NORTH AMERICAN ROCK GARDEN SOCIETY

The Rock Garden

QUARTERLY

SUMMER 2021

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Front cover: *Delosperma* 'Jewel of Desert Garnet',
Wiert Nieuman

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From the Editor

PUTTING AN ISSUE of the *Quarterly* together is a bit like making a garden. I start with a plan, aiming for a good balance of different topics and then I sow some seeds by asking various people if they'd like to write articles. Just like seeds, many of those requests don't pan out, some take longer to develop than expected, and unexpected goodies show up that I wasn't counting on. I look over the assortment of articles, do a little editing and arranging, and we get an issue! When the result is well balanced, beautiful, and interesting, I count my lucky stars and thank all the authors who took the time to share the knowledge, experience, and love of rock gardening.

I'm particularly happy with how this issue came out. There is something here for everyone, whether you love articles on specific plants, botanizing in the wild, tours of gardens, or learning about rock gardening techniques.

This issue kicks off with Michael Uhler's article on a spectacular new crevice garden at the Regional Parks Botanic Garden in Berkeley, California. It is one part a story of garden creation, one part a love letter to the alpine wonders of California. And if you are thinking that Californian plants are all things you can't grow in your garden, flip on to Panayoti Kelaidis's article on California natives that have proved great plants in the very different climate of Colorado. Panayoti's article inspired me, so next is a piece I wrote about a different set of Californian species that thrive in my Virginia garden.

Next, we're off to Kyrgyzstan with Harry Jans to hear the story of his discovery of an enormous population of the incredibly rare and fascinating *Hepatica falconeri*. Wiert Nieuman takes us to visit an inspiring tiny home rock garden in the Netherlands that manages to balance the often antagonist urges towards good garden design and plant collecting. Lee Recca shares interesting information on the role rocks can serve in nurturing plants in the wild and our gardens. Finally, Connor Smith has a technique he's developed to root cuttings of the often very frustrating-to-propagate genus *Acantholimon*.

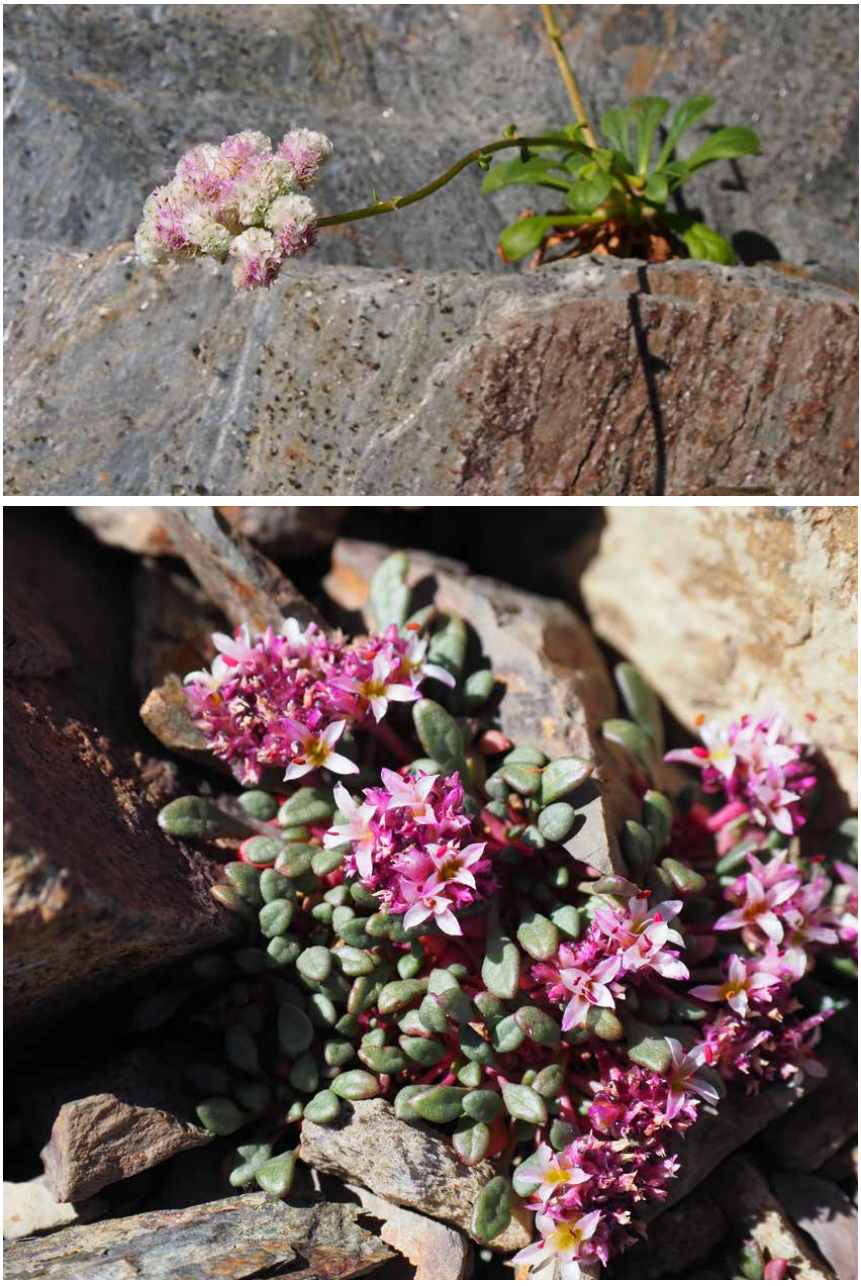
All in all, a pretty good ride! I hope you enjoy this issue, get inspired, and learn a few things along the way.

A New Crevice-Style Rock Display: A Showcase for Alpine Plants

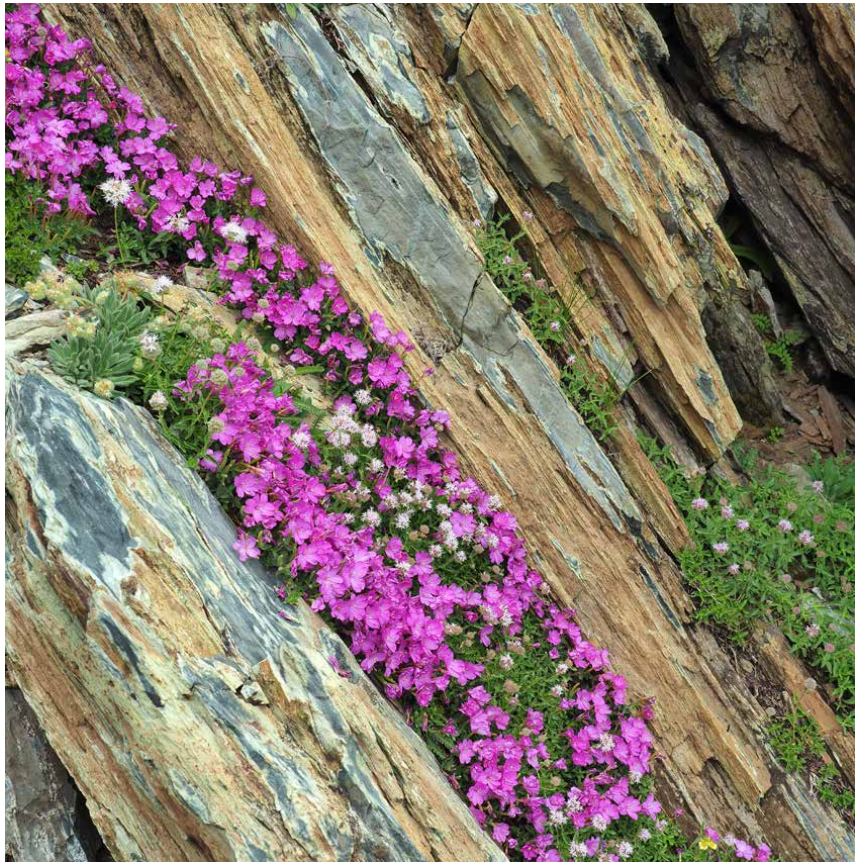
Michael Uhler

THE INCESSANT GALE-FORCE wind is howling as I crouch low to view a beautiful, prostrate, and seemingly delicate alpine plant. My wife, Ellen, and I are between two peaks at nearly 12,600 feet (3,800 m) above sea level, exhilarated by the locally well known Washoe Zephyr winds, and botanizing. We stand on an unglaciated ridge in the eastern Sierra, high above the Owens Valley between Parker Peak and Mount Wood. The ridge forms a topographic funnel that creates a venturi effect, greatly enhancing the Zephyr's speed before it rushes over the ridge and descends into a deep, glacier-carved canyon on its path east towards Mono Lake and western Nevada. Focusing on keeping my balance and too far above the diminutive rosettes at my feet, I am brought to my knees for a closer look. This is a true "belly plant" as all those who have botanized it will attest. I am in the presence of a most intriguing variety of the otherwise common pussypaws (*Calyptridium umbellatum*); I have found the uncommon alpine pussypaws (*Calyptridium umbellatum* var. *caudiciferum*)!

According to the flora I use in this region, *Flora of the Yosemite Sierra* by the eminent Dean W. Taylor, "This variant is an exclusively high-altitude expression of the highly variable *C. umbellatum*, but it consistently differs in growth form, the deeply seated roots being beset with old leaf bases, and the consistent polycarpic life-history." Classically stated and verifiably accurate; however, the current Jepson Manual places this variety in synonymy, simply lumping it into *Calyptridium umbellatum*. The plants I kneel over certainly appear distinct to me, as well as stunning in flower in this alpine setting. Predictably, I find no seed, as all the plants are still in flower; however, I am smitten by this taxon and have no reservations about returning. I am indebted to Dr. Taylor not only for elucidating the differences in the pussypaws' elevational expressions, but also for providing us with his flora, the first and sometimes only one I use while in the area. It will be an honor to grow this variety of pussypaws in the Sierra section of the Regional Parks Botanic Garden, in our new crevice rockery!



Top: *Calyptridium umbellatum var. umbellatum,* the common, low-elevation form of this species.
Bottom: *Calyptridium umbellatum* var. *caudiciferum,* the showier alpine variety.

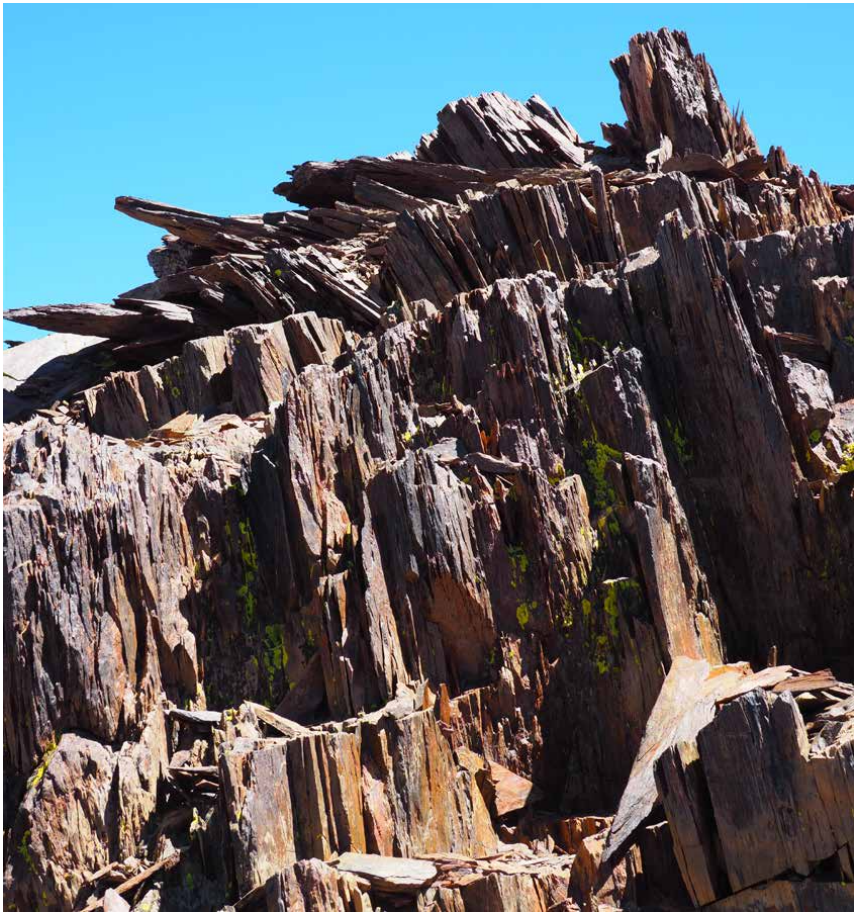


Natural crevice garden in the Upper Virginia Canyon.

Why am I excited about building a new crevice rock garden? Because the alpine zone is one of the most interesting parts of California and the zone I visit most often. I did, in fact, return to collect seed of the alpine form of pussypaws, as well as seeds of many other true alpines; and I am thrilled to grow these out in the garden so that visitors can share in all the wonders found in the highest reaches of our state. To grow many of these plant taxa in the Berkeley Hills (east of Berkeley, California, at an elevation of less than 2,000 feet/600 m) will require this type of garden crevice bed. It will be impossible to completely emulate the wind, the cold, the high level of UV light, and the lack of antagonistic organisms found in the high Sierra. Nevertheless, I am confident the new crevice rock garden will satisfy many of the conditions necessary. We want to grow and display as many Sierran plant taxa as possible, preferably those of the alpine region.

Additionally, as a part of our garden's mission, we endeavor to display plant specimens in a manner that suggests a realistic setting in nature. To make the rock project look natural I referred to my

favorite examples, those from the wild. For me, the most interesting alpine plants, and the most beautiful scenery, are located in regions of the Sierra that are comprised of geologic formations referred to as roof pendants. Simply put, a roof pendant is a metamorphosed formation, either sedimentary or volcanic, that was initially deposited before the most current Sierra uplift. By applying pressure and heat over time, the ensuing uplifting granitic magma subsequently altered or metamorphosed the original material. High above Mono Lake, on the Sierra's east side, resides one of my favorite metamorphosed sedimentary, or metasedimentary, portions of the "range of light," the Upper Parker Creek drainage; it is also the area where I collected the alpine pussypaws. My desire to re-create rock outcrops similar to this region is my inspiration for our crevice garden.



Metasedimentary rock formations in the Upper Parker Creek drainage.

An inspirational natural crevice garden in the upper Parker creek drainage, with the snow willow (*Salix nivalis*)

To get a feeling for the large project of building a full-scale crevice garden, I first assembled a smaller crevice trough. I wanted to gauge not only the benefits to alpine plant horticulture but also the receptiveness of the Friends, docents, and general public to the potential installation of a very large-scale version of this style of rockery. The trough is a roughly two-foot by three-foot (60 cm by 90 cm) rectangular planter with more-or-less vertically oriented flagstone that rises about 18 inches (46 cm) above the lip of the container and is backfilled with a very sandy, mostly mineral, growing medium. I am happy to say that several alpines— such as rockfringe (*Epilobium obcordatum*), beaked beardtongue (*Penstemon rostriflorus*), gray chickensage (*Sphaeromeria cana*), and Sierra wild rye (*Elymus sierrae*)—have either bloomed here for the first time (rockfringe) or reliably bloomed (beaked beardtongue). Perhaps more importantly, almost all visitors, Friends, and docents have been extremely interested in the concept. These promising horticultural results and our receptive visitors have renewed my interest in growing even more taxa of these challenging alpines.

Preceding any groundbreaking there are many planning steps to attend to, and now that I had a natural model envisioned it was time to get started. The first task was to choose a location for the crevice-style

rock garden. Fortunately, James Roof, our founding director, long ago had a series of successful alpine beds above our north lawn and below the Garden's Redwood section. This area provides great exposure for the alpines. It faces east and receives morning to early afternoon sun while staying cooler in the late afternoon as it is shaded by the Redwood section's overstory trees. It is important to avoid prolonged excessive heat in the root zone of alpines, as this will compromise their health. One way to do this is to limit the duration of direct sunlight, although that could compromise flowering. These historic alpine beds performed well until the overly aggressive root systems of nearby trees and shrubs invaded the root zones of the slow-growing alpines. Nevertheless, we agreed to site the crevice garden here, with a sound plan to exclude the tree roots by laying down two layers of geotextile soil-separator fabric to impede or prevent their entrance into the new crevice-garden beds.

The stone we chose comes from a family-owned quarry located in the foothills of the Sierra Nevada west of the historic town of Mariposa. The appropriately named Mariposa-Yosemite Slate Quarry is owned and operated by David Butler, a very knowledgeable and capable descendant of early Mariposa settlers. The stone is likely the most beautiful I have yet worked with and is a remarkably close match to the high-elevation metasediments I adore around Tioga Pass.

The new crevice garden will hopefully allow plants like this alpine buckwheat (*Eriogonum rosense*) to thrive far from their native habitat.

The crevice garden is designed to accommodate the deep root systems of plants like this *Claytonia megarhiza*.

We used the quarry's largest "stand-up" pallets of slate and even larger and thicker quartzite slabs and boulders set vertically on edge to simulate an extreme uplifted and metamorphosed sedimentary deposit. This material is mined from a region known as the Mother Lode belt, not too far from Yosemite National Park. It is also metasedimentary, though likely not as old as the metasediment in Upper Parker Creek. However, in places, the Parker Creek rock outcrops look exactly like the new crevice garden's Mariposa slate with its rich browns and reds and vertically oriented crevices. The scree paths between the crevice ridges in the Botanic Garden are also identical to the trail surface in the Parker Creek drainage.

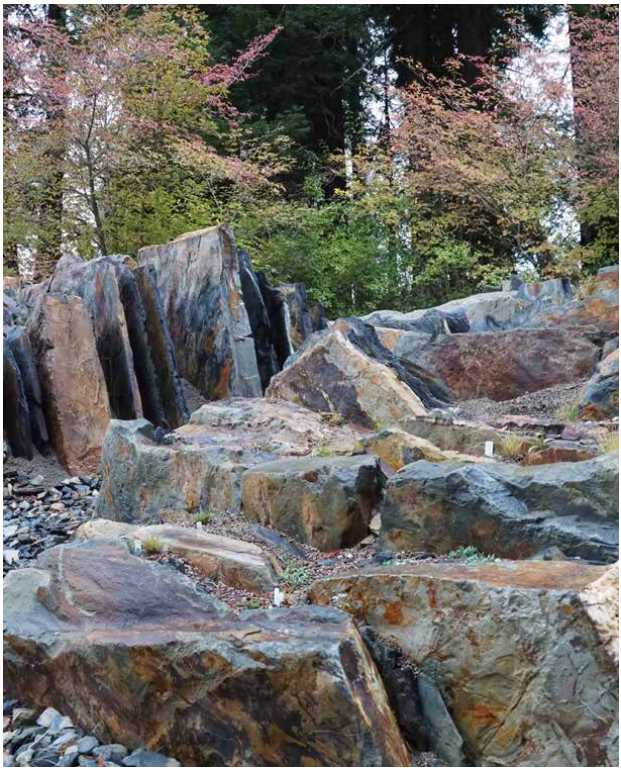
I want the crevice-garden structure to inspire awe not only in our guests but also in me. I want the massive rocks to evoke the same feelings I get when I gaze upon the eastern escarpment of the Sierra Nevada from the Inyo Mountains or Highway 395. This requires walls that rise steeply and sharply from the base and edges of the project. Setting these large stones vertically and close to the edge of the paths is a perfect way to bring the diminutive alpine plants closer to the viewer's eyes; in the past, in the shorter beds, these significant and important plants were lost below the viewer. In addition, this vertical orientation provides an excellent, perfectly drained, long root run for the many deeply tap-rooted alpines we intend to display. For example, alpine spring beauty (*Claytonia megarhiza*) can have a taproot that is four to six feet (1.2 – 1.8 m) long in ideal conditions. Our crevice garden has close to six feet (1.8 m) of rooting depth in its deepest portion of the center ridge. This makes me so happy—I hope it will make our alpines happy too!

This awesome, vertical, massive, crevice drama adds up, especially by weight! We purchased 116 tons of stone and an equivalent amount of crevice backfill (used as anchorage and rooting media among the stones) for a total of approximately 230 tons of material to be imported for the project. Also, we had to excavate and remove a considerable amount of clay soil and lawn for the sand base, as well as most of the old alpine bed's incompatible stonework. This required heavy equipment, and experts to operate it. Fortunately, in the Regional Park District we have one of the finest roads and trails crews I know of, and they were willing to help us out with the heavy lifting. I am indebted to both Rodney Smith and Bill Surges from Roads and Trails, as their expert equipment operation and hard work made this project possible. For me to be inches from an 800- to 1,000-pound (360 - 450 kg) suspended boulder requires trust and confidence in the skill and control of the operator. That skill and control can only come from a lifetime of training and experience. Bill and Rodney are masters at their craft and have this level of experience.

Rodney Smith deftly places one of the larger pieces of Mariposa slate at the apex of the crevice garden.

The final component of the project, and perhaps the most important horticulturally, is the backfill medium used to fill the crevices. For the alpine plants I want to grow, we need a growing medium that is well-drained, well-aerated, and largely mineral in content. To start the process of backfilling the crevices, more than 90 tons of washed river sand was purchased and transported into the Garden. The sand was primarily used as a leveling and anchoring base for the vertical slate and schist pieces that sometimes weigh more than 1000 pounds (4500 kg), but it is also a suitable medium for alpine plant growth. The sand was placed in the lower portions of the crevices and was gradually mixed with the next component as we continued to fill them.

Expanded shale is the next major component that we decided upon and is for me the "holy grail" of horticulture. It is formed when shale is crushed and heated in a kiln to 2,000 degrees Fahrenheit (1093°C). This process causes the tiny air spaces in the shale to expand. The resulting product is called expanded or vitrified shale. Expanded shale can hold up to 40% of its weight in water and is excellent at retaining and then releasing essential plant nutrients as well as the water. It is lightweight and stable and has proven itself in many crevice gardens across North America. To the expanded shale we mix in a small amount of compost (10% by volume). For additional alpine plant health, a graded 3/8-inch (9.5 mm) expanded shale gravel is placed around the root crown to ensure this vulnerable zone has the sharp drainage required to keep the stem and the root from rotting. This larger



The new crevice garden ready for planting.

The author and his wife Ellen Uhler on a backpacking trip. Virginia Peak is the metamorphic mountain behind them.

sized expanded shale is also proving to be resistant to washing out during rainfall and overhead irrigation. As I start to plant some choice alpines in the nearly completed beds, I am excited to see the positive results that they are already exhibiting. I have attempted to grow many of these species before, and they have never looked this good in the outdoor beds; others, we have never grown. I believe that this area of the Sierra section is the most suitable we've ever had in which to grow alpine plants, and I am very eager to start more of this year's seed collections in pots in the hope of planting them out as soon as next year.

As construction progressed, I could not stop envisioning how each stone placement was creating the perfect location to grow the beautiful Sierra Nevada alpine plants that I have always admired. I was constantly transported to my favorite Sierran haunts and imagined each crevice as a scramble up a steep couloir to look upon fine alpine plants. I longed to return to the mountains. As soon as the heavy equipment portion of the project was completed, my wife and I were on vacation and on our way to the alpine zone of the Sierra Nevada with my Inyo National Forest collecting permit.

I am blessed to have a life partner who loves to vacation with me in the alpine region of the high Sierra and botanize. Carrying all our belongings on our backs and keeping as close to the earth as possible in what is, to me, the most pristine portion of California—there is nothing better in life! Only stopping once for gas and packing all the supplies

needed for the ten-day backpacking trip: this is the perfect prescription for the pandemic blues of our two-person pod. Even during those gale-force winds, we continued to search together for the beautiful alpine cushions and celebrated the forces that helped create this wonderful alpine environment. We camped in one location for nine days, becoming intimate with the diminutive flora of this region's alpine zone, and I returned with several true alpines for the Botanic Garden.

Two years ago, when the construction portion of the crevice garden started, I compiled a list of plants I desired to grow upon its completion. Early last year I applied for the collecting permit with the Forest Botanist of the Inyo National Forest, describing our Sierra alpine crevice garden project and including photographs of its first phase. I also included the list of choice alpine species that I felt we could successfully propagate and grow, and requested permission to obtain propagules. Below are descriptions of a few of the notable collections.

Penstemon heterodoxus in the wild

Penstemon davidsonii just past peak bloom on Kuna Peak.

Rapidly rooted in the nursery under lights and over heat mats, three fine species of beardtongues (*Penstemon* spp.) are now planted out in the new crevice garden. We now grow five of the eight species of beardtongue that make it to at least 11,500 feet (3500 meters), the elevation widely considered by alpine ecologists as the lowest elevation for alpine species growth in the Sierra Nevada. Although it is not the stereotypic mat or cushion of the alpine, beaked beardtongue (*Penstemon rostriflorus*) is very fast to root from vegetative cuttings, and within weeks I had already planted out several bare-rooted propagules in the new crevice garden, with more to come. Beaked beardtongue had already bloomed profusely in the crevice trough for the last few years, and I am excited to see how this true alpine, with its intense scarlet flowers, develops in the new crevice garden substrate. Also planted out as a bareroot cutting is Davidson's penstemon (*Penstemon davidsonii*). This little gem fits the alpine flowering mat profile, and its unusually large blue-violet to blue-purple flowers are always amazing to me. I suspect the few high-elevation pollinators that enter the corolla are amazed too! Davidson's penstemon is a veritable crevice garden specialist and one that is worth close inspection. The last of the three new beardtongues, Sierra beardtongue (*Penstemon heterodoxus* var. *heterodoxus*), is my favorite, as it is the one that ranges highest of all those found in the alpine zone. Found no lower than 8,858 feet (2,700 meters), it makes itself at home all the way up to 12,800 feet (3,900 meters). It is also easy to key out in the regional flora. I enjoy looking for its whorls of flowers with their interesting stalked glands, always worth magnified observation.

Lobb's buckwheat *(Eriogonum lobbii)*

Eriogonum incanum

Another group of interest to me is the wild buckwheats (*Eriogonum* spp.). This genus is one of the largest (and most diverse) in California. The Jepson Manual lists 117 species and 123 varieties. Only ten of these species and one variety make it to the rarefied altitude of 11,500 feet (3500 meters), and I was able to obtain seed of three of them. One of my all-time favorites is Lobb's buckwheat (*Eriogonum lobbii*). It has the most interesting habit of laying its flowering stems on the ground rather than growing in the typically erect posture of most buckwheats. I grew this species once to flowering maturity and then lost it to an herbivorous moth or butterfly larva— but not before I could take a photo. I hope the larva was from one of the beautiful "blues" (*Euphilotes* spp.) that are known to use wild buckwheats as larval food sources. I have collected seed again and believe that our visitors (both butterflies and humans) will be seeing more of Lobb's buckwheat in the new crevice garden.

A second *Eriogonum* species, and the most taxonomically interesting to me, is the frosted wild buckwheat (*Eriogonum incanum*). It is one of only three species of wild buckwheat in California that is dioecious, meaning functional male and female reproductive parts are found on separate plants. Recall that there are over 200 *Eriogonum* taxa in California, so this is a rare condition in the genus. It is interesting to note that when the two sexes are mature one can see inflorescence differences, as the female plants develop more red color in the corollas and tend to become more prostrate, while the male flowers are noticeably branched and maintain a more yellow, spherical, upright inflorescence. I look forward to displaying both male and female plants of this unusual alpine buckwheat for all to enjoy at the Botanic Garden.

A third and more challenging *Eriogonum* collection was that of an adorable Sierra native, the raspberry (or White Mountain) buckwheat (*Eriogonum gracilipes*). While it is known to grow in the Sierra Nevada,

I have only seen it in the Inyo and White Mountains of far-eastern California, and it was there that I was able to find good seed of the species. Ellen and I spent a windy November weekend avoiding the first snowfall in the Sierra by heading up Mazourka Canyon in the rain shadow at Badger Flat in the Inyo Mountains. It was the perfect location to escape the pandemic-weary crowds for our ninth wedding anniversary as we saw no one else on our trip. This late-season collection trip yielded a few choice taxa, including the ripe raspberry buckwheat seed. I hope we get to see these rich red spheres of flowers soon!

Let us not forget the carices (the sedges)! I have heard it uttered by otherwise fine botanists that "life is too short for *Carex*." I respectfully disagree. *Carex* is a vast genus with over 2,000 species worldwide. It is also the most diverse genus to be found in my beloved alpine zone, not to mention a favorite food for those cute rabbit relatives, the pikas. The genus *Carex* has 29 species growing to at least 3,500 meters (11,500 feet). (The next most diverse genus is *Draba*, with fewer than half the species, 14, in this alpine zone.) The Tahoe sedge (*Carex tahoensis*) is particularly intriguing to me as it belongs to the taxonomically tricky sedge group known as the Ovales section. The Ovales includes species that are remarkably similar to the trained eye and generally identical to the untrained observer. In the crevice garden, we are growing several plants from a collection made over three years ago at the type locality on Lake Tahoe's Mt. Tallac. I have fairly confidently keyed these to *Carex*

Cloud sedge (*Carex haydeniana*) near Koip Peak

tahoensis. Records indicate that the type specimen for Tahoe sedge was housed at UC's Jepson Herbarium, but, alas, it is apparently no longer there. Additionally, Tahoe sedge was ranked by the California Native Plant Society (CNPS) as being of limited distribution (California Rare Plant Rank [CRPR] 4.3). Having a missing holotype, along with its rarity, was more than enough justification for me to grow Tahoe sedge at the garden. This year I also collected in the Parker Pass region what appears to be particularly good Tahoe sedge seed.

Carex tiogana

And now, at last, the sedge I am most thrilled about has been recognized as extremely rare and is ranked by the CNPS as CRPR 1B.3 (Plants rare, threatened, or endangered in California and elsewhere). Not only were we fortunate to obtain a small amount of seed; it was also a great opportunity to conduct rare plant monitoring and submit the results to the botanist in charge of the Inyo National Forest as well as the rare-plant botanists at the CNPS. While thinking of this relatively recently described sedge, I am especially saddened. The Tioga sedge (*Carex tiogana*) represents a species discovered and formally described by one of my botanical heroes (and the author of my favorite flora), Dean William Taylor. Tragically, Dr. Taylor passed away last November. I will always remember him, always refer to his work, and I will do my best to grow his *Carex* here in the garden.

The construction of this crevice garden has been a highlight of my 15 years at the Regional Parks Botanic Garden, and I am privileged to have been present and involved at every moment of its creation. It is a fitting addition to our garden and is already generating a healthy amount of attention from the horticultural community. The project is a wonderful testament to the vision and dedication of our garden's director, Bart O'Brien, and of the Garden Supervisor/Horticultural Specialist, Liz Bittner, as well as of all our garden staff. It is also a great example of the commitment and generosity of the Friends of the Regional Parks Botanic Garden; without their financial contribution specifically for the crevice garden, this bold project could not be accomplished. I look forward to stewarding the new crevice garden long into the future, and I thank everyone who contributed for their critical support.

Some Red Hot Californians

Panayoti Kelaidis

CALIFORNIA NATIVES HAVE a reputation for being intolerant of extreme cold. This truism is so universally acknowledged that most rock gardeners east of the Sierra shun plants from that state. And so it was with me in Colorado for much of my rock gardening career. Accidentally at first, and then with greater and greater determination, I have found some spectacular rock garden plants that not only survive but thrive in the severe continental climate of the Front Range of Colorado. I have a hunch that many of these (and many more) will prove not just hardy but tough across much of North America.

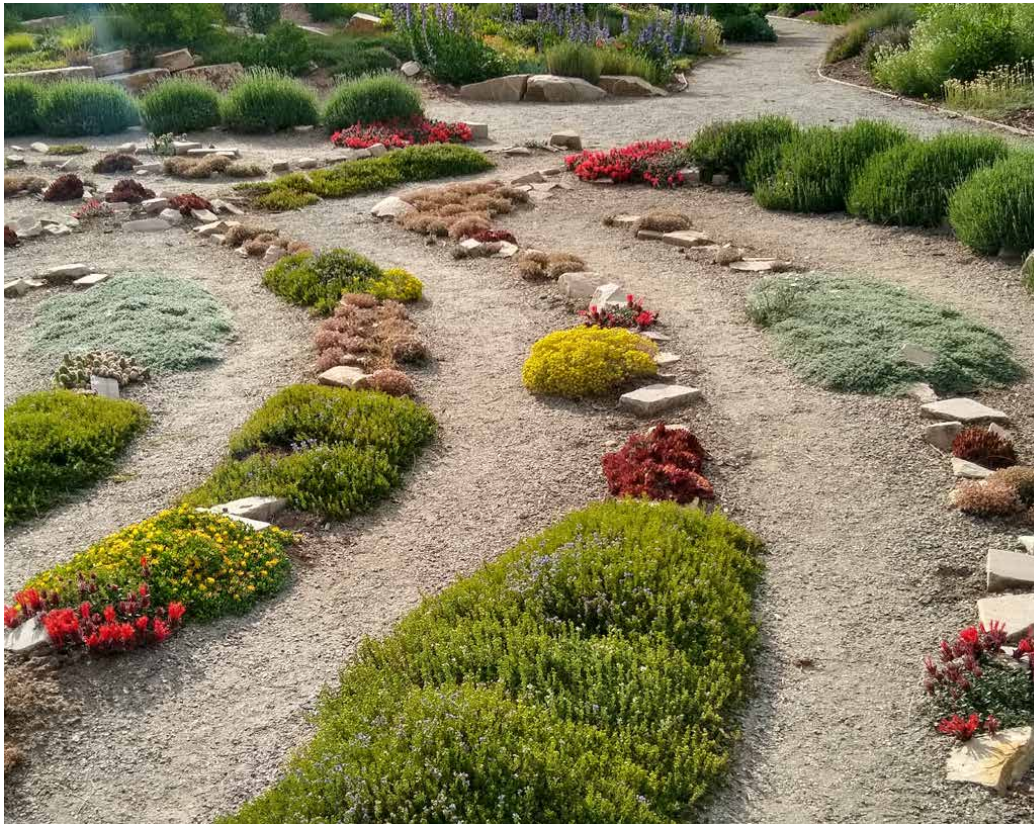
Scarlet coyote mint (*Monardella macrantha* 'Marian Sampson')

Let's start with what is possibly the most startling of these. The scarlet coyote mint (*Monardella macrantha*) has shot to the top of my favorites list. Unquestionably the showiest of its large genus, this is largely confined to coastal mountains in the southern half of California. This would seem to sound the death knell for its potential to grow in our Zone 5 gardens but photographs of the ping-pong-ball-sized flower clusters of brilliant scarlet spurred me on. I tried this from various seed collectors over the years, including Ron Ratko and Alplains. The seed would germinate, seedlings would be planted out and grow a year or so before disappearing.

In 2010 Denver Botanic Gardens hosted the first-ever joint meeting of the Eastern and Western groups of the International Plant Propagators Society. A silent auction is always staged (to the detriment of our checking accounts). A husky specimen of *Monardella macrantha* 'Marian Sampson' had been donated by Suncrest Nursery. It taunted me with several ostentatious flowers and I was bound and determined to outbid anyone. Fortunately, there were enough fabulous plants and distractions that I wasn't altogether bankrupted, although I did pay a dear price for it. This was in September. Would there be time for it to establish? Did I want to risk overwintering it in a greenhouse? I planted it in what I thought would be a perfect spot in my rock garden.

It did survive and bloom nicely the next spring, but gradually dwindled after that. What I did not know was that Mike Bone, who oversees propagation at Denver Botanic Gardens, had nipped a few cuttings off my plant before it was put up for auction. These produced a number of husky plants by the next spring and unbeknownst to me were planted out at Denver Botanic Gardens. A few years later, I noticed a bright patch of red in the Gates Montane Garden: they'd formed a sizeable mat along a path in that garden and were creating quite a spectacle.

Top and bottom: *Monardella macrantha* 'Marian Sampson'



Monardella macrantha 'Marian Sampson' in the Labyrinth at Chatfield Botanic Gardens

A number had also been planted around the Labyrinth at Chatfield Botanic Gardens where they throve even more in the full sun. While plants we tucked in various crevices in rock gardens have dwindled, the ones planted on the flat in exposed sites have spread and proliferated, splashing the Labyrinth with bright red mats of color. I have wondered if this clone doesn't possess an extra measure of vigor and adaptability. It was inducted into the Plant Select introduction and promotion program and thousands of plants have been disseminated from coast to coast as a consequence.

Meanwhile, after the better part of a decade, the plants at Chatfield's labyrinth continue to prosper and spread and taunt us with their robust performance. I've thought about building my own labyrinth out of sheer envy. If I can't match Chatfield's spectacular success, I'll feel a bit smug knowing that its flowers do have an uncanny resemblance to the COVID-19 virus!

Crimson rock beardtongue (*Keckiella corymbosa* [dwarf race])

Closely allied to *Penstemon*, the genus *Keckiella* is confined to California and adjoining states, consisting of seven species of rather willowy, subshrubby herbs. For several years seed collectors in California sold seed of a compact race of *K. corymbosa* (which usually grows a foot/30 cm or more tall) which we grew at Denver Botanic Gardens. The plants grown on a steep, north-facing crevice garden established and prospered for several years. Unfortunately, they did not set seed, and we neglected to take cuttings and ultimately we lost what was one of the best rock garden plants imaginable.

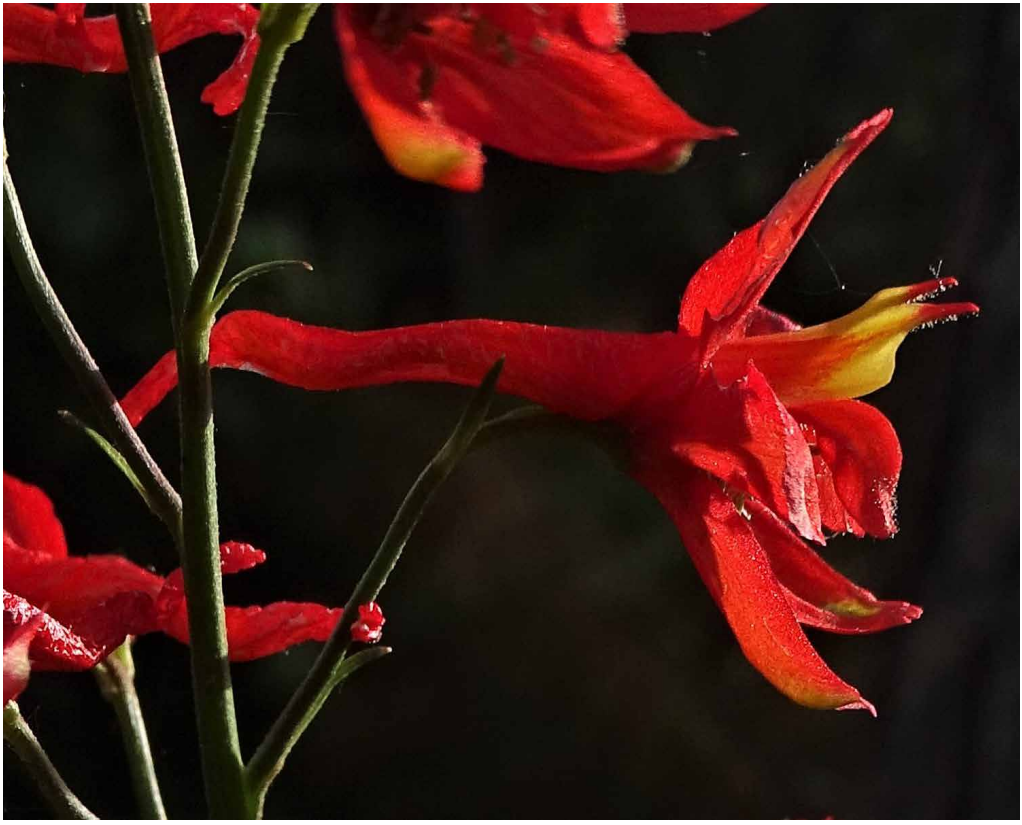
The compact saxatile race of this species forms a dense tuft of glossy leaves, producing a sheaf of low stems studded for most of the summer months with brick-red flowers. Unlike the scarlet coyote mint, this plant seems to demand crevice treatment. It is intriguing to me that two very distantly related herbs found relatively near to the Pacific in California both have such protracted seasons of summer bloom in Colorado. They both do receive supplemental irrigation, which doubtless extends the bloom period. We lost this after a half dozen years of glory, and hope this will once again reappear on seed lists—preferably that of NARGS.

Scarlet Larkspur (*Delphinium cardinale*)

Dwarf form of *Keckiella corymbosa*

California boasts not one, but two, species of red-flowered *Delphinium*. *Delphinium nudicaule* is the more widespread and shorter of the two, found in both the Coast Range and Sierra Nevada from central California into southwestern Oregon. The flower spike on *D. nudicaule* is generally not much more than a foot (30 cm) tall, its flowers a deeper, crimson red than the bright cardinal red of *Delphinium cardinale* which can grow to four feet (1.2 m) tall or even more. I have not had prolonged success (yet) with either species but have overwintered the former once, and plants of *D. cardinale* I obtained mail order from Annie's Annuals were planted out in late March, snowed upon subsequently by late spring snows, and still managed to produce towering stems by late May with a fantastic display of glowing red larkspurs for much of June into July. Only scarlet lobelia in late summer produces a display comparable to this spectacular native wildflower. Perhaps I should try some in a labyrinth?

California fuchsia (*Epilobium* or *Zauschneria*)



Delphinium cardinale

Zauschneria californica

The red Californians that have had the longest track record in Colorado gardens have undoubtedly been the zauschnerias. These have been lumped by botanists into the vast throng of willow herbs (*Epilobium*). Apparently, the DNA of these zauschnerias places this group firmly within the clammy grasp of the larger genus, much as *Dionysia* and *Dodecatheon* are undeniably well within the confines of *Primula* genetically. In order not to ruffle the feathers of sensitive botanists, I assure them that when I speak of *Zauschneria*, I refer to the clearly delineated SUB-genus within *Epilobium*, which comprises a handful of willow herbs gone rogue—hummingbird pollinated flowers in the scarlet spectrum, and a xerophytic habit very different from the prim, conventional wet-loving, pink and white, classic *Epilobium*.

The first zauschnerias we grew came from Ed Carman's treasure box nursery in Los Gatos: these included not just the commoner orange-red and truly scarlet cultivars, but also a bright white. Since that time a dozen cultivars of what used to be called *Zauschneria californica* (*Epilobium canum*) have thrived for years in dozens if not hundreds of Colorado gardens. All of them spread pretty vigorously by rhizomes—so they are not, perhaps, for choice rock garden areas where they're apt to smother neighbors.

In larger rock gardens, and especially at the base of rock work,

I find most of the shorter forms of this subgenus will thrive in rock garden mix, or even loam provided they are well-drained in winter. There are many tall forms in this group, including *Zauschneria arizonica* (now lumped under *Z. cana*, a much too wide a lumping in my opinion) which can be over three feet (1 m) tall. These are better in a xeriscape or dry Mediterranean border than in most of our rock gardens.

One species I treasure in my rock gardens is *Zauschneria septentrionalis* (*Epilobium septentrionale*) which occurs in the coast ranges of northernmost California. It has proved as hardy as more inland forms but is distinguished by its powdery white foliage which is attractive in its own right. This begins to bloom earlier in the summer than most in the subgenus and extends in bloom most of the summer months. I consider this an indispensable rock garden gem and am surprised not to see it in many gardens outside California. It does spread at the root, but not as aggressively as most plants in the subgenus.

If scientific names weren't confusing enough, what does one make of a "California fuchsia" that grows at or above the treeline in western Wyoming and eastern Idaho? The plant, long known as *Zauschneria garrettii* has been lumped under *Epilobium canum* (which also includes giant plants from California's coastal islands). It admittedly resembles

Zauschneria septentrionale

high altitude forms of *Z. californica* from the Sierra, but with this Rocky Mountain origin, you can be sure it has Zone 3 cold tolerance. It generally starts blooming a week or two before *Z. septentrionale*, often by mid-June.

As I think about it, I realize there are quite a few red-flowered Californians I've had luck with over the decades: *Dichelostemma ida-maia* is another stunner I should have added to the list, and the spectacular deep red forms of *Calochortus venustus* from Kern County that was sold by Dutch bulb companies for a few years. And of course, all those Sierra lilies, such as *Lilium pardalinum*! The list could go on and on. Of course, these are all geophytes with bulbs or corms, so deserve treatment separately. California may be called the Golden State, but for rock gardeners, it is arguably red hot.

Zauschneria septentrionale

Californians in Virginia

Joseph Tychonievich

MANY PLANTS LOVE my climate in coastal Virginia but I've found that most plants native to the west coast of North America hate it here. They do fine in the cooler seasons when our mild temperatures and regular precipitation are not too wildly divergent from the Mediterranean climate they evolved in; but come summer, and it is all over. The west coast is dry in the summer with no rain for months on end. Virginia, on the other hand, is soggy. If it doesn't rain for a couple of weeks people start using the word "drought." The humidity is so high that temperatures don't drop much at night. I've gotten up at 6 am to find the humidity sitting at 100% and the temperature already above 80°F (27°C). Oh, and that's the regular summer weather patterns. Periodically, tropical storm systems sweep through and dump torrential rain just to keep things extra wet.

Surprisingly, a few Californians will survive these conditions. Against all odds, the several selections of *Zauchneria* (syn. *Epilobium*) I've tried have not just survived, they've run vigorously out of the well-drained confines of my rock garden and are now spreading a little too happily through my regular (wet) garden soil. However, our regular rain seems to confuse them, and most years I can count the number of flowers they produce on one hand. One year, after a dry spell in late summer, they bloomed a little more, but generally, they are a bust.

I was about to give up on Californians in my garden altogether when I had a realization. There is a whole group of plants native to California that might adapt to my summer-wet conditions easily: winter annuals.

Now, when I say annuals don't imagine I'm talking about garish petunias or impatiens. There are a whole host of plants that have adapted to the summer dryness of California by germinating in the fall, growing through the winter and blooming in the spring or early summer, that are graceful, elegant, and entirely suitable for a sophisticated rock garden.

Culture

My approach to cultivating these species is pretty simple. In September or October, once temperatures begin to cool off a little, I sow the seeds. I've both started them indoors under lights in containers and direct sowed them in the garden with success. During the winter not much appears to happen. They just form a cluster of a few leaves that don't do much. But I believe that underground they are developing a

Overwintering *Clarkia* plants ready to burst into growth once spring arrives.

large root system because as soon as the weather warms up in spring they leap into extremely rapid growth. Despite the mild climate of their origins, every species I've tried has sailed through snowfalls and low temperatures of around 20°F (-6.7°C) without damage.

Several species are beginning to self-sow gently through the garden, which delights me. None have become a weed and they are very easy to remove if they happen to seed somewhere I don't want them.

Nemophila

Nemophila is a genus of winter annuals primarily native to western North America that has been a delight in my garden. In my climate, all of these begin blooming in March and carry on into May.

Nemophila menziesii (left), N. 'Penny Black' (center), and *N. maculata* (right).

Nemophila maculata in full bloom.

Nemophila maculata is my favorite of the genus so far. It has larger flowers than other varieties I've grown with a large blue spot on the end of each petal. In bloom, it forms a dome about six inches (15 cm) tall and wide, covered with a sheet of flowers. That over-the-top profusion of flowers reminds me of the best alpine buns. This species is now self-sowing all over my garden and I'm always happy to see it wherever it pops up.

Nemophila menziesii, going by the overly cute common name of baby blue eyes, has perfect sky-blue flowers over foliage that is green or silver depending on the form. The color of the flowers is dreamy, which makes me keep growing it though it has been less vigorous and floriferous than other nemophilas I've tried.

Nemophila 'Penny Black' with wide (left) and narrow (right) white margins to the petals.

Nemophila 'Penny Black' is a selected form of *N. menziesii*, but instead of blue flowers, they are a dramatic black edged with white. This form far out-performs the blue version in my garden, rivaling *N. maculata* for sheer vigor and profusion of bloom. Each plant has different amounts of white on the flower, ranging from ones with a broad white margin to those that are nearly entirely black. I favor – and save seed from – the individuals with wider white margins.

Clarkia

The genus *Clarkia* is enormous with somewhere around 40 species. All are native to western North America, primarily California, except for the South American *Clarkia tenella*. There are selected forms with garish double flowers probably not suitable for most rock gardens, but most of the wild forms are elegant and beautiful. In the fall of 2020 I was looking at the seed listings from Seedhunt (a wonderful source for California native seeds and, even better, a long-time NARGS supporter) and decided to buy every species I could. I wound up with a dozen different species, many of which I am certainly going to keep growing. What follows are descriptions of my favorites of the bunch. Peak clarkia bloom in my garden is in May and June.

Clarkia tenella Maroon form

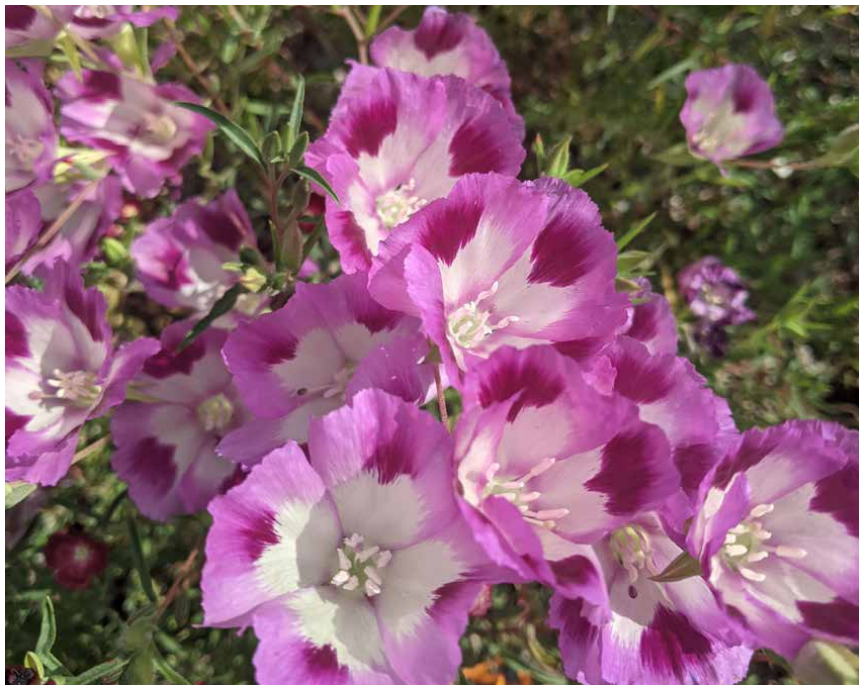
Clarkia tenella, the one non-Californian in the group, is also one of my favorites. The delicate plants, only four inches (10 cm) tall and wide, produce an abundance of small flowers over a very long period. It was the first species to come into bloom in my garden and is holding on after many others have finished up. Flower color is variable, but I'm growing the maroon form from Seedhunt with rich, dark red flowers.

Clarkia williamsonii is hands-down my favorite species. Though perhaps a bit tall for some rock gardens, topping out somewhere around 12-18 inches (30-45cm), the leaves and stems are extremely delicate and airy. Out of bloom, the effect is almost that of a graceful ornamental grass. Once it does start flowering those delicate stems get covered with large, richly patterned goblets that beg to be photographed daily.

Clarkia biloba has a growth habit similar to that of *C. williamsonii*, but instead of large goblet flowers, it produces clouds of small pink blooms. The effect of the whole plant is so airy as to be transparent, so you could easily see and enjoy other plants or rock work through it.

Clarkia breweri was the smallest of the species I grew. At first I thought it hadn't survived the winter because the rosette of leaves was so incredibly tiny. The stems grow nearly flat to the ground, spreading just four inches (10 cm) or so before producing a dozen of the most unusual fragrant flowers I've ever seen, then going to seed and dying. I'll be growing it again because the blooms are unlike any other I've grown, but it certainly was a blink-and-you'll-miss-it display. The small size would certainly be suited to a trough or small rock garden, though I do wonder if the small size had more to do with my less-than-ideal conditions than the natural growth habit of the plant.

Annuals may not be typical inhabitants of the rock garden but few true alpines will grow in my climate and exploring winter annual species has opened up a whole new world of plants to enjoy. I've just begun experimenting with Californian winter annuals and I'm looking forward to seeing if winter annual species from other summer-dry climates like South Africa, Chile, Australia, and the Mediterranean might adapt well here also.



Clarkia biloba *(top left),* C. breweri *(top right), and* C. williamsonii *(bottom)*

Finding *Hepatica falconeri*

Harry Jans

THIS IS THE STORY of the rediscovery of an unusual species which is said to be the link between the genera *Anemone* and *Hepatica*. In 2010, I was asked to organize and lead a tour in Kyrgyzstan in spring 2011. Eventually this trip took place in spring 2012 from April 22nd to May 6th. At that point I had never heard of *Hepatica falconeri*.

Planning a good botanical tour is very important and can be a long and sometimes difficult task. Previous trips made by other plantsmen to Kyrgyzstan were made in June/July and therefore there was little information about plants flowering in April/May. With some difficulty I received information from various sources about what could be in flower. We could expect to see various *Tulipa* species (as a Dutchman I am very familiar with these, at least the cultivated ones), *Eremurus*, *Adonis*, *Primula*, *Iris*, *Pulsatilla*, *Androsace*, *Fritillaria*, etc.

A good way these days to plan your route is Google Earth. Sometimes roads and mountain passes can be seen very clearly and you can use that information to plan your final route for these special botanical trips. Next to that, it is important to have a good travel agency. I prefer to work with local agents who know the area well, but most of the time they do not know the local flora at all. After I made a rough plan of my route, I asked the agent to make photos in 2011 of the scenery, habitat, and flowers on my intended route. In June, 2011

Opposite and above: *Hepatica falconeri* in the wild in Kyrgyzstan.

I received various images with some nice plants and I decided to go ahead with the trip in 2012. As this was my first trip with this agent and to this country, I wanted to visit the well-known Ala Archa mountains near Bishkek first, followed by a round trip along Issyk-Kul lake, with some side valleys I saw on Google Earth.

The whole trip started in the capital city of Bishkek, with a short visit to the Bishkek square to see the changing of the guards, the house of parliament, and a very nice market.

On day two, we drove by minibus into the Ala Archa National Park, just one hour drive from Bishkek. We started to walk up a small path and passed our first exciting plants, like the ice blue *Iris loczyi* and very dwarf *Tulipa dasystemon*. Then disaster struck as one of the tour members slipped and broke her left leg. To make a long story short, after three hours a doctor and two helpers arrived on the mountain and gave her painkillers. It took us nearly two hours to get her down the mountain. I think my arms are six inches (15 cm) longer after this, as it is not easy to walk with someone on these small mountain paths. In a Bishkek hospital they took an x-ray and it was clear that she broke her leg in three places. Three days later, after getting a transport plaster cast, she was flown back to her own country to be operated on. She has fully recovered from her injury now, but it was not a good start to this trip!

Our next goal was the Chong Kemin valley, but first we paid a visit to the famous Burana Tower (10th century) at Tokmok.

During our whole trip we stayed at various accommodations, sometimes at hotels, but also at homestays in the country side, which was a nice experience, allowing us to learn in more detail how the people live in Kyrgyzstan.

Tulipa dasystemon

Iris loczyi

Tulipa kolpakowskiana (top left), *Primula kaufmanniana* (top right), *Corydalis glaucescens* (middle left), *Tragopogon ruber* (middle right) and *Adonis turkestanica* (bottom).

In the Chong Kemin valley, we found new plant treasures like *Tulipa kolpakowskiana*, *Primula kaufmanniana*, *Corydalis glaucescens*, *Tragopogon ruber* and *Linaria transiliensis*. But two other plants were just fantastic to see there in full flower: a very compact yellow-flowered *Scutellaria przewalskii* and good forms of *Adonis turkestanica*.

The following days were spent alongside valleys close to the north of Issyk-Kul lake, which is at 5,200 feet (1600 m). One of these valleys, the Grigorievka gorge, was put in the program as I had found it on Google Earth where a small road was going into the mountain. It is always a gamble to go somewhere without knowing what you will find, but that is part of the fun. Sometimes it can be a waste of time but in this case we hit the jackpot.

We drove in our minibus over a dirt track road higher and higher until a big snow patch blocked our way further up. I decided to walk back the same way we came in as it looked like promising habitat for plants. The road ran parallel to a mountain stream with large rock formations on both sides. In the larger crevices, in moist and shady positions, grew a plant I had not seen before. It looked like a primula

Scutellaria przewalskii

Androsace pavlovskyi

but with no attractive flowers at all. The leaves looked very much like *Primula matthioli* (syn. *Cortusa matthioli*) so I was convinced that it was a primula. Back in the hotel, I send an image to Pam Eveleigh (a primula expert) and asked if she was able to identify this strange primula. She replied a few days later and wrote that I had found a "very rare" plant and it was not a primula but *Kaufmannia semenovii* and that I should contact a Russian botanist who was writing about it. Of course, when I got back home, I did send all the images I had with location information to the Russian botanist as it is important for science to keep records of such special finds.

We all continued our walk further down the road looking at plants and, to be honest, we did not find many, only a few plants of *Primula algida*. Eventually, I saw hundreds, or even thousands, of white anemones growing in the moist turf and in rock crevices. The ones in the crevices looked amazing and I took some pictures. I have to tell you that most anemones do not excite me very much and therefore I did not look at them in much detail. There was not much more to be seen in this valley and it was very cloudy so we drove back to our hotel.

The rest of the trip went fine. We finished our round trip along Issyk Kul Lake and at the higher passes we found some lovely plants of *Trollius lilacinus* (*Hegemone lilacina*), *Chrysosplenium tianschanicum*, *Pulsatilla campanella*, *Fritillaria walujewii*, *Tulipa heterophylla*, *Tulipa tetraphylla*, *Convolvulus tragacanthoides* and *Androsace pavlovskyi*.

The trip came to an end and was very successful despite the very bad broken leg at the start.

Trollius lilacinus (top), *Convolvulus tragacanthoides* (middle), and *Chrysosplenium tanschanicum* (bottom).

Fritillaria walujewii (top left), *Primula algida* (top right), and *Linaria transiliensis* (bottom).

When I come home from such trips, I sort all my images and name all the plants I have photographed. Some plants are easy to identify, others are more difficult, and sometimes I ask experts on a special genus if they can help me with identifying unusual plants in my images. After tours like this, I also send some plant friends a few plant images I made on the tour just for fun and this trip was no exception. Just a few hours after sending my email with some images, a close friend responded and said he was so excited to see the first image of *Hepatica falconeri* and I should get in touch with John Massey from Ashwood nursery as he was an expert on *Hepatica*. *Hepatica falconeri*? I had never heard of it! After this email I looked again closer at all my anemone images and, indeed, they looked different. More serious search on the internet gave me just a little information about this hepatica.

The next day I contacted John Massey and sent him my "anemone" images.

His reply: "Wow, Wow Wow, I may never sleep again."

More research about *Hepatica falconeri* revealed some interesting information. *Hepatica falconeri* is called the link between *Anemone* and *Hepatica*. The leaf shape of *Hepatica falconeri* is intermediate between *Anemone flaccida* and *Hepatica nobilis*. With *Hepatica* the flowers appear first and new leaves develop after the flowers and with *Anemone* it is the opposite way, first leaves and then the flowers.

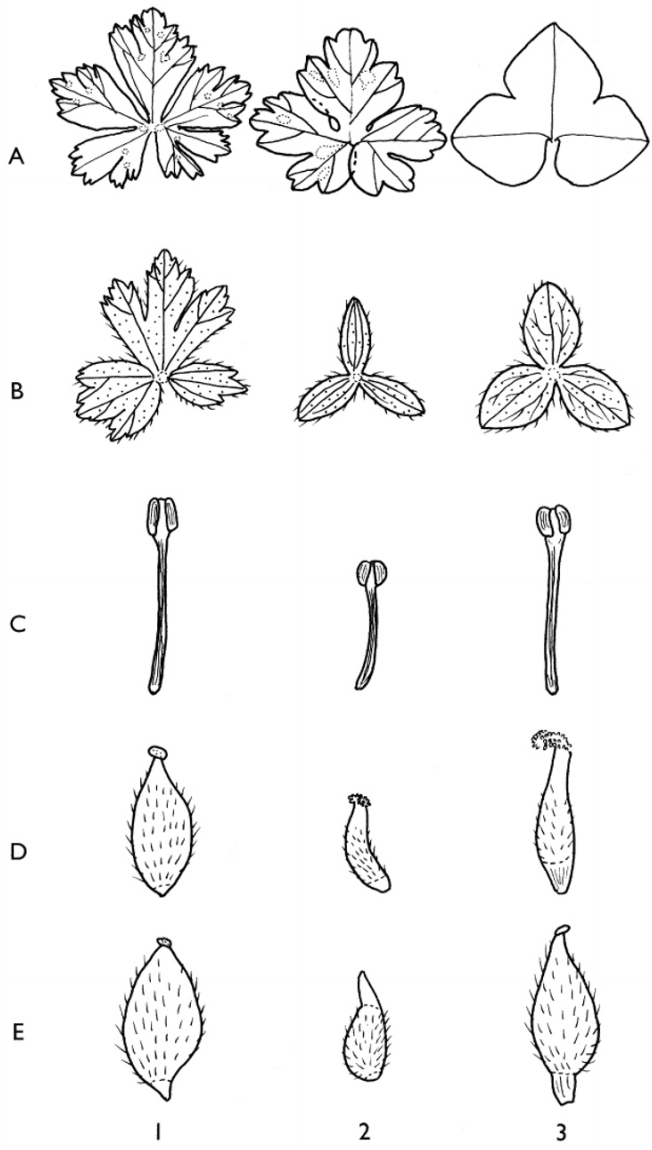
Hepatica falconeri was, till my discovery in Kyrgyzstan, only known from a few locations in the mountains north of Islamabad in Pakistan. As this was a *Hepatica* species barely in cultivation we decided to go back to the gorge where I had found it and some nearby valleys as well.

Our trip in 2013 took place from April 26th to May 4th and besides botanizing at some other locations our main goal was the Grigorievka gorge again. Although we had some serious rain, we found *Hepatica falconeri* again in full flower and were able to study it in more detail this time. Herbarium material and a few living plants were collected.

Hepatica falconeri is a deciduous perennial, flowering with the new leaves, and grows between 6,000 and 8,200 feet (1,830 – 2,500 m) on rocky slopes, rock crevices, shady clearings, and in mixed woodland, often under *Betula tianschanica*, *Picea schrenkiana* and various shrubs.

The flowers are white, occasionally flushed pink on the outside. The leafy bracts appear approximately 0.6 inches (1.5cm) below the flower, a feature unique to *Hepatica falconeri*. The deciduous foliage is deeply divided into three lobes; these lobes are further shallowly dissected resulting in many rounded teeth. The green leaves, which can also be marbled, are covered in short hairs; occasionally the undersides have a red flush.

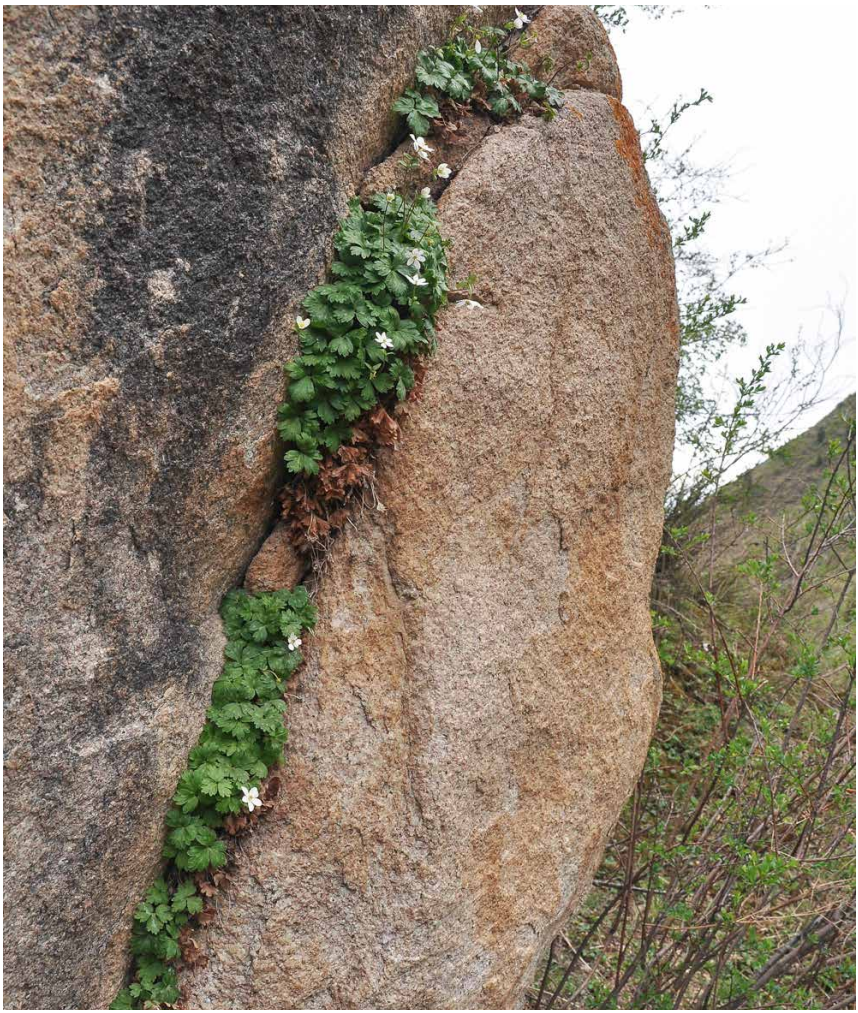
Some botanists think that *Hepatica transsilvanica* is the result of a cross between *Hepatica nobilis* and *Hepatica falconeri*, but so far it has not been proven.



Morphological features of leaves and flower organs of *Anemone flaccida* (1), *Hepatica falconeri* (2) and *Hepatica nobilis* (3).
A. Radical leaves. B. Involucral bracts. C. Stamens. D. Pistils. E. Achenes.
Drawing by Tomoo Mabuchi,
Kew Bulletin 57:943-953 (2002) Morphology, phenology and cytology of Hepatica falconeri in Pakistan (M. Ogisu, R. Awan, T. Mabuchi & Y. Mikanagi)
Used with the permission of the artist.

We all had a splendid week in Kyrgyzstan and found thousands of *Hepatica falconeri* with some variation in flower shape, and a huge variation in leaf patterns. The few living collections we made are now well established in cultivation. There are now even hybrids between *Hepatica falconeri* and another species of *Hepatica*.

During tours like these you never know what you will find. This time we found two very rare species in one valley, namely *Kaufmannia semenovii* and *Hepatica falconeri*. What more could we wish for? Well, in a valley close to this one we found the very hairy and rare *Adonis bobroviana*, previously only known from China, but that is another story.



Hepatica falconeri growing in a rock crevice.

Gardening with a Knife and Fork

Wiert Nieuman

THE NETHERLANDS HAS seventeen million people on a small piece of earth so you get a lot of gardens like postage stamps. Instead of turning that space into a mini paradise, those gardens often have just a few shrubs and perennials or are filled with paving, lounge sets, and outdoor kitchens. Can it be done differently?

As a child, Shirley Bijholt learned to love gardening from her father, who was also a plant lover. Her father collected orchids and bromeliads and the baskets and fern roots on which he grew them spontaneously sprouted ferns. Those small plants fascinated her even more than the cultivated material. "I like everything that is small and lovely," she says.

When Shirley got her own garden, she focused on small plants in the form of alpines and everything that resembles them. It started with lewisias, a relatively new plant for Dutch gardens some 30 years ago. She saw them in her father's plant book and immediately fell in love. Shirley became a member of the Dutch Rock Plants Association and came into contact with other enthusiasts and growers. On the advice of experts, she bought tuff (light-weight stone formed from volcanic ash), because rock garden plants would grow well on and in it. In 1995, Shirley moved to a house down the same street but with a larger garden. Everything from the old garden came along. "When you move, you take your stamp collection with you. So I brought my stones and plants along with me."

Above: Alpines growing on tuff.
Opposite: View of Shirley's garden.

The garden is made of rocky outcrops rising up out of the lawn.

Rock Islands

Shirley's garden, with a modest area of just 2,000 square feet (90 m^2), is full of tranquillity and space. If you have a rock garden and you can create such an atmosphere then you have done well. The construction and aesthetics of collectors' gardens are often subordinated to the plants. In other words, the plants come first and landscape design second. In Shirley's garden, plants and landscaping are equal and she marries them in a perfect way by not filling the entire surface of the garden with hills and rocks, but first making a lawn and a water feature in the shade of the house. On the terrace there are some beautiful troughs planted with dwarf shrubs, conifers, and various perennials including a beautiful group of *Delosperma* 'Jewel of Desert Garnet'. On the other side of the terrace is a large planted piece of tuff with many *Saxifraga*, *Sedum*, *Globularia*, and *Teucrium aroanium*. In this way, the garden gains depth and you are more or less invited to walk into the garden to view the plants and the construction up close. The lawn continues for a while between a few rocky outcrops, creating rocky islands in the grass. Shirley got this idea in the 1990s from Czech gardens where rocks alternated with "grass plains," just as you might see in natural mountainous areas when a large rock protrudes from an alpine meadow. The big advantage of this construction is that paths are almost superfluous in these rocky outcrops. All maintenance can be done from the sides, sometimes with a step on a stone. On both sides of the garden is a path that forms a very natural transition to the rest of the garden. There is also a path at the back so that the roots of the

hedge do not grow in the rock garden and the hedge can easily be cut without cluttering the garden with trimmings. That path is behind the elevation of the rock garden and you don't see any of it. The hard corner of the garage wall has been visually softened with a large boulder that looks like one large overgrown stone but in reality is made up of dozens of small pieces of tuff. From a spot next to this boulder, Shirley likes to take a close look at the rock garden. "This is my favorite spot in the garden. When I sit in my chair here in the morning, I can really enjoy all the plants on and in the rock garden."

Many pieces of tuff placed together to create the effect of a large boulder.

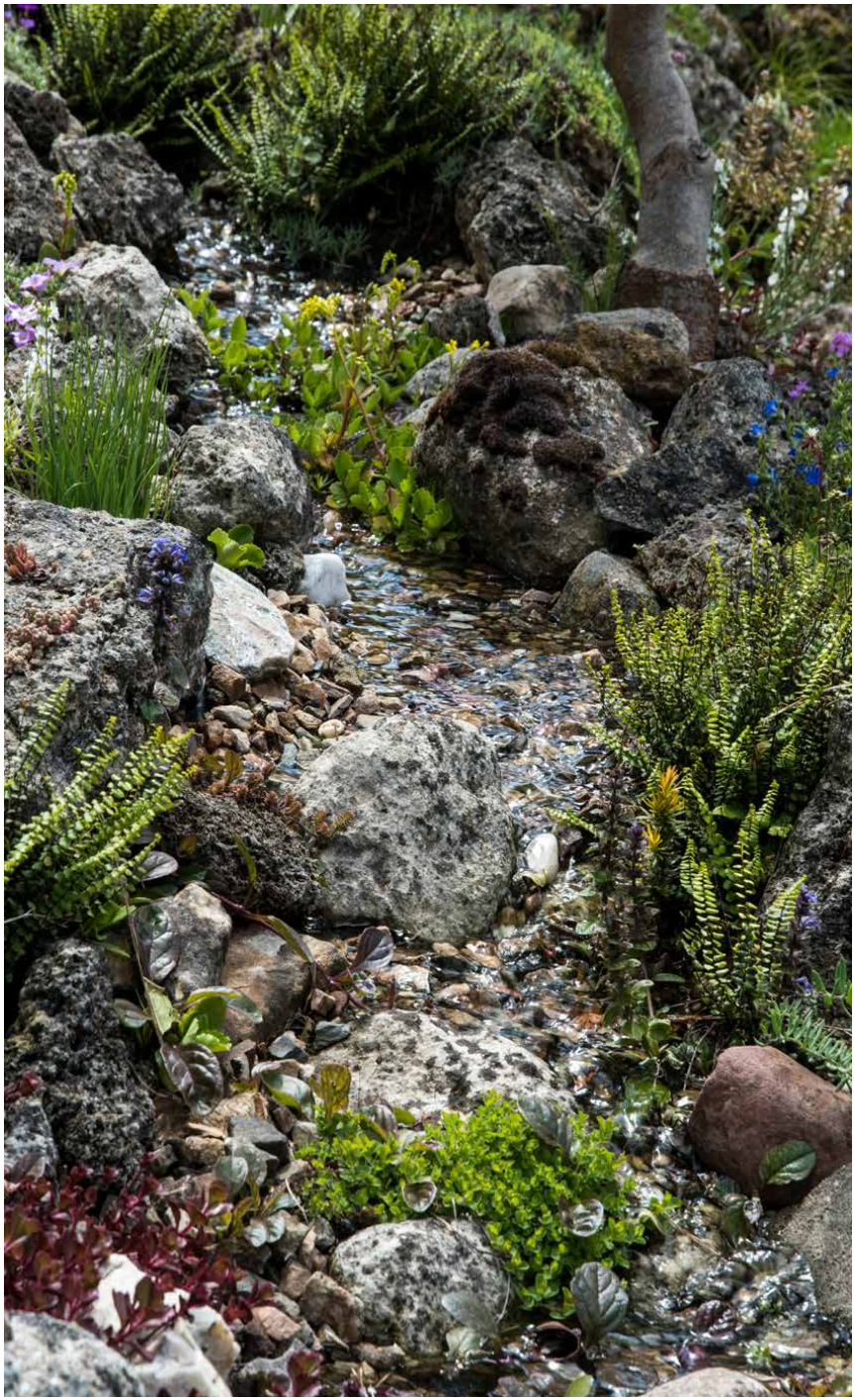
Moving Water

A fast-flowing or gently babbling brook in the mountains makes your holiday an unforgettable experience. Everyone wants to take that image and bring it into the garden. That's what Shirley did. A very quiet babbling brook, barely audible and sometimes barely visible, gives the garden an extra dimension. "I don't want the neighbors to be bothered by a loud gurgling brook and that's why just enough water flows through to make it cozy for us." The brook also offers possibilities for plants that like to be a bit wetter or benefit from the higher humidity. *Asplenium trichomanes* does appreciate the high humidity. *Ajuga reptans* has also found a suitable place here and the little-cultivated *Chiastophyllum (*syn. *Umbilicus) oppositifolium* also feels more at home by the water than in the dry parts of the rock garden. There is another subtle detail in the brook. No tuff stones are used there, instead, it is made with rounded stones as you see in real life in a stream or on the banks of a river. By the pond grows the spotted orchid, *Dactylorhiza maculata*. It is wonderful to have this wild plant that you see all along the roads in the Alps growing in the garden. It used to be rare in the Netherlands but now grows again in many places in nature reserves. Shirley has made the right habitat for this orchid, to the point of it almost becoming a weed: "He sows himself everywhere in the rock garden. Just look, there are also a few over there. I've already pulled a lot out."

Plant Gems

During a tour of Shirley's garden, you'll see such beautiful, special plants that you'll almost be drooling. When I arrived, *Jancaea* (syn. *Ramonda*) *heldreichii* was just over the top. It is a strain found only on Mount Olympus in Greece and is known to be difficult to grow.

Jancaea (syn. *Ramonda*) *heldreichii*



A brook provides the sound of flowing water and habitat for plants like *Asplenium trichomanes*

Physoplexis comosa (top left), *Sempervivum* 'Gold Nugget' (top right)
Saxifaga longifolia (bottom left), and Erodium x variabile 'Bishop's Form' (bottom right.

Physoplexis comosa was thick with flower buds. It is a plant from the Dolomites and the mountains north of Lake Garda. It is not too difficult to grow, though it is always eaten by snails in my own garden. Houseleek varieties are easy plants, but *Sempervivum* 'Gold Nugget' is surely an eye-catcher. *Saxifaga longifolia* also looks great. Unfortunately, it dies after flowering, so the longer it takes to start budding, the longer you can enjoy the plant. *Erodium* x *variabile* 'Bishop's Form' and *Erinus alpinus* are easy plants, but they flower very richly and if they become too much, you just pull a few out. *Aubrieta* is a massively cultivated spring flower that many people turn their noses up at, but *Aubrieta* 'Elsa Lancaster', with its intense flower color and scalloped leaves, is not to be sneezed at. Shirley finds *Asperula sintenisii* very beautiful and is very careful with her *Arenaria tetraquetra*, a gray-colored cushion plant with white flowers that is just as beautiful out of bloom. Saxifrages are very easy, but she doesn't like them very much when it comes to flowers. They are really foliage plants, forming beautiful rosettes and cushions.

Shirley tries to propagate everything herself, both by sowing seed and taking cuttings. She succeeds with many plants, but surprisingly, she failed with *Degenia velebitica*. Her sowing in pots and in the garden did not produce any plants. But persistence wins and the time will come when the yellow flowers of *Degenia* will be visible in the garden.

Arenaria tetraquetra

Chestnut and Conifers

In a rock garden, however small, it is okay to have some trees as long as they do not get too big. In Shirley's garden a beautiful *Aesculus pavia* 'Koehnei', also known as dwarf horse chestnut, has a prominent place on one of the rocky hills and there are also several dwarf conifers, some of which Shirley bought in the Czech Republic in the last century. Pruning them regularly in such a way that they retain their natural shape will keep them small and allow them to be a beautiful part of the garden for years to come.

Aesculus pavia 'Koehnei'

At the natural stone bridge over the stream is a red Japanese maple and in the troughs is a fine specimen of *Ulmus parvifolia* 'Hokkaido', a *Juniperus communis* 'Compressa', and an almost bonsai-like *Pinus mugo* 'Mops'. Keeping these trees and shrubs small and in shape requires pruning. Eventually, though, there can come a time when a conifer or shrub really gets too big and can no longer be pruned in such a way that it seems natural. Then you have to say goodbye to that plant, but that is often a matter of deliberation because removing a tree changes the garden dramatically.

Tools

You can't do much in a rock garden with a regular spade and a hoe. Shirley's husband Joost has made appropriate tools and she now literally gardens with a knife and fork. Joost bent the teeth of a fork to form a mini rake. She finds the overblown flowers of the abundantly blooming carnations unattractive, so she cuts them off with mini sheep scissors or kitchen scissors. Her main tool is a modified apple corer which she uses to make planting holes between the stones and uproot weeds. A pair of mini scoops, an old grout nail, a vegetable peeler, and tweezers complete the set. It is hilarious to see this tool set and realize that most of the gardening work is done with them. Gardening on this small scale is relaxing and enjoyable for Shirley and it is proof that even the smallest space can be turned into a paradise in which you can spend almost all year round with plants.

Top: *Aethionema grandiflorum*
Bottom: Troughs in the garden.

The Nurse Rock

Lee Recca

AS THE MORNING mist evaporates, a pale rock becomes visible in the garden. It invites a passing bird that perches on its crest. Before flying off again, the bird drops a few seeds that it was carrying in its beak. They skitter down the smooth face of the rock and find a comfortable spot at its feet. Shaded from the hot sun during the day and warmed by the rock's mass radiating stored heat at night, the seeds find conditions right to germinate. They sprout and send forth a fragile stem and a first set of tiny leaves. Before long, the plant is taller than the rock, but no matter how tall it is, the rock still shares its shade and moisture with the plant's roots.

At first glance, a rock would seem to be an inert thing offering no real benefit to plants and possibly harming them if its weight were to fall on the tender leaves or stems. But after observation, it becomes clear that rocks can nurture plants. How? The most obvious benefit is the channeling of water down the face of the rock into the soil surrounding the plant. The rock also shades the plant and surrounding soil, keeping it cool in summer's heat. Rocks, particularly dark-hued ones, absorb heat during the day and radiate it out at night, mitigating the temperature swings that can damage developing plants. These factors add up to a rock's ability to create a microclimate around it that makes a hospitable haven.

Protected from the ever-present wind on Mount Goliath in Colorado, a *Heuchera nivalis* thrives.

The harshness of late winter doesn't faze these galanthus, protected by their nurse rock.

There are myriad other benefits. Protection from wind, landslides, and avalanche; the addition of small amounts of fertilizing minerals over time; these are just a few. It's no wonder that many plants, especially the tiny vulnerable ones, prefer to grow among rocks.

Other species are adapted to grow on stones themselves. See the accompanying story about plants that grow on the limestone rock beds of Western Ireland, known as the Burren (p. 249). When mosses, lichens, and other bryophytes colonize rocks, they create a symbiotic relationship that is pleasing to the eye and spirit. "Nothing else seems to hold so much worldly example and welcoming comfort in so small a piece of the planet," writes George Schenk in his book *Moss Gardening*. "Moss on stone is as a comforting hand on a human shoulder."

My friend Michael Alcazar grew up in a family that valued its heritage being among the Muscogee peoples. "My grandmother taught me to plant a handful of grass seed, and then put a rock over it," he said. In addition to the benefits mentioned above, the rock stabilized the earth, prevented erosion, and kept the seeds from washing away. This very simple technique allowed slopes to be revegetated. A rock on the downslope side of a plant creates a mini-terrace where pockets of vegetation can be established.

Prickly pear embracing a nurse rock at Denver Botanic Gardens.

Rocks in depressions can take the form of a dry wash or arroyo. A dry streambed comes alive during a rain event, channeling water to and through trees and plants. Rain gardens are often filled with cobblestones or river rock, allowing surface water to sink and to be held underground as a bank to be drawn on in dryer weather.

A rock in a running stream creates turbulence that keeps the water oxygenated, which is beneficial to both the plants and organisms in the stream. When it comes to water, the straight and narrow path is not the most desirable. The path of least resistance is not the path to a watercourse's health. There is an adage to "slow, sink, and spread water" and this is what stones do beautifully.

Landscapers often create swales, gentle depressions undulating between berms. I often see the lower parts of swales filled in with rocks, while the berms are topped with trees, shrubs, and grass. The most successful swales I've seen had grass and plants in the depressions and rocks around trees set into the berm's shoulders. This is a better example of biomimicry; recognizing that rocks occur in outcroppings, while the depressions represent intermittent watercourses.

In the ancient Shinto religion of Japan, rocky outcroppings were thought to be the abodes of gods. Tomohiro Fujita and Kazuharu Mizuno studied these outcroppings in South African grasslands and found that they promoted more seedlings of woody species.[1] Over time, the Japanese reverence for escarpments segued into the now-iconic form of a classic Japanese rock garden: just a few symbolic rocks in a symbolic sea or stream of white gravel. A typical rock arrangement might be a vertical stone complemented by a "reclining" or horizontal stone. In a small courtyard or teahouse garden, one stone might be balanced by one plant, typically bamboo.[2]

Blogger Robert Ketchell observed that "[Stones] are regarded as forming the essential skeleton of the garden, providing the garden layout with a fixed and subtle framework that will define the overall structure. Planting, that element of a garden so revered by Western garden makers, tends to be seen as adding flesh to the bones of a garden."[3]

Gentiana verna growing by a rock in the Burren in Ireland.

Mahonia repens ambles over its nurse rock at Denver Botanic Gardens.

A rock in the garden is more than just a marker. Aesthetically, it can serve as a complementary or contrasting texture and form that interests and delights the eye of the viewer. Another contrast is the immobility of the rock with the swaying leaves and stems of the plant it nurtures. Writing about the Seattle Japanese Garden, Corinne Kennedy observed that strategically placed rocks create a triadic dynamic with plants and animals. Without the foundation and solidity of the rocks, the garden would be an ephemeral, shifting, and elusive structure.[4]

A well-structured, well-placed rock in the landscape is a grounding influence that can command and direct the eye. The very embodiment of gravitas, a rock can convey stability and permanence or energy, vitality, and power, sometimes all at the same time. Rocks protect. The epic of Nature is etched in the interplay of shadows and light to which they give longstanding witness. In their own way, rocks are ever at work, nursing and preserving the health of Earth and all its inhabitants.

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2. Ohashi, Haruzo, Japanese Courtyard Gardens, Graphic-sha Publishing Co., Tokyo, Japan, 1988.

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Michael Campbell visiting the Burren on Ireland's west coast.

Sidebar: Nurse Rocks in The Burren

Michael Campbell discovered the healing power of the nurse rock when working towards his diploma at Denver's School of Botanical Art & Illustration. He visited the Burren on Ireland's west coast for the first time in May 2015. "The place was completely different than I expected," he recalled. "It was 40 degrees (4.4 °C) and the wind was blowing constantly. At first, I didn't think any plants could flower in that climate. They were tiny, growing amongst the rocks. It was a real eye-opener."

When he returned in August 2016, the weather had barely improved. "It was warmer but still rainy. I was astounded by the amount of flora growing in the limestone meadows." The ferns grew right on the rocks, getting moisture from little cracks and divots. There were orchids everywhere, their delicate blooms sheltered by the limestone slabs and boulders.

It was the same with gentians. "The stone acts as a radiator," he said, actually helping the flora to thrive in the harsh windswept climate. "Plants were growing wherever the limestone is," he added. "The minerals shed by the rocks feed the plants."

In May 2018, when Campbell most recently returned to the Burren, hundreds of gentians were coming up. "It was one of the most remarkable sights I've seen," he said. "At that latitude, days are much longer in spring and summer. The Atlantic is right there. The wind is fierce. But the rocks make it possible for these unique species to thrive."

Indeed, some kinds of plants flourish in the Burren better than almost anywhere else. Twenty-seven species of orchids grow there. The limestone of the Burren is so unique that when a road was being built, the topsoil was removed and taken to Dublin Botanic Garden where it was used to propagate and grow a mini-Burren garden.

Propagating *Acantholimon* at Utrecht Botanic Garden

Connor Smith photos by Gerard van Buiten

TURNING OVER A POT of cuttings to uncover small white roots brings a moment of joy like no other. It brings a happiness required in the cold depths of winter when many of us are secluded in our glasshouses. While this feeling is often sought out, some species are not so eager to please us. As we tip the pot we find rot, callusing but no rooting, or sometimes remnants of a cutting once there. This often requires new methods, taking cuttings at new times, or sometimes trying a new species.

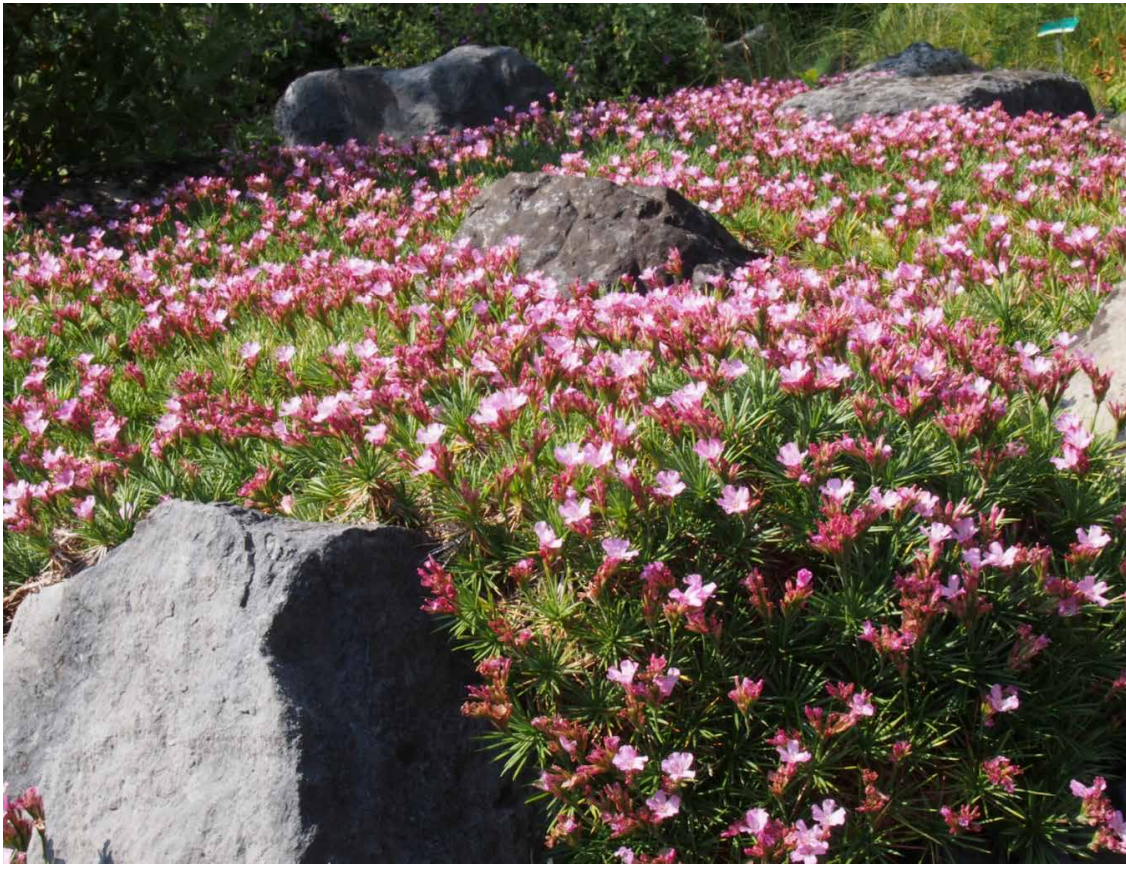
Acantholimon is one of these difficult plants. Predominantly an evergreen shrub (I have seen some with an interesting bronze color normally followed by some loud cursing) *Acantholimon* grows in harsh conditions in the arid, high elevation areas of eastern Europe to central Asia. Different species have growth habits ranging from densely packed cushions to mat-forming carpets which creep over the ground or are found clinging to rock faces. The genus includes an incredibly large range of species. The AGS (Alpine Garden Society) states there are approximately 120 species while Kew recognizes 312, and it is clear the names and species are not agreed upon and far from accurately described. Despite their range, they remain relatively unexplored, with only a small array of species available in commerce and seen in people's gardens or in botanic gardens.

Acantholimon at Utrecht Botanic Garden

At the botanic gardens, many of the *Acantholimon* have been well placed in their preferred conditions, the larger species being allowed to grow rampantly and the smaller, denser species like *A. acerosum* given protection in the alpine house away from the rain.

We have grown the following species:

Acantholimon acerosum, A. alatavicum, A.armenum, A. caesareum, A. calvertii, A. capitatum A. caryophyllaceum, A. echinus (syn. *Statice echinus), A. glumaceum, A. hedinii, A. knorringianum, A. kotschyi, A. litvinovii, A. pamiricum, A. sarytavicum, A. saxifragiforme, A. ulicinum,* and *A. venustum.*



An *Acantholimon glumaceum* accession dating back to 1964. It has formed a large carpet of spiky foliage which is surprisingly graceful when in flower.

Propagation methods

We tried a range of different cutting techniques to test which was the best for us and this tricky plant. We took short cuttings of approximately three inches (7.6 cm) with both single and multiple rosettes of leaves and also tried longer cuttings, approximately six inches (15.2 cm) long, to see if the length was a factor.

A final technique was inspired by a conversation with Gerard van Buiten (Head Gardener at Utrecht BG) who told me when redesigning a bed a number of years ago he removed a large *Acantholimon* species. He covered it with some soil and left it outside, unprotected. He was concerned that it would rot after a rainy cold spell, but, much to his surprise he found many small roots had formed all over the plant.

This is what gave me the idea to do "mounded" cuttings. I cut off long sections of the plant and placed them in a large, deep pot. I placed two to four cuttings in each pot and then backfilled with soil up to the neck of the cuttings. All cuttings were placed in a glasshouse with no bottom heat and only a heater fan to prevent temperatures from dropping below freezing. I took these cuttings in November. I think they can be taken from October to February, depending on your climate and conditions.

Results

Despite many of the cuttings (both short and long) looking healthy, there was no root development on any of them. A few had rotted at the base and were beginning to turn brown. I was told this often happens when I spoke with people about trying to root *Acantholimon*. Some species (*Acantholimon acerosum, A. ulicinum,* and *A. trojanum*) are easier than others, but still not reliable nor consistent with results.

When I turned the pot with the mounded cuttings over it had a different story to tell. All of the cuttings had rooted at the bottom. This is quite similar to *Erigonum* species and other desert-adapted genera. Plants in desert environments have adapted to an environment in which the presence of water is scarce, therefore root formation, especially the fine roots which *Acantholimon* produce, need to be kept moist in order to establish. It makes sense that the cuttings rooted lower down where there is more water, cooler root zone temperature, and better anchorage against wind. This also makes sense when you think about how the plant grows in its native habitat. As soil builds up around the neck of the plant it will form new roots in that soil.

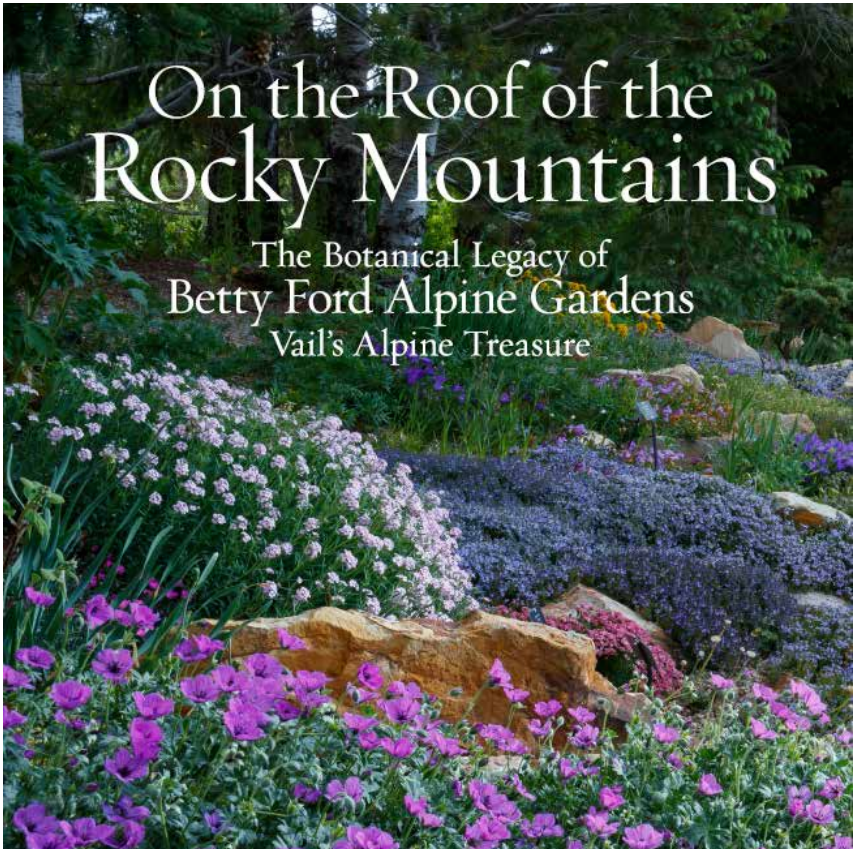
This is a similar adaptation to forest plants like *Viola* which are mounded by the fresh leaf litter on the forest floor. This will then cover the plant, allowing the roots to form in the new conditions. A similar technique has been established to propagate the equally challenging species of *Cassiope* where soil is mounded onto the main stem covering part of the lower limbs to allow new roots to form. This technique is quite similar to layering, but instead of bringing the branch of the plant down to the soil, you bring the soil to the plant.

One cutting, which had the best roots had also started rooting further up the stem. It seems that once the cutting forms roots and is better established, it can then form additional roots further up the stem if a satisfactory volume of soil and water is present.

The biggest problem with this technique is finding the material. You will probably have to sacrifice a plant to get enough material for multiple cuttings. However, once rooted, they are essentially fully grown plants due to the size of the cuttings so they can be planted out into the garden much faster. Best of luck propagating your *Acantholimon*!

Top: Ideal length for an *Acantholimon* cutting.
Middle: *Acantholimon acerosum* mounded cuttings in the pot that have rooted and started to develop new growth.
Bottom: Mounded cuttings only 4 months after they were rooted. They have established well, and are keen to flower.

On the Roof of the Rocky Mountains



On the Roof of the Rocky Mountains: The Botanical Legacy of Betty Ford Alpine Gardens; Vail's Alpine Treasure by Sarah Chase Shaw (Gibbs Smith, 2021)

The Betty Ford Alpine Gardens are a staggeringly beautiful treasure, home to some incredible flower displays. This book certainly displays the incredible beauty of the gardens but also aims to do a lot more than that, educating the reader on what the alpine regions are, the risks they face, and how botanic gardens can be key in efforts to understand and preserve delicate alpine ecosystems.

The first chapter, “Sowing Seeds," gives the history of the garden and, like much of the book, includes a cast of characters that will be familiar to many NARGS members. Flip to page 23 if you want to see what our incoming NARGS president, Panayoti Kelaidis, looked like in 1989. This chapter also introduces the reader to the sheer breadth and diversity of the plant collections in the garden including, according to the text, every species of *Aquilegia* native to North America, 40 species of *Gentiana*, 50 species of *Campanula*, nearly 40 *Primula*, and so on.

Chapter two, “Understanding the Alpine World,” starts with an explanation of what alpine environments are and how plants and animals adapt to thrive in them. Much of this may be old news to the average NARGS member, but there are still interesting details. The most interesting part of the chapter is the second half which makes a case for the importance of botanical gardens – and alpine gardens in particular – as a tool to educate people about the importance of preserving fragile, alpine ecosystems. A quote from Executive Director Nicola Ripley particularly stood out to me: “We’re here to tell a story and because we have no political affiliations, our story tends to be the one that people most believe.” That’s a pretty powerful statement on the ability of gardens to reach out to all parts of our ever-more polarized political landscape.

The next two chapters, “Four Seasons in the Garden” and “Guardians of the Alpine” are essentially photo essays, showing the garden as a whole and details of specific plant collections respectively. The photos are dreamily beautiful. I'm still thinking about the incredible shots of *Gentiana acaulis* on pages 208 and 209. The beauty of these images takes on a different flavor after the earlier discussion of the importance of the gardens, that this very beauty is a tool to educate and open people’s minds.

The final chapter, “Vigilance and Vision,” details the research and preservation work the garden supports, again driving home the point that this garden is more than just a pretty face.

I recommend this book highly. The text and larger message elevate it beyond simply a coffee table book of pretty pictures to something that makes the reader think differently about botanic gardens and their mission in the world.

Joseph Tychonievich

NORTH AMERICAN ROCK GARDEN SOCIETY

Bulletin Board

summer
2021

volume 79 | 3

President's Message: Spring 2021

Many years ago I wrote a piece from the viewpoint of a young woman on "A Perfect Summer's Day" (for the defunct Alpine-L) because summer was my favorite season since childhood. Now that I am in retirement, it interests me that my favorite time of year has shifted. The feeling of this past spring was so long and luxurious, it brings that article to mind in comparison. Before, as I started the day, I immediately got dressed, ate, and got to work in the cool of the summer's morning air. By 10 am I was done. But now I prefer to stroll early about the paths while still in my bathrobe, cup of tea in hand as the birds voice a welcome salutation to the sun. There is no longer a rush as the temperature will not shut me out of the garden. As plants emerge and then blossom and scent the air, I enjoy and savor their unfolding.

First to open in spring are the porophyllum saxifrages, along with hellebores, small bulbs, and primulas like, *P. denticulata* and *P. marginata*, and *Daphne mezereum*. Later in spring, other species of daphne bloom (and perfume), from the large *D.* 'Carol Mackie' and *D. alpina* to small buns of *D. arbuscula* hybrids, to prostrate *D. cneorum* var. *pygmaea* forms in white and pinks. They make a circuit of delight for my stroll. My current favorite is *D.* 'Ernst Hauser' with its inner light pink blossoms outlined with delicate dark purple. It's one of the *Daphne* x *hendersonii* hybrids that do very well here in the Berkshire hills. But many other species are also good "doers" here like *D. circasica, D.caucasica, D. domini*, and *D. velenovskyi*, when given good drainage and correct sun position. Do you grow any? And in late spring there are still more to bloom like *D. jasminea* and its hybrids. For those who live in a more temperate climate than I, there are even more species to grow, like *D. petraea*, which is royalty within this tribe.

Cool weather here this spring cooperated to keep prime bloom on so many of my other favorite alpines, too: *Globularia repens*, various primula, iris, and trillium species as well as epimediums and others. The color of the gently spreading prostrate phlox opens my eyes and clears the mind. Trees and shrubs like the magnolias, the rhodies, and crabapples compete with the scent of the daphnes.

Weigela 'Canary Bird' provides a magnificent backdrop for the many assorted species peonies from the early spring-blooming *Paeonia daurica* tribe. I first learned about that honeysuckle bush from the 2015 NARGS annual meeting in Michigan. It shined so brightly in the garden of Don LaFond that I barely remembered anything else. Well, except for his daphne collection! As with all annual meetings, it was the surprise delight that I recall. This year's meeting in Durango, Colorado, will have some new features like driving oneself to tours of the San Juans in your own car. But powerhouse speakers will again be on hand to expand our inventory of ideas. And, of course, there will be a plant sale and member fellowship. What will this year's surprise be? I hope to see you there and we will find out together! Not registered yet? Check out www.durangonargs.org

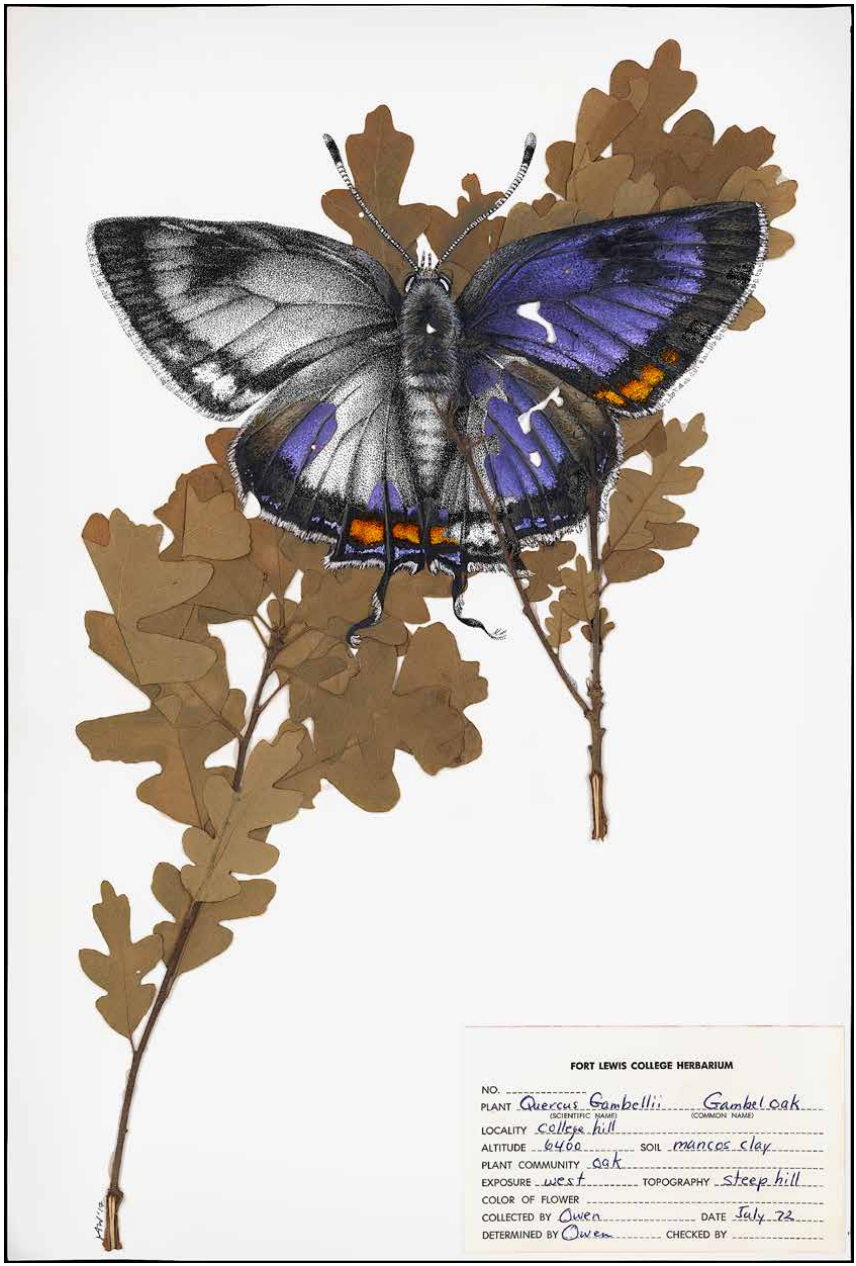
I wish to single out and thank Panayoti Kelaidis, the instigator of this Annual General Meeting being held at Durango, August 5 – 8. And, of course, thank the many hands who helped put it together, notably Mike Smedley, Jeff Wagner, Ken Ray, and Lisa Bourey. There will be other volunteers, all with a common love of the natural world. Hats off to them all.

And I wish to also congratulate Panayoti for accepting the torch as incoming president of NARGS. He was a key player during this COVID time, helping organize speakers for our virtual conferences as well as planning for the upcoming AGM. I know you will all support him in implementing his ideas for our society. And welcome new board members: Todd Boland as Vice President; Sarah Strickler as Recording Secretary; and Tony Avent and Peter Zale as Directors. Mariel Tribby has also signed on for another term as Director and will remain in charge of our social media; and Richard Lane will return as Treasurer. Again, I wish to thank all those staff and the board who supported NARGS during my term. Three cheers.

We are a group of enthusiastic gardeners who delight in growing interesting plants from around the world. Remember to save seeds and send them to the exchange! Have an idea about a program, virtual or in person, on crevice gardens, bogs, woodland gardens, troughs or planted walls? Let's hear it. Don't be afraid to volunteer!

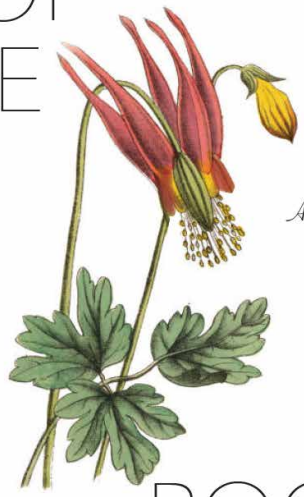
Elisabeth Zander

DURANGO OR BUST!



Painting by Amy Wendland of a Colorado hairstreak *(Hypaurotis crysalus)* state insect of Colorado and its host plant, Gambel Oak *(Quercus gambelii).*

EDGE OF THE ROCKIES



Aquilegia elegantula

Don’t miss an extraordinary opportunity to revel in the Rockies at this year's NARGS Annual General Meeting!

https://www.durangonargs.org/

Botanize

Southwestern Colorado is a botanical hotspot featuring many unique plants not found elsewhere in the state. Plant lists are posted for hikes on the website. Bob Skowron has created a powerful app, Plant List GPS, that generates lists of plants and shows their precise localities. (You can see Bob describe this app on the Rocky Mountain Chapter website or on Youtube: https://www.youtube.com/watch?v=B6Nw7TxQ-CI)

Learn

The rich botanical and cultural heritage of the Four Corners will be highlighted in presentations by Native American scholars. Craig Childs, noted regional author and explorer, will present on the cultural history of Mesa Verde. Mike Kintgen will present on Rocky Mountain plant exploration. Volunteers from the Native Plant Society, Durango Botanical Garden, Master Gardeners, and members of the Rocky Mountain Chapter will serve as hosts on the hikes.

Shop

Enjoy a plant sale featuring many specialty rock garden and alpine plants.

Don't Delay

As of June 16, there are 121 signed up from across the USA, England, and Sweden. Early August is peak season for Durango tourism. Many motels and hotels have already filled. There is still space at Fort Lewis College’s West Hall which is reserved for NARGS members.

New and Rejoining Members

Welcome to all those who joined or rejoined between February 19 and May 18, 2021

Beisley, Ashley, Scappose, OR
Benton, Ann, Birmingham, AL
Berndt, Tim, St. Germain, WI
Bohl, Loree, Portland, OR
Bosanko, Petra, Woodlawn, TN
Brodovich, William, Ann Arbor, MI
Chipchar, Timothy, Vancouver, BC
Cone, Eleanor, Forest Hill, MD
Cousart, Laurie, Chapel Hill, NC
Cruikshank, Sherisa, La Pine, OR
De La Force, D. Michael, New York, NY
Dean, Robert, Mokelumne Hill, CA
Dial, Justine, Glenview, IL
Duma, Eric, Hamburg, NY
Engelsen, Diana Den, Someren, Netherlands
Engledow, Helen, Sonora, CA
Fendley, Mollie, Arvada, CO
Ferguson, Scott, Vancouver, BC
Ferreyra, Marcela, Bariloche, Argentina
Fox, Diana, San Antonio, TX
French, Marian, West Allis, WI
Gaudet, Linda, Upper Tantallon, NS
Gildea, Michael, Reston, VA
Gill, Sue, Morpeth, United Kingdom
Goggin, Tamsin, Norfolk, CT
Hamilton, Pat, Santa Fe, NM
Hickey, Dale, Vancouver, WA
Hoffman, Donna, Casper, WY
Hogue, Nina, Prineville, OR
Hooper, Melody, Woodinville, WA
Horn, Maurice R., Portland, OR
Hubner, Brook, Birmingham, AL
Lewin, Sandra, Calumet, MI
Jones, Edrea, Atlanta, GA
Keilty, Maureen, Durango, CO
Kirk, Frank, Binghamton, NY
Klebba, Robert, Madison, WI
Knauss, Nancy, Pittsburgh, PA
Koschak, Brad, Spring Grove, IL
Kosha, Christina, New Boston, NH
Loomis, Nancy, Cheyenne, WY
McDowell, David, Beverly, MA
McManus, Karen & Jim, Durango, CO
McMillan, Michael, Mancos, CO
Molstad, Christopher, Pensacola, FL
Mulkey, Stacy, Durango, CO
Murphy, Daniel, Boise, ID
Newman, Maureen, Roseboom, NY
Oxford, Lisa, Saint Clair Shore, MI
Palmer, Melanie, Bayfield, CO
Peek, Daniel, Newberg, OR
Piacentini, Dino E., Denver, CO
Porter, Patricia A., Elysburg, PA
Pradhan, Nash, Norfolk, CT
Ray, Valerie, Boise, ID
Saarinen, Kati, Gibsons, BC
Scharein, Jessica, Calgary, AB
Schneider, Amy, Denver, CO
Schoening, J. & C. Hartman, Fort Collins, CO
Seifers, Lynda, Hays, KS
Senft, Herb, Sequim, WA
Shub, Sami, Kingston, NY
Slatalla, Michelle, Mill Valley, CA
Smith, Isaiah, Cheyenne, WY
Smith, Kevin, Portland, ME
Stageman, Dawn E., Holland, MI
Stephenson, Patricia, Englewood, CO
Stezenbach, Sabine, Bronx, NY
Symons, James, Berkeley, CA
Theodore, Karen, Bend, OR
Toffey, Elizabeth, Ithaca, NY
Tomczak, Mark, Foxboro, WI

New and Rejoining Members

Welcome to all those who joined or rejoined between February 19 and May 18, 2021

Torrance, Sam, Longmont, CO
Tucker, Martha, Denver, CO
Vaananen, Mary F., Louisville, KY
Voran, Allyson, Santaquin, UT
Welch, Patricia, Granby, CO
Wendt, Samantha, Madison, WI
Whimp, Diana, Whangarei, New Zealand
Williamson, Connie, Sun Peaks, BC
Yales, Michael, Maybee, MI
Zifkin, Michael, New Germany, NS
Zvolánek, Zdeněk, Karlík, Czech Republic

Upcoming NARGS Meetings:

Durango, Colorado, August 5 - 8, 2021

Ithaca, New York, June 14 - 16, 2022

Nova Scotia, Canada, 2023

Email Address

If you have never supplied your email address to NARGS or it has changed, pleased email it to: nargs@nc.rr.com . We do not share our email addresses outside of NARGS. Your email address helps us communicate with you.

Are You a Gmail User Missing NARGS Messages?

Are you one of the Gmail Users who misses NARGS message notifications? Go to the nargs.org homepage and look under News for Are You a Gmail User Missing NARGS Messages?

Seed Exchange

Was ever a gardening season more welcome... or necessary?! The world is now learning what we've always known: Working in the garden is good for so *many* facets of our lives. The only downside to this, for us, is that the nurseries and garden centers all sell out early! And there are no plants left for the end-of-season half-price sales.

Although the COVID pandemic changed how the seed exchange operated – mainly drawing out the timeline – the valiant volunteers of the Siskiyou and Great Lakes Chapters completed their tasks... and safely. We heartily thank Jean Buck, Kathleen Pyle, Dale Sullivan, and Eric Hagerman (Siskiyou) and Holly Pilon, Lisa Quiggle, and Colleen Mitchell (Great Lakes) for their many hours of work and worry as they all pulled, packaged, and posted our seed orders.

With the assistance of the helpful agents at the Oregon Department of Agriculture, we were able to have the seeds inspected and the phytosanitary certificates issued for seed orders going to our members in Japan, the UK, and countries of the European Union. In each country that requires a phyto, there were Consignees who were willing to re-mail the seed orders to the other NARGS members within their country. We thank them for their continued assistance... and we hope you will, too.

Because the Siskiyou Chapter is not able to fulfill its second year of handling the Main Distribution, the Delaware Valley Chapter has kindly jumped in to fill that void and handle your seed orders in the first round next January. We are very grateful to its chapter leaders and members for responding to the request for help.

Speaking of requests for help for the Seed Exchange: While you are in your gardens, perhaps reaping the harvest from the Seed Exchange workers, please take note of what seeds you can contribute from your own plants. And then keep an eye on them for the best time to harvest (after they've ripened, but before they scatter or the ants carry them home). The return for your donation of 5 packets of different seeds will be 10 extra packets in your order, priority in having that order filled... and the warm thanks of NARGS members.

In case you were wondering what to donate, the taxa most often requested from this year's list were: *Arisaema sikokianum, Paraquilegia anemonoides, Douglasia montana, D. nivalis, D. laevigata var. ciliolata, Lewisia tweedyi, Petunia patagonica, Callianthemum alatavicum, Eranthis pinnatifida* (moist packed), and *Trollius lilacinus*.

And just because you haven't seen one of your plants on the Seed List before, that doesn't mean it wouldn't be welcome. If you love it, and the plant isn't tropical or weedy, it might be something new that someone has been seeking... or would be interested in trying.

As mentioned in the spring issue of the *Quarterly*, NARGS has a Policy Statement on Plant or Seed Collection. We hope that, as you donate, you will keep abreast of changes on the lists for the Endangered Species Act (ESA):

https://www.fws.gov/endangered/ and...

CITES: https://cites.org/eng/app/appendices.php (Scroll way down to Plants)

This issue of the *Quarterly* contains the form and instructions for donating seeds; and, for members outside the U.S., the necessary permit and mailing label that must accompany your seeds to us. The deadline for Laura Serowicz, our Seed Intake Manager, to receive your seeds is November 1. Members in the U.S. should send their seeds by October 25, and all others should mail them no later than October 15, to allow time for inspection of the seeds. The names of any late-ripening seeds that you intend to donate should be included with the list being sent to Laura, and the seeds themselves should arrive there before December 1.

Laura Serowicz
15411 Woodring Street
Livonia, Michigan 48154-3029
U.S.A.

Should you prefer to place your seed order by mail, you can request a print copy of the Seed List and order form from:

Joyce Fingerut
537 Taugwonk Road
Stonington, Connecticut 06378-1805
U.S.A.

You must request this hard copy by December 1.

Warmest wishes to all for a gratifying gardening season.

Joyce, Director NARGS Seed Exchange
Email: alpinegarden AT comcast.net

Help NARGS and new rock gardeners grow.

Give a gift membership to the North American Rock Garden Society and introduce someone to a world of passionate gardeners.
Give access to the seed exchange, *Rock Garden Quarterly*, tours and adventures, meetings and study weekends.

Recipient information:

First Name: _____
Last Name: _____
Email: _____
Phone: _____
Address: _____
_____

Membership (Circle one):	US/Canada	International
Household	$70	$75
Individual	$40	$45
Student	$15	$15

Mail with check payable to the North American Rock Garden Society to P.O. Box 18604, Raleigh, NC 27619-8604

Or visit nargs.org/join

NARGS Book Service

Kalmia - Mountain Laurel and Related Species by Richard Jaynes - Details on propagation, pests, crosses, soil, pictures, etc. Hardcover, 295 pages. Originally $35, now $10. 2 copies

Lewisias by B. LeRoy Davidson. Hardcover, 236 pages. Originally $35, now $10. 4 copies

Buddlejas a Royal Horticultural Society Plant Collector Guide by David D Stuart. Hardcover,192 pages. Originally $35, now $10. 1 copy

Timber Press Pocket Guide to Ornamental Grasses by Rick Darke. Soft cover, 226 pages. Originally $20, now $10. 1 copy

Handbook On Troughs by The North American Rock Garden Society. Paperback, 76 pages. $7 each, or 10 for $35 for NARGS chapters. 150 copies

Rock Garden Design and Construction by North American Rock Garden Society. A collection of monographs by various authors. Originally $30, now $20 each, or 10 for $150 to chapters. 70 copies

The Caucasus and Its Flowers by Holubec and Krivka. A coffee table book of pictures with detailed descriptions of plants. Hardcover, 390 pages. Originally 96 Euros, now $40. 2 copies

The NARGS cloth Dodecatheon patch. 4x2.25 inches. $5 each, or 10 for $40 to chapters. 85 patches

The NARGS metal Dodecatheon pin. 1x 5/8 inches. $5 each or 10 for $40 to chapters. 75 pins

Planning to attend the Durango meeting and want some of these items? If these are pre-ordered prior to August 1, 2021, I will bring the items to the Durango Annual Meeting.

Make checks payable to "NARGS"

Questions or orders? Contact Dave Collura:
NARGSBOOKS@gmail.com

Sorry, but mail-order sales in the U.S. only.

NARGS Donations

Donations to NARGS between February 1 and April 30, 2021.

To support the seed exchange, *Rock Garden Quarterly*, the website, Traveling Speakers Program, the general fund, and in memory of Susan Reznicek (Ann Arbor, Michigan).

Adam, Georg (Germany)
Adler, Lee Howard (New York)
Appling, Talinna (Washington)
Atkinson, Kristine (Massachusetts)
Avent, Tony (North Carolina)
Baker, Pat (Colorado)
Barrett, Karen (Maryland)
Bell, Gary (Nebraska)
Bendall, Matthew (Australia)
Betts, Mary (Maine)
Bier, William (New Hampshire)
Bohanan, Michelle (Wyoming)
Bosanko, Petra (Tennessee)
Bouffard, Vivien (Massachusetts)
Bowlby, Astrid (Maine)
Breyfogle, Ross (Colorado)
Casebier, David (Massachusetts)
Castro, Elisabeth (Texas)
Clarke, Louise (Pennsylvania)
Cockcroft, Claire (Washington)
Conway, Gregory (Quebec)
Deeg, Sheila (California)
Dombrowskyj, Andreas (New York)
Edmond Brown
Eng, Kean Teck (New York)
Enns, Caroline (Oregon)
Ernestl, Dejan (Maryland)
Evans, Barbara (New York)
Fabian, Daniel (Pennsylvania)
Faden, Robert (Virginia)
Ferree, Louisa (Massachusetts)
Fisher, Marty (Rhode Island)
Franklin, Catherine W. (Alaska)
Gentling, Peter (North Carolina)
Glavich, Thomas (California)
Glover, Edward (Wisconsin)
Goldsworthy, James (Washington)
Greanya, Michael (Michigan)
Gregg, John (Maryland)
Griffith, Debbie (Colorado)
Hahn, Kristian (Illinois)
Smith, Carole P. (Ohio)
Hall, Stephen (Oregon)
Hampton, Sandra Kay (Illinois)
Hansen, Bret (Washington)
Hansen, Gene (Minnesota)
Held, Paul (Connecticut)
Hogenson, Gordon (Washington)
Humphries, Terry (New York)
Kelaidis, Panayoti (Colorado)
Koch, Helen (Maine)
Lalonde, Diane (British Columbia)
Lamm, Jack R. (North Carolina)
Leggatt, Anna (Ontario)
Leishman, Margo (Washington)
Lenkoski, Peter F. (Massachusetts)
Ludwig, Kiamara (California)
Macartney, Kathy (Ontario)
Magowan, Robin (New Mexico)
Maksymowicz, Alex & Lillian (Oregon)
Markus, Brent (Massachusetts)
McGough, Lynn (Australia)
Menasian, Colette (New York)
Moscetti, Paula J. (New Jersey)
Mulac, Kathleen (Ohio)
Murphy, Daniel (Idaho)
Otis, Loraine (New Jersey)

NARGS Donations (continued)

Oxford, Lisa (Michigan)
Pacholko, Helen (Alberta)
Pilon, Holly (Michigan)
Place, Alison (Ontario)Rembetski, John (New Mexico)
Riehl, Deborah (Washington)
Ripperda, Jerry (California)
Rodich, Richard T. (Minnesota)
Sanderson, Amy (British Columbia)
Savannah, Anne (Alberta)
Schellingerhout, Jan (Netherlands)
Schleifer, Liane Amy (Georgia)
Schramm, Nancy (California)
Schultze, Sandra (Colorado)
Scott, Caroline (Alberta)
Soderstrom, Maggie (Washington)
Stafford, Russell (Rhode Island)
Staples, Aaroin A. (Nova Scotia)
Strasser, Erin (Colorado)
Turner, Loretta (Washington)
Voran, Allyson (Utah)
Walker, Sally (Arizona)
Wallen, Christopher (Pennsylvania)
Walsh, Tim (California)
Weiland, Jerry (Oregon)
Welch, Marianne (Kentucky)
Whitehead, Diane (British Columbia)
Wilkinson, Guerin (Michigan)
Wysocki, Raymond (New Jersey)
Yatko, John (Ohio)

The following recently became NARGS Patrons:

Anderson, Scott (Missouri)
Du Pont, Elise (Delaware)
Erikson, Janelle (Minnesota)
Ferree, Louisa (Massachusetts)
McIntosh, Kevin (Maryland)
Oxford, Lisa (Michigan)
Smedley, Mike (Colorado)
Sondek, John (North Carolina)
Switzer, Russ (British Columbia)

NARGS Traveling Speakers Program

NARGS has made excellent use of Zoom to host speakers and meetings during the pandemic, but many of us long for the camaraderie of in-person meetings with speakers and other activities. When chapters are ready to return to in-person meetings, funding for speaker travel expenses continues to be available from our generous, anonymous donor. This funding can be used for travel by domestic or international speakers. Regional Chairs of the Traveling Speakers Program will work with chapters to arrange for speaker tours as it becomes possible and safer to travel. If you're not sure who the Regional Chair is for your chapter, email me and I will put you in contact (rosemonahan@comcast.net).

Rosemary Monahan, chair
rosemonahan AT comcast.net

We have learned of the death of the following NARGS members:

Carole E. Earle, Denver, Colorado
David Joyner, Edwall, Washington
Barbara D. Weinz, Reading, Massachusetts

NARGS is sponsoring a tour to the Swiss Alps in June 2022. Tour details and space availability are posted on the Tours page of the NARGS website. If you have questions, send an e-mail to nargstours@email.com.
--David White, chair

Book of the Month

Do you like to read about rock gardening and horticultural subjects? Please share your useful insights with other members and get a free review copy of the book for your efforts. Reviewers are always sought for the NARGS website Book-of-the-Month feature. In return for submitting a 300-400-word review of the book of your choice, the book will be sent to you free of charge. Select your own title for review or suggestions can be provided.

Please contact Steve Whitesell at elysium214@aol.com for more information.

Treasurer's Report – 2020 5-Year Summary

Net Income	2016	2017	2018	2019	2020	2019-20 change
Memberships	55,007	48,848	61,672	51,493	65,303	13,810
Donations	39,866	48,394	36,144	33,909	114,226	80,317
Interest & Dividends	7,718	7,386	8,910	8,889	7,179	-1,710
Advertising	1,491	1,011	1,656	683	453	-230
Book Service	462	23	1,118	527	563	36
Amazon Payments	945	754	631	637	249	-388.38
Seed Exchange	-4,187	1,753	1,625	-3,389	201	3,590
AGM and Tours	11,983	21,606	44,911	41,434	2,598	-38,836
Total Net Income	115,301	129,775	156,665	134,183	190,772	56,589
Net Expenses:						
Grants and Awards	198	5,100	10,984	13,030	373	-12,657
Bank Fees	1,903	80	157	362	32	-330
Speakers Tour	0	0	0	7,391	552	-6,839
Internet Service	5,803	7,627	13,717	12,189	9,011	-3,178
Quarterly	58,073	51,969	50,188	52,162	40,712	-11,450
Administration:						
Exec. Sec.	14,515	15,333	15,334	15,725	19,400	3,675
Insurance	1,633	3,283	1,477	0	3,201	3,201
Other	2,373	733	854	5,330	2,176	-3,154
Total Net Expense	84,498	84,125	92,712	106,189	75,456	-30,733
Net Profit & Loss	30,803	45,650	63,954	27,994	115,316	87,322

Introduction and Summary

Member tours planned for 2020 were cancelled due to Covid-19 pandemic and their cancellation had significant negative impact on net income for the year. However, TAPROOT and NARGSROCKS were great successes and offset a significant portion of our expected tours income. We continued in 2020 to have positive Net Income over Expense and our assets (cash and investments) have continued to grow. An exceptionally generous legacy gift from a past lifetime member accounts for most of our growth in donations and the increase in our cash and investments.

Our membership numbers finally turned up this year after many declining years. Total membership revenue in 2020 was up dramatically over 2019, $65,303.21 versus 2019 $51,492.80. Our video presentations this year have led to increased membership as well as increased donation and meeting revenue.

In recent years, donations have generally saved us financially and continued to do so in 2020. Donations associated with TAPROOT, NARGSROCKS, and Seed Exchange offset a general decline in monthly donations. A $7,000.00 donation early in the year designated for the Speaker's Tour also added to donations although planned expenses did not occur due to COVID. The exceptionally generous legacy gift from a past lifetime member accounted for most of our actual excess over the past.

Below, I have listed those areas of Net Income and Net Expense that have a significant impact on our operations. Net Income in this table is the net of total income minus total expense for each program to more clearly show each program's impact on our finances. A more detailed Financial Analysis is available on our website.

TOTAL LIABILITIES & EQUITY as of December 31, 2020
ASSETS
Checking/Savings
Wells Fargo-Membership 43,408.80
Wells Fargo - Main Account
WF - Main - Speaker Tour Funds 7,852.36
Wells Fargo - Main Account – Other (2,741.78)
Total Wells Fargo - Main Account 5,110.58
Wells Fargo – Savings 269,766.18
Total Checking/Savings 318,285.56

Investments
Investments - Unrestricted
Fidelity - Cash – Unrestricted 31,923.80
Invstmnt Accnt - Unrestricted
Investment Bal – Unrestricted 50,000.00
Unearned Capital Gain/Loss -UNR 7.80
Total Invstmnt Accnt – Unrestricted 50,007.80
Total Investments – Unrestricted 81,931.60
Norman Singer Endowment
Fidelity - Cash – NSE 11,792.28
Investment Account - NSE (MKT)
Investment Bal - NSE (Cost) 151,730.36
Unearned Capitl Gain/Loss - NSE 300.04
Total Investment Account - NSE (MKT) 152,030.40
Total Norman Singer Endowment 163,822.68
Total Fidelity Investments 245,754.28
Adjustment – Unearned Capital (307.84)
Total investments 245,446.44
Other Assets 750.00
Total Assets 564,482.00

LIABILITIES AND EQUITY
Liabilities
Capital One SPARK Business 1,146.68
Tour Deposits
Patagonia Tour
Patagonia Tour PayPal (1,244.96)
Patagonia Tour – Other 29,360.00
Total Patagonia Tour 28,115.04
Total Tour Deposits 28,115.04
Total Liabilities 29,261.72

Equity
Unrestricted (ret. Earnings) 263,880.80
Restricted Funds
Norman Singer Endowment Fund 151,730.36
Robert Senior Award Fund 1,135.72
Carleton Worth Award Fund 3,157.78
Total Restricted Funds 156,023.86
Net Income 115,315.62
Total Equity 535,220.28
Total Liabilities and Equity 564,482.00

PROFIT & LOSS January through December 2019
Income
Contributed Support
Memberships 65,303.21
Donations & Special Requests 114,368.65
Total Contributed Support: 179,671.86
Earned Revenues
Interest 501.07
Credit Card Rewards 459.70
Dividends 6,217.78
Advertising revenues 453.46
Program Revenue
Book Services 651.07
Amazon Payments 248.62
Seed Exchange 16,032.17
Video Services
2020 TAPROOT 13,995.48
2020 Study Day 5,951.75
Total Video Services 19,947.23
Total Program Revenue 36,879.09
Total Earned Revenues 44,511.10
Total Income 224,182.96

Expense

- Grants & Awards 372.66
- Fund Raising Expense 142.59
- Bank Fees 31.95
- Administrative Expenses
    - Executive Secretary 19,400.00
    - Legal & Filing Fees 53.79
    - Insurance – non-employee 3,200.80
    - Supplies 473.72
    - Postage, shipping, delivery 33.20
    - PayPal Virtual Terminal 360.00
    - Advertising expenses 856.33
    - Annual Elections 399.00
- Total Administrative Expenses 24,776.84
- Program Services Expenses
    - AGM Adirondack Chapter 2,058.50
    - Book Service 88.11
    - Seed Exchange 15,831.43
    - Speakers Tour 551.99
    - Internet Services 9,011.22
    - Video Services
        - Taproot 2020 3,315.73
        - 2020 Study Day 2,229.56
        - Other Video Services 562.93
    - Total Video Services 6,108.22
    - Quarterly 40,711.61
- Total Program Services Expenses 74,361.08
- Tour Expense
    - Greece Tour 2019 1,621.56
    - 2020 Adirondack Pre AGM Tour 2,167.43
    - 2020 Hudson Valley Post AGM Tour 84.47
    - Patagonia 2020 Tour 11.40
    - 2021 Burren Tour 74.86
    - Website Development/Maintenance 5,222.50
- Tour Expense Total 9,182.22

Total Expenses 108,867.34

Net Income 115,315.62

NARGS Chapters (meeting place/area) and Chairpersons or Co-Chairs

Adirondack (Ithaca, NY)	John Gilrein <basecamp@alum.syracuse.edu>
Alaska (Anchorage & Mat-Su Valley)	Florene Carney <snowfire@mtaonline.net>
Allegheny (Pittsburgh, PA)	Sandra Ciccone <slmciccone@comcast.net>
Berkshire (Stockbridge, MA)	Joyce Hemingson <jhem1022@gmail.com>
Calgary Rock & Alpine Garden Society (Calgary, AB)	Patti O'Keefe <president@crags.ca>
Columbia-Willamette (Portland, OR)	Terry Laskiewicz <fritillaria_3@hotmail.com>
Delaware Valley (Philadelphia, PA)	Louise Clarke <hortigal55@yahoo.com>
Fells (Newbury, NH)	Thelma Hewitt <thelmakh@gmail.com>
Gateway (St. Louis, MO)	Mariel Tribby <mtribby@gmail.com>
Great Lakes (Southern MI)	Julia Caroff <julia.caroff@me.com>
Hudson Valley (Westchester Co, NY)	Don Dembowski <dondembowski@optonline.net>
Long Island (Oyster Bay, NY)	Donald Ohl <donohl@yahoo.com>
Manhattan (New York, NY)	Judith Dumont <judi.dumont@gmail.com>
Mason-Dixon (Norrisville, MD)	Marika Sniscak <marika123@verizon.net>
Minnesota (Minneapolis/St. Paul, MN)	Rick Rodich <rrodich@juno.com>
New England (Waltham/Boylston, MA)	Estelle James <runtyandstel@netscape.net>
Newfoundland (St. John's, NL)	Todd Boland <todd.boland@warp.nfld.net>
New Mexico (Santa Fe/Albuquerque, NM)	Robin Magowan <magowanrobin@gmail.com>
Northwestern (Seattle, WA)	Kendall McLean <kendallforest8@outlook.com>
Nova Scotia (Halifax & Truro, NS)	Roslyn Duffus <roz.lakeside@gmail.com>
Ohio Valley (OH & surrounding states)	Joan Day <jdayham@earthlink.net>
Ontario (Don Mills, ON)	Jeff Mason <jeff@masonhousegardens.com>
Ottawa Valley (Ottawa, ON)	Rob Stuart and Jane Lund <president@ovrghs.ca>
Piedmont (Raleigh, NC)	Cyndy Cromwell <cacromwell2000@yahoo.com>
Potomac Valley (Alexandria, VA)	Barbara Rose <roserose@verizon.net>
Québec (Montreal, QC)	Réné Giguère <apulsatilla@netscape.net>
Rocky Mountain (Denver, CO)	Kathleen Stewart <kcstewart1568@yahoo.com>
Sierra (Sonora, CA)	Nancy Piekarczyk <NanPiekarczyk@gmail.com>
Siskiyou (Medford, OR)	Jean Buck <buckjean11@yahoo.com>
Wasatch (Salt Lake City, UT)	Tony Stireman <tstireman@gmail.com>
Watnong (Far Hills, NJ)	Roxanne Hiltz <hiltz@njit.edu>
Western (San Francisco Bay area, CA)	John Tsutakawa <jtsutakawa@sbcglobal.net>
Wisconsin-Illinois (Madison-Chicago)	Dave Collura <nargsbooks@gmail.com>

NARGS Structure

The officers of the North American Rock Garden Society consist of a president, a vice-president, a recording secretary, and a treasurer. The officers are elected by the membership.

The Board of Directors of NARGS consists of the four above-named officers, the immediate past president of NARGS, and nine elected directors.

The affairs of NARGS are administered by an Administrative Committee (called AdCom) consisting of the president, vice-president, recording secretary, treasurer, and one director-at-large, selected annually by the NARGS officers from among the nine elected directors.

Officers

President	Panayoti Kelaidis telesonix@outlook.com 1244 S Quince St, Denver, CO 80231-2513
Vice President	Todd Boland nfld.todd.boland@gmail.com 81 Stamp's Lane, St. John's, Newfoundland & Labrador A1B 3H7
Recording Secretary	Sarah Strickler sa.strickler@verizon.net 2436 N Utah St, Arlington, VA 22207-4030
Treasurer	Richard Lane <rhlane01@gmail.com 4904 Hermitage Dr., Raleigh, NC 27612-2762
Director-at-Large	Brendan Kenney, nycbeard@gmail.com 5 1/2 Jane St, Apt. 4R, New York, New York 10014-6017
Immediate Past President	Betty Anne Spar <bettyannespar@gmail.com> 5051 N Grey Mountain Trl, Tucson, AZ 85750-5942

Directors of the Board:

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