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## A BUDDING MEAL

*Harvesting cholla buds offers culinary hope  
in a time of climate change.*

BY MARTHA AMES BURGESS

**T**he heat is on! And that's a good thing—with these hot days and cool nights, it is CAM-plant weather in the desert. CAM-plants? Those are the thick-leaved succulents that punctuate and enrich the Sonoran Desert—century plants and cacti, including my favorite cactus, the much-maligned (yea, oft ignored) cholla cactus! (CAM is short for Crassulacean acid metabolism, a way succulents outsmart aridity by completing their photosynthesis gas-exchange in the cool dark of night.)

From early April into May, our Baja Arizona chollas—staghorn, buckhorn, cane, and pencil cholla—explode with flowers of dazzling colors, sprout new growth, and offer life-giving food to myriad desert creatures, including bipeds.

As soon as the first cholla flower opens, the harvest time is here. My Tohono O'odham grandmother and mentor Juanita would spur me into action to help her jump through

*Above: *Cylindropuntia versicolor* buds*

*Photo by J.R. Mondit*

*Below: Cholla pasta salad*

*Photo by Carolyn Niethammer*

that window of opportunity each spring to harvest as many of the swelling buds as possible before they opened. It was both a joy and also hard, hazardous labor out combing rocky desert hillsides, watching for rattlers, getting spines imbedded in every inch of skin. I learned early how narrow a space between shrubs I could fit through, and not to wear loose

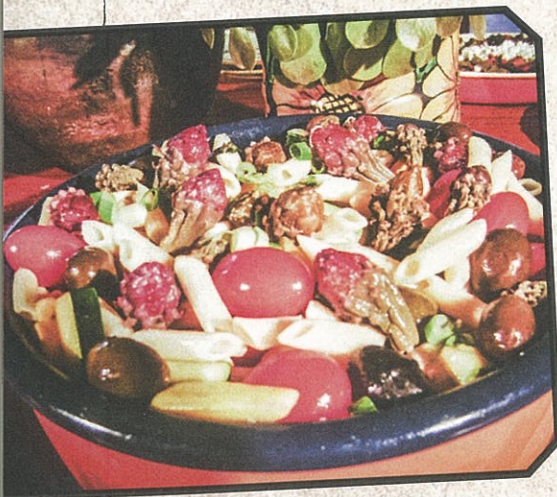
clothing. In fact there isn't much one can do to get those tiny, hair-like glochids out of one's clothes if a prickly pear is accidentally touched. Best to minimize clothing, and to harvest, as Juanita taught, in early morning and late-late afternoon when long sleeves were not as critical for sun protection. Hat and boots, yes. Jeans or sleeves, no.

Watch out—even the buds have spines. Fortunately staghorn, cane, and pencil cholla tend to have relatively easily detachable spines, some of which can be brushed off the buds before picking. Before her tongs gripped the first bud, Juanita would pluck a handful of leafy stems from a nearby bursage or creosote bush to brush spines off the clusters of buds on cholla branch tips. She taught me how to fashion tongs from a section of saguaro rib, split it in half, and tie one end loosely with a desert fiber cord. Voilà—you have “Papago chopsticks,” as she called them, or wah'woh in Tohono O'odham terminology.

One bud at a time, Juanita would pick carefully, bending the bud back and forth until it disconnected from the stem. I never saw her pick all the buds off of one branch. She knew “we are all in this together,” and that the cholla needs to feed many beings besides humans, as well as produce its own children. She always left one to bloom.

While getting up close to a cholla bud can feel dangerous, it offers surprises and treats. You can spot a long-horned cactus beetle, like a miniature black rhino, chowing down on the young green tissue. Or you may see where a packrat cut out a taste of bud in the night. Looking closely, you might see anatomical spots, called areoles, on the waxy succulent tissue of new stem growth and buds, out of which emerge the cactus's spines and tiny temporary leaves. These small, dunce cap-shaped leaves are removed with the spines.

But wait: What is that shiny bead of crystalline moisture resting on each little areole? And what are those ants doing, gathering around it like piggies at a trough? With a toothpick to sample a bead of this moisture, you'll find out why the





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honey-ants are excited. Chollas have genetically “discovered” over the eons that if they share some of their nectar outside of the flower with their ant-helpers, the ants will return the favor by attacking critters which might otherwise chomp the flowers. (Scientists call these extra-floral nectaries.)

Some grand old cholla trees will keep producing buds for a few weeks. Every year, Juanita would take her whole extended family to her favorite plant, which measured some 12 feet in diameter. We would surround the cholla, all picking from different branches for more than 20 minutes. I’ve since realized how psychologically and culturally important these group harvests were to us, and I have strived since then to continue Juanita’s example, introducing new groups to the desert through communal foraging.

When her bucket was full, Juanita would take the buds to an outdoor screen box, much like one used for sifting potting soil. With a broom, which had been dedicated solely to de-spinning, she would brush the buds back and forth until all spines had dropped through the wire mesh.

Since cactus tissue is full of precious water and nutrients, it would have been devoured by thirsty animals were it not for the cactus’s internal chemical defense system—more significant than its external spine armor. Cholla buds, like many in the *Opuntia* family, contain oxalic acid for protection. Calcium oxylate crystals, such as those in the houseplant dumbcane, are toxic to most mammals, including humans, if ingested. So, how then to get to the calcium and to de-nature the oxalic acid in cholla buds? Traditional Tohono O’odham have known since the time of their Hohokam ancestors. Roasting was one way: Ancient cholla roasting pits have been excavated in archaeological sites around Tucson. Juanita preferred a faster method—boiling. She would boil the de-spined buds for about 15 minutes until the fresh green color turned dull. Then they were ready to eat—and delicious!

Juanita would cook the prepared, drained buds with green chiles, garlic, and I’toi’s onion; she might add them to meat stews or teparies. She always served cholla buds at any feast, ceremony, funeral, or celebration.

After the abundant bud harvest in the spring, she would dry the prepared buds for storage. Placing them on trays or screens in the heat of her ramada (not in direct sun as the drying process should be slow and sure in order to be complete), she would shake and turn the shrinking buds daily until they were like little rough stones too hard to crush. In the 1970s Juanita and I started a cholla harvest workshop at the Desert Museum, and she instructed me to continue passing her knowledge along.

When my son was born, Juanita gently admonished me, “You eat your chi’o-lim!—your cholla buds!” sharing her traditional knowledge that its highly available calcium was important to nursing mothers. Now, as an elder, with osteoporosis looming on the horizon, I can hear her reminding me again, “Marfin, you eat your chi’o-lim.”

Cooked cholla buds are a zinging treat to the palette, like a tangy-centered asparagus tip. On the buffet table or hors

d’oeuvre tray, they are a whole new adventure. People will look suspicious, but hold your ground. Those weird bumpy buds provide amazing complex carbs that balance blood sugar, provide sustained energy, and help remove cholesterol. Imagine a desert food that appeals to everyone from athletes and diabetics, gourmets, health nuts, and sustainable aggies, available to everyone poor and wealthy alike!

For the Baja Arizonan cook, chef, and consumer, cholla buds present a lengthening smorgasbord of delectable ideas—stir fried with veggies, cholla buds in mole sauce, pickled buds with garlic, tossed in a colorful pasta salad, or pulverized for a healthful gravy thickener.

So bring on the CAM-plant weather—we can cope with climate change. We have cholla cactus, giver of super-nutrition, appropriate desert agriculture, and great tasting tradition.

Watch for up-coming cholla bud workshops scheduled through Native Seeds/SEARCH, Tohono Chul Park, Arizona-Sonora Desert Museum, and Pima County Parks and Recreation.

*Martha Ames Burgess, ethnobotanist, artist, and gardener, has contributed some of her favorite native chollas to the Mission Garden Project. Select cholla cuttings are available at the Flor de Mayo booth at Sunday’s St. Philip’s Farmers’ Market. Dried cholla buds may be purchased seasonally at the Native Seeds/SEARCH Store and through Tohono O’odham Community Action. For recipe ideas, visit [flordemayoarts.com](http://flordemayoarts.com).*



*Juanita Abila harvesting cholla buds  
Courtesy of KresanPhotography.com*