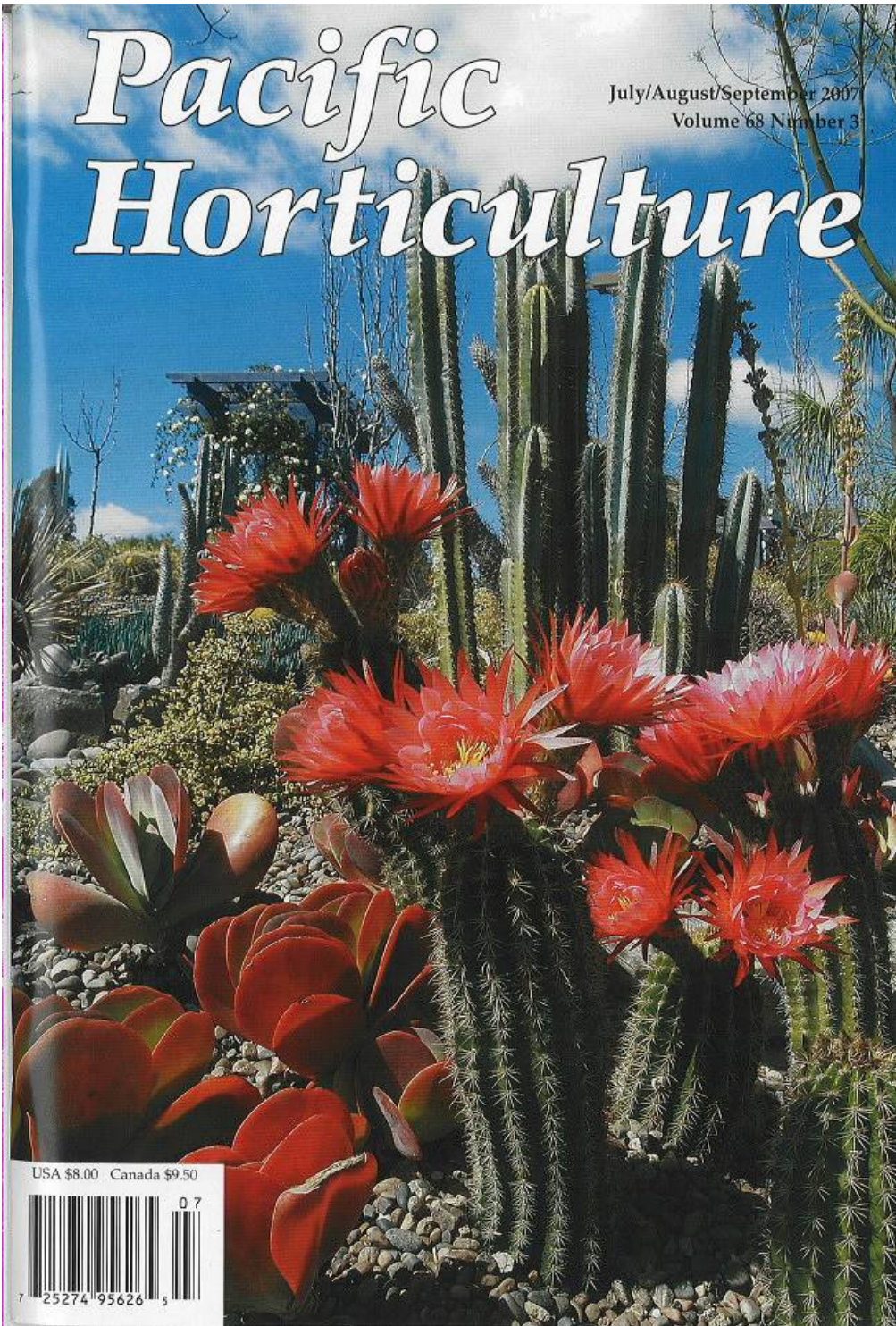


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A Cactus Garden Takes Shape

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The H Warren Buckner Cactus and Succulent Garden is a feature of the Water Conservation Garden, a five-acre demonstration garden at Cuyamaca College with a focused mission: "promoting water conservation in the Southern California landscape through programs and exhibits that educate and inspire the public." The importance of this mission is becoming increasingly clear with each new prediction of water scarcity in our region. Events are planned at the Garden in association with Gardening Under Mediterranean Skies V in San Diego; the author will be a featured speaker. See page two.

When many Southern California gardeners hear the word xeriscape, an image of "zero-escape" comes to mind: a landscape with nothing but gravel and a few cactus scattered about. Here at the Water Conservation Garden, we knew that cactus and succulents had much more potential and, if treated with respect by a landscape designer, would result in a spectacular setting.

To help us create a cactus and succulent garden, we were fortunate to have the volunteer services of Michael Buckner, whose cactus garden designs are acknowledged as some of the finest in Southern California. Buckner, of Plant Man Nursery in San Diego, designed and constructed the garden in honor of his father, the Water Conservation Garden's former president and longtime supporter, H Warren Buckner, who is also a well-known cactus maven.

Michael Buckner is a true landscape artist; working with him was an extraordinary experience. Our existing cactus garden was small and flat, with a pink gravel base and several cactus and succulents of various sizes. Buckner arrived in September 2005, not with a detailed blueprint but a vision for the garden that he sketched roughly on notebook paper. The flat look must go, he said, advising some topo-

graphic sculpting to create a dry streambed separating several isolated mounds. This trick made the twenty-by-twenty-foot main portion of the garden appear larger and offered entirely different views from different angles. Myrtle hedges that framed two sides were trimmed to give a wavy appearance that, from some viewpoints, runs parallel to the mounds and, at others, displays a pleasant contrast.

Thanks to generous donations from Western Cactus Enterprises, The Good Earth Nursery Inc, and C and J Cactus Nursery, Buckner brought with him several truckloads of plants, many simply dug from the ground. Once KRC Rock delivered its donation of a few tons of rocks, we were ready to begin. The final plant layout and installation happened nearly simultaneously as Buckner chose from the collection of donated plants scattered in our back lot and placed them precisely to complete his vision of the garden.

Installation

The end of September 2005 brought the hottest weather of the year, close to 110° F. As we cursed the bad timing, the conditions,

nevertheless, seemed appropriate for a desert garden. We started with the grade changes, for which some serious mechanical equipment was needed to excavate our concrete-like soil. A skid-steer loader completed most of the grading, but, as we got deeper, we needed a trencher with rock teeth to loosen the "soil" when the loader complained.

We then built the planting mounds using a mixture of seventy percent composted topsoil and thirty percent pumice. Buckner's ideal cactus soil mix holds moisture but also ensures that sufficient air enters the soil. The existing irrigation system was deemed adequate. We thought it best to use overhead sprinklers because of the density and complexity of the plantings. A drip system would have been time-consuming and difficult to install (and maintain) around the spiny plants. We liked the advantage of simulating natural rainfall with

the sprinkler irrigation to wash off dust that collects on plants and rocks here, where no rain may fall for more than six months at a time. We used MP Rotator nozzles on the popup sprinklers to increase the system's application uniformity and keep it as efficient as possible.

The back mound was planted first and included a sixty-year-old elephant-foot palm (*Beaucarnea recurvata*) that the Buckner family had purchased in a one-gallon container in 1945. We positioned it at an angle to add interest to the sight lines. Next to be placed, again at an angle, was a huge golden barrel cactus (*Echinocactus grusonii*) that had been propagated thirty-four years ago by a nine-year-old boy. His father, a local nurseryman, asked that it be planted in the garden as a memorial to his son, who had died in an automobile accident. This 300-pound ball of thorns was wrapped in

H Warren Buckner Cactus and Succulent Garden Plant List

The following trees, cactus, and succulents have been prime elements in this garden and should thrive in most parts of San Diego County, as well as elsewhere in Southern California.

Trees

(and tree-like succulents)

×*Parkinsidium* 'Desert Museum'
(syn. *Cercidium* 'Desert Museum')
hybrid palo verde
Parkinsonia aculeata
Mexican palo verde
Yucca aloifolia
Spanish bayonet
Yucca elephantipes
giant yucca

Cactus

(family: Cactaceae)

Cephalocereus semilis
Cipocereus bradei
Cochemia poselgeri
Cleistocactus hyalacanthus
Cleistocactus strausii
Echinocactus grusonii
golden barrel cactus
Echinopsis × *Lobivia* hybrids
Echinopsis tarijensis
Ferocactus glaucescens
Ferocactus gracilis
Gymnocalycium baldianum
Gymnocalycium saglionis
Mammillaria celsii
Mammillaria compressa

Mammillaria mystax
Mammillaria parkinsonii
Mammillaria rhodantha subsp. *pringlei*
Myrtillocactus cochal
Myrtillocactus geometrizans
Opuntia santa-rita
Pachycereus mieckleyanus

Succulents

(other than cactus)

Aeonium arboreum 'Zwartkop'
Aeonium 'Kiwi'
Agave attenuata
fox-tail agave
Agave bracteosa
Agave deserti subsp. *simplex*
Agave filifera
Agave filifera subsp. *schidigera*
Agave geminispina
Agave × *leopardii*
Agave parryi var. *truncata*
Agave potatorum var. *verschaffeltii*
Agave lequilana 'Variegata'
Aloe brevifolia
Aloe cameronii
Aloe dorotheae
Aloe plicatilis
fan aloe
Beaucarnea recurvata
elephant-foot palm

Cistanthe grandiflora
Crassula ovata 'Hummel's Sunset'
jade plant
Dasylistrion wheeleri
Deuterocohnia brevifolia
Deuterocohnia lorentziana
Echeveria hybrids
Euphorbia × *lombii*
(Thailand hybrids)
giant crown of thorns hybrids
Euphorbia ammak *variegata*
Euphorbia tirucalli 'Sticks on Fire'
×*Graptoveria* hybrids
Graptopetalum paraguayense
ghost plant
Kalanchoe luciae subsp. *luciae*
Kalanchoe marmorata
Kalanchoe pumila
Pachypodium geayi
Pachypodium lamerei
Portulacaria afra var. *foliis-variegata*
variegated elephant bush
Sedum adolphi
Sedum brevifolium
Sedum rupicola
Senecio talinoides subsp. *cylindricus*
Senecio talinoides subsp. *mandraliscae*
Yucca rostrata
beaked yucca

old carpeting and strapped to a large hand truck to haul it from the nursery. We moved it by loader to within fifteen feet of its final destination, where four people dragged it up the mound, still wrapped in carpeting (mainly to protect us!).

We placed the stream foundation rocks next. These large, blocky pieces were set both to give definition to the stream and to solidly anchor the mounds. Buckner then painstakingly placed the multicolored river rocks, one by one on end (instead of flat) to give character to the stream bottom and to create the suggestion of flowing water. This beautiful rounded rock is an abundant resource in San Diego County, where an ancient river once flowed. The remainder of the cactus and succulents were then positioned to create vibrant compositions of shape, color, and texture.

The Plants

Our cactus garden includes sixty-six species and cultivars of cactus and succulents from all over the world. The local flora is represented by palo verde (*×Parkinsidium* 'Desert Museum' and *Parkinsonia aculeata*), desert agave (*Agave deserti*), and purple prickly pear (*Opuntia santa-rita*), to name a few. From Africa come *Euphorbia*, *Kalanchoe*, *Aloe*, and *Pachypodium*; from Mexico, *Cleistocactus*, *Ferocactus*, *Mammillaria*, and *Echeveria*; and from South America, *Echinocactus*, *Gymnocalycium*, and *Echinopsis*. In April, *Echinopsis* \times *Lobivia*, a South American hybrid, produces massive, bright pink flowers that are show-stoppers for the few days that they are on display. The flowers are reminiscent of a skyrocket, as the buds slowly develop over the course of a week to give a brief explosion of brilliant color and texture.

The Great January Freeze

A deep freeze that occurred in January 2007 left its mark everywhere in the garden (and throughout much of San Diego County), but most notably in our new cactus garden. The

rarity of a temperature as low as 18° F was equaled only by the duration of the cold weather; many of the cactus and succulents suffered. *Portulacaria afra* 'Variegata' and *Kalanchoe luciae* subsp. *luciae* froze nearly to the ground but have since begun to recover from their roots. The sixty-year-old elephant-foot palm took a severe hit and lost two of its taller branches. A fine specimen of *Pilosocereus purpusii* cactus from Mexico suffered some tip dieback on its three-foot-long branches. Jade plant (*Crassula ovata*) and *Aeonium arboreum* 'Zwartkop' were severely damaged and had to be replaced.

Several other plants died completely, including *Aloe plicatilis*, *Cipocereus gonnellii*, *Euphorbia stenoclada*, *E. milii* \times *lomii*, and *Kalanchoe beharensis*. Some of these have been replaced; others were simply removed. After a late winter plant replenishment and some warm weather that encouraged the damaged plants to regrow, the cactus and succulent garden looks as splendid as ever.

We continue to receive great feedback from visitors. Some say they are surprised to see such a rich mixture of color, texture, and form in the cactus garden. Others sit and study the garden for long periods, taking in a wide variety of inspiring views. Some remark that, when they look at it from different perspectives, it's hard to believe they're in the same garden. It's also a favorite spot for photographers, who capture the ever-changing displays of light and shadow that move across the garden from morning till evening. We are proud to have such a gem to share. 🌵

If You Should Like to Visit . . .

The Water Conservation Garden is open daily (some holidays excepted) from 9 am to 4 pm. The Garden is on the Cuyamaca College campus, just off Hwy 94, at 12122 Cuyamaca College Drive West, El Cajon, CA 92019. Call 619/660-0614 or visit www.thegarden.org for directions, events, membership, and volunteer opportunities.



Flowers of a hybrid cactus (*Echinopsis x Lobivia*) highlight the landscape, flanked by the flat reddish leaves of *Kalanchoe luciae* subsp. *luciae*, pincushion-like clumps of *Mammillaria* species, and the columnar stems of *Pilosocereus purpusii*; the green trunks of a palo verde (*Parkinsonia aculeata*) support an open canopy that provides dappled shade for the more sensitive succulents below

Bright yellow flowers sparkle atop a cactus (*Astrophytum ornatum*); strong textural contrasts abound



The garden's nearby water tower is an appropriate focal point reminding visitors of the need to carefully consider water in the landscape. Author's photographs



Michael Buckner (left) supervises the placement of a 300-pound, thirty-four-year old specimen of golden barrel cactus (*Echinocactus grusonii*)

Golden barrel cactus (*Echinocactus grusonii*) with blue-leaved *Senecio talinoides mandraliscae* in the foreground and sticks-on-fire (*Euphorbia tirucalli*) immediately behind