**In this issue:***Beginner's Guide to Modern Haworthia Hybrids*

Tom Glavich

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Above: *Haworthia* 'Pearl Ball'

Research Committee Awards Grant

Phuc Huynh, CSSA Research Grants

The Research Grants Committee of CSSA is charged with the facilitation of grants (up to \$3000) to help fund well-designed research programs on the botany, horticulture, and conservation of succulent plants. The committee consists of CSSA members who have significant scientific background and/or knowledge in the field of succulent botany or horticulture. Every year CSSA receives grant proposals both from within the United States and internationally. Committee members judge each grant proposal based on many factors including, but not limited to, novel scientific and biological significance, ecological impact and importance, cultivation and conservation relevance.

During the latest cycle of grant review, the committee awarded Randi Spray for her project titled, "The Practice of Small Expedition in American Botany: A case study of women botanists on the Colorado Plateau." She will attempt to re-trace and describe several historical explorations undertaken by four women botanists (Ellen Powell Thomp-

son, Alice Eastwood, Margaret Armstrong, and Elzada Clover) on the Colorado Plateau and the circumstances surrounding their cacti finds. Spray will revisit the sites where these women collected or observed cacti to see if populations of those species still exist in the same locations and in the same ecological associations and to note what changes have occurred to the cacti populations of the Colorado Plateau in the last 80+ years.

During the past five years, the Research Grants Committee and CSSA have awarded more than \$68,000.00 to support over twenty different research projects. Many original articles published in the Cactus and Succulent Journal and/or Haseltonia were the result of projects receiving funding from CSSA. CSSA encourages, supports, and promotes innovative and impactful research projects that can further emphasize and enhance the mission and goals of CSSA. Detailed information and the grant application packet can be found and downloaded on the CSSA website. Given the current frail state of the world's ecological environment, particularly those pertaining to cacti and other succulents, it becomes urgent and necessary to better understand how these beloved plants are impacted by natural selection and human activities. Support this effort through your conservation action and [donation to CSSA](#).

CSSA Calendar of Events 2021
Full details and updates at
[CSSA Calendar](#)

CSSA YouTube Channel Launched!

CSSA
News

The CSSA YouTube channel officially opened in May. With over 20 videos—and new content added regularly—every one will find something of interest. Many of the videos are presentations from past conventions by expert growers.

This new resource is another step to "... promot(e) the appreciation, knowledge, and conservation of cacti and succulents in cultivation and in wild populations."

Subscribe today!



<https://www.youtube.com/c/cactusandsucculentsocietyofamerica>

Taking a Hobby to a Business: Gladys Drummond

Information taken from an article by Mike Hellmann, Reprinted from *HSCSS Digest*, St. Louis, MO and from <https://drummondnursery.weebly.com/about.html>

Longtime nursery owner, Gladys Drummond of Drummond Nursery, Desoto, MO, died on February 17, 2021. Drummond's Nursery was a faithful friend to the Henry Shaw Cactus Society in St. Louis, MO.

"I truly believe that our society would not be what it is today without Drummond Nursery and Gladys' passion for these plants that were once just a hobby. Drummonds has been a primary vendor at every sale we've had since I've been a member. And for years prior, they were the sole vendor. She's also generously given her precious time to judge our Show for the past many years," wrote Mike Hellmann, member and past president of the Henry Shaw C&S Society. "Drummonds has given our members so many opportunities to acquire plants of all types. And more recently, as collector-quality succulent plants became scarce, efforts by the family were made to still find them, including winter-hardy plants for our outdoor gardens."

Fred and Gladys Drummond began the nursery in 1968, with a small 12' by 8' greenhouse. Fred and Gladys quickly became successful selling hundreds of small houseplants at the local farmers market in DeSoto, MO. In 1976, a resident of DeSoto suggested that the nursery expand to include succulents. He brought sempervivums for the Drummonds to propagate. And propagate, they did!



Gladys Drummond, with her cacti and succulents, were a familiar and popular presence at the annual HSCSS Show & Sale at Missouri Botanical Garden. Cold-hardy cacti and succulents, like those pictured above, at the 2016 Show & Sale were popular among buyers and sold quickly, along with her multiple flats of young cacti and succulents.

Photo: Jolie Krupnik

CSSA Conservation Policy

Introduction

The prior Policy Statement was antiquated and dated back to an era when field collecting by hobbyist was not entirely discouraged. A new Statement was drafted that expressly discourages all field collection except for limited scientific studies, rescue operations, government sanctioned breeding programs and the like. The new Statement directly references and incorporates the IOS Code of Conduct. Important legislation (The America Endangered Species Act) and treaties (CITES) are expressly referenced. In short, the Conservation Policy Statement is taking a strong stand against the sale and showing of field collected plants.

Conservation Policy Statement

The Cactus and Succulent Society of America (CSSA) is the national organization for the study, education, and promotion of cacti and succulents. The popularity of cacti and succulents, their availability online, and their increased monetary value have critically endangered their populations in the wild. The conservation of these unique plants and their habitats is of critical concern.

Existing Policies and Guidelines

CSSA shall adhere to:

- ▶ All national and international guidelines, treaties, and laws regarding the protection of cacti, other succulents, and their habitats.
- ▶ The Convention on International Trade of Endangered Species (CITES) treaty and the American Endangered Species Acts for both plants and animals.
- ▶ The International Organization for Succulent Plant Study (IOS) Code of Conduct.
- ▶ Specific conservation policies of the applicable State or other local jurisdictions.

CSSA Show and Sale Policies

- ▶ CSSA will not accept field collected plants in its competitive shows; plants in question will be evaluated by a review team upon entering.
- ▶ CSSA functions will not allow the sale, purchase, or promotion of habitat-collected plants.

- ▶ CSSA encourages its affiliate societies to adopt or incorporate CSSA Conservation Policies in developing their own missions and show and sale policies.

Commercial Selling

- ▶ CSSA endorses and promotes vendors which produce sale plants from seed, cuttings or other artificial means.
- ▶ CSSA discourages the use of nurseries and online vendors that sell field collected plants.

Legal Initiatives

- ▶ CSSA will work with our appropriate government agencies to modernize laws regarding the sale of plants across international borders, especially for hybrids.
- ▶ CSSA will endorse and promote state laws and policies pertaining to the rescue of plants due to urban or agricultural encroachment.
- ▶ CSSA will assist in the development of procedures to conserve and disseminate rescued plants.



Eriosyce napina subsp. *lembckeii*. A little cactus of Atacama Region that is a species in danger.

Photo: Rescuti - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=64463623>

Spines

In this article, [A Single Spine from This Cactus Can Lift a Half-Pound Slab of Pork](https://www.pbs.org/wgbh/nova/article/cactus-spine-can-lift-pork-shoulder/) by Katherine J. Wu (published November 20, 2018, PBS / Nova), researchers took an in-depth look at how cactus spines do their dirty work. Using several species of cactus, spines were collected, and tests were run. The results are another testament to the adaptability and survival strategies of cactus.



<https://www.pbs.org/wgbh/nova/article/cactus-spine-can-lift-pork-shoulder/>

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Time-Lapse: Beautiful Cacti Bloom Before Your Eyes Short Film Showcase

<https://www.youtube.com/watch?v=I8W4LyIXINE>

From filmmaker, Greg Krehel, this stunning time-lapse captures the magic of Echinopsis flowers bursting open. Since this video was first released in 2015, you may have seen it. However, it is worth watching again. And again.



Stockings full of plant matter and some of the plant matter illegally imported in February 2021 by a succulent smuggler caught in New Zealand.

Photos courtesy of New Zealand Ministry of Primary Industries <https://www.mpi.govt.nz/>

MORE DEMAND. MORE CACTUS SMUGGLING.

In February of 2021, a New Zealand woman was caught smuggling almost 1,000 cacti and succulents strapped to her body. The booty was valued at around \$10,000 and included threatened and endangered species. According to CNN, the woman had been caught in 2019 taking "unauthorized" seeds into New Zealand. The current craze for potted plants increases demand and puts a strain on wild plant populations.

A New York Times article, "[Global Cactus Traffickers Are Cleaning Out the Deserts](#)" by Rachel Nurer (May 20, 2021), explains the recent upticks in smuggling cacti and succulents, including a bust involving rare succulents valued at more than \$1,000,000!

While this is a sobering subject, it is an important one. It's time to think hard about our role to be part of the solution.

Note: Our own Conservation Committee members were interviewed for this piece.

Correction

On page 21 of the last issue of *To The Point*, the editor failed to enter corrections. The updated reference entries from the article, "Get Your Facts First" are below.

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Geohintonia mexicana

Brian Kemble, From *SFSCS Newsletter*, San Francisco Succulent & Cactus Society

Mexico is home to more species of cacti than any other country, and many of these are staples of cactus gardens and cactus collections the world over. It is not that uncommon for a new species from there to be described, but a whole new genus is big news. This happened in 1991 with the description of *Geohintonia mexicana* in the journal *Cactáceas y Suculentas Mexicanas*. The name *Geohintonia* honors its discoverer, George Hinton, a plant collector and explorer from the Mexican state of Nuevo Leon.

Fig. 1 A young plant of *Geohintonia mexicana* appears to erupt out of the gypsum in which it grows.

Fig. 2 An older plant, with the crusty lower portion of the cactus seeming to merge into the gypsum.





Geohintonia mexicana is monotypic, meaning that it is the only species in its genus. It is found only on gypsum outcrops in the southern part of Nuevo Leon, to the southeast of Galeana. While extraordinary and unique, *Geohintonia* displays some similarities to a smaller species which grows alongside it: *Aztekium hintonii*. It has been suggested that *G. mexicana* might actually have descended from a natural hybrid between *Aztekium hintonii* and *Echinocactus horizonthalonius*, but this remains a matter of conjecture.

Plants of *Geohintonia mexicana* in nature are single-headed, and multi-headed plants in cultivation are the result of grafting, since a fast-growing rootstock can cause a proliferation of growth, resulting in multiple heads. While starting out as a globular plant, and remaining so for many years, *Geohintonia mexicana* eventually elongates to become short-columnar. The plant body is composed of many narrow ribs, with deep furrows between them. As the plant grows, ribs divide occasionally, so that



Fig. 3 Another specimen; note how the spines are present only on the younger areoles, and how some of the older areoles have dislodged altogether, leaving only divots.

Fig. 4 A group of plants.

Fig. 5 An apical view of a plant with a partially open flower.



the number of ribs increases over time during its juvenile phase. By the time a plant reaches flowering size, it typically has 15 or more ribs, and exceptionally large specimens may have 20 or even a little more. Atop the ribs are closely spaced felted areoles, and the newer ones at the top of the plant are woolly. There are normally 3 small spines per areole, starting out pale but later often blackening, and these curve upward toward the apex of the plant. As the areole ages, it first sheds its spines, and then the entire areole dislodges, leaving a divot in its place. The plant's epidermis in habitat is a pale ashy bluish-gray, but cultivated plants are often greener.

Geohintonia mexicana flowers intermittently during the warm months of the year, from spring to fall. The showy magenta flowers average a little over an inch in diameter (3 cm), emerging from areoles near the woolly apex of the plant. The fruits are about .35 inch long (9 mm) and berry-like, without spines or hairs, and they are hidden by the wool. Within are oval glossy-black seeds about .047 inch long (1.2 mm).

Fig. 6 A plant in full flower.
 Fig. 7 Another flowering plant
 Fig. 8 *Aztekium hintonii* (flowering in the foreground) growing together with *Geohintonia mexicana* in habitat.

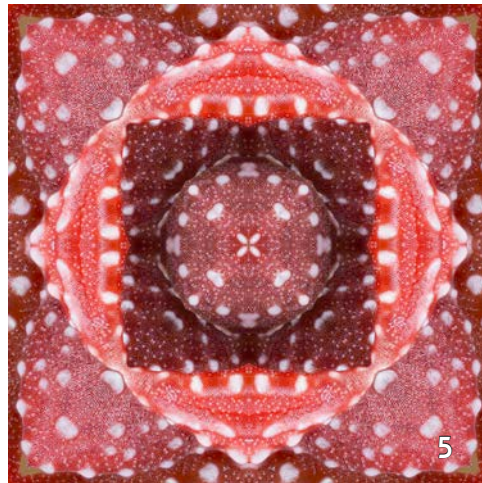
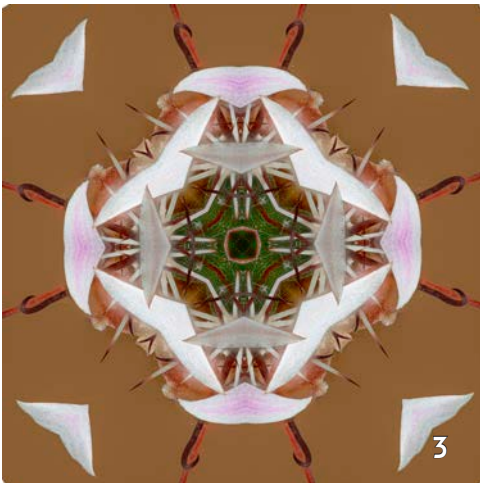
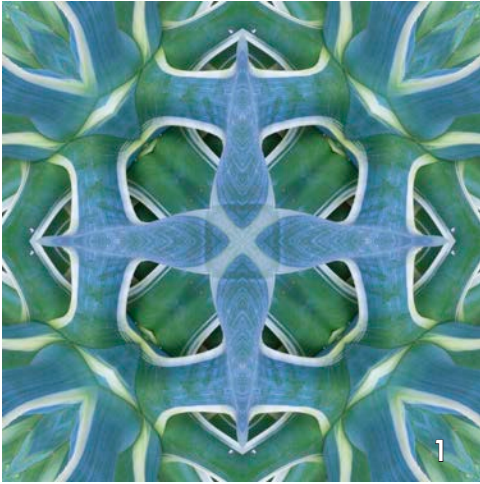
kaleidoscopix PHOTOGRAPHY

Irwin Lightstone

For a gallery exhibit about 15 years ago, I created a “photographic quilt.” At the center of the quilt, I included 18 special squares, each of which was a kaleidoscopic design,

“kaleidoscopix” derived from one of my botanical pictures. Each square was symmetrical at four axes: the horizontal median, the vertical median, and both diagonals. I loved everything about creating them—the transformations, the symmetries, the surreal rearrangement of botanical parts not exactly as nature intended. Most of all, I loved the results, crystalline, fanciful, so surprising. Each kaleidoscopix is uniquely beautiful, like snowflakes.

Kaleidoscopix can be habit-forming for the child in us. I hope you enjoy.



This kaleidoscopix of *Agave desmetiana* ‘Variegata’ (Fig 1) was used in the quilt. No matter how you fold it - in half top/bottom, right side/left side, on either diagonal- each half is the mirror image of the other. The degree of transformation between images is engaging. It is not easy to guess that the two Kaleidoscopix (Fig 2–3) were derived from the same image of a *Mammillaria thornberi*. Ice crystals on sempervivum (Fig 4) and a red *Haworthiopsis reinwardtii* (Fig 5) seen with kaleidoscopic effect. The subject plant, *Mammillaria hernandezii* (Fig 6) and the images created using it (Figs 7–8)

Interested in trying it? Google "Creating a Kaleidoscope Image in PhotoShop."

Trashed or Treasured?

Judith Burkholder, Colorado Cactus and Succulent Society

Everyone has heard and believes that cacti are tough. They can survive very harsh conditions, neglect, and they have spines to prove just how tough they are! As a member of our local cactus and succulent club for over 30 years, I know that cacti can be just the opposite. There may be a few tough guys out there that will prickle you no matter what, but overall, cacti like to be pampered.

Neglect and harsh conditions can overlap, but neglect has a human factor. For example, I had a cactus that fell out of a pot. Maybe I knocked it over, I don't remember. I put the spiky body on my window sill while I cleaned up the mess. I would pot it later. It got later and later. My cactus was not only tough but optimistic. It kept growing unpotted and actually bloomed two years in a row on my window sill! That's when I found out that even an optimistic, tough cactus that had my daily admiration had its limits. The following summer, it died.

Why didn't it just hang on a few more days? Surely, I was going to plant it soon. There are tales of deserts where it doesn't rain for 10 years or more and the cacti survive. The winds, the sun, the lack of rain. The isolation. The harsh conditions. How do cacti really survive in a desert in the middle of nowhere if they can't survive in my house? Obviously, the natural world has its own way of healing and survival. Mother Nature doesn't deal a tough hand of neglect that I apparently had dealt. That was 15 years ago.

My son, now in graduate school, is a cactus fanatic. In fact, he is getting a master's degree in Biology/cactus. On a recent trip to pick him up for summer break, we drove through the deserts of the western United States to see cacti in their native state. I questioned the fact that we were going to drive through the middle of nowhere and was it really going to be fun. "Cactus Summer" is what he called it. He was excited. He assured me that it was going to be fun.

As a mother, I was worried about other things besides all the different kinds of cacti we were going to see. My worries circled around the harsh conditions that humans encounter in a desert like lack of bathrooms, gas, water/food and hotels. Surprisingly, my cactus on the window sill came to mind after all these years. I was hoping for a better outcome for us, of course, but it was also related to some of the cacti we were planning to see on our trip. My window sill cactus was an *Enchinocereus pectinatus* and since I was going to see his friends and relatives on this trip, I needed to pay my respects.

We were racing the rain as we left the university. Out of the car window, we saw lush opuntias hanging from rocks flush with yellow flowers and native wild flowers in bloom. Rest stops with bathrooms and gas stations were clean and readily available. People were walking their dogs. Trucks were resting. The weather was warm and pleasant. This was fun.

Further on, we stopped and saw *Enchinocereus enneacanthus*. It was a nice roadcut. Cars passed us as we assessed a beautiful bright pink flower shining at eye level. Pictures and smiles all around.

Hours later, the land got flatter and drier. The roads were less crowded. Gas stations were hard to find. We stopped occasionally here and there to get out and survey the land. No one passed us. All was quiet. This was a big road too, with off ramps leading off to nowhere. What if our car broke down? There was no phone service here. Who used these roads?

Just past our car, the gravel and grass gave us the answer. People use this road - a lot of people from the looks of things. For a road with seemingly no traffic, there was a lot of litter. Yet here nestled among the plastic bottles (most filled with a suspicious yellow liquid), broken glass and weathered paper several *Echinocereus stramineus*

grew. Opuntias stood guard. A cactus with a single rose-colored bud was opening and next to it was an old shoe, some underwear and a black plastic trash bag flapping in the wind. A few paces down and on the edge of a cliff we spotted a huge *Hamatocactus hamatacanthus*. We saw it because attached to it was large sheet of clear plastic. The sturdy plastic was wrapped around and caught on every spine. We tried to get it off, but it was impossible.

We continued our trek. There were several side trips along the way, but we were always looking for cactus. Off the main road, we saw *Echinocereus coccineus*, *Echinocereus dasyacanthus* and an *Escobaria dasyacanthus*. They were mostly along the fence lines where birds help to plant their seeds. I forget how many we saw, but I remember that there were less big trucks, and a steady supply of cars. The land was better cared for and devoid of litter. It was dry and isolated but maybe not as vast as the big highway. The cacti seemed to be happy and so were we. Each cactus discovery was new and exciting. A friendly policeman stopped to make sure our car hadn't broken down and that we were ok.

Eventually, we had to get back to the highway and head home. The road got lonelier again. Always watching out our window for a good place to stop, there was only one time we didn't see cacti. On a straight away we found a safe place to pull over. It looked like a good desert grassland location to find *Lepidocoryphantha macromeris* but instead we found our biggest surprise of the trip: an *Echinocereus fendleri*. We also found our second biggest surprise of the trip: how neglected our highways are. This stop was the dirtiest stop yet. The *E. fendleri* had been chopped and left to die. It was dry and dusty here, but the trash and human neglect far out-weighed the desert conditions. There wasn't a lot growing, but there was a growing feeling of sadness.

Signs along the way called for photo ops and a quick survey for cacti. The land was



Echinocereus dasyacanthus (top)
Homalocephala texensis skeleton (center)
Opuntia macrocentra with trash (bottom)

still flat and lots of cars stopped to take pictures. Laughter was heard and cars roaring off in the distance while we found a few *Homocephala texensis*. One in particular stood out among the others and spoke the loudest. It looked like it was at least 50 years old by the size of it. We had to push away the trash to



Photographing *Echinocereus fendleri*

see the entire skeleton though. Its body was long gone and all that was left was a cage of spines. The trash here was human neglect at its height and an aha moment for all of us.

Cacti are tough. They live in harsh environments. It's dry, it's hot, there are no bathrooms...but even the toughest cactus has its limits. The cacti here were dying. The land around this area was dying too. It became obvious to my family at the same moment. On our trip, the cacti that were doing the best had

the least amount of trash around them. The ones that were withering and dying had the most. The desert may look like an environment of neglect and isolation, but Mother Nature provides and pampers in her own way. Those tough spines that protect the cactus from animal predators are no match for trash. Underneath

the toilet paper and plastic that we could pull off, the plants were dying from lack of light among other things.

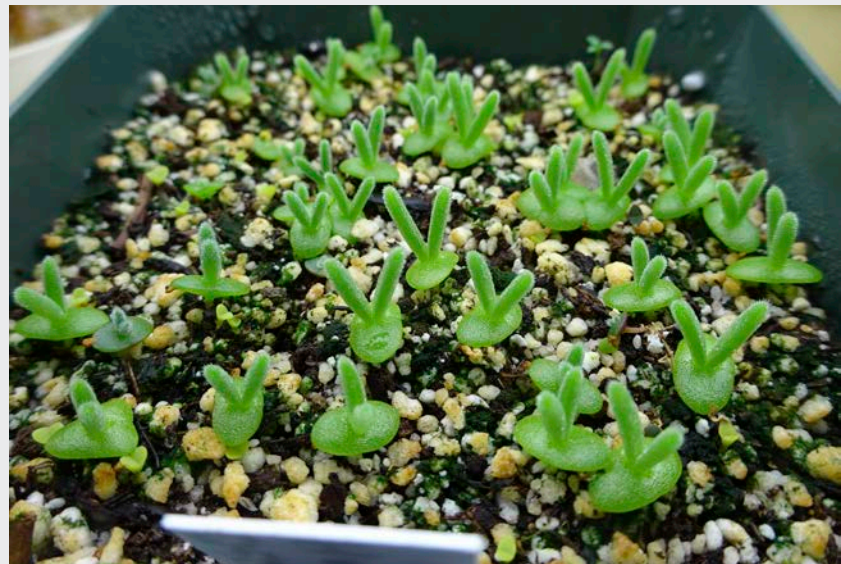
The land is the same way. Just like my cactus on the window sill, the cacti cannot survive human neglect. Humans need to do better. Highways are not trash cans. We need to treasure the earth even if it's a seemingly unimportant place because these are still places where many species of plants grow and animals call home.

Delosperma harazianum

Bob Stewart

From *The Eastern Spine*, January 2021, National Capitol C&SS

I bought and grew this batch of delosperma seed in order to have plants to test their potential winter hardiness. Growing from seed gives you a relatively large supply of plants to use in such testing, or to sell or give away to others. Unfortunately, so far *Delosperma harazianum* doesn't seem to survive temperatures



below 25°F which excludes them from use in an outdoor hardy planting here. I did keep a couple of plants that are now part of my permanent C&S collection.

Beginner's Guide to Modern Haworthia Hybrids

Thomas Glavich, Altadena, CA

Haworthia hybrids have been favorites of succulent plant collectors from nearly the day of discovery. There are dozens of species with most geographically and locally variable, blessing the prospective hybridizer with a wealth of genetic material to work with. There are also well over a hundred years of hybrids still extant. The best cultivars survive for many years in collections. Some are reproduced when they can only be found in pictures. Haworthia hybrids are currently in fashion and we are experiencing a haworthia mania.

Some of the best haworthia hybrids regularly appear on eBay and other plant auction sites and are traded through private hybridizers and collectors. Although prices are generally 'reasonable', new cultivars of exceptional beauty and difficulty or slowness of propagation can easily trade for well over \$1000. The parents (or great-great-grandparents) of some of these are available for \$10 or less. The heritage of some of the best is getting increasingly murky due to poor record keeping and trade secrets.

Sources for new hybrids include several US hybridizers as well as significant groups in Japan, Europe and South Africa. New interesting cultivars are also coming from China, Thailand and Korea as well, but these don't yet have the wide distribution that the more established hybridizers have achieved.

For the purposes of this article, "modern" is being taken as anything hybridized or made available after 2015. The pictures with this article show the differences that talented hybridizers use to produce spectacular new plants. The first of these is a hybrid, created by Gerhard Marx of South Africa (Fig 1). It is one of his Triple B series



1. Hybrid haworthia created by Gerhard Marx

plants, notable for its fantastic texture. The second is a very different hybrid, a plant sold as *Haworthia* 'Pearl Ball' (pictured, [page 1](#)) in the United States and as Shinju Dama in Japan, where it was created. The smooth shiny surface is festooned with raised rounded tubercles that blend into soft white lines. The third is *Haworthia* 'Gintaikyo' (Fig 2), a recent hybrid from Renny Wong of California. The leaves are smooth, there are no raised bumps or tubercles, just a sophisticated and beautiful pattern of light and dark green lines. Also from California is a hybrid from George Theodoris' Prickly Pete Series PP 236 (Fig 3). Spotting returns with uniform spots that appear in bands on a clear green background. Some of the best parts of modern Haworthia hybrids are subtle but important to the connoisseur, and are the result of hours of work from the hybridizer. Like many other art forms hybridization results are unique to the artist.

The arrival of a new hybrid from a mail order nursery is often anticlimactic. Instead of the wonderful multi-leaved specimen shown in the catalog or auction page, the arrival is often a three or four leaved specimen with a few

small roots and none of the special features that were the impetus of the purchase. New haworthias should be potted up immediately, with pure pumice or any medium normally used to give good growth and good root formation. For the first several months care and feeding of the roots must be the primary focus. The plants should get bright light but not full sun to encourage root growth without the risk of burning the new leaves. As the plant matures it should be moved to live with other haworthias and given no special treatment.

There have been a number of articles in the CSSA journal about pH control and the improved growth that is obtained with low (5.5 to 6) pH. Read these and do what they say. It really works. This is as true for haworthia as it is for anything else. Supplying a consistent and steady supply of nutrients with good available nitrogen in low pH water is the best recipe for rapid rooting, fast recovery and the best leaf color and form.

Haworthias like to have ample root room. They should be placed in 3 inch deep pots at least right from the start. A bit deeper is even better. Many of the truncate forms are slow to offset if kept in small pots. The roots need to spread a bit.

Haworthia have entered the rarified horticultural world normally inhabited by the growers of roses, iris and daylilies. The newest hybrids sell for exorbitant prices for a year or two, but they quickly go into tissue culture and the price drops considerably. As with roses, daffodils and daylilies the price of a hybrid has no correlation with its value. A beautiful plant is just as beautiful several years after its introduction as it was when it was new. As with all plant breeders, the best hybridizers produce their hybrids by using the best (and often newest and most expensive) parent material. Ordinary plants will generally make ordinary offspring.

Even beginners can try their hands at hybridization. You need two plants in flower at the same time. Pollen is best taken from a flower a day or two old, and are most receptive when



2. Haworthia 'Gintaikyo'
3. Prickly Pete Series PP 236

the flower is two or three days old. Getting to the anthers and the stamen is easiest if a petal or two is removed. Magnifying goggles, similar to those machinists use, makes the task much easier. (A perfectly acceptable alternative is to isolate the plants from other flowering haworthias and let hummingbirds do the work.) After successful pollination, wait for the fruits to mature, pick and dry the fruits, select the seeds and plant. Interesting plants may show a year later, but it is best to wait two or three years for the plants to get some maturity before making selections of what to keep and what to toss. Keep good records and keep only the very best.

For the Love of Lithops

Rita Taylor

Reprinted from November 2020 Henry Shaw Cactus & Succulent Society newsletter, St. Louis, MO

NOTE: I am no lithops expert, just a lithops lover who tries to do what's right for my plants. I am still learning and am eager to hear what both the experts and the experienced plant hobbyists have to say.

I was first attracted to lithops because of all the varieties of color and pattern and especially their small size. These compact cuties are just right for my collection. Low cost is another attraction. So, the price is right if you are interested in trying your hand at raising some colorful little lithops. (Fig 1)

Light: I do not have a green house. Nor do I use special grow lights on any of my plants.

Lithops are best kept inside in the St. Louis area where I live. I did try putting a few lithops outside on my covered front porch, which solved the rain issue, but I was concerned about the moisture in the air. Then finding a lithops with a bite out of it convinced me that all my lithops belonged inside. Squirrel attack?

My lithops get direct natural sunlight year-round in a southeast facing picture window. The plants happen to get less sun in the late afternoon and evening. During the warm to hot months, the plants sit on the windowsill itself. During very cold weather (capable of temperatures below freezing) the lithops are moved further back to a table directly in front of that same window. My lithops get the prime sun spots on that table. If lithops get elongated, they are not getting enough light.

If you want to try your hand at lithops outside, check out

Leo Chance's series "Pushing the Limits: landscaping with cacti and succulents in cold climates" in the Cactus and Succulent Journal of the Cactus & Succulent Society of America. *Lithops salicola* is the lithops that Leo says have done well planted outside. For a glance at lithops in his rock garden see Figure 2.

Watering: I use tap water that I allow to sit for a few days so that the chlorine evaporates before using it for my lithops. I used to go by the rule, "Stop watering your lithops from Halloween to Easter." However, I modified that rule to stop "regular" watering from Halloween to late March. Easter can fall into mid-April, which is definitely too late to wait to restart a watering schedule. I just do what seems to work for my plants. Occasionally, I lose a lithops or two, but that seems to be true of any plant collection. At least, that's what I tell myself!

From an expert at one of the cactus & succulent conferences, I also found out that lithops have fine hair roots coming off the main tap root which will die if left completely unwatered for long periods. So now, during the dry season of Halloween to late March, I lightly spray my lithops every 10 to 20 days. From late March to the end of October, I water my lithops approximately every 1½ to 2 weeks. If the temperature goes very high, I might lightly spray them during the "off" week or even give them an extra drink of water. I let the water run through until it comes out the bottom. I make sure that my plants drain off any excess water by sitting them on newspaper until I no longer see water draining onto the paper. I do not let the plants sit in water in a saucer.

One way to check if a plant's soil is wet or dry is to stick a wooden skewer all the way down in the soil and leave it for a few minutes. If the skewer comes out totally dry, your plant is dry and needs water. If the wooden skewer is damp to the touch, the lithops has enough water for now. I do not want a totally saturated



1. Colorful lithops species display at Linnean House, Missouri Botanical Garden in St. Louis MO. July, 2014.
2. Leo Chance's rock garden, Colorado Springs, CO. June, 2016. See the lithops among the rocks.

soil for lithops, so I do not want wet soil clinging to the stick. That would be too wet for my lithops. I use this soil check method during the regular watering period of late March to the end of October.

Some growers add another "dry period" for lithops during the hot summer until late summer or fall. They taper off regular watering again at this time. I have not tried this, but might in the future to see if my lithops respond better. See Living Stones Nursery <https://Lithops.com/Lithops/> for more on this subject.

Soil: When I first started with lithops, I left them in whatever soil they came in. Since they were happy, that is alive, I was afraid to chance doing anything to upset them. I had been warned that lithops are hard to grow! I was just excited that they were living. Eventually, after advice from some lithops experts, I realized that light and airy soil is great for lithops. Thus, pumice is what I use now when I transplant my lithops. Some lithops growers use a mix that is 50% pumice and 50% of various succulent soils. Others use a standard succulent soil mix for all their succulents including their lithops. Mainly, you want a soil that is porous and drains well.

Years ago, for our cactus and succulent shows, I was leery of taking my lithops out of the soil they came in. So, I cut down the sides of their plastic pots and buried them in small, attractive clay pots to make them show worthy. It worked; they got blue ribbons. Now I transplant my lithops into show pots with fresh pumice and that's where they live from then on. I also put a complimenting layer of top soil on the surface for good looks and water retention.

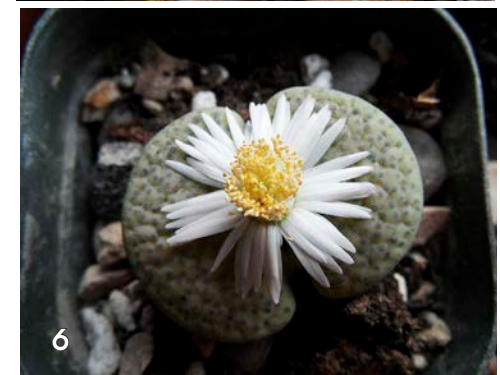
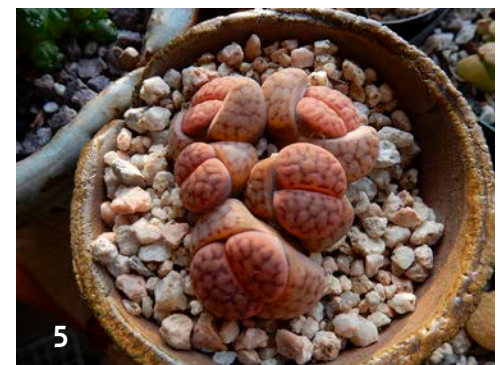
Pots: I am still guilty of frequently leaving my lithops in their original plastic pots in their original soil, unless I choose them for entries in our show or I think it is finally time for fresh soil. In habitat, lithops are flush with the ground, nearly hidden. Thus, when I transplant, I tend to lower them slightly into the soil. If a lithops has a long tap root, it gets a taller container. So, some of my lithops are in plastic, some in beautiful ceramic and some in cute little clay pots. My lithops have not shown a preference. Just be mindful that plastic, glazed and ceramic pots retain water more than clay pots.

Air: Year-round, I run a pedestal stand fan at the lowest speed in the corner of my plant area for good air circulation.

Pests: I rarely see any type of pests on my lithops. However, I have seen an occasional mealy bug (appear as small, cottony white spots) on my lithops. I treat them with alcohol on a cotton swab applied directly to the white spot. I use the same method to treat any of my plants with mealy bugs. If it is an actual mealy bug, it turns gray or brown when touched with alcohol. If it is a speck of pumice or other material, it stays white. If your lithops do get mealy bugs, check your plants daily and treat any suspicious white spots with an alcohol swab.



Lithops dorotheae
Restricted area near Pofadder (Bushmanland); South Africa



3. *Lithops dorotheae*, each of the four plants shows a different pattern.
4. *L. dorotheae* in bloom - yellow flower
5. *L. schwantesii*. Reddish color. Can also be shades of pink, gray, tan or green.
6. *L. fulviceps* v. *aurea* - white flower

Books for more information on Lithops

Lithops, Sprechman, David L. 1970

An older but in-depth book on Lithops. Provides information about the habitat, structure and cycle of the plants, as well as an analytical key for identification. Color photos included.

Lithops, Flowering Stones, Cole, Desmond 1988
(Aizoaceae, Lithops)

Lithops, Treasures of the Veld, Hammer, S.

Mesembs of the World, Smith, G.; Cheeselet, P.; Van Jaarsveld, E.; Hartmann, H.; Hammer, S.; Van Wyck, B. E.; Burgoyne, P.; Klak, C.; and Kurzweil, H., 1998

A great book for those who are trying to grow mesembs in colder climates.

The new Growing the Mesembs, Storms, Ed 1986

This 58-page booklet Includes 12 pages of color photos of lithops to help with identification.

All photos by Rita Taylor

Mammillaria carmenae is a small, golden-spined cactus which freely offsets eventually forming a neat mound. There are no central spines but about 100 fine radial spines per tubercle which provides a dense yellow covering.

After being found on a ranch in the Mexican state of Tamaulipas in 1953 it did not come into cultivation until rediscovery by Alfred Lau in 1977. It is still only known from the single location.

My two plants are from Mesa Garden seeds (Mesagarden.com) started in December 2001. The plant in the photo (below) is 10 inches across with 40 heads each about an inch and a half across. The other plant is taller with 11 heads each 2 inches across. The corkiness that forms at the base of many cacti with age, both in cultivation and in habitat, is not noticeable — an advantage of having a cluster with many heads.

Standard cactus care includes a winter rest, watering deeply when completely dry, quarter strength fertilizer, and a systemic pesticide once a year. Small white flowers with yellow centers appear in the spring.

Mammillaria carmenae

Steve Casebolt

Cascade Cactus and Succulent Society

The Point March 2021



Cacti as Means for Artistic Creation

Chaden Yafi, Houston, TX

Throughout history, humans have had a strange relationship with cacti. They either loved or hated them. Often times, those who loved them, enjoyed the various ways they could use them. For centuries, cacti were used as a source of food both for humans and animals; a source of medicine or protection; and even clothing! Cacti were also used in profitable businesses such as the industry of the cochineal dye for clothing and makeup. This business found its way to Europe, and, unfortunately, its overuse backfired. Many centuries later we are still witnessing the consequences of that business on the environment¹. There was also a recent attempt by Mexican entrepreneurs to use the opuntia cactus pads as an animal leather substitute. However, it might be too early to tell whether such attempts of exploiting plants for these thriving businesses will help the environment in any way. Only time will tell.

On the other hand, there are many examples of



how cacti were admired and loved merely for their aesthetic value and not for consumption purposes. They were chosen as a subject for paintings such as the painting by German artist, Carl Spitzweg, entitled: *A friend of cacti* (1856) (Fig 1, Berlin, Alte Nationalgalerie, Carl Spitzweg, Kakteenfreund.) The beautiful fruits of Prickly Pear cactus inspired the French painter Auguste Renoir his famous painting: *Still Life with Flowers and Prickly Pears* (1885) (Fig 2, New York City, Metropolitan Museum of Art, Auguste Renoir, Still Life with Flowers and Prickly Pears).

Recent history shows examples of how cacti themselves became not only the subject of art but also the means by which an art work is produced.

In 1975, the prominent American composer, John Cage, was on tour in Arizona with a dance company. A dancer in the group put a cactus near the composer's ear and plucked its spines. The sound that the cactus made inspired Cage to write his famous work "Child of Tree"² where a cactus functions as a musical instrument for the first time! To perform this piece, a cactus is amplified. It is



connected to a contact microphone and amplifier and is played by plucking gently its spines to create various improvised rhythmical pattern.³

The Palestinian artist Ahmed Yasin, who lives in Nablus and teaches art in a local university there, was inspired by opuntia cacti that are common in the Middle East.⁴ The name of the prickly pear opuntia cactus in Arabic is Sabr, meaning patience. The opuntia cacti inspired artist Yasin the values of patience, endurance, and perseverance. He relates to the plant in its ability to survive in harsh and arid environments. Thus, Yasin chose to create fabulous paintings with oil and acrylic on the pads of the opuntia cactus plant in his garden (Fig 3, published with authorization from the artist). The cactus was not harmed during the process of painting as he gently moved his brush on the thick surface of its pads. His works express the suffering not only of Palestinians but of all humanity:

“Starting from the idea of the connection between human beings and their land, I made a collection of oil and acrylic paintings that express the suffering of Palestinian people and afflicted people too.”⁵

Recently, it seems that cacti found their way into the world of photography and luxurious fashion. In December 2020, photographer Felix Valiente was given the mission of taking photos of the famous Spanish actress, Greta Fernandez, for the cover of the magazine, Lavanguardia. This was to promote the 2021 spring fashion.⁶

The setting was a field of opuntia cacti! He captured the photos of the actress in a very artistic way, where her red dress and handbag matched the redness of the fruits on the pads of opuntia cacti! (Fig 4)

Apparently, using cactus to promote fashion styles was contagious. Other high end fashion brands subsequently announced their luxurious product with cacti around them, such as the handbag of Dolce and Gabbana.⁷

In recent decades, people have shifted their relationships with cacti. They have given them

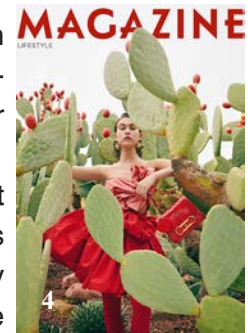


Ahmad Yaseen Artist

3

the right to exist for their own beauty and aesthetic value, and not think of them for mere consumption.

Cacti became a subject of fascination for artists of all types, with the many values they could cultivate and inspire. In the light of the recent environmental awakening, perhaps these works of art could inspire us to continue promoting the respect, conservation, and appreciation of these beautiful plants rather than their use and extensive consumption that could lead to abuse and extinction.



4

References

- (1) <https://www.kut.org/energy-environment/2021-02-01/an-invasive-bug-could-wipe-out-texas-cactuses-the-story-of-how-it-got-here-spans-centuries-and-continent/?fbclid=IwAR1mmxkcoyuxSv3MlgVxk17NjSXCAYv2nxAnpTBkUjavacsFVRwRrpsGA>
- (2) https://johncage.org/pp/John-Cage-Work-Detail.cfm?work_ID=40#:~:text=White%20on%20tour%20in%20Arizona,Child%20of%20Tree%20and%20Branches.
- (3) <https://www.youtube.com/watch?v=RBnsBqOx9h4>
- (4) <https://hyperallergic.com/286319/an-artist-paints-hopeful-portraits-of-palestinians-on-cactus-pads/?fbclid=IwAR29SEG--dn26sugSOLd7PqRzINtmw6QvzX1INo656YFyScf1EglQENW4SY>
- (5) <https://www.behance.net/gallery/75647041/Art-on-Cactus>
- (6) <http://www.felixvaliente.com/portfolio/greta-fernandez-magazine-felix-valiente/>
- (7) <https://www.facebook.com/DolceGabbana/photos/10151604113044977>



Mestoklema Tuberosum

Karen Summers

The Point, May 2021 Cascade Cactus and Succulent Society of WA

to Little Karoo and the Eastern Cape in South Africa. Based on my success so far, the climate there must be similar to that which is found in our laundry room.

♦ *Mestoklema tuberosum* synonyms are *Delosperma tuberosum*, *Mesembryanthemum tuberosum*, Donkey Mesemb, and Donkey Fig.

♦ In habitat *Mestoklema tuberosum* grows in alluvial soils (think silt, clay, sand, gravel) as a perennial bushy shrub 1–2 feet tall with many branches. The awesome part of this plant is the potato shaped root structure - looking much like dahlia bulbs twisted together (Aha! tuberosum!). While often referred to as a caudex, the roots are not. In cultivation, plants 8–12 years and older are often shown with the roots partially exposed for a bonsai effect (you'll see why you wait later on).

- ♦ With such big fat roots, the plant is drought resistant. It has no spines. And it gets many small (1/8–1/4 inch in diameter) orange daisy-like flowers on it.
- ♦ On the other hand, the branches are lax, thin, twisted and dried out looking. They become brown with age. The leaves are cool though - they spread finger-like and are recurved at the tips. In touching them you discover a slightly bumpy tongue like feel. After flowering the old inflorescence branches stick around creating a meshwork among the leaves, adding to the general disarray of the shrub.
- ♦ It generally blooms from February to June in habitat, however mine bloomed later last summer. I accidentally noticed it blooming and was surprised since it was barely an inch tall, less than a year old. I'm not sure whether my plants developed fruits as the flowers were so small and the stuff left behind such a dried mess. Had I tried to discover what was there I likely would have pulled them from the seedling mix. I decided to let them grow wild and free instead of neat and tidy.

A year ago, this strange succulent was a stranger to me. I was sending in an order to the Cactus and Succulent Society of America Seed Depot for our club's seed growing event when I saw "*Mestoklema tuberosum*". What? I loved the name and having no idea what I was buying, I added it to my list for a succulent seed growing adventure. What's \$1.50 when it comes to research?

I believe I received something like 10 seeds which I duly planted in my usual seed planting mix of pumice with a whiff of potting soil. Within a week, two seeds sprouted and thus far they are still with me - one-inch-tall miniature replicas of this "shrubby bush" with bulbous roots developing below ground.

In my research, I learned the following:

- ♦ This member of the Aizoaceae family was given its name by Nicholas Edward Brown in 1981.
- ♦ The genera is named from the Greek *mestos*; 'full' and Greek *klema*; 'a small branch' for the abundant branching. Hold on, you will learn about the tuberosum part in a moment.
- ♦ In the real world, they are found in South Namibia

- ◆ As with most of our plants there is a naming dispute — whether our plants in culture are *M. tuberosum* or *M. arboriforme*. The description of both taxa is obscure enough that it could be either one.
- ◆ These plants grow very slowly, and the root bulbs take many years to enlarge. Basically, what I'm saying is if you are an older person, like me, you might want to start now to be able to enjoy the root aspect of this plant. In fact, the roots are the main reason for this plant in collections. Important to know-- once the roots have been lifted above ground, they will no longer increase in size. The longer you wait, the better. 8–12 years is good, as mentioned above.

Rhus lancea (an African sumac) dry fruits were once used as an important ingredient for mead or honey beer. The fleshy roots and stems of *Mestoklema tuberosum* was one of the sources of yeast for brewing this mead. Roots of both *Mestoklema* and *Trichodiadema* species have been used in the past for speeding the fermentation of bread, beer, etc. It is presumed they contain either yeast or sugars which increase the rate of fermentation. Something to try while you are staying home.

October then allow to stand mostly dry all winter. I don't follow this for my young seedlings as they dry out much more quickly. Their roots are small bulbs right now and I am concerned they can't hold a winter's worth of moisture. This plant will rot if wet at low temperatures - something we already know about our plants.

Mestoklema tuberosum will enjoy a summer outdoors with lots of light and hot temperatures. It will also enjoy the added ventilation. As it ages, it will live outdoors in the greenhouse during winter if kept dry. It can

Cultivation, for me thus far has been easy enough. It lives with my other seedlings on a lighted tray and receives water on a regular basis - i.e., when the soil dries out. I have a fan running to keep the soil drier rather than moist. I fertilize very lightly during May through September. Reports are that it will endure temps below freezing while in the ground but since my plants are about 1½ inch tall that will not happen for many years.

To pot up, use a cactus mix or add a lot of perlite or pumice to regular potting soil. A gritty, very free-draining compost is suitable, and clay pots help the plants to dry out between watering. For best results, use a deep pot (big roots, remember). My regular mix is 60% pumice and 40% soil, but for plants such as this I increase the pumice to 80%. I'm using plastic pots since the mix dries out very quickly and the plants are still very young.

In general, water from April to

go below freezing only if dry. My baby plants however stay indoors where I can keep an eye on them for their first few years.

Since this plant can look untidy, prune it from time to time to keep it looking neat. Cool thing - if you prune in spring or summer, you can use the branches as cuttings. Pot them in grit or gritty compost, keep them damp and they will root easily (per internet sources).

You can also propagate from seed, planting it as soon after harvest as possible for maximum viability. Seeds like to be grown in warm soil. I used a heat mat.



Seedling *Mestoklema tuberosum*s

Tephrocactus geometricus

By Jerry Vaninetti, Lake Stevens, WA

Everybody needs at least one tephrocactus in their collection, preferably a *T. geometricus*.

Most tephrocactus are easy to grow, but hard to flower. They originate from Argentina and are in the opuntia family. Plants are notable for round or oval segments rather than flat pads, and their glochids are sunken into the areoles (i.e., less dangerous than opuntias). They grow in stacked segments, with new segments emerging from existing



segments, like in the movie *Alien*. They range from spineless (“inermis”), to straight or wavy coarse spines, to long papery spines. The segments are easily broken off and rooted. Coaxing flowers from these cacti isn’t easy. When they do flower generally it is only when they’re mature. So it’s especially satisfying when flowers, typically white-colored, but ranging to pinkish, yellow, or even red in some species, emerge from the newest segment.

There are eight *Tephrocactus* species. The more common yet iconic species are *T. geometricus*, *T. articulatus*, *T. alexanderi*, and *T. aoracanthus*. In addition, there are many varieties. These cacti grow from Spring through Fall then go dormant in the winter when they should not be watered. They like lots of direct sunlight.

Tephrocactus geometricus

Tephrocactus geometricus is my favorite among

the tephros. It originates from northern Argentina and extends to the Bolivian border. According to the Llife website:

“It grows fully exposed to blazing hot sun in an extremely arid habitat, between red violet-colored rocks and gravel in flat or moderately steep and very drained clayey and sandy soils. It is an extraordinary species that shows a strong adaptation to extreme desert habitat, with its dwarf growth and geophytic habit. It is one of the showiest “opuntia” species sought-after [by collectors of] strange “geometric” plants, but fabulous flowers. *Tephrocactus geometricus* is an example of hexagonal configurations of stem-segments surface.”

Tephrocactus geometricus has no glochids and comes in a version with spines flattened against the body, and a spineless



inermis version. Its segments can approach 2" in diameter (ping-pong ball-sized, and shaped). It has an elongated tap root, so needs a deep pot. As with nearly all cacti, it requires high-drainage soil. It can withstand temperatures to about 20° F, but its roots will rot in wet soil if planted outside (in Pacific Northwest). It requires a cool, dry winter dormancy to promote the formation of buds. Since they are notoriously difficult to grow from seed, rooting segments from mature plants is the preferred propagation method. I grow a large cluster of *T. geometricus* cacti in my greenhouse, which (after several years of failure) finally produced three flowers in 2019 in Colorado, and seven more in Washington in late July 2020 (Figs 2 & 3).

Given the high demand for *Tephrocactus geometricus* plants, some growers

specialize in them, and they can command prices ranging from \$40 for a single segment, to hundreds of dollars for a well-developed plant (if you can even find one). I'm not aware of any local nurseries or garden centers offering them, but I would expect for them to turn up from time to time. In the meantime, you can buy them via mail-order and off the internet (Etsy & eBay), to which you will need to add shipping costs.

Primary Sources:

Llifle website: http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/14349/Tephrocactus_geometricus

Cactus-Art website: https://www.cactusart.biz/schede/TEPHROCACTUS/Tephrocactus_geometricus/Tephrocactus_geometricus/Tephrocactus_geometricus_450.htm

Facebook: Tephrocactus Study Group (TSG)

Photos: Jerry Vaninetti unless noted



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SEED DEPOT ADDENDUM 2021-1

The Seed Depot is a service for CSSA members; price, \$1.25 apiece. A number of items on this list are available in small quantities, as indicated by the number in brackets. Please list substitutes or they will be made at the director's discretion. Recent donors to the Depot include Doug Anderson, Dan Gale, Peter Beiersdorfer, Brian Kemble, Rob Hofberg, Jean O'Daniel, Jeannie Echenique and Ken Kohler. Many thanks to them. In keeping with CSSA's conservation policy, donors affirm that the seeds were legally harvested.

Postage: U.S., \$5.00 per order; Canada and other countries, \$15.00. Payment must be made in U.S. currency—cash or money order—or check drawn on a U.S. bank (payable to CSSA Seed Depot.) California customers should add 7.25% sales tax on the seeds + postage total. Orders should be sent to: CSSA Seed Depot, 3015 Timmy Ave, Clovis CA 93612-4849.

You may also order by credit card from the secure CSSA site: <http://cactusandsucculentsociety.org>.

Members in EU countries: the EU now requires phytosanitary certificates for seed import, which we cannot supply. Please check with your local authorities if you are considering an order.

- 269 *Agave parryi*
- 270 *Agave parviflora*
- 271 *Aloe conifera* (open pollinated)
- 272 *Aloe dyeri*
- 273 *Aloe erythrophylla* (open pollinated)
- 274 *Aloe gneissicola* (open pollinated)
- 275 *Aloe reynoldsii* (open pollinated)
- 276 *Aloe vacillans* (open pollinated)
- 277 *Bowiea nana* [10]
- 278 *Copiapoa echinoides* [10]
- 279 *Copiapoa esmeraldina* [10]
- 280 *Coryphantha pallida*
- 281 *Coryphantha pseudoechinus*
- 282 *Echinocereus fendleri* subsp. *rectispinus*
- 283 *Echinocereus pectinatus* subsp. *huizache*
- 284 *Echinocereus pectinatus* subsp. *wenigeri*
- 285 *Echinofossulocactus obvallatus*
- 286 *Frailea bueneckeri*
- 287 *Glottiphyllum difforme*
- 288 *Gymnocalycium cardenasianum*
- 289 *Gymnocalycium schickendantzii*
- 290 *Lobivia winteriana*
- 291 *Mammillaria senilis*
- 292 *Matucana huagalensis*
- 293 *Neoporteria floccosa*
- 294 *Neoporteria odieri*
- 295 *Parodia comarapana*
- 296 *Pelargonium appendiculatum*
- 297 *Pelargonium camosum*
- 298 *Pelargonium spinosum* [10]
- 299 *Pleiospilos nelii*
- 300 *Rhombophyllum dolabriforme*
- 301 *Thelocactus bicolor* subsp. *heterochromus* [10]
- 302 *Thelocactus leucanthus* subsp. *schmollii* [10]
- 303 *Trichocereus chiloensis*
- 304 *Turbincarpus schmidickeanus* subsp. *rubriflorus* [5]
- 305 *Turbincarpus horripilus* subsp. *horripilus* [10]
- 306 *Uebelmannia pectinifera* [10]

Euphorbia obesa seedlings

Bob Stewart, Reprinted from *The Eastern Spine*, January 2021, National Capitol C&SS



When *Euphorbia obesa* seedlings first come up, they do not look anything like the baseball-like plants they will eventually grow to look like. The seeds germinate within 7 to 10 days and the seedlings grow fast. I have had best germination with seed that is only a year or less old. Seedlings shown (top) are about two weeks old.

Unlike the seedlings above, these six-month-old *Euphorbia obesa* seedlings (bottom) now display their more recognizable globular forms. Like most of my seedlings, these are growing under artificial light that give me complete control of their environment. They will remain under lights until their second year when they will be moved outside to enjoy the summer sunshine. I have found *E. obesa* easy from seed so long as the seeds are relatively fresh.



SEMPERVIVUM

Sue Haffner

Reprinted from *Cactus Corner News*, Fresno

Cactus & Succulent Society June 2021

If you're looking for "Hen and Chicks", then sempervivums are what you're going to find. These are modest little rosette-forming plants, mostly native to alpine regions of Eastern Europe.

The name means "Live-forever" as they offset freely at the base, making the plants seem immortal. Semps have been in cultivation for a long time. In Europe they were planted on the roofs of thatched houses and believed able to repel demons and/or lightning away from the home. The plants would colonize to form "green roofs" which have in recent years become fashionable.

Horticulturally speaking, there are two distinct groups of semps: tender species from northern Africa and the Canary Islands and the hardy species from the European mountains. Many of the fancy hybrids grown today are derived from the European natives.

Botanically speaking, there are four plus types of sempervivum: (1) tectorums are smooth and slightly hairy; for instance, the cultivar 'Ohio Burgundy' has a large rosette and develops a deep, rich burgundy color; (2) arachnoideums are the "cob-web" types that can tolerate a lot of sunlight; (3) calcareum are velvety and prolific, apple-green, Examples are *S. bicolor* and *S. rubrum*; (4) ciliosum are the tight rosette plants with many fine hairs. There are the occasional mutants, variegated plants or *Sempervivum* 'Oddity', a cultivar with leaves rolled into tubes, which used to show up in nurseries now and then—a plant no succulent geek could resist.

Sempervivum on a tile rooftop.

By Arnoldius - Self-photographed, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=2679792>

Sempervivum 'Oddity' bottom

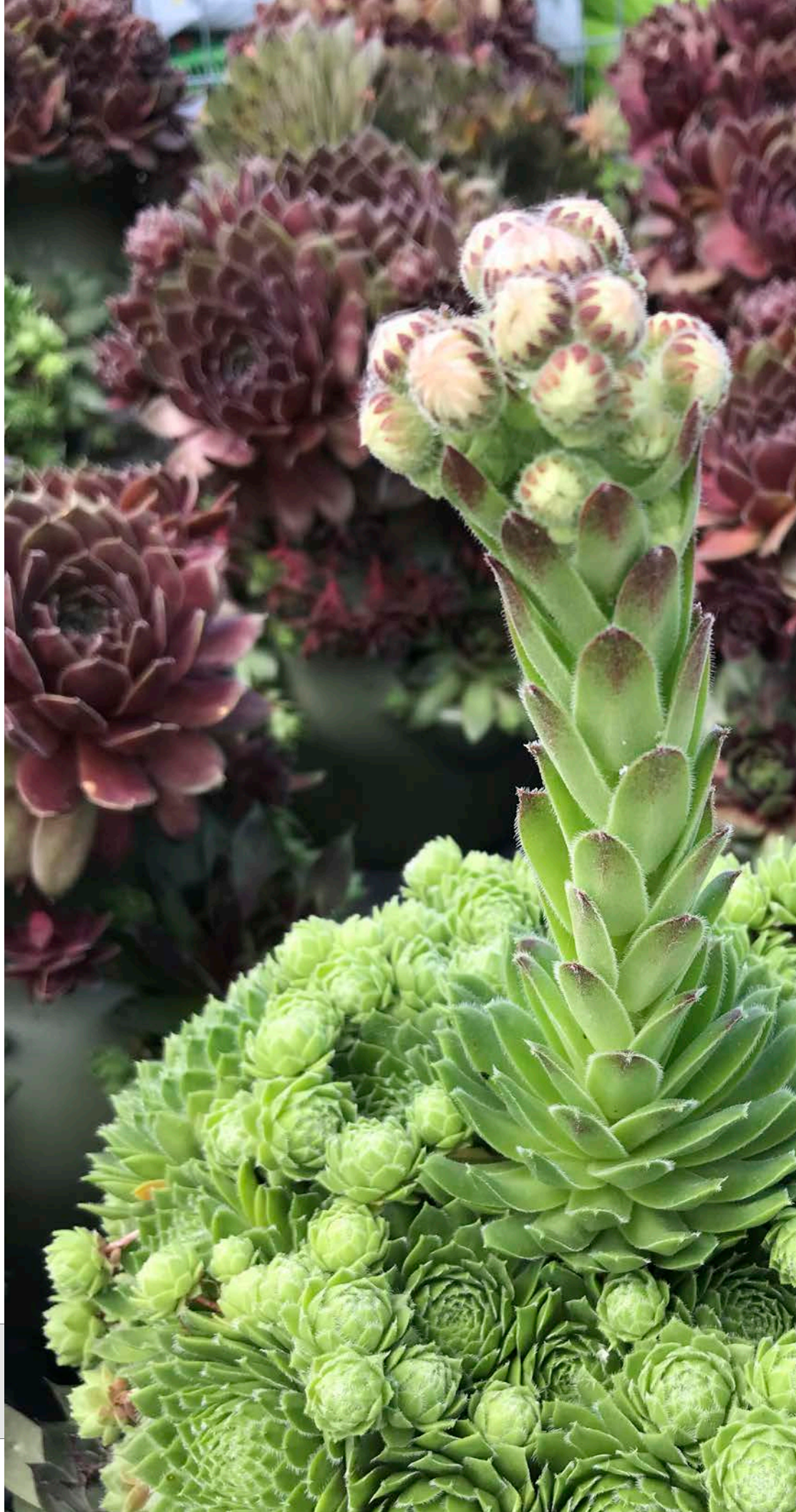
Generally speaking, sempervivums are not difficult to grow. Considering the heritage of most cultivars, you would have to say that they would prefer a climate not as hot and dry as Fresno, CA, but they can survive if a bit of care is taken. They should be grown in filtered light or semi-shade. Good drainage is a must; otherwise, they are not fussy as to soil mix. I've found that, for me, they do better in large planters with other plants. I think this keeps their roots cooler than they would be packed alone into a small pot.

Propagation is simple because offsets are produced at the base and usually develop roots readily. They can be detached and planted right away.

The flowers are star-shaped, mostly pinkish. The rosette will suddenly elongate into a bloom stalk, which usually signals that the plant will bloom and produce offsets before dying. These offsets should not be detached until they reach an ample size and the mother rosette has nearly dried up. On occasion, a semp will bloom and not send up offsets.

The bittersweet bloom of a sempervivum.

Photos: Linda Tamblyn unless noted



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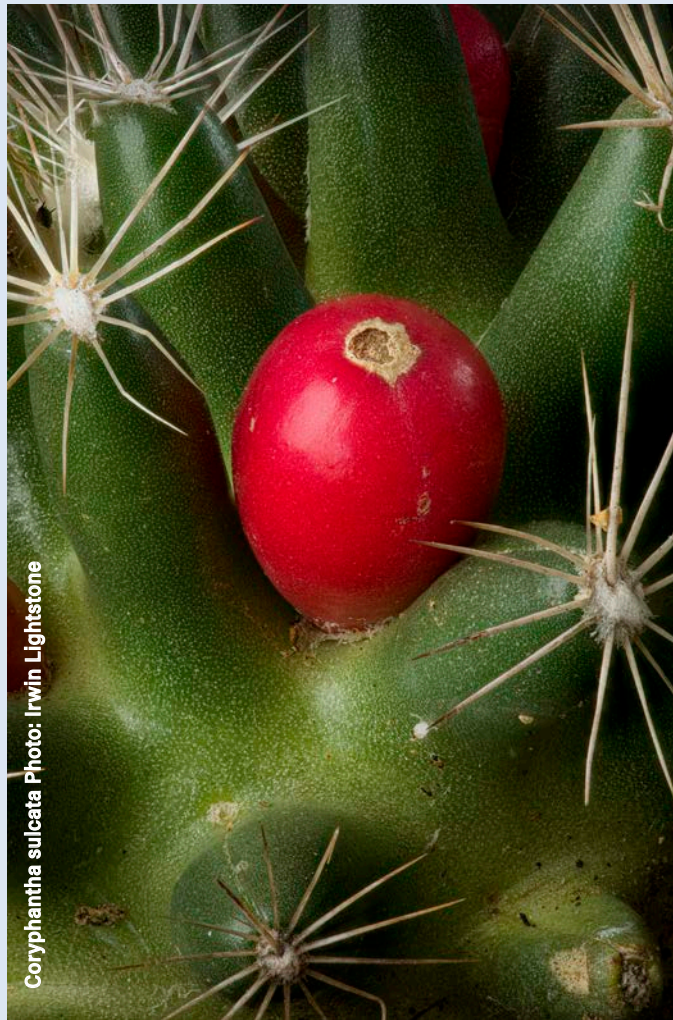
M.A. Bjarkman
Irwin Lightstone
John Martinez

CSSA

Executive Director

Gunnar Eisel

gunnar.eisel@gmail.com



Coryphantha sulcata Photo: Irwin Lightstone

CSSA Calendar of Events

Keep up to date and in the know! Bookmark your CSSA Calendar of Events today. It's the place to find out about shows, sales, upcoming conferences and webinars. (Currently most of our events are on hold due to the pandemic. We will be ramping up as soon as we are able, so stay tuned!)

http://cactusandsucculentsociety.org/calendar_of_events.html

General Information

Memberships, subscriptions, orders, and all

general questions: [Gunnar Eisel](mailto:Gunnar.Eisel@cssa.org)

Seed orders: [Sue Haffner](mailto:Sue.Haffner@cssa.org)

CSSA Affiliate Club: [MA Bjarkman](mailto:MA.Bjarkman@cssa.org)

Website: <http://cactusandsucculentsociety.org>

CSSA Affiliate Clubs

Find a local CSSA Affiliate or update your local Affiliate with contact numbers and website information. It's all online so it's quick and easy.

<http://cactusandsucculentsociety.org/Affiliates/affiliates.html>

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<https://cssa.myshopify.com/collections/join-cssa>

Seedling - \$25-\$99

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Ruth Bancroft Gardens
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Michael Buckner
Maria Capaldo
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Aeonium 'Emerald Ice' Photo: Irwin Lightstone

To The Point Submissions

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TTP.Editor@gmail.com

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- 2021 Submission due dates are as follows:
 - Spring - March 1
 - Summer - June 1
 - Fall - August 1
 - Winter - November 1



Tephrocactus articulatus var. *papyracanthus* (top)
Tephrocactus sp. (bottom)
Photos: Courtney Martinez, Kansas City, MO



Mission Statement

CSSA is a community of individuals who are passionate about promoting the appreciation, knowledge, and conservation of cacti and succulents in cultivation and in wild populations.

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