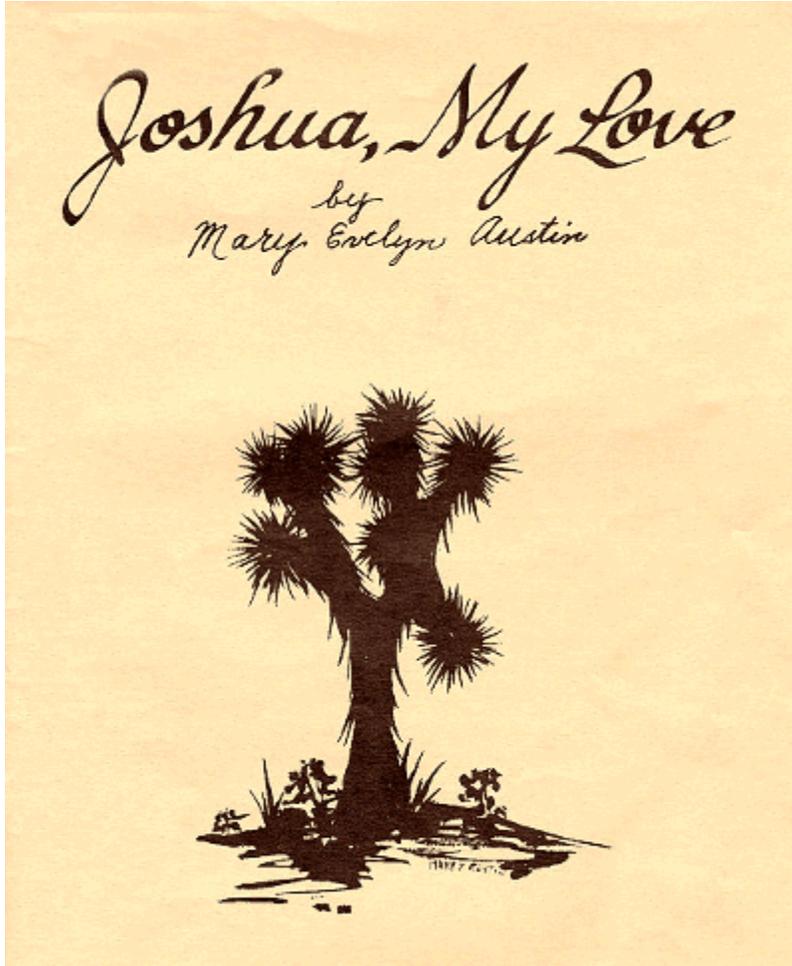


Joshua, My Love
by
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Black & White Photographs By Walt Gentry
Palmdale, CA*

First Printing 1965 Fifth Printing 1987

I became fascinated with Joshua trees the very first time I saw them in the spring of 1934. A bus trip took me through the Mojave Desert when they were in bloom and the guide's "patter" whetted my appetite for more information about them. After moving to Lancaster, California in 1937, I began searching everywhere for any information regarding them. I found only two line articles everywhere I turned. Since this is really a "do it yourself kit" of "here and there" type information gathered over these many, many years, it is impossible to give any one article credit for the information herein. All I can say is that whatever information came my way was devoured with delight! I hope this article will provide a comprehensive "thumbnail sketch" for you.

The Joshua trees are a member of the lily family, and are classified as *Yucca brevifolia*. They are related to many familiar plants such as yucca, tulips, hyacinth, asparagus, and of course our ever lovin' garlic and onions! !

The wood fiber of the Joshua is classified as the Monocot, along with palms, bamboo, cane, etc. Their growing habit is very similar to many Palm trees, (with the exception of growth rate). Each year the Joshua trees put out a tiny amount of new leaves (spines) at the end of each branch and a few die back to resemble the shaggy profile of many Palms.



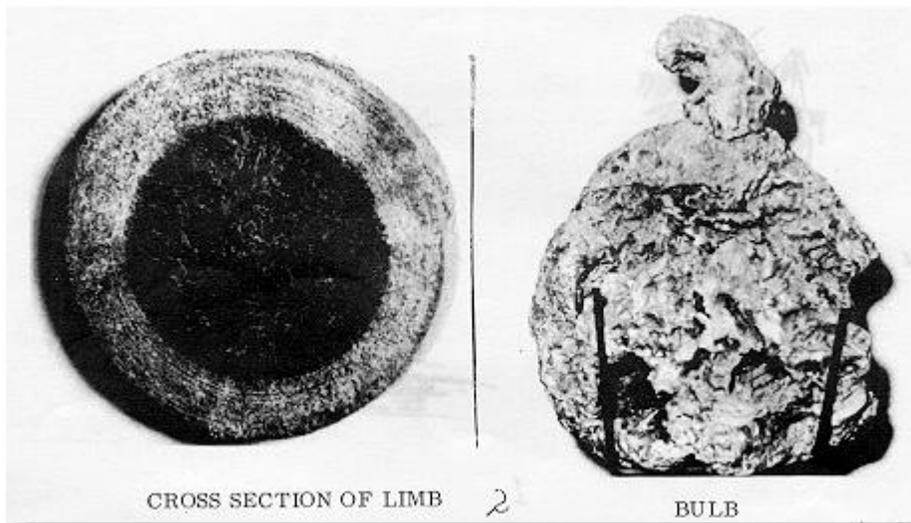
Living trunks and limbs are very porous and contain large amounts of moisture. It takes a huge heavyduty piece of equipment to push over a medium sized tree. A cross section of the trunk and limbs look like many layers of blotting paper wrapped around a huge loosely woven rope. The Joshua wood has been veneered and made into exquisite wood paneling. I had the good fortune to get acquainted with Mr. Compton of Adelanto, California who had developed a method of veneering Joshua trees and making (four by eight) 4x8 foot panels that were so beautiful that each panel could have been framed as a piece of art. The grain of the wood suggests clouds, sand dunes, mountains and some pieces even look like seascapes without a single brush stroke!! (The Joshua Trees are protected by the government and permission has to be obtained for the removal of any tree even from your own property. The trees Mr. Compton used had been removed from the Los Angeles to Victorville, California Freeway site).

Joshua wood has been used for a number of things but all major ventures have been discouraged since growth is so extremely slow. The replacement of an average tree could take as long as a hundred years. The Indians had many uses for the Joshua wood. They removed the ropelike centers from the limbs and used this cylinderlike "canister" for storing nuts and berries. The fibrous crosssection centers made excellent filters for many liquids. The tough outer bark made very useful lightweight serving dishes. As far back as 1883 the white man has used the wood. The London Daily Telegraph was printed on paper made of Joshua pulp. During World War I the wood was used in making splints. The pioneers used the soft tough bark for banding fruit trees and used the limbs for fence posts. The wood that had been exposed to the elements became very hard (actually seemed to be petrified) and made a superior firewood. The early settlers prized the wood in an area where all other firewood was practically nonexistent.



Photographs on this page show the seed pods as they are found on the Joshua trees.

These black and white photographs are original photos from Mary E. Austin's publication.



The Joshua trees (like all desert plants) do not like to be transplanted. There are "individuals" that contend that "a successful transplanting will result" if the tree is very carefully replaced in the soil exactly as it originally grew. I have observed the results of every method and have come to the conclusion that regardless of the method, survival remains the same at about fifty per cent!

Dry Seed Pod

Most members of the lily family grow from scaly bulbs but some have fertile seeds and will grow from either, though the percent of fertile Joshua seeds is very small. Mr. Compton found that less than half of the seeds planted germinated. The most astounding features of the Joshua trees are the huge bulbs found under the trees. These bulbs are found at depths of ten to thirty ft. They occasionally reach forty inches in circumference and weigh up to forty pounds. The Joshua bulbs differ from other lily bulbs in that they grow year after year and, with a convulsive movement, grow deeper and deeper. Although these bulbs grow under every tree, they are seemingly rare to the average person who seldom digs at such depths, but workers in excavating and mining are very familiar with these almost unbelievable bulbs. When "green" they are plump and firm, but when dried they look like any "big ale' dried sweet potato"! !

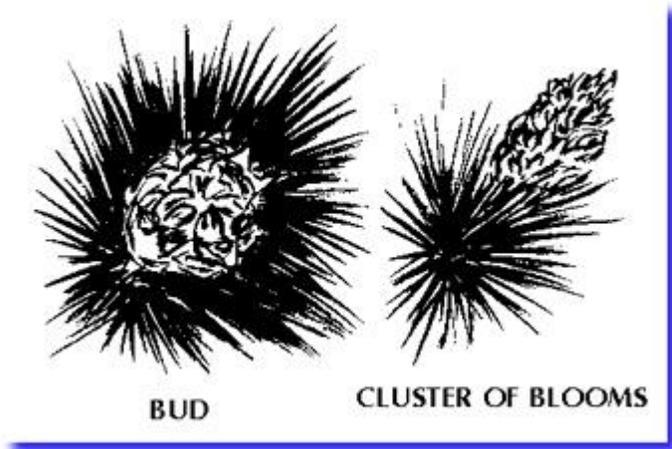


This bulb was given to me by a worker at the gravel pit at Littlerock, CA. as a birthday present. It was completely saturated when he gave it to me. (We were operating a little cafe at time and when I went into raptures over it one customer nudged his buddy and remarked "BOY " it sure doesn't take much to turner en dons it ")

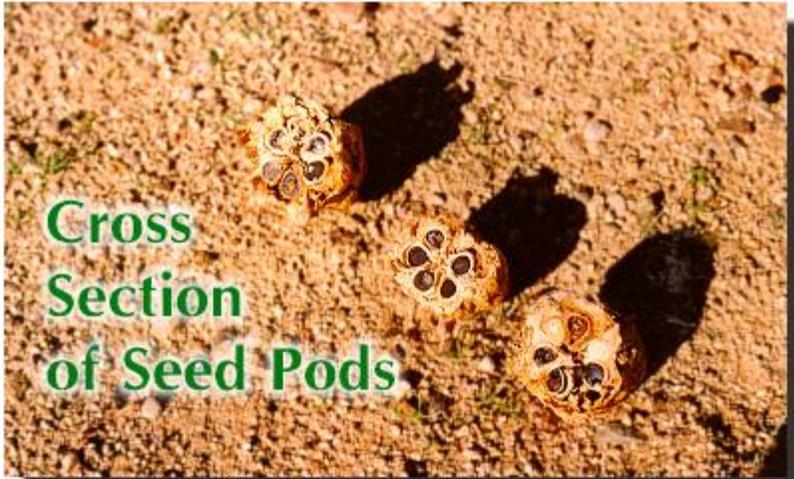
I put the bulb on display and learned many things from our patrons. There are many bulbs under each tree. There are two sets of root systems, the shallow roots that reach a few feet and then another that develops bulbs that stores any surplus water to be used when needed. One customer chuckled while reading the story on the back of the menu. When I asked him "why" he smiled and said "the previous owner of his home had transplanted a Joshua tree in the back yard he was digging a bomb shelter and was down 1213 ft. and was going crazy trying to figure out where 11of those "little potatoes" were coming from. His Joshua Tree was making NEW BULBS! ! So, they are not

RARE, just are at such depths that the average person never sees them. When I am asked why no one has ever bothered to dehydrate one my answer is I guess I'm the only one that really cared "

Another bit of information that came my way was from Mr. MacVey from Rosamond, Ca. He was on a tour of duty in Tel Aviv for two years. He wanted to photograph a Joshua Tree in the Holy land to send back to a club that had adopted the name Joshua since the tree grew in the Holyland " He did extensive searching and finding none he contacted a Dr. John Mendelsson of Tel Aviv University and a Dr. Hannah Dan Nun of Hebrew University still no Joshua Trees')



The Joshua blooms in early spring with large clusters of creamy white blossoms at the end of some of the branches. These buds were highly prized by the Indians. The large clusters of buds were removed by reaching overhead and with a snapping motion the brittle stalk was severed. These large clusters were pit roasted and served either hot or cold. The high sugar content made them a delightful substitute for the then nonexistent candy and was served to the children as such. There are many bits of folklore concerning these blooms. One is that "all danger of frost is over when the Joshua blooms" (Ho, Ho, don't ever bet on that! !). Another bit is that the Joshua blooms only every seven years. The actual truth is that each terminal only blooms once (more about that later in this article pertaining to growth habits). I was puzzled for many years trying to find a cluster in full bloom. I always seemed to either find nothing but buds or seed pods! Imagine my chagrin when I learned that they bloomed at night.



The Joshua flowers are fertilized by a little grayishwhite moth, (*Pronuba Synthetica*) during the months of March and April. The moth climbs up into the flower, gathers pollen, shapes the sticky substance into a tiny ball, tucks this little ball under her chin, flies to another tree, enters another bloom, lays her eggs, climbs to the tubular stigma and presses the ball of pollen inside to furnish food for her newly hatched grubs, which in turn fertilizes the bloom. The flower produces a seed pod around *Pronuba*'s eggs. The moth grubs are timed to hatch when the seeds ripen. They eat a small share of the profusion of seeds, then bore out of the pod and make their way into the ground where they sleep until the following spring.

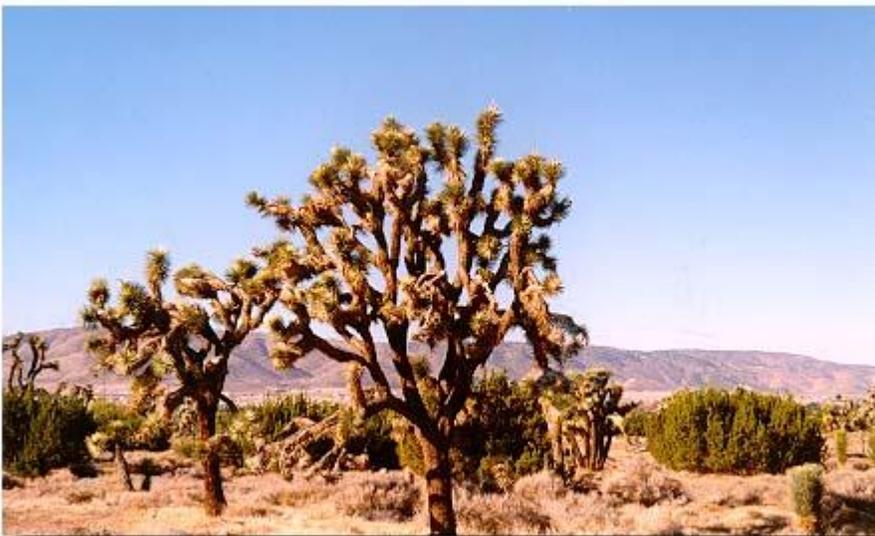


Only *Pronuba Synthetica* pollinates the Joshua flowers, without her the blooms would remain sterile, and the Joshua bloom is the only food provided for the babies of the *Pronuba* moth. This strange union caused the changing of the moth's name. Originally the moth was called *Tegeticula Pronuba*, and is now known as *P. synthetica*, a name chosen from the ancient goddess of marriage, Juno *Pronuba*. The tiny *Pronuba*s work

at night and to make their work a little easier nature provides them with blooms of a whitish color. The small flat black seeds resemble ripe watermelon seeds. They are firmly packed in pods about the size of medium chick's eggs. Some of the clusters contain as many as fifty pods.

Each pod is divided into five sections and contains about eighty seeds. The seeds were widely used by the Indians. They ground them into flour and ate them dry or made them into a mush. These seeds are a very important food for the tiny desert rodents. Nearly any hot summer day you can see the beguiling chipmunk scaling the spiny tree, searching for a much needed meal or just scouting the terrain for enemies!

These unusual trees were named by the Mormons on their trek to Salt Lake, Utah. The story goes that the trees with their lifelike postures suggested Joshua lifting his arms heavenward in a prayer of thanksgiving for the successful end of a long and tedious journey.



There are many conflicting stories as to the locale of the Joshua trees. I have read from time to time (in newspapers) that they grow not only in the southwestern part of the United States but also in the "Holy Land". I have researched every possible source of information and have only found the following wording: "while yuccas are widely distributed, the only place in the world where the Joshuas grow is on the Mojave Desert, parts of which extend from California into Arizona, Utah and Nevada."

I have personally checked with aircraft engineers that have worked in the Holy Land and with families that have toured and filmed that entire area and all sources reported "no

Joshua trees"! I have an idea that the name Joshua, being a biblical term, contributed to the misconception that they originated there. Where the Joshuas came from, no one knows. It has been suggested that their ancestral yuccas may have come from Mexico or Central America or even that they may have actually developed into the unusual tree right where they are. The Joshua trees have no growth rings, therefore it is impossible to establish their age by that method. Joshua trees may well be the desert's oldest living thing.



Grosteque Silhoutte of a tree about 25 feet high and about 300 or 400 years old



Small Joshua about 10 years old

For thousands of years members of the yucca family have grown in their present site. Some of our largest Joshua trees now living are guessed to be a thousand years old. They probably were flourishing ages ago when giant sloths, ancient carnivores and prehistoric birds roamed the deserts.



Details of the terminals with the start of "New Spines" for future blooms

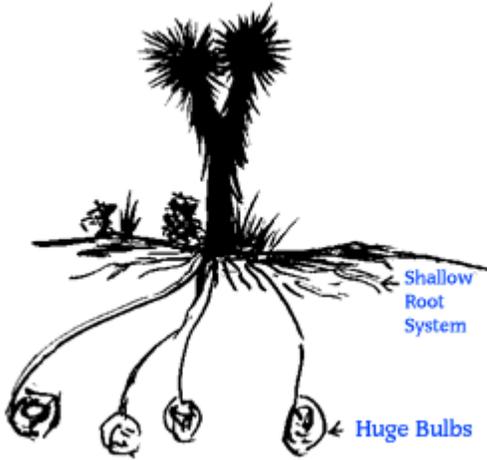
The trees grow to a height of fifteen to thirty feet, with some of the grand old ones reaching a height of eighty feet. (One tree near our home grew about six feet in twenty-six years) ! The circumference of the trunks reaches from two to six feet. The trees grow vertically until the growth is terminated by the blossom or the yucca boring beetle. Then the tree branches to start new terminals for future blooms. This unique feature accounts for our intriguing and often grotesque silhouettes. The Joshuas are usually found in the upper desert at 2, 000 to 4, 000 feet elevation.

Many uses of the Joshuas have been recorded. The Indians used them extensively. They removed the sharp spine (leaf) from the tree after it became dry. They then removed its side fibers, leaving a very sharp "needle" with a very tough "thread" attached to "sew" with. These spines were often tied together to make a very durable "roofing tile", sleeping mats or anything that needed a tough and waterproof covering. The spines were pounded on rocks and the pulp was used as a soap for shampooing, bathing or washing clothes. The roots were also boiled and either used fresh as "liquid" or dried and used later for cleaning purposes. The inner bark of the rootlets are red and the Indians used them in basket weaving for added color. Some of the rootlets were boiled and a red dye was obtained for use in pottery coloring.

I believe that mother nature has given the Joshua trees three chances for survival:

1. Each spiny leaf is turned upward to catch even the least amount of moisture, for storing in the limbs and trunk.

2. The shallow root system radiates from the trunk for many feet. Since these roots are only two or three feet deep they capture and store all surface moisture from summer showers and winter rains.
3. The huge, completely saturated bulbs, living so far beneath the desert's hostile environment is their "survival kit" to be called upon in cases of severe drought.



Shallow root system of an uprooted Joshua tree



Joshua tree



Large trunk



Author beside tree

The End