

PRICKLY NEWS

SOUTH COAST CACTUS & SUCCULENT SOCIETY NEWSLETTER | JUNE 2020

SOUTH COAST
CACTUS & SUCCULENT
SOCIETY



Greetings from Home, still!

I hope this finds everyone well and safe. Since I do not know when the Society will be able to meet again in person, I will provide any opportunity to attend webinars and online information through e-mail and our Newsletter. I hope you enjoy all the photos of our Mini-show plants and members' gardens.

CALL FOR PHOTOS: The Mini-show categories have been published online with information about each genera. Our genera for June is Cactus: Opuntia, Tephrocactus, Cyllindropuntia, Austrocylindropuntia, and Succulent: Cissus and Cyphostemma. Photos from your collection will be published and you will be given one Mini-show point each for a submitted photo of your cactus and succulent (up to 2 points). Please include your plant's full name if you know it (and if you don't, I will seek advice for you just as we do during meetings). Let me know if you would prefer not to have your name published with the photos. The photos don't have to be professional quality but as high resolution as possible so they will publish well. This is for fun and to have a chance to learn from one another and show off your plants. You may send as many photos as you like. Please email them to me by June 20th at minniecap@icloud.com.

BOARD ELECTIONS: Board elections are normally held in June. Since a formal election is impossible, I have asked each Board member to continue on the Board for now and there will be occasional Zoom meetings for decisions that need to be made. Bill Wilk has asked to step down as CSSA liaison, and I thank him for his representation from CSSA in the past. M.A. Bjarkman will take his place as liaison. Carol Knight has asked to step down as Chair for the Show and Sale in 2021. I thank her for all her work on the past Show and Sale. Anita Caplan would like to step down as Show and Sale Publicity Chair. Anita has been the publicity chair for the past 8 years and I thank her for all her efforts over the years. If there is anyone who is interested in being on the Board (President, Vice-President, Treasurer, Secretary, Member at Large) or interested in becoming Show chair, or doing the publicity for the Show and Sale, please let me know. Formal voting for the upcoming year will be held whenever we can next meet. I look forward to hearing from you.

MARIA CAPALDO

SHARE YOUR GARDEN

Email me with photos of your garden and/or plants that we can publish as a way of staying connected.
minniecap@icloud.com

VIDEO PRESENTATIONS:

CSSA (Cactus and Succulent Society of America), is sharing the complete video presentations of the lectures from the 2015 and 2017 Conventions. This is a chance to hear from world renowned lecturers and experience the high level information received at the Conventions.

Please go to this website <https://cactusandsucculentsociety.org/> to access the videos.

[To learn more visit southcoastcss.org](https://southcoastcss.org)

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What's in your garden?

Bill Wilk



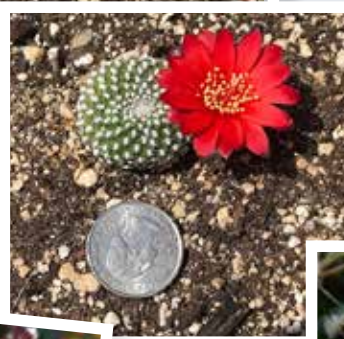
*Terri Straub
before and after*



Karin Cozzolino



Maria Capaldo



Laurel Woodley



Share your garden
with everyone!



Mini - Show Plant Calendar



Mini-Show Plants for 2020-2021

June	Opuntia, Tephrocactus, Cyllindropuntia, Austrocylindropuntia	Cissus, Cyphostemma
July	Melocactus	Bromeliaceae (other than Tillandsia)
August	Astrophytum	Sedum, Pachyphytum, Sempervivum
September	Ariocarpus, Obregonia	Adenium, Adenia
October	Copiapoa	Graptopetalum, Graptoveria, Pachyveria
November	Crested and Monstrose	Crested and Monstrose
December	HOLIDAY POTLUCK	HOLIDAY POTLUCK
January 2021	Mammillaria - Hooked Spines	Caudiciform (Beaucarnia, Calibanus, Dioscorea, Fockea, etc.)
February 2021	Eriosyce, Neoporteria, Neochilenia, Islaya	Crassula
March 2021	Echinocereus	Gasteria and hybrids
April 2021	2021 Show and Sale	2021 Show and Sale
May 2021	Coryphantha, Escobaria, Acharagma	Dudleya, Cotyledon



Monthly Cactus: Cyclindropuntia

Cactus: Cyclindropuntia

Cyclindropuntia is a genus of cacti (family Cactaceae), containing species commonly known as chollas, native to northern Mexico and the Southwestern United States. They are known for their barbed spines that tenaciously attach to skin, fur, and clothing. Stands of cholla are called cholla gardens. Individuals within these colonies often exhibit the same DNA, as they were formerly tubercles of an original plant.

Cyclindropuntia was formerly treated as a subgenus of *Opuntia*, but have now been separated based on their cylindrical stems (*Opuntia* species have flattened stems) and the presence of papery epidermal sheaths on the spines (*Opuntia* has no sheaths). A few species of mat- or clump-forming opuntoid cacti are currently placed in the genus *Grusonia*. Collectively, opuntias, chollas, and related plants are sometimes called opuntiads.

The roughly 35 species of *Cyclindropuntia* are native to the southwestern and south-central United States, Mexico, and the West Indies. The Flora of North America recognizes 22 species. Some species have been introduced to South America (Chile, Ecuador, Peru) and South Africa.



Cyclindropuntia chuckwallensis



Cyclindropuntia acanthocarpa



Cyclindropuntia cholla



Cyclindropuntia carribae



Cyclindropuntia bigelovii



Cyclindropuntia arbuscula



Austrocylindropuntia vestita with fruits



Austrocylindropuntia floccosa



Cyclindropuntia anteojoensis



Cyclindropuntia hystrix



Austrocylindropuntia subulata



Austrocylindropuntia pachypus



Cyclindropuntia alcalabes



By Tom Glavich



Monthly Cactus: Opuntia

Cactus: Opuntia

Opuntia is a genus in the cactus family, Cactaceae.

The most common culinary species is the Indian fig opuntia (*O. ficus-indica*). Most culinary uses of the term “prickly pear” refer to this species. Prickly pears are also known as tuna (fruit) or nopal (paddle, plural nopales) from the Nahuatl word nōpalli for the pads, or nostle, from the Nahuatl word nōchtli for the fruit; or paddle cactus

Prickly pears typically grow with flat, rounded cladodes (also called platyclades) armed with two kinds of spines; large, smooth, fixed spines and small, hairlike prickles called glochids, that easily penetrate skin and detach from the plant. Many types of prickly pears grow into dense, tangled structures.

Like all true cactus species, prickly pears are native only to the Americas, but they have been introduced to other parts of the globe. Prickly pear species are found in abundance in Mexico, especially in the central and western regions, and in the Caribbean islands (West Indies). In the United States, prickly pears are native to many areas of the arid Western United States, including the lower elevations of the Rocky Mountains, where species such as *Opuntia phaeacantha* and *Opuntia polyacantha* become dominant, and especially in the desert Southwest. Prickly pear cactus is also native to the dry sandhills and sand dunes of the East Coast from Florida to Connecticut/Long Island (*Opuntia humifusa*). Further north, *Opuntia* occurs in isolated areas from the southern Great Lakes to southern Ontario. *O. humifusa* is also a prominent feature of the flora at Illinois Beach State Park, in Winthrop Harbor, Illinois, north of Chicago, and of Indiana Dunes State Park southeast of Chicago.



Opuntia stricta



Opuntia rivereana



Opuntia polyacantha



Opuntia ovata



Opuntia monacantha



Opuntia microdaysis



Opuntia macrocentra



Opuntia leucotricha



By Tom Glavich

JUNE

Monthly Cactus: Opuntia

In the Galapagos Islands, six different species are found: *O. echios*, *O. galapageia*, *O. helleri*, *O. insularis*, *O. saxicola*, and *O. megasperma*. These species are divided into 14 different varieties; most of these are confined to one or a few islands. For this reason, they have been described as “an excellent example of adaptive radiation”. On the whole, islands with tall, trunked varieties have giant tortoises, and islands lacking tortoises have low or prostrate forms of Opuntia.

The first introduction of prickly pears into Australia are ascribed to Governor Philip and the earliest colonists in 1788. Brought from Brazil to Sydney, prickly pear grew in Sydney, New South Wales, where they were rediscovered in a farmer’s garden in 1839. They appear to have spread from New South Wales and caused great ecological damage in the eastern states. They are also found in the Mediterranean region of Northern Africa, especially in Tunisia, where they grow all over the countryside, and arid southern Europe, especially on Malta, where they grow all over the islands, in the south-east of Spain, and can be found in enormous numbers in parts of South Africa, where it was introduced from South America.

Opuntia species are the most cold-tolerant of the lowland cacti, extending into western and southern Canada; one subspecies, *O. fragilis* var. *fragilis*, has been found growing along the Beatton River in central British Columbia, southwest of Cecil Lake. Prickly pears also produce a fruit, commonly eaten in Mexico, known as tuna; it also is used to make aguas frescas. The fruit can be red, wine-red, green, or yellow-orange.

Cactus: Opuntia

*Opuntia basilaris**Opuntia aurantiaca**Opuntia aciculata*

Charles Darwin was the first to note that these cacti have thigmotactic anthers: when the anthers are touched, they curl over, depositing their pollen. This movement can be seen by gently poking the anthers of an open Opuntia flower. The same trait has evolved convergently in other cacti (e.g. *Lophophora*).



By Tom Glavich



Monthly Cactus: Tephrocactus

Tephrocactus is a small genus in the subfamily Opuntioideae which is endemic to Argentina. Like other members of this group, Tephrocactus does have glochids, however, they are uniquely sunken into the areoles in this genus. Spines may be long, dense and needle-like or thin and papery or absent. The stems grow in very distinct segments, but unlike the flat-pads found on the genus *Opuntia*, the segments of *Tephrocactus* are round. This can be either in short cylinders, egg shaped, or even spherical. These segments typically grow in a slightly zig-zagged stack. Flowers are white in most species or pinkish, sometimes yellow, and in one case red.

Some species in this genus are very popular in cultivation. Grown for their alien-looking stems and dramatic spines. Flowers are less common in cultivation as the segments often detach with the slightest touch. Plants that are only a couple segments high tend not to flower. As such, a flowering *Tephrocactus* is a special delight to the hobbyist.

Cactus: Tephrocactus



Tephrocactus aoracanthus



Tephrocactus articulatus



Tephrocactus articulatus
var. diatematus



Tephrocactus articulatus
strombiliformis



Tephrocactus articulatus
papyracanthus



Tephrocactus geometricus
inermis



By Tom Glavich



Tephrocactus articulatus papyracanthus



JUNE

Monthly Succulent: Cissus

Succulent: Cissus

Cissus is a genus of approximately 350 species of lianas (woody vines) in the grape family (Vitaceae). They have a cosmopolitan distribution, though the majority are to be found in the tropics.

Uses...

Medicinal

Cissus quadrangularis has been evaluated for potential medical uses. As a source of carotenoids, triterpenoids and ascorbic acid the extracts may have potential for medical effects, including “gastroprotective activity” and benefits in terms of “lipid metabolism and oxidative stress”. *Cissus quinquangularis* was used by the Maasai people of Kenya to relieve some of the symptoms of malaria.

Ornamental

Cissus antarctica, *Cissus alata* and *Cissus incisa* are cultivated as garden plants, depending on area of the world. Succulent members of the genus such as *Cissus quadrangularis* are also found in the nursery trade but tend to be frost tender and are thus not widely cultivated.

Ecology

Cissus species are used as food plants by the larvae of some Lepidoptera species including *Hypercompe eridanus* and *Hypercompe icasia*.

Taxonomy

The generic name is derived from the Greek word (kissos), meaning “ivy”. [5] In the 1980s the genus was split according to some details of the flower. The large caudiciform species were moved to the new genus *Cyphostemma*. The genus name was established by Carl Linnaeus who used species epithets that are adjectives with feminine grammatical gender in Latin (e.g., *C. trifoliata* L.). This matches the pattern that names of trees ending in -us in Latin have feminine gender, although other plant names ending in -us are usually masculine.



Cissus tuberosa



Cissus tuberosa



Cissus subaphylla



Cissus quadrangularis



Cissus quadrangularis



Cissus quadrangularis



Cissus cactiformis



By Tom Glavich



Monthly Succulent: Cyphostemma

Succulent: Cyphostemma

Cyphostemma is a member of the Vitaceae or grape family. The members of this genus span the range of extremely easy to grow plants to real challenges. Most of the species will grow large, given time, good root room, lots of fertilizer, and water during the growing season.

Most *Cyphostemma* will set fruit. In almost all cases, the fruit is toxic to humans and most pets, although freely eaten by birds. The seeds in the fruit are ripe when the fruit turns color (usually red).

The key to success with these plants is to pay attention to the native habitat. *Cyphostemma juttae*, common in many collections, comes from South Africa. It takes some frost with no damage, and grows in the ground in Southern California, putting on bulk and character in just a few years.

Cyphostemma seitziana, on the other hand comes from Namibia, and is much less tolerant of unprotected cold and overwatering. Propagation is easy from cuttings and seeds. Seed of all the common and even some of the truly rare species is sometimes available through the CSSA or through some of the better South African and US seed dealers. Germination is erratic (days to months), and only one seed should be sown per pot. The seedling mix should be sterile and organic, and hold a lot of water. Scarring the seeds to allow water penetration helps. The seeds should be completely buried to provide uniform moisture. A plastic bag over the mix will help keep everything uniform. The bag should be removed as soon as any sign of green appears, the seedling leaves are large, and will rot if they touch the plastic. Softwood cuttings should be taken when active growth is occurring. Rooting does not require or even seem to benefit from hormones.



Cyphostemma currorii



Cyphostemma cirrhosum



Cyphostemma bainensii



Cyphostemma juttae



Cyphostemma juttae

Latin Lookup

Loquerisne Latine (Do you speak Latin)?
The meanings of latin plant names on the previous pages
– from <http://davesgarden.com/guides/botanary/>

acanthocarpa [a-kan-tho-KAR-puh] From the Greek kantha (thorn) and karpos (fruit).

aciculata [ass-sik-yoo-LAY-ta] 1. Needle-like; needle-shaped. 2. Marked with fine, irregular streaks.

arbuscula [ar-BUS-ku-luh] Small tree.

articulatus [ar-tik-oo-LAH-tus, ar-tik-yoo-LAH-tus] Having joints, jointed.

aurantiaca [aw-ran-ti-AYE-kuh] Orange-red colored.

Austrocylindropuntia [oss-troh-sil-in-droh-PUN-tee-uh] From the Latin australis (southern) and the Greek cylindro (cylinder) and opuntia (referring to an ancient Greek city, Opus).

basilaris [bas-il-LAIR-iss, base-IL-ah-riss] Basal.

bigelovii [big-eh-LOV-ee-eye] Named for Dr. John Milton Bigelow, 19th century professor of botany at Detroit Medical College.

cholla [KOL-luh] From the Mexican vernacular name for Cylindropuntias (Cholla).

Cylindropuntia [sil-in-drop-UN-shee-uh, sil-in-drop-UN-tee-uh] From the Greek cylindro (cylinder) and opuntia (referring to an ancient Greek city, Opus).

floccosa [flok-KOH-suh] Woolly.

hystrix [HIS-triks] From the Greek word for hedgehog; bristly.

inermis [IN-er-mis] Not spiny, unarmed.

leucotricha [loo-koh-TRY-kuh] White haired.

macrocentra [mak-roh-SEN-truh] Large center.

microdasys [my-kro-DAS-is] Small and bushy.

monacantha [mon-ah-KANTH-uh] From the Greek monos (one, only) and akantha (thorn, spine).

Opuntia [op-UN-shee-a, op-UN-tee-a] Named after Opus (Greece), an area where other cactus-like plants were grown.

ovata [oh-VAY-tuh] Ovate in shape.

pachypus [PAK-ee-pus] Thick foot, stem or roots.

polyacantha [pol-lee-uh-KAN-tha] Many spines.

stricta [STRIK-tuh] Erect, upright.

subulata [sub-yoo-LAH-tuh, sub-yoo-LAY-tuh] Awl-shaped.

Tephrocactus [tef-roh-KAK-tus]

From the Greek tephros (ash-colored) and cactus.

vestita [VES-tee-tuh, ves-TEE-tuh] Clothed, dressed.

alata [a-LAY-tuh] Winged.

antarctica [ant-ARK-tee-kuh] Of or from the Antarctic region.

cactiformis [kak-TIF-for-miss] Shaped like a cactus.

cirrhosum [sir-ROH-sum, kir-ROH-sum] Having tendrils, curly hair.

Cissus [KISS-us, SISS-us] Latin name for Ivy.

Cyphostemma [sy-foh-STEM-uh]

From the Greek kyphos (tumor, hump) and stemma (garland, crown).

incisa [in-KYE-suh, in-SIGH-suh] Deeply cut.

juttae [JOO-tay-ee] Named for Jutta Dinter, the wife of Professor Kurt Dinter, 20th century German botanist and collector in Africa.

quadrangularis [kwad-ran-gew-LAIR-iss] Four-angled.

trifoliata [try-foh-lee-AY-tuh, try-foh-lee-AT-uh] Three leaves.

tuberosa [too-ber-OH-suh, tew-ber-OH-suh] Tuberous.

<https://davesgarden.com/guides/botanary>

EXCERPTED FROM AN ARTICLE BY ELTON ROBERTS, EDITED BY MARIA CAPALDO

Cactus and Alkalinity



Introduction — Cacti in the desert – We often hear references to desert soil being alkaline. Maybe this is because there are so many alkali dry lakes on the desert so the assumption is that desert soils must also be that way. Cacti in their natural habitat get their water directly from rain. These plants normally grow on a minimum of soil in rocky areas. Many appear to come out of cracks in the rock. The pH of rain is slightly acidic due to the carbon dioxide from the atmosphere dissolving in the rain water. It is this water that the cacti prefer.

Municipal water supplies often have a very high pH due to alkalinity. This alkalinity serves to prevent pipe corrosion and since many of the pipes in older towns are lead this becomes a safety issue. Leaking pipes are another safety issue, since many times they will cause ground water to be aspirated into the pipe. Well water can also be especially alkaline. As a result, soils quickly become intolerably alkaline for the plant. Once this happens, the plant stops growing and starts to die. Since the pH of normal rain is about 5.1, it may be best to drop the pH of your water to that level. This may be done with any number of acids.

We have seen that dropping the pH of our alkaline water has vastly improved the lives of the cacti that we grow. This is reflected in new growth and flowering of our plants. This effect seems to be quite general for many plants. However, it is more striking for cacti, since we keep our plants in the same pots for years without disturbing them. The fact that they do not like their roots disturbed mitigates for not repotting them but increased alkalinity is a serious problem that then gets the cactus grower into a losing situation.

These problems may readily be corrected by dropping the pH of the water for your plants. Use of lower pH in horticultural practice – There are a few references to suggest that cactus growers ought to use a low pH water on their plants. The best reference for the use of lower pH for cacti we have seen is from Buxbaum(1). In his book on *Cactus Culture* he emphasizes that pH=6.0 is the proper pH for water for cacti. Buxbaum also shows pictorial evidence for the much slower growth of cacti at higher pH. He offers many examples of the poor response of cacti to higher pH.

Bailey and Bilderback, *Alkalinity Control for Irrigation Water Used in Nurseries and Greenhouses*, also suggest a lower pH of ca. 5.4 to 6.0(2). They also discuss the acids that are in common use and methods for adjusting the pH. They suggest that the main reason for better response at low pH is the availability of the elements necessary for plant growth. This article which is available on the Internet, contains many excellent pointers for nursery growers.



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BY ELTON ROBERTS / FRESNO CACTUS AND SUCCULENT SOCIETY

The use of acid to decrease the pH of irrigation water is also common in large-scale agricultural practices. Many companies in agricultural areas such as the Central Valley of California sell large systems for addition of acid to correct the pH of irrigation water. We were referred to Verdegall Bros. Inc. by a farmer in the Modesto area. They referred to the article of Bailey and Bilderback when we wanted to find out how much acid they were using.

The use of lower pH in hydroponics is also well known and there are several pH indicators on the market that allow the pH to be readily and cheaply measured. These are discussed below. pH measurements of rainfall during thunderstorms reveal that the pH of rain water fluctuates over very short time intervals, falling to 3.6 directly after lightning strikes(3). Obviously plants are expecting to receive low-pH water.

Theory -- Water hardness is an old term that refers to certain dissolved salts.

These are often salts of calcium and magnesium.

These ions cause a precipitation reaction with soaps.

**Calcium Bicarbonate + sodium stearate → sodium bicarbonate
+ Calcium stearate (Precipitate)**

Consequently water containing these salts is said to be “hard”. Generally the counter-ion to these salts is bicarbonate but often sulfate and chloride can be present. Much of the soluble salts can be precipitated, if the counter-ion is bicarbonate, by heating the water. This part of the “hardness” is called “temporary” and the other “permanent”. These counter-ions precipitate as the insoluble calcium and magnesium carbonate.

$\text{Ca}^{++} + 2(\text{HCO}_3)^- \rightarrow \text{CaCO}_3 \text{ precipitate} + \text{H}_2\text{O} + \text{CO}_2 \text{ (to atmosphere)}$

Alkalinity. The problem for plant roots is caused by the bicarbonate in the water. The common term for bicarbonate is “alkalinity”, you may also read that the water is buffered by the bicarbonate. This refers to the fact that the amount of acid necessary to drop the pH is greater than theoretical. But we shall refer to it as alkalinity since the fact that it has buffering capacity is not actually germane to the argument.

There are two ways of adding your acid to the water in order to decrease bicarbonate content and your pH. You may either use a colorimetric indicator solution, or a pH meter. In this case you should add incremental amounts of acid and measure either the color or the pH until you get to your desired pH. I shoot for a peachy color on my indicator, which is around a pH of 5.5.

Another way is to know the value of your water hardness. Most municipal water systems in the USA have websites that will give you the pH of your water as well as the hardness. The hardness number to look at is the CaCO_3 equivalents of hardness.



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BY ELTON ROBERTS / FRESNO CACTUS AND SUCCULENT SOCIETY

Another thing that you will see especially with high levels of alkalinity is a pH rebound. This is caused by the fact that the CO₂ becomes saturated in the water. As the CO₂ comes out of the water the pH will rebound. If you have very hard water you may want to take some time as you do your initial testing on your water due to the pH rebound. The bottom line is that you should not give too much regard to the initial pH but focus on how much acid it takes to drop the pH to about 5.5; taking care to allow for pH rebound with very highly alkaline waters.

Cacti and Limestone – In the Chihuahuan Desert, especially, many desert plants are found associated with limestone strata. This association with limestone is so strong that having geological maps of the limestone areas is a good way to find these plants. These soils have been measured as having a high pH value. The assumption then is that the soil is very alkaline.

Warning—The pH increase caused by limestone creates some confusion with cactus raisers. We often see references to adding lime to your cactus soil. This is a big mistake since lime and limestone are very different materials. Lime is calcium hydroxide and the pH of lime is so high that it is deadly for the plants.

Practice— Elton Roberts' story – I built my first hothouse to grow cacti in the early 1970s in California's Sierra Mountains at an elevation of about 3000 feet. But when I moved to my present location 24 years ago my plants stopped growing, although conditions had not noticeably changed. If I repotted the plants into new soil they would grow and get to look good again, but before long they would go into decline. When an azalea finally died I was inspired to use gypsum. I gave that to all my plants. The positive effect lasted only six months. A nurseryman suggested I use aluminum sulfate and I spent another \$200 on a pH meter. I dropped the pH to about six but the problem was that it caused the water to become milky. Since I had a pH meter I experimented with vinegar and found out that it only took one tablespoon in five gallons to drop the pH from 7.8 to 6.0.

I didn't pursue the idea further, because about that time I found a pH-balanced fertilizer. When it was no longer available, I bought a fertilizer with sulfur in it. The sulfur is supposed to keep the pH of the soil on the acidic side, but it didn't work. I found, by calling the manufacturer that the sulfur was supposed to encourage a bacterial growth that was responsible for maintaining low pH in the soil. But these bacteria evidently don't grow in a dry cactus mix, and a low pH was not maintained. By the fall of 2006 my plants were looking pretty bad. *Echinomastus johnsonii var lutescens*, normally the diameter of a tennis ball, was hardly bigger than a ping-pong ball. So, remembering my old tests I mixed up a batch of vinegar spiked water and watered my plants with it. Within a week they were pushing new spines. I had happened upon a simple fact that commercial nurseries take for granted but that hobbyists are largely unaware: for best growth, most plants need slightly acidic water. For cacti, I now believe it to be essential. Since 5% vinegar is more expensive, I have eventually gone to sulfuric acid. This is the cheapest material that can be used.

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BY ELTON ROBERTS / FRESNO CACTUS AND SUCCULENT SOCIETY

Acidifying your water– Starting out – In order to lower your pH you must be able to measure it. The cost of pH meters has dropped a lot and you may now purchase them starting at about \$150. If you have a commercial greenhouse that is nice but it still is a substantial outlay of cash.

It seems as though the hydroponics growers have been aware of the necessity of correct pH for some time. They generally suggest a pH of 5.6 to 6.0. Our suggestion would be to purchase a colorimetric indicator kit. These are available from hydroponics stores. They are generally from \$6-8. The two brands I have seen are General Hydroponics and Sunleaves. They have a spectrum of color going from:

Low pH = red

Correct pH = reddish-yellow (5.5)

High pH = blue green

Vinegar is a good acid to start with. Purchase a gallon bottle of 5% white vinegar. (Some of the cheaper brands contain 4% so be careful to read the label.) Beginning with a five gallon bucket of tap water, add incremental volumes of vinegar and measure the pH using a good pH meter. Or record the color using your colorimetric kit. Keep track of the results and make note of the total volume required to reach a pH of about 5.5. Any number of acids may be used to lower your water's pH. Citric acid, acetic acid (vinegar), nitric acid, phosphoric acid, and sulfuric acid are possibilities, but do not use muriatic acid (often sold for swimming pools) as this is another name for hydrochloric acid, and is very bad for plants. If you have access to pH data and CaCO₃ hardness of your local water, I refer you to the above discussion above.

Note that phosphorous and nitrogen are both present in fertilizers, and you must take this into account if you use nitric or phosphoric acids. Citric and acetic acids do not present these problems. Sulfur is a necessary plant nutrient. Plants are not damaged by receiving too much sulfur, therefore, sulfuric acid is a good option for larger collections. Sulfuric acid is available in large quantities from auto supply stores. It has proven to be the cheapest acid to use.

Delivery systems for watering with low pH – There are several ways that you can water your plants with low pH water. The cheapest would be to use a five-gallon bucket and adjust the pH in the bucket. We are sure that you will quickly tire of this procedure and find it necessary to upgrade to a more automatic system.

Sump pumps are available in hardware stores for under \$100 that may be used in conjunction with a larger container such as a 55gal drum. The best type is one that has an on-off float. Running these pumps dry can be disastrous to the impellers. Plastic garbage cans make excellent reservoirs. Have a hose system set up to deliver water to all of the places that you want.

The more expensive Dosatron may be used for larger operations. It can be adjusted to dilution factors from 1:66 to 1:200. The dilution rate is independent of the flow rate. This is the Cadillac of the watering systems. It will run about \$300-400.

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BY ELTON ROBERTS / FRESNO CACTUS AND SUCCULENT SOCIETY

The added benefit these operations give you is the ability to add your fertilizers and other chemicals such as pesticides and wetting agents into the water. Many fertilizers have a downward pH adjustment built into them, and it would help to measure the pH of your favorite fertilizer mixture. You must adjust the pH after you have placed the fertilizer into the water.

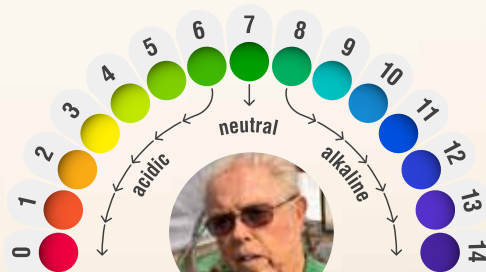
For plants with heavy mineral deposits on the pots, caused by alkaline conditions, it may take some time for the acidic water to have its full effect. Older clay pots may also leach a lot of minerals, and their outsides will turn white for a while as the mineral buildup is slowly dissolved away.

Conclusion — Some plants show adverse reaction to alkaline water quicker than others. These are the plants that have a reputation of being difficult to grow. Among them are the high elevation plants of North and South America, such as *Pediocactus*, *Sclerocactus*, *Micropuntia*, *Rebutia*, *Sulcorebutia* and the rare and hard to come by *Opuntioids* from South America. Also other deep desert species such as *Echinomastus*, *Escobaria*, *Neolloydia*, *Glandulicactus* and plants like *Mammillaria tetrancistra* and *Herrerae* and many others succumb readily to alkaline water. The slow growing *Ariocarpus* may not show signs of dying quickly but in time they will succumb like the others. Plants with small diameter stems and young plants that do not have much water storing capacity will succumb quickly to alkaline water. These plants and the rest of the cactus family along with all other succulents will show signs of growth soon after receiving acidified water.



References 1. *Cactus Culture* Based upon Biology. Franz Buxbaum, pp. 34 – 44 Blandford Press, London, 1958
 2. Doug Bailey and Ted Bilderback, 1998, *Alkalinity Control for Irrigation Water Used in Nurseries and Greenhouses*, North Carolina State University, <http://www.ces.ncsu.edu/depts/hort/hil/hil-558.html> 3. Railsback, L.B. 1997. Lower pH of acid rain associated with lightning: evidence from sampling within 14 showers and storms in the Georgia Piedmont in summer 1996. *Science of the total environment*. 198: 233-241. 4. *The Genus Turbinicarpus in San Luis Potosi* by Cactus & Co. libri Malcolm Burleigh – St. Paul, MN

Elton Roberts -- Ripon, CA Edited for the Newsletter by Maria Capaldo



By Elton Roberts



Virtual Mini-Show: **SUCCULENT/ NOVICE**

SUCCULENT CATEGORY: NOVICE



Euphorbia ammak
by Terri Straub



Euphorbia susannae
by Gretchen Davis



Euphorbia horrida
by Karin Cozzolino



Euphorbia obesa
by M.A. Bjarkman



Euphorbia medusoid
by M.A. Bjarkman



Euphorbia mammilaris
by Terri Straub



Euphorbia lactea cv 'White Ghost'
by Sonita Bantad



Euphorbia aeruginosa
by Gretchen Davis



Euphorbia horrida
by Gretchen Davis



Euphorbia globosa
by Martin Dorsey



Euphorbia bupleurifolia
by M.A. Bjarkman



Euphorbia abdelkuri
by Jacob Youssefzadeh



Euphorbia horrida 'Snowflake'
by Terri Straub



Euphorbia abdelkuri
by Martin Dorsey



Monadenium stapelioides variegated
(*Euphorbia neostapelioides f.variegata*)
by Gretchen Davis



Virtual Mini-Show: **CACTUS / NOVICE**

CACTUS CATEGORY: NOVICE



Parodia scopia
by Jacob Youssefzadeh



Eriocephala (Parodia) magnifica
by Jacob Youssefzadeh



Eriocephala (Notocactus) magnifica
by Gretchen Davis



Parodia scopia
by Gretchen Davis



Eriocephala (Parodia) leninghausii
by Joe Tillotson



Parodia buiningii
by Martin Dorsey



Notocactus uebelmannianus
by Sonita Bantad



Notocactus scopia rubra
by Terri Straub



Notocactus uebelmannianus
by Sonita Bantad



Virtual Mini-Show: **SUCCULENT / INTERMEDIATE**

SUCCULENT CATEGORY: INTERMEDIATE



Euphorbia susannae
by Bernard Johnson



Euphorbia stellata
by Bernard Johnson



Euphorbia polygona "snowflake"
by Anita Caplan



Euphorbia medusoid
by Bernard Johnson



Euphorbia squarrosa.
by Lemono Lott



Virtual Mini-Show: **CACTUS / INTERMEDIATE**

CACTUS CATEGORY: INTERMEDIATE



Parodia microsperma var. *sanguiniflora*
by Bernard Johnson



Eriocephalia (*Parodia*) *magnifica*
by Anita Caplan



Virtual Mini-Show: **SUCCULENT/ OPEN**

SUCCULENT CATEGORY: OPEN



Euphorbia xanti
by Maria Capaldo



Euphorbia trigona
by Phyllis DeCrescenzo



Euphorbia squarrosa
by Maria Capaldo



Euphorbia spiralis
by Phyllis DeCrescenzo



Euphorbia makallensis
by Jim Gardner



Euphorbia lactea crest
by Jim Gardner



Euphorbia inermis var. huttonae
by Laurel Woodley



Euphorbia horrida var. noorsveldensis
by Bill Wilk



Euphorbia horrida
by Bill Wilk



Euphorbia flanagani
by Maria Capaldo



Euphorbia enopla
by Phyllis DeCrescenzo



Euphorbia caput-medusae
by Phyllis DeCrescenzo



Euphorbia bupleurifolia
by Sally Fasteau



Crested euphorbia
by Phyllis DeCrescenzo



Euphorbia grandidentata crest
by Jim Gardner



Euphorbia horrida var striata
by Bill Wilk



MAY

Virtual Mini-Show: CACTUS/OPEN

CACTUS CATEGORY: OPEN



Wigginsia sellowii (Notocactus)
by Gary Duke



Parodia microsperma (aureispina)
by Maria Capaldo



Notocactus uebelmannianus
by Maria Capaldo



Eriocephalo (Notocactus) *magnifica*
by Gary Duke.



Parodia warasii
by Laurel Woodley.



Parodia mammulosa
by Phyllis DeCrescenzo



Notocactus tureckianus
by Jim Gardner



Eriocephalo (*Parodia*) *leninghausii*
by Sally Fasteau



Parodia warasii
by Bill Wilk



Parodia mairanana
by Phyllis DeCrescenzo



Parodia schlosseri
by Laurel Woodley



Notocactus herteri
by Gary Duke



Notocactus vanvlietii
by Sally Fasteau

MAY

SCSS Mini-Show MAY 2020 Standings

[Click here for sortable standings](#)

Novice Class	Cactus	Succulents	Total	Intermediate Class	Cactus	Succulents	Total	Open Class	Cactus	Succulents	Total
Bantad, Sonia	1	1	2	Johnson, Bernard	11	23	34	Capaldo, Maria	17	11	28
Bjarkman, MA	3	6	9	Johnson, Ted	5	14	19	DeCrescenzo, Phyllis	19	20	39
Bjerke, Martha	0	2	2	Caplan, Anita	1	1	2	Duke, Gary	15	14	29
Cottrell, Diane	7	9	16	La Forest, Dale	7	7	14	Sally Fasteau	5	17	22
Cozzolino, Karin	0	2	2	Lott, Lemono	0	1	1	Gardner, Jim	10	3	13
Davis, Gretchen	1	1	2	Neely, Jade	3	3	6	Hanna, Jim	0	8	8
Diaz, Gloria	0	2	2	Nettles, Coni	22	15	37	Wilk, William	8	4	12
Dorsey, Martin	1	9	10	Mike Short	0	8	8	Woodley, Laurel	2	4	6
Nisewanur, John	0	10	10								
Sover, Suzane	0	1	1								
Straub, Terri	16	9	25								
Straup, Matt	0	2	2								
Tanner, Jim	8	10	18								
Tillotson, Joseph	1	0	1								
Unrine, Judy	0	6	6								
Youssefzadeh, Aya	1	4	5								
Youssefzadeh, Jacob	5	15	20								

SCSS Mini-Show Rules

A Mini-show is scheduled for all meetings except April (Show and Sale) and December (Holiday Potluck) as a way for members to show their prized plants and staging skills; and for everyone, especially novices to learn how to grow and show theirs. Lists of eligible plants are printed in the newsletter and on our Society's website.

There are three entry classes:

Novice, Intermediate and Open. New members may enter at any level, but once a level has been entered members may not regress to a less advanced class.

There are two plant categories, Cactus and Succulent. Up to three entries per member may be entered in each category.

Exhibitors must be club members in good standing and present at the meeting. One member's name representing a household must be used unless plants are grown and shown separately. We trust you.

Any container may be used, including plastic. The containers and plants must be free of pests and disease. Only one plant/container is permitted but this includes rosettes/offsets/pups connected by rhizomes, stolens, and above ground clusters. Dish gardens are an exception if they are the category of the month. Novice and Intermediate entries must be grown by the exhibitor for a minimum of six months, and open class entries for one year.

Usually our speaker (as an unbiased expert)

will be asked to judge, but if the speaker is a Society member, one or two members who are not showing will be asked to judge. Remember, judges may not be experts and usually judge based on how well the plant is grown and staged.

The following point system is used.

1st place= 6

2nd place=4

3rd place=2

Entries not disqualified receive 1 point.

After the November meeting, point totals will be reviewed by the Board. Novice and Intermediate members with more than 64 points or with at least 6 first place awards may be asked to move to the Intermediate or Open class if their entries show them qualified. This is a subjective judgment.

All events for June have been

CANCELLED

[For more information and to learn more](#)

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