NORTH AMERICAN ROCK GARDEN SOCIETY

The Rock Garden

QUARTERLY

SPRING 2021

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All illustrations are by the authors of articles unless otherwise stated.

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Front and back covers: *Rhododendron mucronulatum* 'Crater's Edge', Betty Ann Addison

The Rock Garden

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From the Editor

HAVE WE EVER been more thankful to see spring arrive? What a winter it was. It started mild for most of us, and then huge swaths of North America faced record low temperatures and excessive amounts of snow. I have friends in Texas who recorded a staggering -6°F (-21°C) where winter temperatures don't usually drop below 15 to 20°F (-9.4 to –6.7°C). In my garden in eastern Virginia I didn't get extreme cold but consistently chilly temperatures have delayed our usual winter and early spring flowering plants. Perhaps even more welcome than the arrival of spring are hints of improvement in the global pandemic. As I write this in March, COVID-19 cases are dropping as more vaccines make it into arms -- news I'm even more delighted to see than the flower buds on my daffodils.

Perhaps it is the combination of winter and coronavirus lockdowns, but I've been receiving more emails and letters from you lately about the *Quarterly*, which I really appreciate! I always want to hear what you, the members of NARGS, think about the articles and topics I've included in each issue. Praise, complaints, or requests are all equally welcome. The *Quarterly* belongs to each of you as members and I love the chance to try and include more articles that you are interested in reading.

In this issue, we're starting with articles from Betty Ann Addison and Ger van den Beuken on dwarf rhododenrons and *Calceolaria* respectively, sharing information on the diversity of these two very different – but extremely desirable – groups of plants, and tips on how to cultivate them successfully.

Since traveling is still pretty restricted, I'm happy to include several virtual tours of public rock gardens in Georgia, Tennessee, and New York. Each garden is in a different climate, faces different challenges, resulting in three very different gardens.

Next, Bill Stark has written a fascinating article on how he shapes and builds structures with tufa. I'm not sure I'll get quite as ambitious as Bill, but his article did make me want to get a few tools and try my hand at shaping some stones.

Finally, Wiert Nieuman is taking us to the Tannheimer Valley in Austria to enjoy some spectacular alpine vistas and equally stunning flora.

Happy Spring!

Dwarf Rhododendrons for Northern Rock Gardens

Betty Ann Addison

WE ALL KNOW that the best rock gardens are not just tiny perennials and rocks. To be interesting year around, dwarf evergreens and miniature shrubs are needed to add structure to the garden. With their dense, compact growth, I like to think of them as living transitions between boulders and alpines. In the mountains, the landscape above the timberline is dotted with gnarly evergreens and crawling or mounded shrubs. Re-creating this scene takes some effort because commonly offered conifers and shrubs are grown for large landscapes, not for detail-oriented, small-scale rock gardens. Cute in a pot, they quickly outgrow their place and shade out or smother their diminutive neighbors. Dwarf conifers are a subject of their own and are often described while other dwarf shrubs tend to be overlooked. Not often are the delights of miniature rhododendrons revealed, though they bloom beautifully and are in scale with flowering alpines.

Mountaintops are cool, windy, and sunny with rocky, well-drained soil. The rhododendrons that naturally thrive there have small leaves on densely twiggy branches. They blossom early and hunker down in the shelter of rocks. North-facing slopes offer snow cover for evergreen rhododendrons but those that lose their leaves in winter or have small, thyme-like leaves can grow in full sun. That sun tolerance makes them suitable for rock gardens placed in sun. They are all scaly-leaved types, also called small leaved or lepidotes, and evolved growing in sun. *Rhododendron* 'PJM', though too large for most rock gardens, is a lepidote and blooms best in sun. Large-leaved types of rhododendrons grow at lower elevations or are woodlanders, needing partial shade, especially where summers are hot.

Rhododendron Species

Rhododendron dauricum has penny-size, oval leaves that stick around all year. It naturally occurs from Japan, northward to Manchuria and Siberia. As their range extends northward, plants become semi-evergreen and finally deciduous. This protects the plants from desiccating in winter when water in the soil is frozen and unavailable. Winter burn is a drought situation. The smallest form is called *R. dauricum* 'Nanum' and is usually a vivid reddish-purple.

Top: *Rhododendron dauricum* 'Nanum'
Bottom: Lavender-flowered form of *R. mucronulatum*

The related plants that grow farther north regularly drop their leaves in the fall and are called *Rhododendron mucronulatum*, though the two interbreed very easily in culture. Perhaps you have heard of *R. mucronulatum* 'Cornell Pink', which makes a spectacular show of sugar-pink flowers on a large plant bare of leaves, though the usual color of the species is lavender to magenta.

A *Rhododendron mucronulatum* seedling showing a "pansy" flower pattern.

Growing in my garden, Rice Creek, is a bright lavender five foot (1.5 m) shrub that regularly blooms in April and sets lots of seed. I have been growing seedlings and selecting the most dwarf, and many show a "pansy" pattern on the flower with the center petal quite light. Larger ones are invaluable for early color because planted here and there around the garden they create drifts of color in the mid-size range between spring ephemerals on the ground and magnolias in the sky. Thus, your garden becomes volumetric, not just horizontal.

R. mucronulatum 'Crater's Edge' (See the photos on the front and back covers) is a tiny, deciduous shrub, covered in coral flowers in April. It gets its name because its origin is a volcanic crater in the mountains of Korea.

Dwarf forms of both *R. dauricum* and *R. mucronulatum* are extremely easy to grow from seed and will flower in approximately three years. They stay a foot or less in height and bloom very early when drabas and species bulbs are lighting up rock gardens. Shades of fuchsia, pink, lavender, and white are very welcome in early spring when you really need flowers.

In milder climates, a variety of other small species can be grown, but these two are the hardiest. Through further hybridization of these supremely hardy species and half-hardy lepidotes, different colors and habits can be passed on for northern gardeners to enjoy.

Miniature Rhododendron Hybrids

Plants with double quotes are our unregistered hybrids but I mention them because they show promise for the future. Those available commercially have single quotes, are recommended and have thrived through -35°F (-37°C) winters and 100°F (38°C) summers.

"Blue Roses" is our hybrid of 'April Rose', which is a large, very hardy, wine-colored flowered shrub, crossed with a half-hardy blue dwarf species.

We named our dwarf, double *R. dauricum* x *R. dendrocharis* "Chickadee" because what says "D-D-D" but that rascally little bird? The stamens (male, pollen-bearing parts) have turned into petals, leaving the pistil able to take pollen. We have seedlings made with 'Crater's Edge' pollen coming along and hope to find a pink rose-form among them.

Top: *Rhododendron* "Blue Roses".
Bottom: *R.* "Chickadee"

Top left: "Jack-in-the-Box" Top right: 'Karen Seleger'
Bottom: 'Karen's' in a woodland rock garden.

"Jack-in-the-Box" resembles a flowering boxwood, forming a slow-growing globe. Although its parents are unknown, it is extremely hardy.

'Karen Seleger' is available commercially and has reddish-violet flowers.

'Karen's' is the one and only commercial evergreen azalea hardy here. It has been around a long time and is commercially available. This variety likes at least a half-day of sun for best flowering.

'Purple Gem', though eventually growing to three feet (0.9 m), has proven hardiness and is widely available.

'Robert Seleger' makes a cupcake of baby pink flowers.

'Windbeam' has thrived for over 40 years here. It is a charming addition to semi-shade gardens.

I hope that once these possibilities are known and plants become available, they will inspire more experimentation to make our gardens capture a wider variety of natural beauty.

Top left: 'Purple Gem' Top right: 'Robert Seleger'
Bottom: 'Windbeam'

The Genus *Calceolaria*

Ger van den Beuken

CALCEOLARIA IS A genus that is highly valued by plant lovers for its attractive inflorescences.

The genus was previously classified in the family Scrophulariaceae, but following research by Olmstead, they are often classified in the family Calceolariaceae. The plants that interest us are mainly endemic in the alpine zone of South America, distributed from the Falklands and Tierra del Fuego in the south up to the Andean zones in Chile and Peru in the north.

Calceolaria flowers consist of two separated lips joined by an almost non-existent tube. The upper lip is very much smaller than the lower, and hooded or flat with an inrolled margin. The flowers are borne in few flower clusters, some almost like umbels. One or two of the dwarf alpine species are single-flowered. Despite coming in all shapes and sizes, the flowers in this group are all colored some shade of yellow: lemon, sulfur, or even gold. They sometimes have spotting, usually reddish, inside the throat or pouch.

If the mouth of the flower is closed, plants are pollinated by bumblebees. Open-mouthed flowers are pollinated by smaller bees. The insects that visit the flowers are rewarded with pollen and oil instead of the usual nectar. There are two stigmas in each flower, which, when fertilized, develop into pods containing numerous small seeds.

The Species

Calceolaria uniflora (syn. *C. darwinii*) is an exceptionally beautiful species with darkish green leaves and flowers a basic orange-yellow with varying amounts of deep garnet-red to bright chestnut brown in the throat and on the outside of the vertical lower lip. The species is widespread in Chile and Argentina, in southern Patagonia and Tierra del Fuego. It grows in coastal and river sands and rocks, scrubland, peaty alpine moorland, clifftops, and steppe, often in very exposed, well-drained sites from sea level to 3,900 feet (1,200 m) in altitude.

One of the best locations for this species is Estancia Stag River in the south of Santa Cruz, Argentina. Estancia is surrounded by an immense grassland area, notofagus woods, and screes. Particularly in the grasslands, but also on exposed ridges, you can spot numerous *C. uniflora*. Other species like *C. biflora*, and *C. polyrhiza* are common in grassland as well. Where *C. uniflora* and *C. polyrhiza* grow together some exciting hybrids appear.

Top: *Calceolaria uniflora*
Bottom: A natural hybrid of *C. uniflora* and *C. polyrhiza*

Carpets of *Calceolaria biflora* growing by a stream (top) and a closer view of the flowers (bottom)

Calceolaria biflora is more common in moist grasslands and forest edges. This is a wide-spread species in Patagonia from Tierra del Fuego to the north of Neuquen, with inflorescences of up to four yellow flowers on 15-inch (40 cm) stems. The species is in cultivation and it is possible to grow it in the open garden.

Calceolaria polyrhiza is a species from damp grasslands but appears also on dry, sandy, windswept Patagonian steppe down to the Santa Cruz River and adjacent Andean slopes from sea level to 4,900 feet

(1,500 m) in altitude. Often confused with *C. biflora*, it has inflorescences of two or three yellow flowers on 12-inch (30 cm) stems. It is easy to grow from seeds and pretty hardy in cultivation.

Calceolaria fothergillii is mainly found in the Falklands and rarely in the south of Argentina and Chile. This species prefers open, dryish, heath scrubland from sea level (on cliffs) to moderate altitudes. The small cushions are 2.35 to 4.7 inches (6-12 cm) high and somewhat woody at the base. The leaves are spathulate, dark green, and hairy on both surfaces. The flowers have an elongated, somewhat flattened, obovate lip, typically a fairly deep yellow with rich garnet-red spotting or shading that may cover the whole surface. The species is very similar to *C. uniflora* and easy to grow in the alpine house.

Calceolaria fothergillii

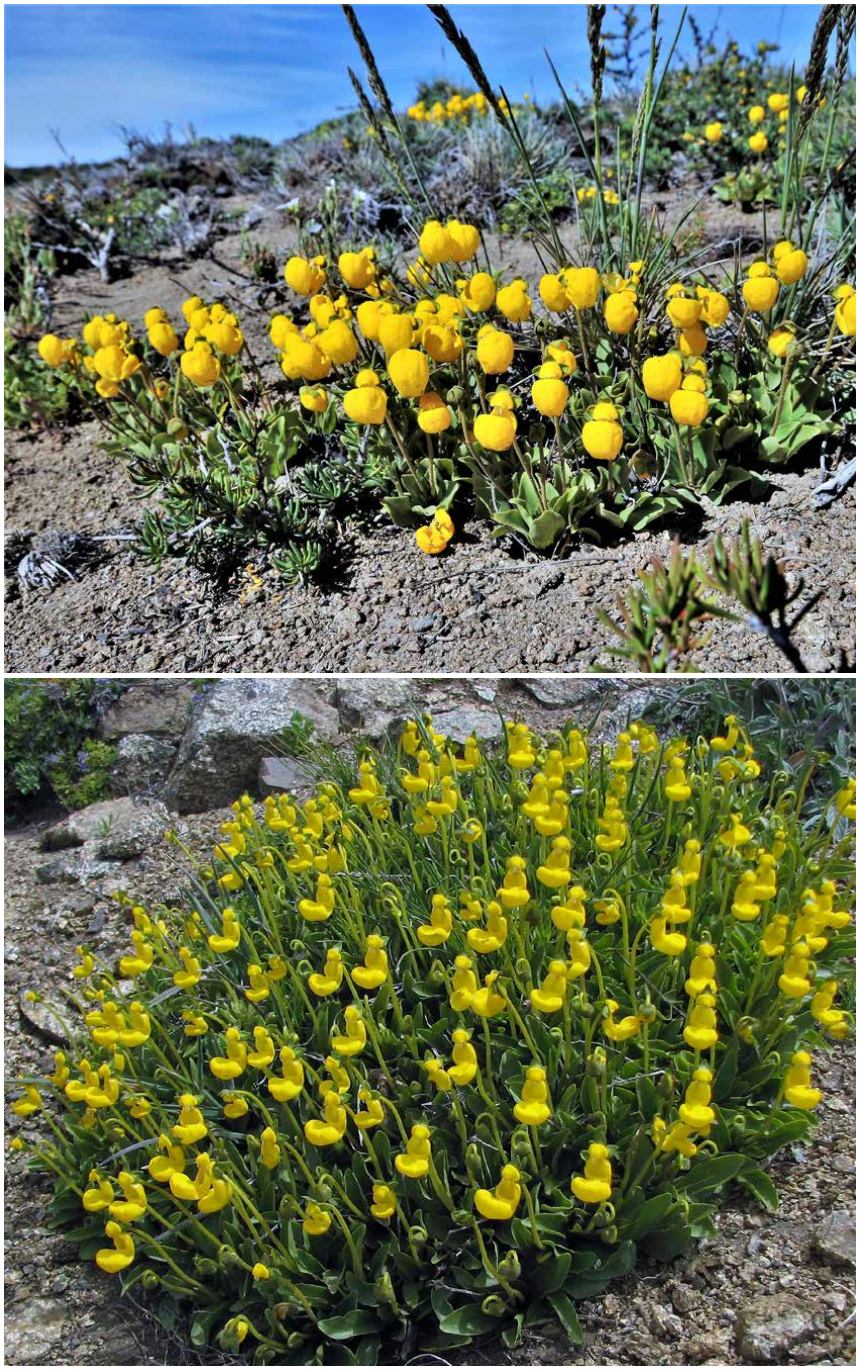
Calceolaria tenella, from Santa Cruz and the south of Neuquen, is a mat-forming species with hairy leaves with few-toothed margins up to 0.4 inches (1 cm) in diameter. The flowering stems grow to two inches (5 cm) tall. The plant flowers in January or February in its native habitat. The best opportunity to see this species is on wet, vertical cliffs along streams or in bare damp volcanic sand up to 6,500 feet (2,000m) altitude. This rarely cultivated species is attractive with solitary or paired flowering stems bearing up to three clear yellow flowers. In cultivation, choose a low pH potting soil, never allow it to dry out, and keep it well protected from bright sunlight.

Calceolaria tenella (top) and *C. dentata* (bottom)

Calceolaria pennellii

Calceolaria dentata is not the right species for a small rock garden but is good for larger gardens with big rocks. It's an endemic perennial from the north of Neuquen where it mainly grows among cliffs up to altitudes of 6,500 feet (2000 m). It is an easy-to-cultivate species in moist conditions. The dark green leaves and bright yellow flowers on about 20-inch (50 cm) stems make it an attractive species.

If you are traveling in Neuquen, visit Batea Mahuida Volcano near Villa Pehuenia. The summit of this mountain, at about 5900 feet (1800 m), harbors *Calceolaria pennellii*, one of the most spectacular species I have ever seen. This very compact, rosette-forming alpine species is about three inches (8 cm) high, making mats 20 inches (50 cm) wide. The leaves are elliptic to ovate and glandular-pubescent on both surfaces. The flowers are bright yellow and unmarked; the globose lower lip is very lightly upcurved and 0.8 to one inch (2-2.5 cm) across. This species grows on windswept summits in volcanic sand. I have never seen this plant in cultivation due to the extreme weather conditions of its native habitat, and cultivation will probably always remain a dream.



Calceolaria borsinii (top) and *C. corymbosa* subsp. *montana* (bottom)

Calceolaria borsinii is another beautiful species from Chubut and Neuquen, about 8-12 inches (20-30 cm) tall. The leaves are hairy and the flowers are deep yellow. It grows on rocky outcrops and ridges.

Calceolaria corymbosa subsp. *montana* is from Mendoza and Neuquen, frequently growing in rocky steppe conditions. It grows about 12 inches (30 cm) tall. As with many calceolarias, the bright yellow flowers bloom during December and January.

Calceolaria pinifolia is a real gem from rocky outcrops in Chile from the central Cordillera to the Atacama Desert in the north. This compact, mat-forming species reaches a maximum of six inches (15 cm) high with two-inch (5 cm) long leathery leaves. The flowering stems are erect with two-to-five-flowered cymes. The flowers are yellow with red-freckled throats. It grows in rock crevices and dry gravelly places. This species is in cultivation, and I actually have seedlings popping up, which I am looking forward to seeing mature.

Calceolaria pinifolia

Calceolaria 'John Innes'

Calceolaria 'John Innes' is a natural hybrid, thought to be between *C. biflora* and *C. polyrhiza*. It is a perfectly hardy plant for the rock garden. The plant is very low, at six inches (15 cm), and spreads slowly to form a compact mat. The large flowers each have their own four-to-nine-inch (10-23 cm) stem. The color of the flower is mainly a bright yellow with a few brown spots on the pouch. It likes good drainage, but does not like fully drying out. In other words, the soil has to be moisture-retentive and quickly draining. Choose a location such as a well-drained slope in full sun, and mix an ample amount of peat moss to keep the roots moist. If allowed to dry out too much in summer it will go dormant early. However, just because it disappears above ground, don't think that it has died.

Propagation and Cultivation

The germination of most calceolarias is relatively easy. The only problem they pose is due to the small, dust-like size of their seeds. The seeds must be simply sown on the soil surface. Light is often reported as a required factor for germination, but since the seeds must be sown on the soil surface they will receive light naturally.

To germinate calceolarias, prepare a fine substrate with very good drainage, containing 50% vermiculite, sand, or something similar. You must use a fine-textured substrate because if the substrate is too coarse, the seeds will fall deep between the substrate particles and many will not germinate.

Seedlings usually appear in about three weeks. Transplant the seedlings about four to six weeks after germination into individual pots. For some calceolaria species (for instance, *C. uniflora*), a cold stratification is advised to increase the germination percentage. Seeds of some of the described species are available from the Czech collectors Vojtěch Holubec and Michal Rejzek, the German company Jelitto, or Michail Belov (Chileflora).

Calceolarias are attractive and valuable for their distinctive, late-summer flowering period. Which species are easiest to grow depends on the climate where you are living. Especially in recent years, our climate where I garden in the south of the Netherlands has changed a lot. The last three years we have suffered from extremely dry and hot summers, with temperatures up to 104°F (40°C), while our wet winters have been exceptionally mild with only a few frosts and temperatures often around 50°F (10°C). These weather changes make the cultivation of the more difficult alpine plants a real effort.

The choicest calceolaria species like *C. uniflora, C. fothergillii, C. pennellii, C. borsinii, C. tenella*, and *C. pinifolia* are best grown in clay pots in the alpine house or protected raised beds, especially during winter to protect them from excess rain or snow. They all are completely hardy. I use a soil mix of peat, sharp sand, perlite, or vermiculite. Other species like *C. biflora, C. polyrhiza, C. dentata, C. corymbosa*, and *C.* 'John Innes' can be grown in the open garden in a light, fertile soil that never becomes dry. Calceolarias are often affected by fungus during the winter, and it is very important to control for aphids during the growing season.

I hope you can grow some of the described species and have a lot of slipper flowers in the garden or alpine house.

Atlanta Botanical Garden's Rock Garden

Raleigh Wasser

ATLANTA BOTANICAL GARDEN has one of the largest public rock gardens in the southeastern US. Our rock garden is about 100 feet (30 m) long and no more than 15 feet (4.6 m) wide, with a 15-30-degree slope. Its gentle curve faces south-southeast and its large boulders came from the construction site of the AT&T Promenade building in Midtown Atlanta back in 1989. Most days you can see me scrambling from rock to rock, taking great pains to avoid causing any mini-landslide of pea gravel down the slope.

I'd love to be able to grow high-altitude alpine plants, but the daily commute from Atlanta to Denver would be too much, and I'd miss my dog. Instead, we've expanded the definition of a rock garden to be "gardening among the rocks with unusual dwarf perennials, shrubs, trees, grasses, and bulbs." At the Atlanta Botanical Garden, we do have a separate garden area for desert southwest cacti and succulents, so yucca and agave have a unique, well-drained, sun-capturing home elsewhere. The plants in this garden also thrive in high heat conditions, drought, wind, direct sun, and extreme temperatures. Besides the huge boulders, the substrate upon construction was probably sand mixed with red clay, with the pea gravel intended to be used as a mulch.

Views of the rock garden in early sumer (opposite) and in July (above).

The heat and humidity in Atlanta provide a unique opportunity for plant selection and trial and error. We live in a temperate (USDA Zone 8a) humid subtropical climate with consistently hot, muggy summers and cold winters. For example, in July, the average daily relative humidity is 74%, hitting 88% RH by seven in the morning and averaging a high of 90°F (32°C), typically punctuated with thunderstorms in the afternoon. We average 52 inches (132 cm) of rain annually and one inch (2.54 cm) of snow per year. I almost never water the rock garden, except if I've added a new plant in the middle of the summer (despite my better judgment; I should wait till the fall), or to keep the conifers happy during a drought period.

Over the past thirty years of this garden, plants that were trialed and written off can sometimes re-emerge. Case in point: our one living *Alophia drummondii* (15 inches/38 cm tall, summer-blooming irid) which I had no hope for after two or three years of babying. I have a special interest in other Iridaceae, partly because they've been successful in the rock garden with some care and editing neighboring "bullies." A few years ago, I found one or two *Iris pumila* (10 inches/ 25 cm tall, spring-blooming) all but suffocated by some vigorous creeping thyme. After editing out a couple of key patches of the thyme, these irises have become a successful little colony. A similar story followed with *Iris douglasiana* (12-16 inches/30 – 40 cm, evergreen, spring-blooming) and *Herbertia lahue* subsp. *lahue* (4 inches/10 cm tall, spring-blooming). On the other hand, *Sisyrinchium* sp. (probably *S. angustifolium*; 8 inches/20 cm tall, blooms May to June) needs no coddling as it reseeds responsibly.

Opposite: *Alophia drummondii*
Top: *Iris pumila*
Bottom left: *Herbertia lahue* subsp. *lahue*
Bottom right: *Sisyrinchium* sp., possibly *S. angustifolium*

Delosperma cooperi (top) and *Heliotropium amplexicaule* 'Azure Skies' (bottom) sometimes thrive a little too much in the garden.

Some plants in our hot and humid rock garden do exceedingly well. I love *Delosperma cooperi* (4 inches/10 cm tall, summer-blooming), but I frequently find myself peeling huge chunks of it away so we can actually see some rock formations below the sparkly mat. *Heliotropium amplexicaule* 'Azure Skies' (8-12 inches/20-30 cm tall, summer-blooming) seeds around too well, although it is beautiful in bloom. It also is perennial here, so I get lots of opportunities to prune back or simply edit out this taprooted spreader. I read in a recent NARGS *Quarterly* about someone's affinity for *Scilla scilloides* (15 inches/38 cm tall, midsummer-bloomer). For me, I wish no one had ever introduced it to the garden, as it has become a weed I am always trying to catch up with.

Other perennials that are stalwart throughout the seasons include summer dormant *Oxalis brasiliensis* (1 inch/2.54 cm tall, winter-bloomer), which really put on a show this winter; *Tetraneuris scaposa* (1 inch/2.54 cm, summer-blooming); the ever-present sundancer daisy (*Hymenoxys acaulis*, 7-9 inches/18 – 23 cm tall); and *Liatris microcephala* (18-24 inches/46-61 cm tall, summer-blooming), with which I use pruning to play with the height and bloom time like you would a chrysanthemum or rudbeckia.

We also have some amazing ephemerals that grace us every year, including various species tulips, *Narcissus*, *Scadoxus multiflorus* subsp. *katharinae* (1 inch/2.54 cm, blooms midsummer), and *Rhodophiala bifida* (15 inches/38 cm, late summer/early fall bloom) to name just a few.

Our conditions are both limiting and a catalyst for creativity and learning, and it's my pleasure to hop from rock to rock creating alpine vistas at (effectively) sea level.

Tetraneuris scaposa with *Euphorbia myrsinites*.

A Public Rockery in Deer Country

Don Dembowski with photos by Mark Womack

SUPPOSE YOU WERE offered a site for a rock garden with a beautiful vista, a rock outcropping, and large boulders on the site? Who could pass that up? That is what Howard Zar, executive director of Lyndhurst in Tarrytown, New York, proposed to our group, the Hudson Valley Chapter of NARGS, in September 2019. One major problem was the deer herd on the property. But because of our long experience with the property, we felt we were up to the challenge. Even better, Lyndhurst would pay for the expenses.

The site was beautiful, with a view of the Hudson River at the wide spot called the Tappan Zee and in sight of the new Governor Mario Cuomo Bridge about 25 miles (40 km) north of New York City. A custom-made bench on one side of the site replicated one that had been there many years ago when a Victorian rockery was established amidst the outcropping and boulders.

The institution had originally had a landscape plan drawn up by a Vermont firm. Unfortunately, the plants selected included ones sure to be deer fodder, like *Trillium grandiflorum*, and others that just won't grow here, like *Cornus canadensis*.

Our chapter has maintained a rock garden at Lyndhurst for 20 years. It was large, roughly 100 feet (30 m) long and 20 feet (6 m) wide. The site was adjacent to a patio where a café with tables brought visitors. Unfortunately, the café was discontinued and our garden was off the beaten path of visitor traffic. With few visitors, our crew, which consisted of longtime rock gardener Rick Plate; Mark Womack, a recent member; and myself, occasionally wondered about the purpose of our work.

The main attraction of Lyndhurst is the mansion constructed with limestone blocks in the Gothic Revival style in the 1800s. Also on the site is the iron frame of a large conservatory by Lord and Burnham that, at one time, was one of the largest in private hands. The extravagant Victorian cabinetry and trim of the interior lent itself to film shoots for the History Channel, and back in the 1960s, a vampire tale serialized daily called *Dark Shadows* was filmed there. (At one of our meetings, a stranger with a black cape walked in and announced that he was Barnaby, the main character.)

Top: Site of the rock garden with a view of the Hudson River beyond.
Middle: Lyndhurst mansion.
Bottom: From left to right Don Dembowski, Rick Plate, and Mark Womack

Rocks going into place (top) and applying a layer of sand over the soil (bottom)

The rockery restoration was part of a development at Lyndhurst that aimed to create interest beyond the mansion itself. The proposed site was originally a Victorian rockery, which probably had typical garden plants, not alpines, with rocks. Recently, wide concrete walkways were built to connect to the rockery, another outcropping, and other features on the hillside that leads down to the Hudson River from the mansion. The idea was not to create a botanical garden but a park-like setting with horticultural highlights. A deer fence around the rockery was out of the picture financially and aesthetically, but our experience of coping with deer made us think we could create an interesting rock garden that was deer resistant. Deer are a big problem in our area."Will deer eat it?" is the most common question asked at our plant sales. It is estimated that a herd of 35 deer lives on the 67 acres of Lyndhurst.

We needed to prepare the site, roughly 25 feet by 25 feet (7.6 m x 7.6 m), with several large boulders on the perimeter from the original rockery and other boulders that had been placed haphazardly on the site during the construction of the walkways. Mark, Rick, and I were able to lever and roll the movable boulders – 200 pounds (90 kg) and more – into a design that suited us.

We debated as diplomatically as we could where each boulder would go, and how it should be situated: a little this way or a little that way. Since the site was on an incline, it made sense to us to line up the movable boulders in a series of rough ledges as though several outcrops led down the slope. One of the hardest things to do is to position rocks in a way that looks random but also natural. We were able to do this during the mild winter months of January to March of 2020.

The existing soil on the site was heavy clay so we amended it with coarse sand, what is locally called concrete sand. We mixed some of this into the top of the existing soil and then aimed for a four- to five-inch (10 – 13 cm) layer of sand on top of that. A tractor with a scoop, driven by David Ware the grounds manager, was employed to bring the sand to our site. Rick made "story stakes" marked off in inches so we could judge if we were reaching the target depth of sand, which we then topped with three inches (7.6 cm) of half-inch (1.27 cm) gravel.

Watering-in the newly planted garden.

The gardening beginning to fill in with *Artemisia schmidtiana* 'Silver Mound'.

In general, deer will eat even "deer-resistant" plants if they are hungry enough, but there are a few plant characteristics that they do not favor. Prime among these are aromatic plants, especially herbs which seem to have their own built-in deer resistant spray. Also, the lower and tighter to the ground flowers are, the less tempting they are to deer.

Here are our choices which, after six months, have not even been browsed by deer. I am listing these roughly in order of flowering. We are hoping to have something in bloom through the season. We planted these in large, separate groups by type, rather than mixing the plants, to make more of a statement. Also, as Rick said, not to be too artsy, we left some negative space between the groupings.

Phlox 'Herbert' is the earliest to flower in March/April. Flowers are lavender/pink and at only one to two inches (2.5 – 5 cm) tall are too low for deer to bother with.

Thymus praecox 'Coccineus' has rosy-red flowers and is planted in crevices of the outcropping.

Veronica 'Waterperry Blue' has blue flowers in early summer, and becomes a four- to six-inch (10 to 15 cm) tall groundcover.

Allium cernuum has pink flowers and *Allium* 'Millenium' has rosy purple flowers that make a beautiful statement in the garden (thanks to NARGS member Mark McDonough for creating this hybrid.)

Geranium x *cantabrigiense* 'Biokovo' is a dwarf (8 inches/20 cm) geranium with very light pink flowers.

Artemisia schmidtiana 'Silver Mound' has shimmering silvery foliage and was very durable in our old rock garden, lasting 20 years.

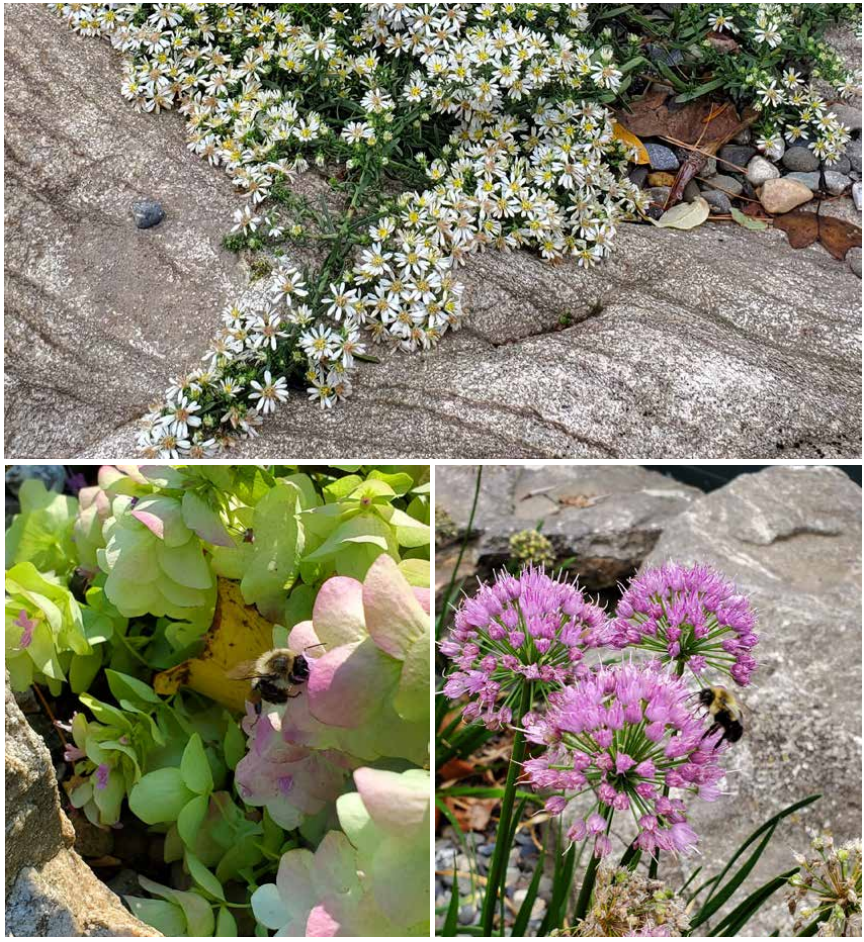
Teucrium chamaedrys 'Nanum' is another long-lasting shrublet with rose flowers in summer.

Origanum rotundifolium 'Kent Beauty' is a standout adorned with hops-like bracts and lavender florets, growing 6 inches (15 cm) high.

Saponaria x *lempergii* 'Max Frei' is a cascading form of soapwort that has bloomed all summer and into fall.

Symphyotrichum ericoides is a ground-hugging western aster covered with white flowers in September and October.

Planting in deer country is quite a challenge, but one that many of us face, and we have found with the right plant choices we have been able to create a beautiful garden.



Symphyotrichum ericoides tumbling over the rocks (top). Bumble bees visiting the flowers of *Origanum rotundifolium* 'Kent Beauty' (bottom left) and *Allium* 'Millenium' (bottom right).

University of Tennessee Rock Garden

Elin Johnson

WHILE RESEACHING THIS article, I came across a copy of a rather lengthy message Panayoti Kelaidis wrote on Alpine-L (https://florapix.nl/alpine-l/) in 2008 titled "In Defense of Non-conventional Rock Gardens." It was a celebration of miniature plants worldwide. He described a garden at his home in Colorado that he loved. He called it a "dryland rock garden," and he said "Probably half the plants in this garden have never appeared in a single rock garden tome." Although his descriptions were confined to tiny plants, I agree with his premise, and this is my "defense of a non-conventional rock garden."

One of the great loves of my life is the University of Tennessee Gardens, where I have been a volunteer for over 20 years. It was recognized in 2013 as the State Botanical Garden of Tennessee with locations in Knoxville, Crossville, and Jackson. Some years ago, when the south greenhouse was completed and placed in operation, the garden's staff decided to build gardens adjacent to the staff parking lot. A kitchen garden containing raised beds, surrounded by blackberry vines and ornamental bushes was constructed, enclosed by fences painted a lovely lavender color. It is a display garden, a useful teaching tool, and a favorite destination for visitors.

Original planting of the rock garden.

There was an area between the new garden and the parking lot, a slight bank rising between the two areas. It was something of an eyesore and needing to be planted to hold the soil. The staff wondered how to deal with this area, so the bank was designated the rock garden, and boulders were brought in from the Cumberland Plateau, a part of Tennessee known for its beautiful rocks. This is not a traditional rock garden. It is not a crevice garden, and it is not planted with alpines (they probably wouldn't grow here anyway.) But I think it is beautiful, and thought it was worth describing.

Dr. Sue Hamilton, long-time director of the gardens (who retired this year), is well known to members of the Conifer Society and has served as its president. So, when the rock garden was planted, conifers were featured prominently. Above is a picture of the original planting; in comparison, the picture at the beginning of this article was made in 2019 from the same perspective.

The conifers have thrived; mature now, they are truly beautiful, and they form an effective separation from the parking lot. There are pines, junipers, and arborvitaes along the bank, and a beautiful *Cedrus deodara* is located next to the stairway from the parking lot down to the path. To the side of the stairs grow common sage (*Salvia officinalis*) and tiny boxwoods.

Spring color in the garden from phlox (right), *Crocus tommasinianus* 'Roseus' (top left), and *Tulipa clusiana*.

Early spring is a colorful time in the garden. Clumps of creeping phlox abound, and *Tulipa clusiana* has naturalized on the bank in several places. Early blooming *Crocus tommasinianus* 'Roseus' ordered from Jane McGary many years ago had naturalized in my home garden in several locations, so I planted some of its bulbs on the bank.

The large concrete trough was made by another long-time member of NARGS, Nancy Robinson. She and her husband, Hal, gave it to me in 2006 when the Friends of the UT Gardens came to my home for a garden party. It, too, resides in the rock garden and is now planted with *Sedum* 'Blue Carpet'. The white quartz rocks originated in the mountains of Monroe County, Tennessee, my home county. *Sedum* 'Angelina' grows on the ground nearby.

My dear friend, Deedee Blane, and I took part in the Adopt-A-Spot program developed by Alice Kimbrell when she was an intern working on her master's degree at UT, and we "adopted" the rock garden. This program has been very successful, and many volunteers are now maintaining their favorite spots in the gardens. It has become an integral part of the volunteer program at the gardens, and Alice is now the Volunteer Coordinator. I truly regret that I'm no longer able to participate. Working to help maintain the rock garden was an experience I really enjoyed.

Many plants have naturalized on the bank. Among them are *Verbascum thapsus* (common mullein), *Nassella tenuissima* (Mexican hair grass), and *Euphorbia characias* subsp. *wulfenii*. The euphorbia has seeded itself all over, but it's pretty, even after bloom is over. An occasional yucca sends up its stalks of white flowers. Carpets of sedum spill down the bank, and there is even a big clump of cactus (*Opuntia aurea*).

Cotinus obovatus grows among the conifers at the top of the bank,

Rosette of *Verbascum thapsis* behind *Nassella tenuissima*

Echinacea tennesseensis in front of *Nassella tenuissima*.

providing chartreuse color in the line of green screening the view of the parking lot, and shrub roses appear at intervals to provide a splash of color to complement the green of the conifers. *Echinacea tennesseensis* and *Salvia greggii* bloom on the bank. Yellow *Echinacea paradoxa* and *Coreopsis grandiflora* seedlings are present, as well as various poppies whose seedlings appear each spring. There is a huge clump of *Santolina viridis* in one location.

At this end of the garden, the path moves away from the kitchen garden and slopes down to a different area of the gardens. The bank is steeper here. Some of the large green bushes at the top of the bank where the path curves are heirloom figs descended from cuttings taken years ago at Mary Ball Washington's birthplace in Virginia. I have sampled some of them—they're very good. A large clump of *Phlomis fruticosa* blooms in front of the figs.

Tall spires of blue *Perovskia atriplicifolia* (Russian sage) are in evidence here and there and blue *Baptisia australis* blooms in the spring. Some of the most interesting of the boulders must have originated at the bottom of an ancient lake and are covered with fossils.

This is a very different rock garden than those NARGS members are used to, but it is nevertheless a rock garden close to my heart. Mr. Kelaidis said, "Of course, we pay special honor to the treasures of the highest crags, but I would think that any rock gardener worth his or her salt would bow on their knees to worship bluets in a New England lawn just as fervently." We have bluets in the mountains of East Tennessee, too, and a bank full of big rocks and conifers that is, I think, representative of our southern Appalachian region.

Top: *Phlomis fruticosa* blooms in front of a fig.
Bottom left: A fossil-covered boulder.
Bottom right: Even during the winter, conifers and boulders provide interest.

Shaping Tufa and Building Vertical Tufa Structures

Bill Stark

MARY AND I were alone in the British alpine house. I looked around and didn't see any security cameras. I was standing in front of the tufa wall in the photo below and, like any good engineer, I wanted to tear it apart.

I wanted to dismantle the wall because I had many questions about how it held itself together and nourished its plants. However, I knew that plants can send their roots through tufa and I'd harm them if I moved the stones. I couldn't hurt the plants! So, I decided to contact the rock gardeners at RHS Wisley after returning home for answers to my questions.

The tufa wall inside the Landscape Alpine House at RHS Garden Wisley

Tufa carefully fitted together without mortar to produce a sturdy wall.

Working through the RHS Gardening Advice service, I was able to communicate with the Wisley alpine team. I focused my questions on the north-facing tufa wall on the outside of the Landscape Alpine House because it was definitely subjected to frosts and, as you can see in the photo above, it had no discernible batter or mortar. The wall looked like it would lose stones the first time a child, or even a squirrel, climbed it.

Through a series of emails, I learned that the uncoursed tufa wall was dry fit with no mortar. The masons cut the tufa with chisels and angle grinders with diamond blades (disks) and then "linking each rock so that each rock holds the ones around so they are a solid fit and then with the soil in behind it securing them in place." They added that most of the stones required minimal shaping, so they had a large pile of tufa to select from. The wall's face stones had been trimmed to fit together tighter than randomly shaped tufa would. When you cut tufa with a diamond blade, the cut surface looks obviously artificial, like the back side of travertine tile. I saw no cut surfaces or chisel marks on the Wisley tufa walls.

A dry stone wall relies on friction and varying degrees of mechanical interlock to hold the stones in place. Tufa's rough surface increases friction while its light weight decreases the friction force. It appears that the Wisley masons shaped the stones to more strongly interlock than normal, building a wall that could survive the abuses of a public garden. You won't see many granite dry stone walls built this way, but it's economical with tufa because tufa is so easy to cut and shape with the right tools in skilled hands.

I was equally curious about what type of soil was inside the tufa wall. I was told that the Wisley tufa walls have "not much soil". Instead, they contain mostly rubble and John Innes #2 (a soil-based potting medium) with added grit. I then asked how often they watered the wall. They answered that there was no internal irrigation system; the north-facing wall was watered every morning by hose and in the afternoon during extreme weather. In comparison, we water an east-facing, upstate New York tufa garden once a week in August because its tufa boulders sit on water-retentive clay that keeps the tufa and its plants hydrated. A fast-draining soil protects the Wisley walls from frost damage at the cost of frequent watering. Frost heave occurs when water in the soil freezes forming ice lenses. The ice lenses increase in size and are more destructive when water from below moves upwards due to capillary action and then freezes. Silt, clay, and fine sand soils support capillary action while coarse sand and washed gravel do not. In the summer, a more water-retentive soil provides a water reservoir that helps plants survive sporadic watering or an automatic irrigation failure. Can we build planted tufa walls in our colder climate that don't have to be watered twice a day but also won't be destroyed by frost heave?

In the remainder of this article, I'll discuss several tufa projects that were inspired by the craftsmanship we saw at Wisley and other British gardens. All involved shaping tufa with a variety of tools but didn't require the skills of a British stonemason. Most of these tufa structures contain soil and have withstood frequent frosts and freezes.

Tools and techniques for shaping tufa: A 4.5 inch (11 cm) angle grinder (top left), tufa with parallel cuts ready to be snapped off with a screwdriver (top right), and a masonry drill bit (bottom).

I'll first describe two common tufa shaping operations that were used repeatedly in these projects: drilling and contact trimming.

Drilling

Tufa is normally drilled to create planting holes from one half to one inch (1.25 – 2.5 cm) in diameter and about two inches (5 cm) deep. I use masonry drill bits (see photo above) that have hard tungsten carbide cutting edges. In ascending order of less effort and faster penetration rate are low speed (to 650 rpm), high speed (to 3000 rpm) and hammer drills. Some tufa is difficult to drill with a low-speed drill. Any hammer drill will quickly penetrate tufa, but I've broken and ruined stones with a hammer drill that was too powerful.

Contact Trimming

Contact trimming is an iterative process where a smaller or less valuable stone is shaped to fit into a larger or more valuable stone. Contact trimming decreases the gap between two stones by removing the existing contact points. Cut marks are hidden inside the joint between the stones. Two contact trimmed tufa stones can appear to be a single stone if you avoid straight joints.

1) The first step in contact trimming is to place the two stones together and roughly mark with chalk the large areas where the two stones touch that have to be cut out. Then make a series of cuts every quarter inch (6 mm) up to the chalk line with an angle grinder or other tool. Then break off the tufa between the cuts with a flat screwdriver. I'll often clean up the ragged tufa breaks between cuts by grinding to the chalk line with an angle grinder.

2) Fit the two stones back together. Use chalk to mark where they are touching. At first, it will be easy to see the contact point(s). But when you can't, slide a thin strip of plastic (flexible plant labels work) along the gap between the stones until it catches on a contact point. Then pull out the plastic strip and stick it back in as a depth gauge. When it stops, hold it in place and pull the stone away. The end of the strip is at a contact point. Another method is to brush off the stones and then rub them together. You can sometimes see scrape marks or dust at the contact point(s).

3) Remove material at the marked contact points using one of the tools listed below. You'll quickly learn how much to remove. Repeat steps two and three until you're happy with the fit. If you aggressively remove material from the interior of the joint, you will reduce the number of iterations and save time.

I usually use a 4.5 inch (11 cm) angle grinder with a diamond blade for contact trimming because it's the fastest. However, an angle grinder can disable or kill you in several ways. Read and follow the manufacturer's instructions for all these tools and wear all the protective gear. A hammer and chisel or a brick hammer with soft tapping wrist swings will crush rather than chip the tufa and are surprisingly pleasant to use. However, it's difficult to accurately aim the brick hammer blows, so the quality of the joint suffers. I use a chisel with a stronger blow to break off chips when I can't hide the cut for a more natural surface. A Dremel rotary tool with a 9934 carbide carving bit quickly and accurately removes small amounts of tufa for the final contact trimming step. Other tools that I've used to cut tufa include a reciprocating saw with a carbide demolition blade and an oscillating multi-tool with a saw blade. Blades with carbide teeth cut faster than blades with carbide grit.

Top: A tufa wall built between two limestone boulders.

Project 1

The photo above is of a small, four-course, tufa wall built between two immovable limestone boulders. Concrete blocks set on bedrock provide a stable base. Stones were selected that roughly fit together, then each stone was contact trimmed to fit into another to form a concave curve, an arch on its side. The soil behind the wall presses on the arch, locking the stones together. The end stones were shaped to lock into facets of the limestone boulders. As new courses were added, each stone was contact trimmed to the stones below and to its right side so the soil wouldn't wash out. Some upwards-facing openings were left for planting pockets. The arches didn't require mortar, but I added two tablespoons of Type S mortar between stones (not visible from the front) to prevent them from being dislodged by woodchucks.

The close-up photo on the following page shows how the stones were shaped to interlock. The first two courses were shaped and mortared one course at a time. Then, I tried to save time by shaping all the stones in the top two courses and then mortaring them. This was a mistake. Rough tufa locks together slightly differently each time it's assembled. Small misalignments added up so that the top course didn't fit and had to be reshaped. As each course was built, I backfilled with soil and packed it down by ramming it with a board to avoid future settling of the three-foot (0.9 m) tall soil column.

Tufa cut and fit together to form a sturdy structure.

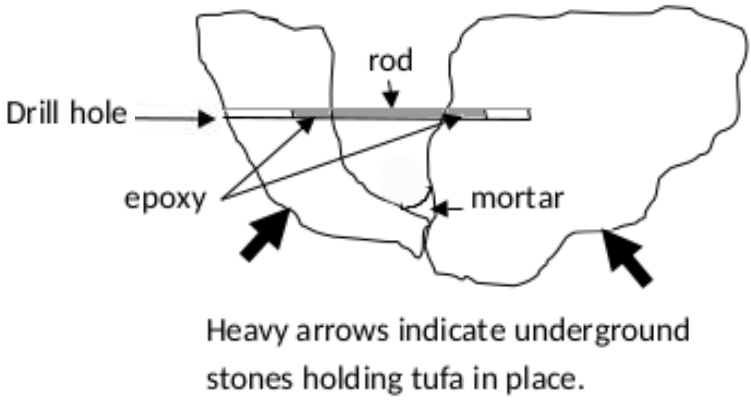
At the bottom of the soil column, there are weep holes open to the air, a layer of washed quarter-inch (6.35 mm) stone, and drainage filter fabric to keep soil fines out of the washed stone. This drains excess water and prevents capillary action that could lead to frost heave that could damage the wall. The top of the soil column is open so that it can act as an expansion relief valve. All the projects in this article used the same soil column structure. The soil is mostly decomposed shale flakes that collect (7 tons/year) ten feet (3 m) from the plunge pool of a natural waterfall on our property. A good-sized brook flows through rather than over this material. I sift it through a half-inch (1.27 cm) screen and add compost, vermiculite, and peat moss to increase water retention and fertility. I can't recommend this mix to others because the shale may break down into silt. A safer mix could use coarse sand in place of the shale. While the Wisley tufa walls had "not much soil," I used lots of soil because the arch is a very strong structure that is only one stone thick. Drip irrigation emitters will water the top of the soil column once they are connected. Mary insists that we only water the north-facing wall by hose once a week, but I sneak in every few days to water new sax cuttings planted directly in the tufa. The three-year-old north-facing wall is planted with a variety of *Primula*, *Hepatica*, *Haberlea*, *Asplenium scolopendrium*, *A. trichomanes*, and others. An Abbott's Pygmy hemlock grows in the upper center.

Tufa shaped to fit around a pool.

Project 2

The photo above looks like a typical tufa garden, but it actually involved considerable tufa shaping. The three tufa boulders around the circular pool were lowered two inches (5 cm) by cutting curved grooves into their bottoms so they slid down over the pool's edge. I used a seven-inch (18 cm) angle grinder to make a series of concentric cuts about 3/8 inch (1 cm) apart. I then used a flat screwdriver to snap off the tufa between the cuts. I could have used a sharp beveled chisel to slowly carve out the grooves, but I always have more projects than time. There are excellent videos of stone carving on the web.

I wanted to add a fourth boulder above and behind the pool, but I was running out of matching sun-darkened tufa. I had two pieces that if joined would have sufficient visual mass. So I built a stable base, set the larger stone on the right side, and then contact trimmed the smaller stone on the left. After finishing the contact trimming, the two stones



Drawing of how two tufa stones were tied together with a steel rod.

were tied together with a quarter inch (6.35 mm) stainless steel rod, epoxy, and mortar as shown in the top-view drawing above.

To join the two stones, I drilled a quarter-inch (6 mm) hole from the left face of the smaller stone, past the gap between the stones and four inches (10 cm) into the larger stone. A flexible quarter-inch (6 mm) drill bit easily deflects as it contacts the irregular surface of the larger stone, so use low pressure as the drill bit first makes contact with the larger stone and use a block of wood to support the drill bit so that it doesn't skitter off axis. Otherwise, the less flexible solid rod will miss the hole. Then I blew out the drill dust with a flexible plastic air tube and cleaned it with a bottle brush. The metal rod (or a fiberglass rod) extends into each stone by two inches (5 cm). I used an angle grinder with a metal cutting blade to cut the rod to length, roughened the rod's ends, and cut several notches at both ends for the epoxy to lock onto. I used a slow-setting, high-viscosity epoxy such as J-B Weld Original Cold-Weld so that I would have time to work and the epoxy wouldn't drain away into the porous tufa. To avoid getting epoxy on the outside of the left stone, work from inside the gap. First, I used a nail to work epoxy into both holes, then partially slid the rod into the gap, smeared epoxy onto the rod end in the gap, pushed the rod four inches (10 cm) into the larger stone, smeared epoxy onto the other rod end, and then pulled the rod out by two inches (5 cm). After the epoxy set, I spread Sakrete Type S Mortar mix on the inside of the tufa joint. I then ran a drip irrigation tube up through the gap, blocked the cracks between the tufa and the rear limestone with strips of landscape fabric, and filled the gap with free-draining soil.

Top: South side of the tufa tower

Project 3

The 67 inch (170 cm) high tufa tower in the photo above appears to be a 30 inch (76 cm) long tufa boulder held above a much larger three-foot by three-foot (90 cm x 90 cm) tufa boulder. My first problem was that I didn't have the larger boulder and one that size would cost thousands of dollars at the Ilion tufa quarry. I did have some 250-pound (113 kg) slabs of tufa that had cost $0.25/lb, and I decided to try to use contact trimming to fuse them into a hollow, soil-filled lower boulder.

Top: Lifting a tufa slab into place with a tripod and electric winch.

My next problem was figuring out how I could repeatedly check for contact points, separate the stones, remove contact material and then reassemble the stones without breaking my back. Luckily, I had a nine-foot (2.7 m) high steel tripod which, fitted with an electric winch, gave me push-button control of the height of the stones. In the photo above, the tripod is lifting the first slab into position. Note, if you don't have a tripod, you can use two stepladders with a beam across them and an inexpensive come-along for lifting stones. This type of work is dangerous if the cables break or boulders slip out of chains.

The first step was to mortar a four-inch (10 cm) schedule 40 steel pipe into a hole in the bedrock. I made the hole by drilling a circle of one inch (2.5 cm) holes and removing the rock between them. Then I built a solid 12 inch (30 cm) high stone base around the pipe so that the tufa slabs would be supported just below the ground level of the bed. After fitting the east-, south-, and west-facing slabs around the pipe, I tied the three slabs together with stainless steel rods as in the previous project. I had roughly contact trimmed the three large slabs and I still had some gaps between them. I cut small stones that would wedge between the gaps when placed from inside the boulder. These wedge stones couldn't be pushed out by the soil, they created many upwardly facing planting pockets and a small amount of Type S mortar mix

held them in place until the soil was added. In the Wisley photos, you can also see small stones fitted between large valuable tufa boulders and fewer small stones elsewhere. Adding bridging stones instead of removing contact material can be easier and can involve less risk of damage to large stones.

The incomplete north face opening reminded me of the bronze sculpture "Sphere Within a Sphere" that Mary and I had seen years before at the Vatican, so the design changed. I decided the north face would appear to have been sheared off, creating a shady hollow in the roundish lower boulder

The space between the east and west slabs at the north face was roughly triangular, so as I raised a piece of tufa up within the space, it made contact with both walls. With minimal shaping of the inside walls of the east and west slabs, I was able to make notches that would

The space between the slabs forming the base of the tufa tower showing the two steel bars, the irrigation tube going into the base of the four-inch (10 cm) pipe, the two irrigation tubes beside the pipe, and the mortar between south and west slabs at the upper left.

The tufa tower's north face with its hollowed-out inner space.

lock horizontal pieces of tufa into the structure and create many planting pockets. I started at the top of the gap and worked down so that when done, all the stones were self-supporting and locked in place. I left an opening at the top and rammed soil with a board between the slabs to avoid future settling.

For the upper boulder, I welded a ¾ inch (2 cm) floor flange to the top of the four-inch (10 cm) pipe and screwed in an eight-inch (20 cm) long steel ¾ inch (2 cm) pipe. The boulder's weight is supported by the flat part of the flange and the pipe holds it upright. I wanted to hide the flange inside the stone, so I needed to cut a shallow 4.5 inch (11 cm) hole ¾ inch (2 cm) deep at the balance point on the bottom of the boulder. I was skeptical but tried a Harbor Freight carbide tip adjustable circle cutter. I thought its two cutters would whack into the irregular tufa and fly apart. But tufa is amazingly soft and machinable and it worked perfectly as I very slowly fed the cutter into the stone. I used a 4.5 inch (11 cm) angle grinder to remove the center disk left by the cutter. I then drilled a quarter-inch (6 mm) hole for an irrigation line from the cutter's center pilot hole to the top of the boulder and then enlarged the first nine inches (23 cm) of the hole to 7/8 inch (2.2 cm) for the ¾ inch (2 cm) pipe. I lifted the upper boulder up with the tripod, threaded the irrigation line that came up inside the pipe through the boulder, and smoothly slid the boulder down the pipe until it rested on the flange. I was done, except that the boulder freely rotated around the pipe. I selected the best orientation and raised the

boulder a few inches so that I could spread epoxy on the flange.

Suddenly, I had a serious problem. The tripod wasn't exactly centered on the ¾ inch (2 cm) pipe so the boulder clamped on it and broke the steel pipe where it threaded into the flange. The broken pipe was at an angle and hanging together by a thin shred of steel. If I winched the tufa higher and broke the shred, I'd be unable to remove the threaded end of the pipe with a screw extractor because an irrigation tube ran through the flange. If I pushed the tube out of the way, I might not be able to retrieve it from the bowels of the four-inch (10 cm) pipe. Moving rock is like chess – you have to look several steps ahead. I decided to do something that you should never do: get directly underneath a suspended boulder and push it with my shoulder to counteract the clamping action while pushing the winch's up button. Luckily, it worked and the tufa rose out of the way without breaking off the pipe. I gingerly used the long piece of the pipe as a handle to unscrew the threaded piece in the flange. I replaced the ¾ inch pipe, placed epoxy on the flange, and smoothly slid the boulder down the new pipe. The tufa tower was finished in the spring of 2020.

While the tufa tower is in full sun, the lower boulder's tufa slabs came from a shady garden where they were horizontal and growing many plants, including hundreds of *Erinus alpinus*. I thought the *Erinus* would die back on the sunny south and west sides, but it didn't. A *Saxifraga oppositifolia* on the east side and a rockcress on the south side grew faster. A maidenhair spleenwort in the hollowed-out north side grew from one to four inches (2.5 to 10 cm) in diameter. Planted in soil pockets in the north side's hollow are *Hosta* 'Pandora's Box', several *Ramonda myconi, Primula allionii* 'Lismore Treasure', plus others. Major new plants in soil at the top of the lower boulder are *Salix arctica* var. *petraea* and *Daphne cneorum* var. *pygmaea*. The upper boulder is pure tufa with 21 new, mostly xeriscape, plants such as *Echinocereus triglochidiatus*, *Coryphantha vivipara (*syn. *Escobaria vivipara)*, and *Jovibarba heuffelianus* 'Steffan' planted in it. I also planted some porophyllum saxifrage cuttings on the north side. I misted them nearly every day during last summer's drought and kept them alive, but they'll probably die when I cut back on watering next summer. I expect that we'll settle on watering the tower every three or four days during the summer. I'm looking forward to experimenting with the many different exposures, micro-climates, and the rain shadow on the tower.

I hope this article encourages NARGS members to tool-up and explore new ways to use tufa in their gardens. At the same time, it's important to note that you can build wonderful tufa gardens without shaping and tools, and so I also hope this article doesn't dissuade tool-phobic readers from using tufa.

Tannheimer Valley in Austria

Wiert Nieuman

DIFFERENT REGIONS OF the Alps are made up of different kinds of rock. The western, southern, and northern Alps are calcareous, while the central part is acidic rock. From a botanical point of view, the northern limestone Alps, north of the Inn River in Austria, are more interesting than the areas with acidic rocks such as the central part of Tyrol. The hiker or the skier will not notice this, but the plant lover will be more satisfied in a limestone area. Interesting plants can be found throughout the growing season, and in the spring and autumn, you can walk from one botanical gem to another. The Tannheimer Valley, high in the northern Alps in Austria, is an ideal destination for a plant lover. It is only one mountain ridge away from Germany. One minute you are still driving in the rolling hills of the Allgäu and the next you are in a majestic mountain area filled with botanical treasures.

Idyllic mountain lake

The mountain lake Vilsalpsee, near Tannheim, Austria, is an idyllic, perhaps magical, place. From Tannheim it is an hour's walk, but you can also go there by car, bus, or the Tannheimer Alpenexpress, which is a tram pulled by a tractor. Surrounded by 6,500 foot (2,000 m) high

mountains and flanked by alpine meadows, is the beautiful 1,700 acre (700 ha) natural mountain lake. The flower display starts in the so-called *Buckelwiese* (hummocky meadow) to the south of the village. In the spring, this meadow is full of various orchids, gentians, and *Polygala* and a few weeks later the striking burnt orchid, *Neotinea ustulata*, blooms there. Such meadows were created in the past by clearing the forest and throwing the tree stumps and stones into heaps. In the years that followed, the heaps smoothed out, gradually becoming nothing more than slight elevations in the terrain. This slightly undulating terrain does affect plant growth, with different species growing on top of the hills and others in the small valleys in between. When I first arrive, I always take a walk in this area and often lie flat on the ground to admire gentians, orchids, and

Vilsalpsee lake and *Neotinea ustulata*

Lilium martagon (left) and *Lathraea squamaria* (right)

primroses. *Lilium martagon* is in bloom in spring along the paths in the forest to the lake and a little deeper in the forest you can find, with a little luck, the rare parasitic *Lathraea squamaria*.

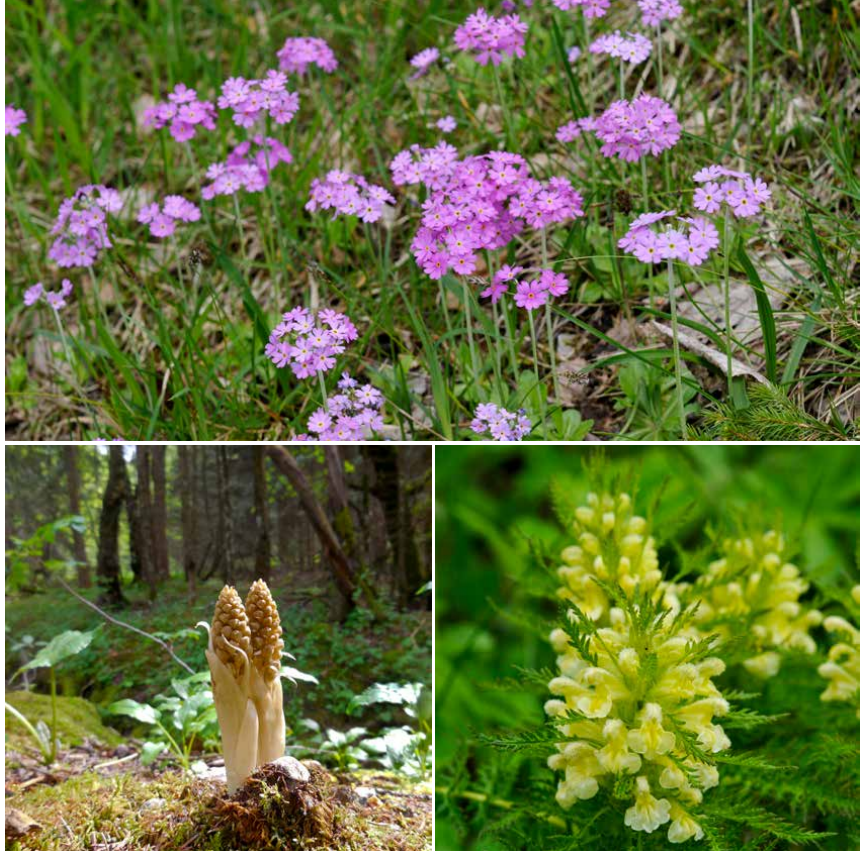
A walk along the lake is an experience. While you enjoy the beautiful views over the lake, pay particular attention to the steep slope on the right side of the path. On the slope there are gentians, violets, primroses, and bell flowers and sometimes you can see a *Lilium martagon* or an *Epipactis atrorubens*, a tall but usually inconspicuous orchid that grows in several places along the path. In the distance, surrounded by meadows, beckons the Vilsalpe, a mountain restaurant with a large terrace where you can stop for a rest.

After the Vilsalpe we enter the forest. Early in the year *Hepatica* blooms there, but in May you will only see the leaves. For most visitors, the main attraction is the waterfall at the end of the valley, but for plant people, the scree slopes and wet valleys just before the waterfall are the real attractions. *Caltha palustris* is still in bloom in May as are the beautiful flowers of *Petasites albus* between the boulders and rubble. Also noteworthy are the many specimens of *Tozzia alpina*, a yellow flowering plant that is now part of the Orobanchaceae. In its first year, it is a parasite on grass and after that it grows as a hemiparasite that has green leaves and can photosynthesize but also extracts food from its host plants.

Vilsalpe restaurant with *Senecio alpinus* (top), *Tozzia alpina* (bottom left), and *Tragopogon pratensis* (bottom right)

The valley in the spring

At the end of May, the hay meadows around Tannheim are yellow in the morning with the morning stars, *Tragopogon pratensis*. Nowhere I did see them as exuberant as just north of the village. Buttercups and *Anthriscus sylvestris* produce flowering meadows as you rarely see them, and you can smell their sweet scent from a distance. Walk through the meadows towards Grän and you will find *Geranium sylvaticum* and cuckoo flower providing some red and pink. In somewhat wetter places *Polygonum bistorta* produces its pink flower spikes, while on drier slopes the orange flowers of *Crepis aurea* stand out. These meadow flowers change the landscape into a festive carpet of color.



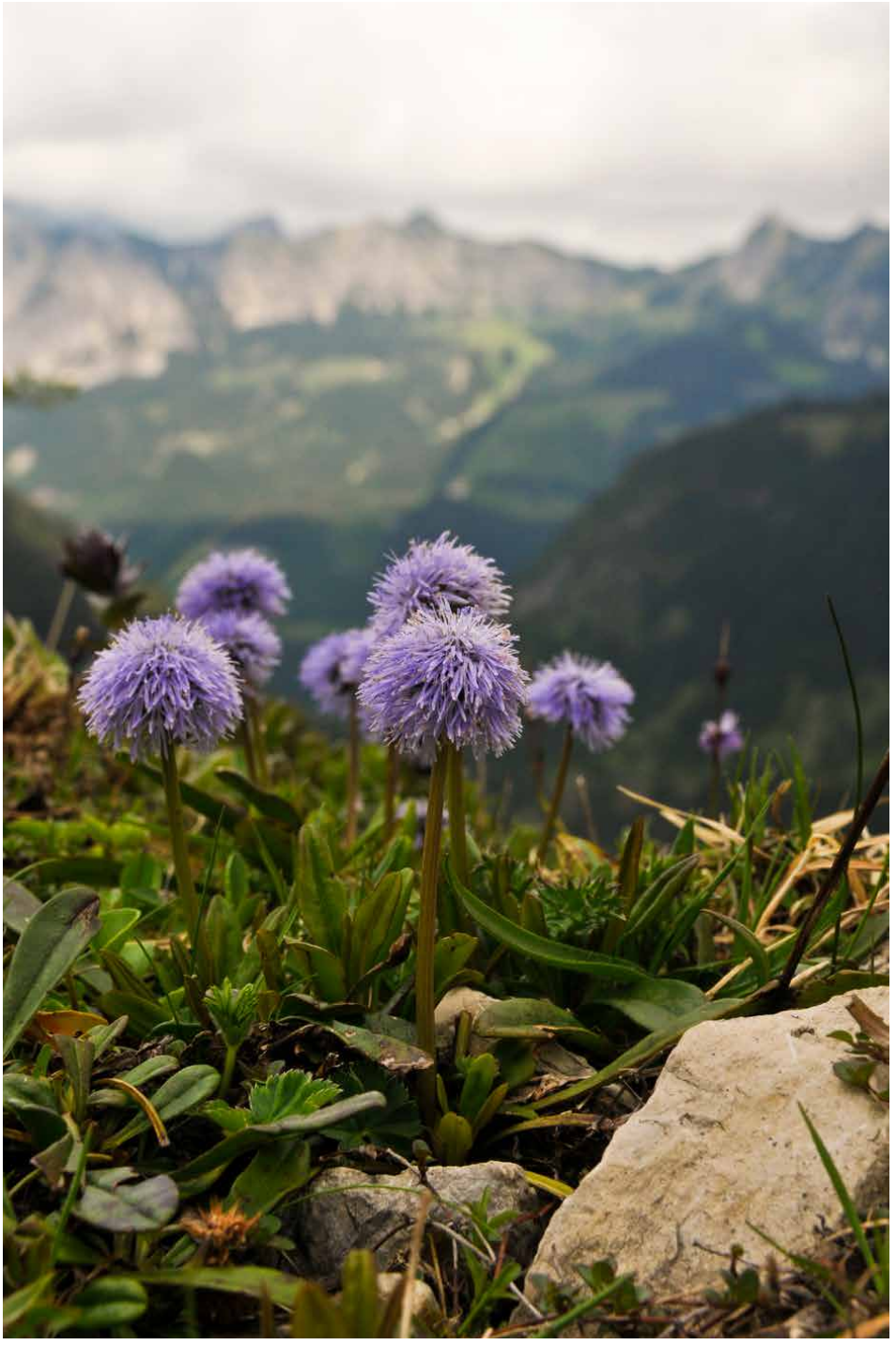
Primula farinosa (top), *Neottia nidus-avis* (bottom left), and *Pedicularis foliosa* (bottom right)

For alpine plant enjoyment, you want to hike on to the border with Germany. The road goes up slowly from Tannheim as you leave the wide valley and arrive in an environment of meadows interspersed with forests, streams, and moors. At the former border post, you can take a beautiful walk along the tree-flanked brook Weissenbach. Well-known plants such as Solomon's seal and lily-of-the-valley grow in the partial shade of the trees, but you'll also find the smelly *Aposeris foetida*, mysterious *Neottia nidus-avis* and *Actaea spicata*. But what is really thrilling are the thousands of *Primula farinosa* in the meadows along the side of the road. Usually the best time to see them in such masses is late May or early June. Among these primulas are also *Polygala* and sometimes *Gentiana verna*. The icing on the cake is *Orchis mascula*. There is no shortage of orchids in this valley. In the same meadows, you can find *Pedicularis foliosa*, never as plentiful as the primula, but the plants are much larger and you can hardly miss them. Like many other *Pedicularis* varieties, it is a beautiful plant but unfortunately difficult to grow in cultivation as they are hemiparasites that are dependent on a host plant, at least in the initial period.

Alpine spring flora

From Tannheim and Grän you can take the cable car to an altitude of between 6,200 and 6,500 feet (1900 and 2000 m). More and more hotels and apartments have a guest card that allows you to use the cable car once a day. There is a good chance that there is still snow up there at the end of May and that some trails are not yet accessible but there are always places where the spring flowers are already in full bloom. *Primula auricula* is a common plant in this limestone area, and what could be better than a snowfield with *Crocus albiflorus* on the edge? To see hundreds of flowering crocuses in June is quite an experience! Six feet (2 m) from the snow they will have already finished flowering and you can see the new leaves appearing above the ground. A dozen feet (4 m) further and they have completely disappeared in the grass.

Primula auricula (top), *Crocus albiflorus* (bottom).



Globularia nudicaulis

Soldanella alpina

When the snow is almost gone at the end of May, you can take various hikes from the mountain station of the Neunerköpfle and as a plant lover, you will see many alpine highlights after just half an hour's walk. I am always impressed by the beautiful blue balls of *Globularia nudicaulis* and the white flowers of *Androsace chamaejasme*. In scree slopes, if you look closely amid the rubble, you'll find alpine cherry, *Pritzelago alpina*, covered with white flowers.

As a plant lover, don't just take a photo of a flower with your phone from a height of three feet (1 m). Get down on your knees and take a photo of *Soldanella alpina* at eye level or let yourself be overwhelmed by a field of *Gentiana verna*. Don't think that you need an expensive camera for that, because you can also take beautiful close-up photos with a phone with a good camera. There, up in the mountains, you walk with your head in the spring and you see at your feet the last convulsions of winter.

Late summer

If you really can't get to the Alps in the spring, then the late summer also offers plenty of opportunities to view exceptional plants. The little ones from the alpine plant world will be at rest or are only present as green, but several tall varieties will be in their showy phase. You need a bit of luck with *Veratrum album* because they sometimes bloom badly for

a year. If they do well, you will see them everywhere because the cattle avoid these plants like the plague and you can see them from a great distance in the bare-grazed land. I also find *Gentiana asclepiadea* to be a plant with a lot of charisma. At the edge of the forest it often grows a bit too high and the flowering is not optimal, but in a meadow the blue flowers stand out all the more. In the vicinity of Schattwald, Austria, there are several wet meadows where this gentian occurs on the edge and where the relatively unknown *Swertia perennis*, or pool gentian, grows in wet areas. I have not often seen *Swertia* on all my alpine trips, but there were dozens of flowering plants there at the end of August. It is a plant of the gentian family, growing up to 30 inches (75 cm) high with small purple flowers. It is the only species of this genus in Europe; many more species occur in Asia.

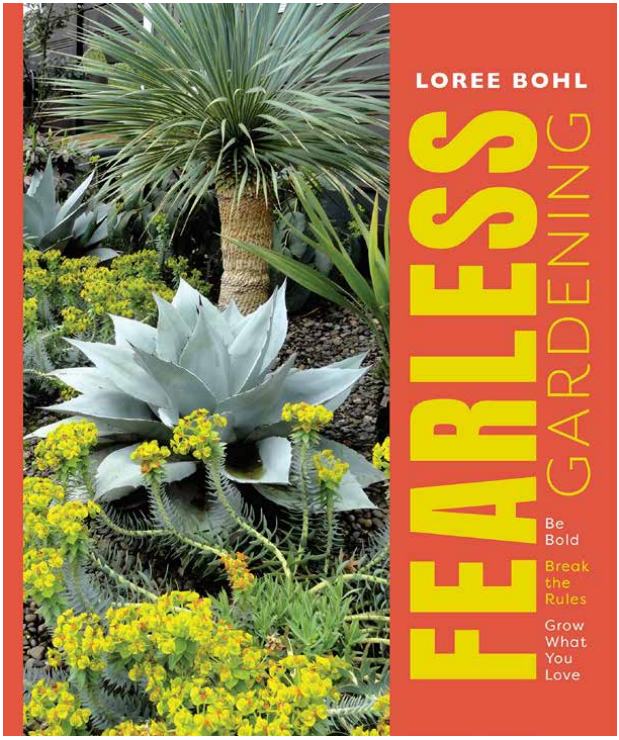
The star gentian, *Gentiana cruciata*, also blooms in August in the meadows west of Tannheim and *Gentiana pneumonanthe* can be found in many places in the Tannheim Valley. Gentians contain bitter substances that livestock do not like and some species are also poisonous. The animals graze around them giving the plants a perfect stage. This applies to the yellow gentian that can be seen here and there in the valley in the spring, but also to the blue-flowering varieties in the late summer. There is a big difference between the hay meadows and the meadows where the cattle graze. The hay meadows bloom in May to June and after mowing they become dull grassy plains. The grass of the meadows where the cattle graze is often a bit shorter and there are more low-growing flower plants in the spring. In late summer, the grass is grazed short with the poisonous or bad-tasting plants blooming everywhere, protruding high above the grass surface. One small fall-flowering variety is the fringed gentian, *Gentianopsis (*formerly *Gentiana) ciliata*. This is a biennial plant with fringes on the edge of the four petals. This gentian does not occur in large numbers anywhere and it is always a wow moment when you encounter it in full bloom. According to the books, it occurs in hay meadows and on forest edges, but I usually find it in the short grass at the edges of paths. Also blue is the aconite, *Aconitum napellus*, a very poisonous plant that is also avoided by livestock. This aconite does not grow in the meadows, but rather in the bushes at the edge of the forest and along streams. Late summer is also the time for the weather thistle, *Carlina acaulis*. The flowers of this stemless thistle are open when the sun is shining and closed when it is raining or cloudy. There are two subspecies, the common form without a stem and the stemless thistle with a stem, *Carlina acaulis* subsp. *caulescens*. Who makes up such a name?

A day hiking through the northern Alps, although sometimes tiring, gives you a lot of energy from the beauty of the plants, be they the short, flower-covered beauties of spring or the taller blooms of fall.

Gentiana asclepiadea (top left), *G. campestris* (top right), *G. utriculosa* (bottom left), and *Gentianopsis ciliata* (bottom right)

Bookshelf

Fearless Gardening: Be Bold, Break the Rules, and Grow what you Love



Fearless Gardening by Loree Bohl (Timber Press, 2021) is a lighthearted, empowering, call-to-action to take your garden less seriously and have fun with it, buck rules, and follow your dreams. It's a respectful nod to the legitimate foundations of garden dogma and taste, followed by a swift kick to its butt, and it provides piles of beautiful photographic proof that gardening this way works.

Some readers, like myself, will recognize Loree, a Portland garden writer, from her long-time blog, "Danger Garden: You could poke an eye out," a plant-worshipping blog littered with agaves and, in prior years, peppered with a charming pug. Rock gardeners will remember her winter 2018/19 article in the Rock Garden Quarterly about her shade pavilion that doubles as an overwintering greenhouse. Her accrued visits to nurseries, gardens, conventions, and her own garden journey have culminated in this book, just when we need it most.

This book feels timely when gardeners find themselves with much time at home, some perhaps facing the restrictions in their garden they have put upon themselves over the years. The book is perfect to shake up a stagnant relationship with your garden, to mix up a cocktail for the personal garden party of your mind. It also comes from a feminine, fierce, and fresh standpoint on gardening rooted in the ultimate new-world substrate of west coast American gardening, and cradled by a completely nation-wide, internet-driven, church-of-the-mail-order-nursery culture. This makes her thesis universally applicable: "be bold, break the rules, grow what you love."

Rock gardening is not forgotten. It's elevated in the book as a tool responsible for putting fresh air in the sails of contemporary American gardening, and therefore something for gardeners anywhere to use to freshen up their garden life. New trends are used as examples to convey her main idea, so such fads certainly will not date the book and leave it stuck in time. Proudly, our very own Rocky Mountain Chapter-NARGS members, Carol and Randy Shinn in Fort Collins, are documented in the section on crevice gardens.

Loree is focused on the fact that the average gardener's plantable space is shrinking, offering up a very deep, complete, and nuanced experience in container gardening. She points out, for instance, that pots allow a person to grow plants with entirely different soil or moisture needs (but similar sun needs) right next to one another for entirely novel plant combinations.

Her personal taste in plants becomes the backdrop of the book and is used as an example of what gets revealed by the process of years of trying, testing, seeking, learning, growing, and enjoying. One doesn't at all feel that the regional flavor of the book limits the delivery of the spirit of her message – any gardener reading it will immediately start thinking of their own experiences in parallel to those of hers, from which she vulnerably draws her gospel.

Loree's message helped me pull my head out of the sand of current personal plant research benders or design scheme rabbit-holes to start thinking of the personal and emotional context of gardening for me. Upon closing the book, I was deeply reminded of the quote attributed to Howard Thurman, and I think Loree's book is essentially a gardener's version of his sentiment: "Don't ask yourself what the world needs. Ask yourself what makes you come alive, and go do that, because what the world needs is people who have come alive." I am also reminded of a few recent articles that aimed to synthesize the mantra and spirit of Generation Z: that they live their "own (personal) truth" against the backdrop of a very post-modern internet-fueled world. That said, I wonder if Loree's book is just ahead of its time, and will have seasoned just a tad on the shelf when the teens and twenty-somethings of today pick it up as their first gardening bible. There are certainly enough succulents to get their attention!

Remarkably, even with its completely colloquial written-as-spoken tone, this book is not fluffy at all. Every notion is backed up by a real and relatable insight into the practical nature of having a playful relationship with your garden. Her years of knowledge of plants, techniques, design, and, perhaps most importantly, writing to teach and share her excitement, come through clearly in this book. No gardener, from the green-horned novice to the seasoned veteran, will escape being stirred by this invitation to break out and take the brave adventure of seeking, or even re-seeking, one's true personal vision and expression in the context of their own garden: to embrace some fearless gardening.

Kenton Seth

NORTH AMERICAN ROCK GARDEN SOCIETY

Bulletin Board

spring
2021

volume 79 | 2

President's Message: Spring 2021

Hello fellow gardeners:

Joie de vivre is defined as an exuberant enjoyment of life. Isn't that why we garden? In spring we eagerly wait for those first shoots to emerge, fawning over the appearance of that first bud. The first draba for me is *D. hispanica,* which pops open along with the crocus and galanthus. Its spirited, yellow color heralds the start of the new season. Of course, the various porophyllum *Saxifraga* blooming nearby echo the cheer. *Saxifraga sancta* and its hybrids trumpet the vibrance of the draba. It so inspires me that I sometimes dig right into uncovering the garden. And sometimes it is a bit early. A mistake, all due to my impatience. Funny how desire and fear are intermixed in the life of a gardener. Each plant is like a returning friend. We eagerly await its arrival, gasping with anticipation. But then the weather cruelly intercepts the unfolding. Luckily the early ones can usually survive most of these setbacks. But we must wait another year for their splendor.

The February virtual study day, "NARGS Rocks Crevices: Horizontal and Vertical," gave us all a big dose of delight. And a strong desire to get back into the garden, though snow is still on the ground here in Connecticut. The program was stellar, thanks to a fantastic lineup of speakers from coast to coast. (A big thank you to my co-host Mike Kintgen who organized the slate). The first half focused on the large scale of crevice gardening from its history in North America to its philosophy. The second half was up close and personal, embodying a common thread of inspiration for every gardener and to every size garden. There were so many take-aways for me. For one, I want to start thinking more about the story of the garden, rather than the rocks. But gosh, everyone just needs to see the videos for themselves. They remain available on nargs.org for the mere price of a ticket. I will watch and rewatch them during the building and growing season.

Just as I was preparing last minute computer settings for the conference my Seedex order arrived! Special thanks go to the Siskiyou and Great Lakes Chapters of NARGS for its efforts during this pandemic. Bravo! I readily admit I did steal a glance at what arrived, in spite of my pressing deadlines. We are indebted to all those volunteers of those chapters who handled the two seed distributions. And special thanks also to Joyce Fingerut and Laura Serowicz who orchestrated it all. Immediately following the conference, Joyce brought to my attention the need for

an updating of the NARGS policy on collecting in the wild. The Board has accepted the following which is now published on our website (nargs.org/about-us):

The North American Rock Garden Society is dedicated to understanding, preserving, growing, selecting, propagating, and appreciating the natural flora of the earth, especially those plants amenable to rock gardening. Above all, we support efforts to protect wild habitats as the sources for genetic variations and naturally thriving plants for generations to come. We believe habitat destruction, both planned and accidental, is responsible for the greatest loss of habitats and species in the world today; and we deplore this situation. We strive to support those organizations around the world that seek to preserve valuable wildlife habitats.

We are against the wholesale collecting, for resale, of wild plants from public lands, especially the rarer plants, and abhor the practice of misleading the public by calling such collected plants nursery propagated by any stretch of the definition.

We encourage collectors to follow all local, national, and international laws when collecting seed. Be aware that rare plants merit special consideration and should not be distributed, or propagules taken, unless there is sufficient local stock to successfully perpetuate the population. In most cases this means minimal or no collecting.

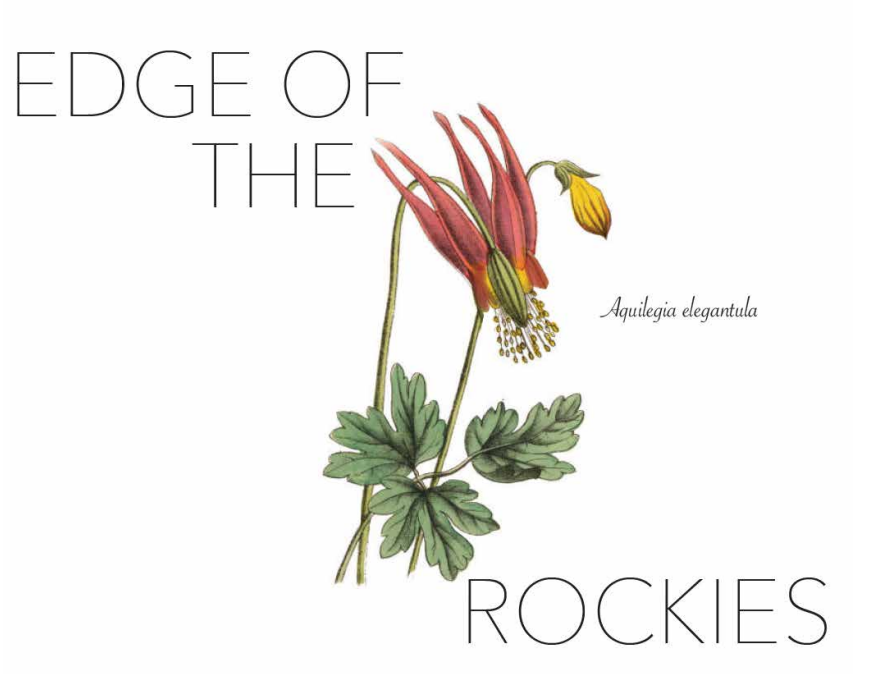
Plant material collected after 2014 in countries that have ratified the Nagoya Protocol (https://www.cbd.int/abs/doc/) may only be used for non-commercial purposes, unless a special permit is obtained.

Bear this in mind, please, as the gardening season progresses. Collect seed in your garden for our Seed Exchange of all those plants you grow that are no longer in the wild, or within endangered habitats. Keep the native seed coming. And start as soon as the seed is ripe.

With that note I hope you will continue to support NARGS as you can during these changing times. During my tenure we have added virtual programming that enables gardeners of any age and situation to get that dose of joy. Plans are underway to include more short virtual programs to spark ideas and provide instructions. By including virtual features we have added a spike in membership unseen for many years. We will be upgrading our website with an overhaul as we move to the next software version over this summer. Hopefully log-in issues will ease as well as search features. For Seedex participants, note this year again we had no issues with first-night ordering!

Thanks go to the Administrative Committee as well as the Board who have supported these efforts during this COVID pandemic. Yes, there was a significant change in all our lives that will have an impact for many years. And the silver lining has been the virtual programming to keep us all in touch. And, lucky for all of us we have our gardens.

Elisabeth Zander



The Annual General Meeting of NARGS has been postponed to August (4) 5-8, 2021

Fort Lewis College Durango, Colorado

(Registration enclosed in this bulletin)

More details on the website www.nargs.org

Upcoming NARGS Meetings:

Durango, Colorado, August 5 - 8, 2021

Ithaca, New York, June 14 - 16, 2022

Nova Scotia, Canada, 2023

NARGS 2021 Online Election

May 3 through May 16, 2021

The online election for President, Vice President, Treasurer, Recording Secretary, and three members to the Board of Directors will be held from May 3 - 16, 2021. The list of candidates and their qualifications were published in the winter issue of the *Quarterly*. On May 3, members will be emailed a call to vote that will include directions and a contact for any questions. Please make sure your email address is up to date in the NARGS membership files. If you do not have email, you may mail a request for a printed ballot to NARGS, POB 18604, Raleigh, NC 27619-8604. The NARGS board will ratify the voting and results will be posted online.
-- Joyce Hemingson, Recording Secretary

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

Sigrid Nauen Hewitt, Wakefield, Rhode Island, age 93

Jim McKenney, Rockville, Maryland

William "Bill" Plummer, Painted Post, New York, age 93.

Bill was a founding member of the Adirondack Chapter of NARGS in 1976 and held various offices in the chapter, including organizing a NARGS Study Weekend in 2000.

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.

Why August in Durango?

(A second spring)

The Annual General Meeting of NARGS has been moved to August (4)5-8, 2021

The landscape surrounding COVID and vaccinations had been changing by the day. Potential participants to the conference this summer told us the proximity of a June meeting was simply too rushed for them to be comfortable signing up. The local organizers staging the Conference are glad to have more time to coordinate, and snowpack in the San Juan Mountains has been sufficient that late June would likely be too early for the high mountain hikes planned for the conference.

The first week of August still boasts lots of bloom in the alpine zone. This is peak season for subalpine meadows and forests for which the San Juan Mountains are renowned. Masses of paintbrush, columbines, larkspur, gentians, *Mertensia*, and geraniums will paint the meadows and provide a second spring for attendees. On the tundra you'll still find early spring flowers blooming near snowbanks, and the summer gentians and a wealth of cushion plants will be in top form.

Average August temperatures for Durango are daytime highs of 84° and evening lows at 49°--much cooler than late June and July which average three degrees higher. There is often a second season of flowering at lower elevations as well in August due to summer thunderstorms (the "Monsoon")—so the sagebrush steppe on Mesa Verde and around Durango should boast a variety of *Eriogonum, Erigeron,* and *Penstemon rostriflorus* at their peak, not to mention a daisy-chain of Composites!

Introducing a bus-free conference.

Initially, due to concern for having people packed in close quarters in a bus, the committee has explored the potential of attendees providing their own transportation: a few vans will be reserved for people who cannot drive—but having cars (we do recommend car-pooling) will allow fewer numbers at each trail head and less impact than a large bus at a given site. Having your own or a rental car, provides ideal access to Durango. There is plenty of free parking on the Fort Lewis College campus.

Flying: The Durango airport is served by American Airlines, United Airlines, and (beginning in May) Delta Airlines. There are daily non-stop routes to and from Dallas-Fort Worth (DFW), Denver (DEN), Phoenix (PHX). In May, a route to Salt Lake City Int'l (SLC) will begin. In June, seasonal flights to Los Angeles (LAX) start.

Durango is 336 miles from Denver (6 hours and 7 minutes driving). There are several routes from Denver where you can potentially cross four or more passes over 12,000' one way, and almost as many different passes on your way back. It's a stunning drive through the Rockies.

Durango is 212 miles from Albuquerque, N.M. (3 hours and 52 minutes). The low-fare Southwest Airlines is ABQ's major carrier. The drive will be through the high-deserts of Northern New Mexico or a longer but more scenic trip north to Santa Fe and Abiquiu, past the Georgia O'Keefe Ghost Ranch.

Salt Lake City is 391 miles from Durango (6 hours and 20 minutes). The drive goes over the Wasatch Mountains and into the heart of the Colorado Plateau's high desert and red rock country of Moab and beyond.

If flying into Denver, Albuquerque or Salt Lake City, we recommend arriving in that city and staying the night of Tuesday, Aug. 3. That way, you can get up early for the long drive that will be filled with heart-pounding scenery and floral riches on the way. The same will be true on your way home.

It appears that most everyone who intends to get vaccinations will have an opportunity to do so well in advance of this conference. We will adhere to recommended CDC and local health department guidelines. We expect that attendees who've been vaccinated for COVID will be willing to carpool with friends and share Campus facilities.

We believe Durango is an ideal destination for renewed "in person" meetings for NARGS—sufficiently remote from high population centers that the hiking destinations will not be overcrowded. The campus is scenic and modern and the nearby town offers a wealth of amenities and great charm.

Best of all, there is an enthusiastic community of flower lovers (a very active Botanical Garden and Native Plant Society) who are looking forward to hosting, guiding, and sharing their expertise.

The registration form to sign up is included in the spring NARGS *Quarterly*, and a link to a website dedicated to this conference will appear on the NARGS webpage (www.nargs.org) in early April so that you can sign up on-line.

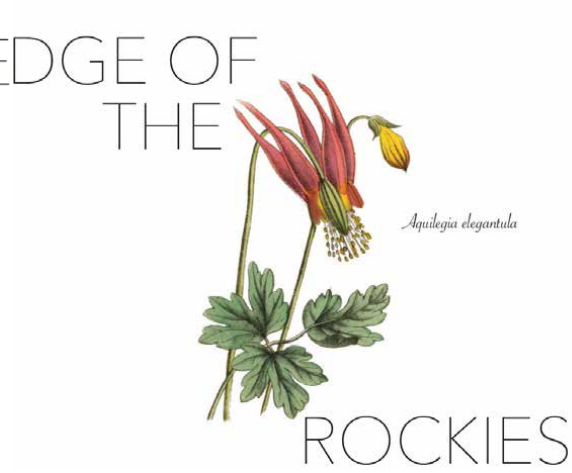
Conference attendance will be limited to 200 attendees: do sign up, please. Join us in Durango!

Thank you.

Edge of Rockies Organizing Committee

A supplement to Rock Garden Quarterly, vol. 79 #2 Spring 2021

North American Rock Garden Society Annual General Meeting



Durango, Colorado
August 5 - 8, 2021

Durango lies not only at the edge of the San Juan Mountains (the most massive range of the Colorado Rockies) but at the edge of the Colorado Plateau's rich canyonlands, and it brushes against the Chihuahuan Desert uplands of New Mexico to the south and east. Mesa Verde rises to the south and west — a blue-gray mesa filled with the largest, densest concentration of Pre-Columbian architecture north of Mexico. In many ways, Durango is the heart of North America.

Space is limited: sign up now!
Join us at the Edge of the Rockies!
A socially-distanced conference*

We invite you to join us from Thursday, August 5th to Sunday, August 8th, to attend the Annual General Meeting (AGM) of the North American Rock Garden Society. The base of operations will be Fort Lewis College—a lovely setting for meals, talks, and more. Attendees may stay in the scenic West Hall at reasonable rates or arrange your own stay at dozens of nearby motels/hotels. We have secured several for this conference available on first come basis.

**We will adhere to the current CDC guidelines for this conference.*

Program

We recommend arriving in Durango by late afternoon, Wednesday August 4: whether driving from Denver, Albuquerque, or flying into Durango —we suggest that you should arrive the day before; the actual program will not begin until the afternoon of August 5.

Wednesday afternoon: Open Gardens. Registration 3-6pm.

Thursday, Aug. 5th: Open Gardens. 2pm Annual Board Meeting. 6pm Rooftop Opening Reception on the plaza with drinks and hors d'oeuvres. 8pm Opening speaker Craig Childs.

Friday, Aug. 6th: 6-8am Breakfast in Student Union. 8:30am Depart for field trips, box lunch provided. Return 4pm; Banquet at 6pm. 7:30 lectures.

Saturday, Aug. 7th: 6:30-8am Breakfast hosted by Durango Botanic Garden. Depart from the Garden for field trips, box lunch provided. 6pm Banquet, awards, program.

Sunday, Aug. 8th: 6-8am Breakfast. Checkout by lunch. Mesa Verde Tours; self-guided field trip options provided.

Plant Sale: Thursday-Saturday

Speakers *(pending the lifting of travel restrictions)*

Opening Welcome Speaker (Thursday 8/5)
CRAIG CHILDS, *Author; Ancestral ethnobotany*

Keynotes (Friday 8/6 and Saturday 8/7)
KAJ ANDERSON, *Bangsbo Botanical Gardens, Denmark*
MARCELA FERREYRA, *Argentina, Author; Tour of Patagonia*

Local Speakers:
ARNOLD CLIFFORD, *Navajo Geobotanist, Curator, and Co-Author*
ADRIANO TSINIGINE, *Navajo Ethnobotanist, Biologist*
MOUNTAIN STUDIES INSTITUTE, *Durango/Silverton Climate Study Group*

Field Trips

Maps are provided for driving to assigned destinations where you will be met by local expert guides. We will be adding to this list as options arise, stay tuned. These will include:

Molas Pass/Purgatory/Andrews Lake for easy-to-moderate access to subalpine and alpine areas.

Engineer Mountain for easy-to-moderate access to subalpine and alpine areas.

Cumberland Basin/Taylor Lake in the La Plata Mountains moderate and also with difficult option to **Indian Trail Ridge (4WD)** for subalpine and alpine areas.

Lime Creek (drivable tour easy 4WD) subalpine

Highland Mary Lakes, Silverton moderate access subalpine/alpine area.

Mesa Verde guided tour by Craig Childs (limited groups Friday)

Program Registration Form *(please print legibly)*

Name(s) _____

_____

Address _____

_____

City _____State_____ Zip _____

Telephone number _____Country_____

Email address _____

May we include name, state, and country of origin be published in program booklet? Yes ____ No ____
May we publish email address in program booklet? Yes ____ No ____
Street address and phone numbers will not be published in program booklet.

Not a NARGS member? Join at $40 US/Canada; Overseas $45
www.nargs.org

Online registration starts in April, visit www.nargs.org for more details.

Please send check payments to:

Rocky Mountain Chapter, NARGS
c/o Kenneth Ray
9968 W 84th Pl
Arvada, CO 80005-1201 USA

Cost

Registration including program bulletin for tours, speakers, opening night drinks/hors d'oeuvres, 3 breakfasts, 2 box lunches (gluten-free/vegetarian options available), 2 banquet dinners and maps for tour destinations.
(If you're **NOT** driving here or renting a car check here _____ we will provide a van for a surcharge based on demand and availability.)

Own vehicle: $350 #registrants _____ total $_____
Spouse/volunteer rate: $180 #registrants _____ total $_____
(breakfast, lunch, and dinners included)
Room cost: #registrants _____ x days _____ total $_____
($75 a day double occupancy, $100 single occupancy; 4 days shared bathroom $300 double occupancy, $400 single)

Grand Total $_____USD
(Checks only, CC must go through website with 3% fee added)

Lodging Registration Form (Fort Lewis College)

The NARGS annual meeting takes place at scenic Fort Lewis College in Durango, Colorado. Attendees wishing to lodge on campus will stay at West Hall, a modern 90-room facility with the outstanding mountain views. NARGS has reserved the entire building for the conference. At full capacity, there will be room for 180 people.

West Hall offers ultra-economical lodging arranged in two-bedroom suites. Each suite consists of two double-occupancy rooms that share a spacious dual-sink bathroom. Each bedroom has two extra-long twin beds, two desks and chairs, and two wardrobes. Bed linens and pillows are included. In addition, there is a central lounge with flat screen TV and DVD player. Washers and driers are on site. The cost is $75 per person per night double occupancy. The single supplement is $25. Each bedroom at West Hall includes two beds and a bathroom shared with the next room. Only guests who have had COVID vaccinations* at least 3 weeks before the conference can be eligible for West Hall accommodations.

***PLEASE BRING PROOF OF COVID VACCINE**

If you're NOT booking at Fort Lewis MAKE SURE YOU BOOK your lodging immediately (see recommended hotels on website).

Room cost ($75 a day double occupancy, $100 single occupancy)
4 days shared bathroom $300 double occupancy, $400 single

If you have friends with whom you'd prefer to share a bathroom, write name below or let us know at least a month in advance (otherwise, the selection will be random).

Also, if you have a couple or party that you would like in a neighboring suite, please let us know prior to registration and we will try to make that happen.

Name of registered friend:_____

NARGS Service Award

Janet Novak (Delaware Valley Chapter)

Mike and Jan Slater remember exactly when they met the recipient of this year's NARGS Service Award, Janet Novak. It was while eating lunch after a DVC meeting that they were chatting and discovered that their mutual interest in plants extended beyond rock garden plants to native plants. Janet joined our chapter in 2003 after moving here from Connecticut. Mike and Jan recall her telling them she did not want to get too involved or take on responsibility in the chapter because she had so much going on in her life after the move to Philly.

It didn't take too many years before Janet became a pillar of the chapter in many ways. She served as chapter chair for four years and program chair for two years. She redesigned the DVC's website in 2010 and has been the webmaster ever since. This has been a major gateway in keeping our members informed and attract new people, too. Over the years, Janet has done a lot of planning and provided hands-on work for the chapter's Philadelphia Flower Show award-winning exhibits.

For our NARGS Study weekend in 2019, Janet organized and helped coordinate meeting plans and field trips and then wrote an article about them for the Rock Garden Quarterly. She also served as a guide for the 2007 NARGS annual meeting at Caanan Valley in West Virginia.

Janet's well-grown plants have always been popular at our plant sales and have helped to keep people coming to that popular fundraising activity! She has graciously opened her small garden (which is full of choice plants) to us for chapter garden tours. She also served on the NARGS Board of Directors from 2011-2014 and made a firm commitment to NARGS when she joined as a life time member in 2009. In her column in our recent newsletter she wrote "I'm not going away; I'm taking on two new roles in the chapter. The first is plant sale coordinator. I'm looking forward to this job as a way to help connect people and with the plants that are right for their particular gardens. I'd love to hear your thoughts on our plant sales. How could we do them better? My second new role is information technology coordinator: basically, dealing with Zoom, digital projection (once we return to in-person meetings), and the chapter web site."

(Recommended by Jan Slater and Sharee Solow)

New and Rejoining Members

Welcome to all those who joined or rejoined between November 18, 2020 and February 18, 2021

Aegerter, Stephen, Denver, CO
Atkinson, Kristine, Cambridge, MA
Ayers, Andrea, Englewood, CO
Babuwe-Ngobi, Joy, Roseville, MN
Barnes, Bill, Warrington, PA
Bartlett, Lisa, Kennesaw, GA
Bean, Susan, Flagstaff, AZ
Beatty, Dennis, Seattle, WA
Belanger, Jerome, Thorp, WI
Berenson, Laura, Pipersville, PA
Beuker, Ivan, Star City, SK
Bivens, Christopher, New York, NY
Black, Adam, Millican, TX
Bohanan, Michelle, Cheyenne, WY
Borgen, Kathy, Vail, CO
Bowser, Kathy, Redmond, OR
Brawner, Eve R., Boulder, CO
Burroughs, David, Ottawa, ON
Camfield, Ellen, Pittsford, NY
Camm, Andrew, Teeswater, ON
Canale, Margaret, Alexandria, VA
Cécile, Dubé, Montréal, QB
Chater, Susan, Dundas, ON
Chihrin, Chris, East Garafraxa, ON
Collman, Sharon J., Mountlake Terrace., WA
Connelly, Michael, Broomfield, CO
Costea, Gabriela, Waterloo, ON
Cruz, Sabina de la, Londonderry, NH
Cruzalegui, Ursula, Idaho Springs, CO
Currie, Janice, Victoria, BC
Curry, Karen, Parsippany, NJ
Dane, Arabella, Center Harbor, NH
David, James, Santa Fe, NM
Day-Skowron, Rebecca, Franktown, CO
Dejan, Ernestl, Baltimore, MD
Deuber, Harry, Anchorage, AK
Dicristina, Katherine, Ester, AK
Doughty, Chuck, Holbrook, MA
Dugan, April, Grafton, NH
Duncan, Charlene, Washoe Valley, NV
Dwyer, Mark, Janesville, WI
Elliott, Karen, Denver, CO
Elmore, Killie, Asheville, NC
Fast, Ellen, Pittsburgh, PA
Fay, Carole, Palmyra, PA
Fernis, Åse, Årsunda, Sweden
Fiebig, Brigitte, Tüingen, Germany
Finn, Patrick, Durham, NC
Fitanides, Theo, Berkeley, CA
Fitzgerald, Karyn, Te Kuiti, New Zealand
Fleisher, Erik, Victoria, BC
Foley, Eileen, Georgetown, ON
Fowler, Amy G., Rhinebeck, NY
Gall, Kurt, Moline, IL
Garrett, Jennifer, Colorado Springs, CO

Gerlica, Dawn, Kirtland, OH
Gibson, Donna, Monterey, CA
Goodchild, Peter, Maidenhead, UK
Groeschel, Lynn, Wisconsin Dells, WI
Gunter, Toshiko, Leesburg, IN
Gwynne, John, Little Compton, RI
Hahn, W. Alan, Canonsburg, PA
Hansen, Gene, Eden Prairie, MN
Happel, Ruth, Johnson City, TN
Henrikssen, Ingunn, Saint Paul, MN
Hewitt-White, Pauline, Almonte, ON
Heyden, Frans van der, Kapellen, Belgium
Hill, Harry, Roberts Creek, BC
Hinchey, Debbie, Anchorage, AK
Hoegg, Sue, Ottawa, ON
Hoover, Joanne, Georgetown, TX
Horn, Dora, Santa Fe, NM
Jeffers, Bill, Stella, ON
Kampe, Lynnette, Los Angeles, CA
Kandy, Barry, Evergreen, CO
Kaplan, Leslie, Pittsburgh, PA
Katz, Sara, Toronto, ON
Kimpton, Kim, Centennial, CO
King, Michelle, Califon, NJ
Kipilovitch, Moti, Ridgewod, NJ
Knight, Martin, Tylden, Australia
Koman, Swaroop, Scotch Plains, NJ
Krantz, Shirlee, Durango, CO
Laht, Silja, Harjumaa, Estonia
Lalonde, Diane, Princeton, BC
Lambourne, Danée, Victoria, BC
Lambrecht, Geert, Meulebeke, Belgium
Langdon-Paff, Dawn, Fowlerville, MI
Larson, Haleigh, New Haven, CT
Leishman, Margo, Sammamish, WA
Liebert, Danna, Englewood, CO
Limpert, Lynne, Ladysmith, BC
Lydon, Patrick, Sheffield, MA
MacMillan, Susan, Waterdown, ON
Mahar, Marion, Sterling, MA
Marchlik, Tim, Gainesville, GA
Markus, Brent, Newton, MA
Marlin, Margie, Idaho Springs, CO
McCann, Peg, Saint Joseph, MI
McClure, Mark, Durham, NC
McCormack, Margot, Westland, MI
McKenzie, Margaret, Cheyenne, WY
Meyer, Beth, Tijeras, NM
Meyer, Ellen, Bartlett, IL
Miksits, Connie, Allentown, PA
Miller, Chad, Manhattan, KS
Miller, Jacqueline, Victoria, BC
Milton, Evan, Denver, CO
Minnich, Kathy, Edgewood, NM
Misner, Daniel, Portland, OR
Mitchell, Dawn, Longmont, CO
Mobley, Dorte, Wasilla, AK
Morrell, Karen, Morrison, CO
Morris, Anne, Victoria, BC
Morris, Tessa, Waterdown, ON
Morrissettse, Pierre, LaValtrie, QB
Morrissey, Todd, Yutan, NE
Mundi, Karl, Hackettstown, NJ
Murray, Kris, Fanny Bay, BC
Neff, Maya, Tacoma, WA
Nevler, Susan C., Seattle, WA
Norris, Kelly, Des Moines, IA

Otto, Paul, Hayden, ID
Packard, Le Anh Tu, Media, PA
Paganoni, Marco, Bergamo, Italy
Pankiw, Polina, Calgary, AB
Parker, Aaron, Falmouth, ME
Parker, Heather A., Surrey, BC
Pastorek, Marc, Grand Junction, CO
Peat, Barbara, Stouffville, ON
Peltotalo, Aleksi, Turenki, Finland
Pettigrew, Dianne, Terra Cotta, ON
Pindyck, Suzanne, Quechee, VT
Womack, Mark, Yonkers, NY
Poli, Manuela, Toronto, ON
Potts, Theya, Cincinnati, OH
Potvin, Louise, Victoria, BC
Power, Sandra, New York, NY
Price, Anne, Gatineau, QB
Pryor, Jeanette, Littleton, CO
Rea, Patricia, Regina, SK
Reddy, Joy, Toronto, ON
Remington, Justin, Centennial, CO
Rettenmund, Scott, Spokane, WA
Rice, Charles, Quebec City, QB
Rodahl, Allyson, Bethould, CO
Royer, Mary, Ithaca, NY
Saltenberger, Becky, Reno, NV
Salvo, Lisa, Canajoharie, NY
Savannah, Anne, Calgary, AB
Schaller, Sandra, Denville, NJ
Schmidt, Karen, Butler, PA
Schneider, Joshua, San Diego, CA
Seekins, Susie, Victoria, BC
Seibert, Deb, Ephrata, PA
Shaw, Rita, Hamilton, ON
Shibata, Tatsuya, Aichi, Japan
Shramek, Joseph, Olympia, WA
Simonds, Bruce, Guilford, CT
Sirbaugh, Nora, Pennington, NJ
Smith, Shane, Paonia, CO
Sondek, John, Chapel Hill, NC
Sperry, Cora, McCoy, CO
Staples, Aaron A., Kentville, NS
Steinbrock, Susan, Brooklyn, NY
Strasser, Erin, Laporte, CO
Sulewski, Pam, Broomall, PA
Sullivan, Jim, Saskatoon, SK
Switzer, Russ, West Vancouver, BC
Thrasher, Allen W., Front Royal, VA
Tierney, Tom, Stamford, CT
Tol, Dorothy, Ottawa, ON
Topsfield, Matthew, Isle of Benbecula, UK
Townsend, Coleman, Wilmington, DE
Trowbridge, Laura, Peterborough, NH
Turnbull, Susan, Greenmountain Falls, CO
Turner, Loretta, Bellingham, WA
Uhll, Linda, Ithaca, NY
Van Herk, Kok, Utrecht, Netherlands
Wallen, Christopher, Dillsburgh, PA
Weiser, John P., Sparks, NV
Welsh, Mike, Takoma Park, MD
Whitehead, Laura, Southern Pines, NC
Wilson, Dorothy, Ottawa, ON
Witter, Debra, Fremont, CA
Wright, Jeff, Victoria, BC

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

Seed Exchange

It's been quite the year – hasn't it? – since we first entered the time of the pandemic. We hope that you are all safe and well and looking forward to spring – in your gardens and your lives. Extraordinary times have called for extraordinary measures to maintain all those parts of our lives that give us pleasure – not least among them our annual Seed Exchange.

We owe a great debt to two NARGS chapters: Siskiyou, in Oregon, and Great Lakes, in Michigan. They had agreed to handle the two distributions before anyone knew of the outbreak and lockdown due to COVID-19. But they have persevered and have been managing to fulfill all their responsibilities... and our seed requests. We appreciate the work of the chapter coordinators for this project: Jean Buck and Kathy Pyle (Siskiyou) and Holly Pilon (Great Lakes), as well as the many helpful volunteers in both groups. And they have said that your many positive comments have helped to buoy them up during this long slog.

Because of all the necessary health precautions, the volunteers have had to socially distance themselves and their work schedules, so seeds will be reaching our members a month later than usual. There will be an additional delay for members in Japan, the U.K., and countries of the European Union, whose governments require an inspection of the seeds and a phytosanitary certificate.

On that matter, we also thank our volunteer consignees who, last year and this, have enabled the distribution of the seed orders among their country members: Peter Cordall, Barbara Dussler, Josef Kitz, Niels Kristensen, Petr Krecek, Tomasz Kubala, Kimio Ikawa, Michael Turunin, Vesa Muurinen, Hjalmar Rosengren, Jan Schellingerhout, and Richard Stockwell.

We've had the invaluable help of the Oregon Department of Agriculture for the seed inspections and all the work that goes into the phytosanitary certificates... and they're even willing to do it all again next year.

At the time of this writing (late January), we do not know exactly when the Surplus Round of orders will open, but we plan on beginning by mid- to late March. Following the completion of the Surplus Round in April, there will still be many choice and interesting seeds remaining. Chapters that have responded to my notice will receive a portion of this dividend in late April to share among their members and/or with community organizations.

If some of your seeds will be arriving too late to receive the necessary moist-cold treatment outdoors, they can be started in your refrigerator – either in pots of medium, or with paper towels in plastic bags. Check out our Seed Exchange Helpful Links page for many sources of useful information: https://www.nargs.org/seed-exchange-helpful-links

If you understand how eagerly you have been looking forward to receiving your seeds, then you should also look ahead to gather and donate seeds during this gardening season for next year's exchange. The benefits of donating are multiple: Besides taking place in the safest, healthiest environment – outdoors, in your own gardens – your material rewards will come in the form of ten extra packets of seed next year, as well as priority in having your order filled before non-donors.

Please share your bounty with your fellow NARGS gardeners.

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

In Memoriam: David Hale

Plant explorer, mountaineer, and great gardener, David Hale died suddenly on January 23, 2021, in his Portland, Oregon, home, at age 80. His passing leaves many memories among all those who shared his enthusiasm, skill, and knowledge.

David was born in Portland and grew up in the house on Holgate Street where he and his wife, Donna, later lived and gardened. He earned his MD and was then sent to serve as a doctor in the Vietnam War. On his return he specialized in emergency medicine on the staff of Kaiser hospitals until his retirement.

Always interested in nature, David was a mountain climber from a young age and became fascinated by alpine plants. As well as many trips exploring the western states, his work schedule allowed him and Donna to travel abroad often, especially to Europe, the Himalaya, and South America. They also enjoyed winter vacations in Mexico. Everywhere they went, David trekked through the mountains and searched for their remarkable plants. He traveled at times with mentors of an earlier generation, and was a mentor himself to younger plant lovers. Many of us learned the places most special to us through David's guidance.

At the Portland house and later at a second home in Arch Cape, David created gardens which, though small, are showcases of choice plants. He built rocky berms, maintained a small alpine house, and kept tiny, often rarely cultivated species in troughs. He grew most of his plants from seed, much of which he collected during his wide travels. His gardening techniques are a model of using small spaces and accessible techniques in the cultivation of a wonderful range of plants.

David was interested in all things that grow, and he documented them in thousands of excellent photos. He often presented programs for the Columbis-Willamette chapter of NARGS and the wider rock gardening community. A selection of images from his slide collection will be digitized soon.

Jane McGary

In Memoriam: Susan Reznicek

Susan A. Reznicek, passed away in her sleep at home Wednesday, December 2, 2020 of complications from a stroke earlier this fall.

Susan lived in the Toronto area until 1978, when she married Anton A. (Tony) Reznicek and moved to Ann Arbor, Michigan. Susan loved plants and for her Master's degree from the University of Toronto, worked on Arctic ecology in northern Canada. This generated a life-long interest in Arctic and alpine plants and rock gardening.

Soon after coming to Ann Arbor, Susan became active in the Matthaei Botanical Gardens Docent Program and, later, was a very active volunteer for the Ann Arbor Hands-On Museum. Though she had her teaching certificate, she only did limited substitute teaching, enjoying more the less structured volunteer work, where she could be more creative.

Susan was also an artist, who did illustrations for a number of people, including illustrating plants for her husband's botanical research. Her most substantial contribution was illustrating a large proportion of the Flora North America volume on sedges, published in 2002.

In later years, she was very active in the Great Lakes Chapter of the North American Rock Garden Society, serving the Chapter in most of the offices, including a long period as Treasurer. She was instrumental in shepherding the chapter's hosting of two national meetings, in 2003 and 2015.

Susan loved cooking and enjoyed hosting visitors, sometimes making appropriately themed meals for them. She was preceded in death by her father, Albert Cecil White, mother Agnes Vera (Shearer) White, and older sister Janice Wood. She is survived by her husband Anton (Tony) A. Reznicek and brother Albert White of Toronto, Ontario.

Susan will have her ashes dispersed in her favorite natural places. In lieu of flowers, we ask that you place a donation in her name with the Ann Arbor Hands-On Museum or Matthaei Botanical Gardens.

NARGS Donations

Donations to NARGS between November 1, 2020 and January 31, 2021

To support the seed exchange, *Rock Garden Quarterly*, the website, the general fund, and in memory of Tony and Bob Wilkinson (Ithaca, New York).

Anonymous (Missouri)
Anonymous (Vermont)
Delaware Valley Chapter of NARGS
Addison, Betty Ann (Minnesota)
Adler, Lee Howard (New York)
Andersen, Jeff (Colorado)
Anthony, Janice (Maine)
Appling, Talinna (Washington)
Astlind, Torbjorn (Sweden)
Atkinson, Angela (Australia)
Atkinson, Kristine (Massachusetts)
Baer, Christine (Michigan)
Barrett, Karen (Maryland)
Bell, Gary (Nebraska)
Black, Lida (New York)
Blade, Robert (Washington)
Bland, Don (British Columbia)
Bolt, Joan L. (Michigan)
Botstein, Paula (New York)
Bouffard, Vivien (Massachusetts)
Boulby, Christine (United Kingdom)
Bowditch, Margaret (Pennsylvania)
Bowlby, Astrid (Maine)
Brastow, Dave (Washington)
Breyfogle, Ross (Colorado)
Brink, John M. (Washington)
Brown, Alison (Maine)
Brown, Judith (New York)
Burch, Ronald (Washington)
Burnet, Jr., Thornton W. (North Carolina)
Caroff, Julia (Michigan)
Carpenter, Meighan (North Carolina)
Clarke, Leslie (New York)
Clarke, Louise (Pennsylvania)
Collins, Jane D. (Virginia)
Conway, Gregory (Quebec)
Conway, Heather (Iowa)
Cook, Scott (United Kingdom)
Cromwell, Cynthia (North Carolina)
Curtis, Margaret (Colorado)
Damman-Sharrow, Lisa (Michigan)
David, James (New Mexico)
Dearing, Michael (Wisconsin)
Deaven, Larry L. (New Mexico)
Demarest, Diane (Oregon)
Deuber, Harry (Alaksa)
Donahue, Maura (Massachusetts)
Drzyzgula, Cathy (Oregon)
Dumont, Judith (New York)
Dussler, Barbara (Germany)
Enns, Caroline (Oregon)
Farrier, Maurice (North Carolina)
Fabian, Daniel (Pennsylvania)
Ferriss, Terry (Minnesota)
Fish, Diana (California)
Fluet, Amy (Wyoming)
Franklin, Catherine W. (Alaska)
Gault, Ranald (Alberta)
Gentling, Peter (North Carolina)
Gilrein, John (New York)
Glass, Joshua (Washington)
Glavich, Thomas (California)
Godleski, Edward S. (Ohio)
Grant, Laura (Ontario)
Gray, Gail K. (Colorado)
Green, Ellen (New York)
Greene, Stephanie (Colorado)
Gryboski, Maryanne (Connecticut)
Haas, Joan T. (Pennsylvania)

Hahn, W. Allan (Pennsylvania)
Hajek, Radovan (Indiana)
Hall, Steve (Ontario)
Halverson, Jean (Wisconsin)
Hammond, Seyra (Connecticut)
Hampton, Sandra Kay (Illinois)
Hayes, Peter Paul (United Kingdom)
Hegedus, Mary (Colorado)
Held, Paul (Connecticut)
Hendrickson, Daniel (Michigan)
Herold, Roy (Massachusetts)
Hewgley, Greg (Colorado)
Hogenson, Gordon (Washington)
Hornig, Ellen (Massachusetts)
Houdek, G. Robert (Ohio)
Huggler, Carol (Alberta)
Humphries, Terry (New York)
Jakob, Marie-Louise (Germany)
Jenson, Mary W. (Colorado)
Johannessen, Roar (Norway)
Jurries, Elaine (Colorado)
Kalb, Jennifer (New York)
Kelaidis, Panayoti (Colorado)
Kelley, Sabra (North Carolina)
King, Tasha (Oregon)
Kinlen, Lois (Wisconsin)
Koch, Helen G. (Maine)
Koltun, Nancy (Illinois)
Koreeda, Koko (Michigan)
Krementz-Bigliani, Anne (New Jersey)
Kuklis, Wanda (Oregon)
Lane, Amelia P. (North Carolina)
Langdon-Paff, Dawn (Maine)
LaVallee, Steven (Wisconsin)
Lease, Deborah L. (Ohio)
Leggatt, Anna (Ontario)
Lewis, Mary W. (New Hampshire)
Lockhart, Bruce (Massachusetts)
Love, Stephen (Idaho)
Macartney, Kathy (Ontario)
Markovitz, Kirk (Oregon)
Marsolo, David (Ohio)
Mattus, Matt (Massachusetts)
McClure, Mark (Durham)
McDowell, Marta (New Jersey)
McGary, Mary Jane (Oregon)
McGrigor, Albert (New Jersey)
McInnes, Laurie (Australia)
McIntosh, Kevin (Maryland)
McKenzie, Laurel (Ohio)
McMaster, Donna (Ontario)
Mear, Doreen (New Zealand)
Miksits, Connie (Pennsyvania)
Milde, Leslie (New Hampshire)
Miller, Joyce E. (Oregon)
Mitchell, Colleen (Michigan)
Mizin, Michael (Pennsylvania)
Moamar, Amal (Massachusetts)
Moltubakk, Anne (Norway)
Montague, Pat & Dan (Washington)
Morris-Smith, Leslie (Pennsylvania)
Moscetti, Paula (New Jersey)
Muggli, Michael (Minnesota)
Mulac, Kathleen (Ohio)
Mustin, Sarah (New Hampshire)
Myrick, Valerie K. (California)
Nedveck, Nancy (Wisconsin)
Noort, Marco van (Netherlands)
Oliver, Martha (Pennsylvania)
Olmsted, Amy (Vermont)
Pacholko, Helen (Alberta)
Parker, Rosmarie (New York)
Parrish, Michael (New York)
Peachey, Harold (Maine)
Pharr, Walter (North Carolina)
Pilon, Holly (Michigan)
Plankeel, J. W. (Netherlands)
Poehnelt, Daniel (Wisconsin)
Pomfret, Mary (Ontario)
Rembetski, John (New Mexico)
Rettenmund, Scott (Washington)
Reznicek, Anton A. (Michigan)
Rieder, Corina (California)
Rifkin, Jerry (Pennsylvania)

Rifkin, Leslie (Pennsylvania)
Ripperda, Jerry (California)
Robertson, John (Illinois)
Rodahl, Allyson (Colorado)
Rodich, Richard T. (Minnesota)
Rombouts, Otto R. estate (Washington)
Rose, Barbara (Virginia)
Rowse, Melinda L. (Washington)
Ruault, Bob (Alberta)
Sanderson, Amy (British Columbia)
Schelleingerhout, Jan (Netherlands)
Schramm, Nancy (California)
Schultze, Sandra (Colorado)
Scott, Caroline (Alberta)
Seligman, Bret (Colorado)
Seth, Kenton (Colorado)
Shannon, Jerry (Minnesota)
Sharpe, Jim (Nova Scotia(
Shepard, Cecile (California)
Sirch, Jim (Connecticut)
Skulason, Fridrik (Iceland)
Smith, Anne (Colorado)
Smith, Carole P. (Ohio)
Smith, Jeaniene (Saskatchewan)
Smith, Paul (Washington)
Snow, Barry (Arkansas)
Spar, Elizabeth (Arizona)
Sperry, Cora (Colorado)
Spiers, William (Michigan)
Spriggs, Paul (British Columbia)
Springer, Lauren (Colorado)
Stafford, Russell D. (Rhode Island)
Staniland, Rob (Alberta)
Stephenson, Laura L. (Pennsylvania)
Strickler, Sarah (Virginia)
Stuart, Rob (Ontario)
Swick, Kathleen (Alaska)
Tallman, Marna C. (Oregon)
Tarrant, Georgina (Nova Scotia)
Taylor, Mionne (Ontario)
Thompson, Leah (Oregon)
Thompson, Paula (Michigan)
Tou, Vello (Ontario)
Townsend, Sara (Massachusetts)
Treadway, Susan (Pennsylvania)
Twombly, Priscilla (Connecticut)
Vaxvick, Linda (Alberta)
Wagner, Jeff (Colorado)
Wainwright-Klein, Jennifer (Germany)
Waksmundzki, Raymond (New Jersey)
Walsh, Tim (California)
Warner, Gary (New Jersey)
Weiss, Edward (Michigan)
Wessells, Arcangelo (California)
Whitehead, Diane (British Columbia)
Willis, John (Maryland)
Wolfe, Pamela (New Mexico)
Wollenberg, Bert van den (Netherlands)
Wolter, Erika (Alaska)
Wrather, Brian (Missouri)
Wysocki, Raymond (New Jersey)
Yatko, John (Ohio)
Young, Michael K. (District of Columbia)
Zander, Elisabeth (Connecticut)
Zeeh, Reiner (Germany)
Zweig, Debra (New Jersey)

NARGS Traveling Speakers Program on Hold

Unfortunately, due to COVID-19, the Traveling Speakers program for 2021 is temporarily on hold. As soon as we have updates, we will post them on the NARGS Web site under "Latest News." Your local NARGS chapter leaders will also have the latest information as plans develop.
----Rosemary Monahan, chair

The following recently became NARGS Patrons:

Clayton, Hilary (New Jersey)
Dumont, Judith O. (New York)
Goldman, Amy (Pennsylvania)
Grissell, Edward Eric (Oregon)
MacFarlane, Radford (Delaware)
Mauney, Katherine (North Carolina)
Norris, Peter (Massachusetts)
Olson, Deanne (Illinois)
Shepperly, Katherine (New Jersey)
Thrasher, Allen W. (Virginia)
Tonnesen, Alex (Colorado)
Wosczyna, Bridget (Pennsylvania)

NARGS Tours & Expeditions in 2021 and 2022

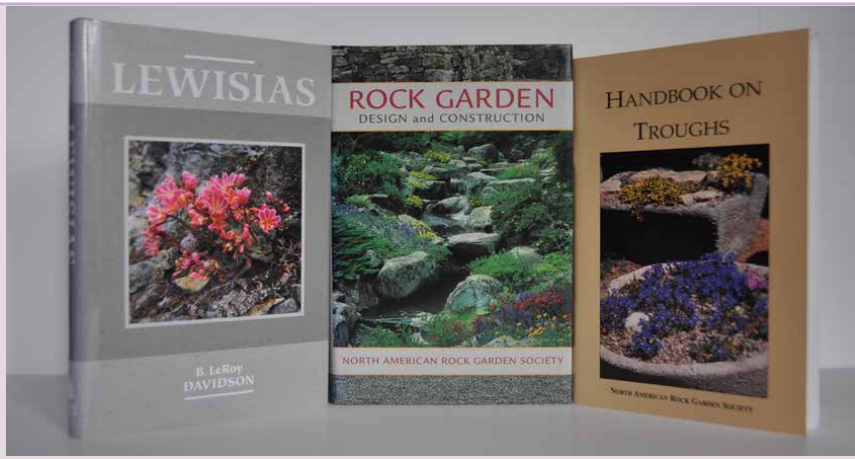
The pandemic resulted in the cancellation of planned tours in 2020 to the Adirondacks, the Burren in Ireland, and Patagonia. However, we are moving forward with plans for trips to Patagonia later this year and to the Swiss Alps during the summer of 2022. The 2021 tour to Patagonia is currently full, but we hope to have a repeat tour in late 2022 if there is sufficient interest.

The Patagonia tour includes a 12-day traverse from Bariloche to Chos Malal in northern Patagonia and a 4-day tour to southern Patagonia. The tour is scheduled to coincide with peak bloom time of Patagonia's unique flora and will be led by Marcela Ferreya.

The Alps tour focuses on the Bernese Oberland region of Switzerland. The tour will be 12 days long and is centered around the village of Wengen. The tour is timed to coincide with flower emergence after snow melt. Julia Corden will be the tour leader.

If you are interested in either of these tours and would like more information, please send an email to nargstours@gmail.com.

--David White, chair



NARGS Book Store:

Lewisias $10
Rock Garden Design and Construction $20
Handbook on Troughs $7
Prices include shipping.
Contact Dave Collura (nargsbooks@gmail.com) to order.

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)	Holly Pilon <plantscape_design@yahoo.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	Elisabeth Zander nargspres@gmail.com 127 North St., Goshen, CT 06756-1202
Vice President	Vice President: Panayoti Kelaidis telesonix@outlook.com 1244 S Quince St., Denver, CO 80231-2513
Recording Secretary	Joyce Hemingson <jhem1022@gmail.com> 44 Rock Hall Rd., Colebrook CT 06021-7072
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

2018-2021	Mariel Tribby, Saint Louis, MO Michael Guidi, Denver, CO Judy Zatsick, Fairfax Station, VA
2019-2022	Cyndy Cromwell, Cary, NC Brendan Kenney, New York, NY Jerry Rifkin, Merion, PA
2020–2023	Ed Glover, Mount Horeb, WI Susan E. Schnare, Andover, NH John Willis, Frederick, MD

Managers

Executive Secretary	Bobby J. Ward (919) 847-6374 P.O. Box 18604, Raleigh, NC 27619-8604 <nargs@nc.rr.com>

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