

# Agave : Complex plant species



## a desert place

Natural beauty  
through preservation

Presented by:  
CONSERVATION COMMITTEE of the  
Cave Creek Improvement Association

**Editor's Note:** This is the first of a two-part series on agaves and yuccas in central Arizona.

**Desert Place**  
by Gladys Nisbet

I don't know why I ever thought I was wise enough to take on the job of discussing the above genera in an adequate manner.

The genus *Agave* is one of the most complicated of plants and the identification of species sometimes depends on the use of precise botanical terms and careful measurements of the structures of small flowers.

When a mature agave plant produces a flower stalk and flowers, it uses all of the food it has been storing for 10 to 20 or more years and gradually dies.

Due to this rather unusual life cycle, blooming agaves are often few and scattered during any one blooming season.

This is one of the important reasons for protecting all agaves from the bulldozer. Since the flowers are sometimes not available, I will stress the green plants in discussing each agave and give only the approximated length and color of its flower and the type of inflorescence. While these descriptions are simplified, I hope they may be of interest and of some help to those interested in these two genera.

I am grateful to Howard Scott Gentry for his extremely interesting and informative book "Agaves of Continental North America," without which, this effort would have been impossible.

There are 12 agave species and subspecies that are native to Arizona. Five of these, plus one variety, are found in central Arizona. Three species are endemic or found only in central Arizona.

Another reason, friends, to take care of these plants is that a fourth species, thought to be endemic in Arizona, has recently been found in Sonora.

*Agave toumeyana* subspecies,

*toumeyana* and subspecies *bella* are endemic in central Arizona. Subspecies *toumeyana* has been found in the Pinal mountains, Superstition Mountains and hills north of Sunflower. Subspecies *bella* is located in the Sierra Ancha Mountains, New River Mountains and along the old road to Red Rover Mine.

These agaves grow on open, rocky ridges of limestone or volcanic rock along with other vegetation of the high desert up to 4,500 feet elevation.

The rosettes are small, light or yellowish-green and crowded because of the numerous sucker plants. If you think agaves have wide and long leaves, this one may not look like agave because the leaves are narrow, 8 to 12 inches long, one-half inch wide on the

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upper part and three-quarter inches wide on the lower part of the leaf.

The leaves are almost flat above, but convex beneath, and become more convex on the lower part of the leaf.

Lengthwise, white lines can be seen on both the upper and lower sides of the leaf. These white lines are called bud printings because they are acquired during the bud stage of the rosette of leaves. Many agaves show these bud printings, some more than others.

The leaves have a narrow brown edging and many loose white fibers along the margins. The brown or gray spine at the tip is one-half to three-quarter inches long. The flowering stalk may be five to eight

feet tall. The flowers grow close to the stalk, are small and green with lobes almost white. When mature, these flowers hang downward.

*Agave toumeyana* subspecies *bella* differs from subspecies

*toumeyana* in having more numerous and smaller leaves which are only seven to eight inches long and one-quarter inch wide. Also, the lower half of the leaf margins have no brown edge or white fibers and they have tiny teeth. The flower stalk is shorter and the flowers are the same color and size.

*Agave chrysantha* is also endemic in central Arizona. Its habitat is from 3,000 to 6,000 feet on the slopes of the Pinal, Mazatzal and New River Mountains.

*A. chrysantha* seldom forms suckers so the small-to-rather-large open rosettes are usually single. The leaves are 16 to 20 inches long and three to four inches wide, with the widest part in the middle. They are straight with margins that curve upwards so the leaf forms a gutter that catches and carries rainwater to the base of the plant.

The margins are toothed, the larger teeth being about one-half inch long and one inch apart with smaller teeth between them. The spine at the tip may be as much as one and three-quarter inches long, slender and brown.

The flower stalk may be very

tall, around 20 feet. The inflorescence is narrow with few branches. The flowers are 1-1/2 to 2-1/4 inches long, a beautiful golden-yellow and have a strong odor resembling coconut meat. This is a very attractive and distinctive plant. A good place to see it is Queen Creek Canyon, near Superior.

*Agave murphey* plants are rare and scattered from the Tonto Rim to southwest Arizona and adjacent Sonora.

It was considered an endemic in Arizona until recently when plants were found in Sonora.

It prefers slopes of hills and mountains at 1,500 to 3,000 feet elevations in Maricopa, Gila and Pinal counties.

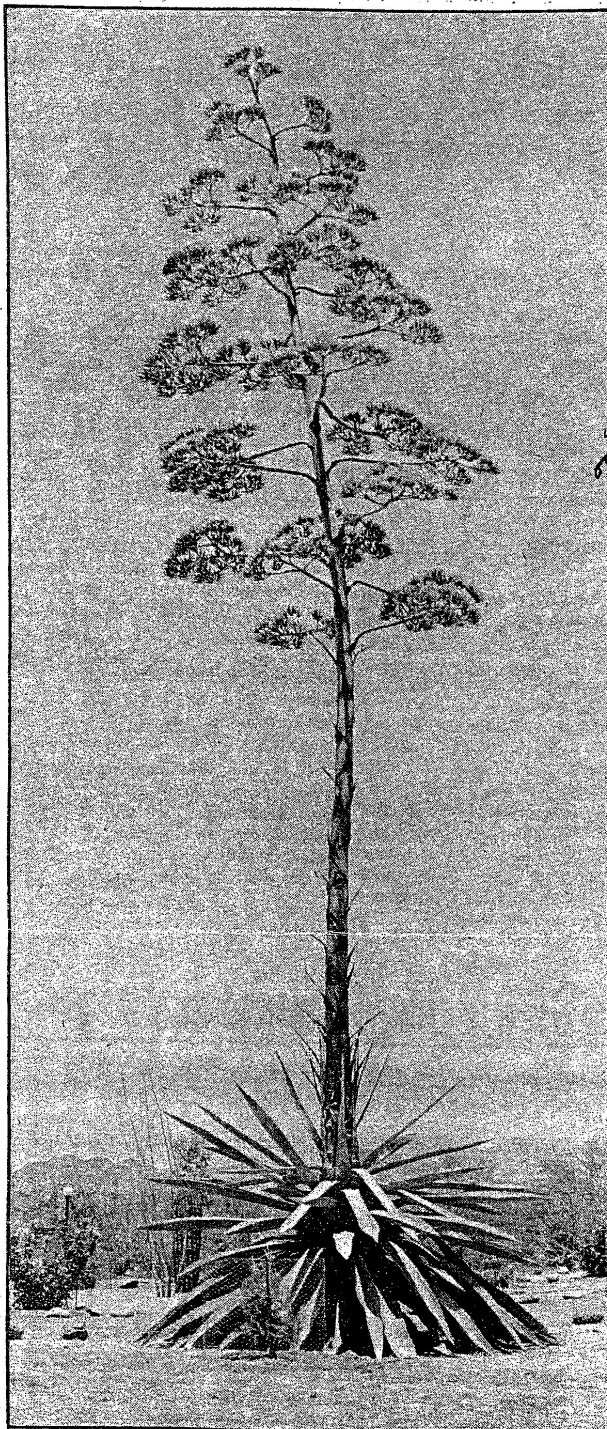
The plants are medium in size, light green, compact and suckering freely.

It forms colonies of plants, but one can travel many miles before finding another colony. Botanists, so far, have no explanation for this.

The leaves are 15 to 30 inches long, 2 to 3 inches wide, firm, bud-printing prominent and attractive.

Margins are toothed with broad-based spines. The spine at the tip of the leaf is about three-quarter inches long.

The flowering stalk is of medium height, the inflorescence open with 10-15 compact branches. Flowers are 2-1/2 to 3 inches long, pale, waxy green with purplish to brownish tips on the lobes. The inflorescence also may produce



## MAJESTIC PLANT

This 30-foot century plant blooms at the home of Robert and Helen Van Dyne, 31439 N. 44th St. in the Foothills. It is one of the tallest found in the Foothills area.

Photo by Linda Riche

bulbils, which are tiny plants that grow in the axils of the branches of the inflorescence.

*Agave Murphey* can reproduce by seeds, suckers and bulbils, but still remains rare and scattered. It is nice to know it can be seen in the Boyce Thompson Southwest Arboretum near Superior.

*Agave Parryi* has an extensive range from central Arizona and southwestern New Mexico, southward through Mexico to Durango. Also, it grows farther north and at higher altitudes than any other agave. It has been found at 9,200 feet in the Chiricahua Mountains of south-eastern Arizona and also near Flagstaff. It can be seen along the slopes of the Mogollon Rim.

The rosettes are compact, medium-sized, light green to grayish, with 100 to 160 overlapping leaves. The leaves are about three times as long as they are wide and thick and rigid. The upper part of the leaf is curved inward toward the center of the rosette.

These characteristics give *Agave parryi* a beautiful symmetry that few agave plants can surpass.

The 10-15 inch leaves have small teeth on the margins with larger teeth on the upper half of the leaf. The spine at the tip is one-half inch long, dark brown, with a prominent groove on the upper side.

The flowering stalks are stout, 13 to 20 feet tall with many stout, lateral branches on the upper half of the stalk.

Flowers in the bud are pink to red and open up yellow, 2-1/2 to 3 inches long. The lobes are short and narrow with hooded tips.

*Agave parryi*: var. *eousssei* differ from typical *Agave parryi* by having smaller leaves and smaller flowers. Also, its habitat seems to be limited to the slopes of the mountains bordering the upper Agua Fria and Verde Rivers.

*Agave arizonica* is very rare and found only in a restricted area in the New River Mountains.

This agave is small with the rosettes growing singly with a few suckers. There are many leaves 7-9-1/2 inches long and three-quarter to 1-1/2 inches wide.

The leaves are dark green, slightly concave above and quite convex below. Margins are reddish-brown or gray and toothed. The small teeth are turned downward and they vary in size. The spine at the tip varies in length from less than one-half inch in length.

The inflorescence is narrow and the many branches are short, but each bears quite a number of yellow flowers with exserted stamen.

One can hope the habitat of this rare and attractive agave is in a part of the mountains used sparingly by man so this rare species will have a chance to increase its few numbers and the extent of its habitat.

Next week, discussion about the Yucca.