

DESERT LIFE

Beautiful Useful Devil's Claw

by Wayne P. Armstrong

One of the most beautiful wildflowers in the Anza-Borrego desert region is the yellow-flowered perennial Devil's Claw (*Proboscidea althaeifolia*). It is not commonly seen by most wildflower lovers because it blooms during the scorching months of July-August, long after most other desert plants have flowered and gone to seed. Another little-known, pink-flowered annual (*P. parviflora* ssp. *parviflora*) is apparently naturalized in the Banner Creek area.

The Devil's Claw fruit has a woody pit surrounded by a fleshy outer layer. The name "Devil's Claw" refers to the inner, seed-bearing, woody capsule that splits open at one end into two curved horns or claws. They readily cling to the hooves of grazing animals or your shoes if you happen to step on them. In some areas of the southwestern United States they are a nuisance to sheep ranchers because they get entangled in the fleece. The fresh green pods (and dried black seed capsules) were important items in the cultures of Native American tribes of the southwestern United States, and are still used to this

day for food and in basketry. The plant is also known as unicorn plant, referring to the large, hornlike fruit before it has split open.

The seed capsules of Devil's Claws are clearly adapted for hitchhiking on the hooves of large grazing animals; however, with the exception of introduced livestock and people (and possibly desert bighorn sheep), there are few native North American animals living within the present range of Devil's Claws that are capable of dispersing these large hitchhikers. It is possible that the range of some large North American grazers, such as antelope, bison, deer and elk once overlapped the range of Devil's Claws thousands of years ago. It is also possible that Devil's Claw dispersal by grazing mammals may be a North and South American anachronism, or an occurrence that is out of its proper time in history.



Pink-flowered Arizona Devil's Claw (Proboscidea parviflora ssp. parviflora) in Banner Creek

During the past one million years of the Pleistocene Epoch, the Americas were rich in large mammals (such as giant ground sloths) that are now extinct. Assuming Devil's Claw plants existed over 600,000 years ago, were some of these ancient mammals the true carriers of these hitchhiker pods? A similar anachronism occurs in the New World tropics of Central and South America, where the natural dispersal agent for some large seed pods are unknown.

Both of our local Devil's Claw species form sprawling, pumpkin-like plants

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Elephant Trees

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they can enjoy the shade for at least some of the day.

To get to these canyons, the easiest approach is from the south end of Malperia Ridge. At the southeast end of the ridge, you will see evidence of an abandoned mining operation.

Around on the southwest end of the ridge are some light-colored mounds of gypsum. You'll notice how water has carved grooves into it, nature's works of art. You may also notice a good scattering of the shrub Pygmy Cedar, *Peucephyllum schottii*, with some of the prettiest flowers of the spring. It grows nowhere else on the ridge.

From here, it's about a mile and a half to the Vallecito Mountains. All you have to

do is walk up the front of Malperia Ridge several hundred yards and find a wash to take you there.

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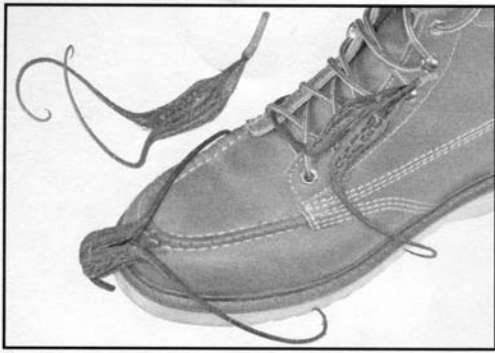
After several hours of making my way up one wash or another to get to the Elephant Trees in the Vallecito Mountains, there comes a moment when it's time to turn around and take a good look at Malperia Ridge. I've walked into and onto this ridge. I've become familiar with its coves and washes, and enjoyed views after a little climbing. I still have questions. What is it? How did it get there?

Is it a single entity, or is it a collection of pieces that have taken a ride on the quake fault (the Clark Fault) and been mashed

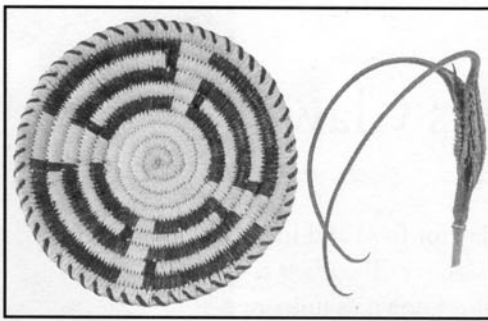
together? Gypsum in the southeast suggests a marine origin. Rocks embedded in old mud suggest a river. From the walking its west side from north to south and south to north, I know the elevation is about 200 feet above sea level at either end. There is a gradual climb to about 450 feet at the middle of the ridge.

Alma Wash, as it leaves the mountains, seems to aim right for the middle of Malperia Ridge, and then turn to the northeast, while the southern washes turn to the southwest and Fish Creek. Is it possible that some or all of Malperia Ridge is debris from Alma Canyon?

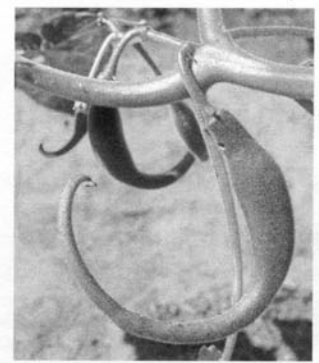
On a sunny day in southern California, it's something to wonder about.



Devil's Claws hitchhiking on a shoe



Papago basket and seed capsule of pink-flowered Arizona Devil's Claw



In Arizona, some Native American tribes cook and eat green Devil's Claw fruits.

Devil's Claw

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with clammy, sticky foliage during the hot summer months. Another species, *Proboscidea louisianica* ssp. *louisianica*, has large pinkish-white flowers and is native to the southern United States. It is sometimes grown in gardens and is naturalized in California. A yellow-flowered South American species, *Proboscidea lutea*, is occasionally naturalized in the Central Valley of California. They all belong to the martynia family (Martyniaceae), a small family comprising three genera and a dozen species, mostly of warm subtropical and desert regions of North America. DNA evidence indicates that they are closely related to the sesame family (Pedaliaceae) and some botanists have placed them in the latter family.

Many native plants have been used extensively by indigenous people, but one of the most amazing is the Devil's Claw. By far the most widely used and highly prized species is the large-fruited, pink-flowered annual *Proboscidea parviflora* ssp. *parviflora*. Peter Bretting of Indiana University (*Amer. Jour. Botany* Vol. 69, 1982) has named two varieties of the pink-flowered Devil's Claw, a wild black-seeded type (*P. parviflora* ssp. *parviflora* var. *parviflora*) and a domesticated white-seeded race (*P. parviflora* ssp. *parviflora* var. *hohokamiana*). Variety *hohokamiana* has been cultivated for generations on several Native American rancherias in Arizona for its superior basket-making qualities. The striking seed capsules may have claws up to 15 inches long. This plant was so important to native Americans in Arizona, that it is commemorated by a large bronze statue of the capsule at the Phoenix airport.

Like the famous rugs and blankets of the Navajo, baskets of the Papago are well-known for their durability, beauty, and intricate designs. The four basic colors in the baskets are white, black, green, and red. White is from sun-bleached dried yucca leaves (often from *Yucca elata*), while green is from unbleached dried yucca leaves. A red dye obtained from yucca roots is sometimes used to color the leaves. Narrow strips of yucca leaves are tightly wound around slender, fibrous bundles of beargrass leaves (often from *Nolina microcarpa*) producing the unique coils of the baskets. If you look closely between the coils of yucca leaves you can see the bundles of beargrass leaves.

The pink-flowered annual (*Proboscidea parviflora* ssp. *parviflora*) is common along the Gila River flood plain where it grows wild on the banks, along fences, and in abandoned fields where there is plenty of moisture. It was probably introduced into California, because its few known locations are near abandoned Native American settlements. According to the *Jepson Manual 2nd Edition* (2010), all California material previously identified as *P. parviflora* ssp. *parviflora* is the cultivated variety *hohokamiana*. I have personally visited several isolated locations in Inyo County, including landing in a single engine plane on a dirt road in Saline Valley about 100 m from a Devil's Claw population. The yellow-flowered perennial (*P. althaeifolia*) grows from a deep taproot in dry washes and along roadsides throughout the Colorado Desert, extending from the southern Anza-Borrego desert south to the Cape Region of Baja California.

Another interesting location for *Proboscidea parviflora* ssp. *parviflora* is Banner Queen Ranch near the mouth of Banner Canyon in San Diego County. Banner Creek flows east out of massive Volcan Mountain where it joins San Felipe Creek that flows into Sentenac Canyon in Anza-Borrego Desert State Park. In 1987, Larry Hendrickson of ABDSP showed me a small population of the sprawling plants in a heavily grazed grassland/mesquite area along Banner Creek. They apparently received ample moisture in the sandy soil of the creek bed. The plants did not appear to be the white-seeded cultivar *hohokamiana* with extraordinary long-claws. Scattered plants have persisted over the years, and the species should probably be considered naturalized in this area.

The occurrence of this species in the San Felipe Valley area always perplexed me. Recently, I discussed this enigma with Kate Shapiro and she has finally solved the mystery of the Banner Creek Devil's Claw. This plant appeared on the Banner Queen Ranch about 30 years ago and became established along Banner Creek. The seeds or pods were apparently introduced in a load of hay from Arizona. Devil's Claw pods are a nuisance to ranchers because the sharp claws get into the hocks (ankles) of horses and cattle. The approximate date of this introduction certainly corresponds to collections of this species in the San Diego Natural History Museum herbarium.