
Bulbils and Our Century Plant

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A REPRODUCTIVE ODDITY

photos, center & right: Dave Mills



What is a bulbil? They are small plantlets that form on the flower stems of many plants. Many agaves form thousands of these plants. But in nature, out of thousands of plants that fall to the ground, only a half a dozen or so will take root.

[source: http://socialguerrillagardening.org/?page_id=51]

Bulbil was a new word for me. The dictionary says it's a small or secondary plant bulb, one produced on the aerial part of a plant and capable, when separated, of producing a new plant. In the case of the Century plant the miniature plants (bulbs) are formed at the base of the flowers. I never noticed until it was brought to my attention by Professor Stan Szarek, botanist at Arizona State University, that a few of our Century plants use more than seeds or suckers (pups from rhizomes) for reproduction; they may also use bulbils.

The Century plant is easy for me to remember. Blooms once a century. Right? Well, not quite, but five to fifteen years or so if it's well watered and much longer if growing in nature. In a way it's like our annual plants that bloom once and die. But this one stores up food for many years just to produce its towering stock (scape), blossoms and then dies.

Funny thing though. Our local Agave, perhaps the more common name for the Century plant, produces those beautiful flowering structures and their seeds once

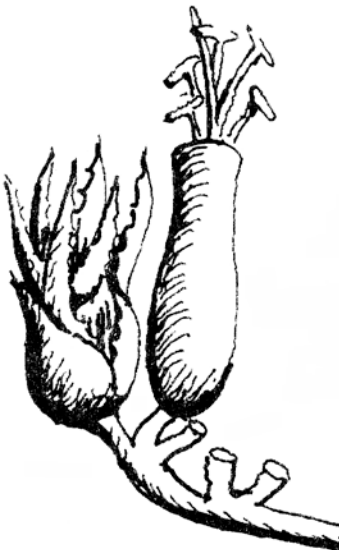


in a lifetime, but it also propagates by root extensions during its life. Professor Szarek points out the roots, really underground stems (rhizomes), can spread and produce new plants, pups, over the years around the base of the mother plant. Eventually, the new plants repeat this spreading process. Thus we're likely to see "fairy ring" clustering of Agave on our hillsides.



Pups on this Parry Agave surround the mother plant and share identical genetic material

In some species very few of the seeds develop fully and are incapable of germination, remaining white and papery thin. Instead, bulbils start at the base of each flower and grow into miniatures of the Agave itself, about four or five inches long. (In other species, flowering results in viable seed, black in color.) There can be hundreds of these bulbils - each cluster of flowers would have a cluster of bulbils!



Bulbils

When present, miniature plants 3"-5" long, which form on the flower stem.

But only a few of our Agave have bulbils, according to Professor Szarek and associates who have studied the bulbils of *Agave angustifolia*, *A. fourcroydes*, *A. murpheyi* and *A. vilmoriniana*. Pete Smith, my hiking partner, and I searched for bulbils in the area under the power lines north of Camp Creek without success only to return back through Cave Creek to find one of last year's blooming Century plants (probably *A. murpheyi*) beside the downtown roadway just loaded with bulbils.

One might also ask how the Agave got into these Phoenix foothills. They're really native to Central America. Professor Szarek and others hypothesize some plants were brought here in pre-Columbian times and were



cultivated by Hohokam and Salado peoples via these bulbils. The valuable plant produced rope (sisal), food, etc. Bringing it to Arizona made a lot of sense to them. If the Agave produced few viable seeds, then it's speculated its bulbils could be easily transported.

Did you know the leaves of the Agave survive for many years too? Most plant leaves last just a year. Conifers and evergreens may keep their leaves for more than a year but Agave leaves thrive for 12 to 15 years – a great age for a leaf, huh?

Next time you see a spectacularly blooming Century plant take a close look up there where the flowers were and see if it has clusters of little bulbils.

