

NORTH AMERICAN ROCK GARDEN SOCIETY

The Rock Garden

QUARTERLY

SUMMER 2019

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

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Front cover: Pulsatilla seedheads at Allen Centennial Garden

Photo by Joseph Tychonievich.

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QUARTERLY

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From the Editor

IN THE SPRING issue of the *Quarterly*, I wrote that this, the summer issue, would be digital only. But, as is probably obvious if you are reading this from a sheet of paper instead of your computer screen, the board decided to print this issue after all. That change is thanks in no small part to your generous donations and support of this organization. For now, we are continuing to print all four issues of the *Quarterly*. If you'd like to see some of the reasons we've been able to carry on printing the *Quarterly* despite the ever-rising costs of printing and postage, flip to the treasurer's report on page 262, and read what our president has to say on page 250.

No one can promise that this will not have to change in the future as physical print continues to fall to the ever-increasing ubiquity of digital content. Hopefully, if we can maintain an enthusiastic and supportive membership that enjoys getting a physical copy of the *Quarterly* in their mailboxes, we might be able to buck the trend and keep putting words and images on paper.

That all being said, I do hope you'll check out the *Quarterly* on the website as well. The cost of printing means there are strict limits on the number and size of images in the physical version. Online, there are no such restrictions, so visit the website to see additional beautiful and inspiring images that I just couldn't fit into the print version.

I'm particularly grateful for issues of the *Quarterly* in print and on my computer right now because I need a lot to read. It is summer, and now that I live in the hot, humid Southeast, summer is the new winter. When I lived in Michigan, I read and dreamed and planned all winter while trying not to worry too much about what was or was not freezing to death in the latest attack of the Polar Vortex. Now fall, winter, and spring are the gardening seasons, and during summer I hide inside in the air conditioning, reading, planning, and wondering if my alpine daphnes will make it through another southern summer.

Whatever your climate, if you need a break from working in the garden, this issue is full of ideas and images to get you dreaming and make your garden even more exciting in the seasons to come.

Letter to the editor:

Other Aroids worth trying

Andrew Osyany

I really enjoyed Bridget Wosczyzna's article *A is for Aroids*. Thank you. I have much less experience with aroids and my attachment is really to bulbs (As someone said, I love all flowers that are attached to bulbs). My gardening experience is in southern Ontario, Canada, and amplified by a fair number of visits to various northeastern United States gardens. With those introductory comments herewith my two cents regarding three additional hardy (for me) aroids.

The premier elegant aroid that I have frequently encountered and grown is *Arisaema sikokianum*. Successfully grown in a wide geographical area, ranging from Zone 4 to Zone 6, many individuals have lovely markings on the leaves, and the flowers always used to bring big profits to Kodak. I am sure I have pictures from at least eight different gardens, plus my own. My accessions were from corms, and I do not recollect any seed setting. Easy in semi-shade, I have not tried it in full sun. It persists well.

Arum idaeum comes from Crete, but I did flower it outside (after it survived three winters). My only corm disappeared afterward, but I do not know the cause.

Arum palaestinum took nine years to flower from seed, but it has proved very durable for me and for all who shared in the offsets. Good seed sets, too, so I would think it is reasonably well established now in the gardens of our local chapter members. Photographing this is challenging.

Normally I am very sensitive to fragrances, but I recall none from any of the above three.

Have a comment on one of the articles in this issue of the Quarterly or just want to share a quick thought, tip, or idea? Send in a letter to the editor at gsparrowgardens@gmail.com! We'd love to have more perspectives and ideas in every issue.



Top: *Arisaema sikokianum*
Bottom left: *Arum idaeum*
Bottom right: *Arum palaestinum*



Growing a Bulb Lawn

ANNA LEGGATT

MY NAME IS Anna, and I am a plantoholic. I lust after new plants of all kinds. I want more of the favorite plants I already have, and I am also in Zone denial, trying to grow all kinds of specimens from warmer climates. Surely this winter will be warmer, right?

We have lived in our house for 46 years. There are perhaps five trees, two shrubs, a perennial, and some bulbs left from the original design. Much has been added. Plants have grown, and space and light are tight. We cannot now remove shrubs and trees I planted for the short term due to local by-laws, so what can I do?

The lawn! Forty years ago it took Sandy two hours to mow the lawn. Today there are many more flowerbeds, and mowing the remaining lawn only takes a half hour, which includes moving benches. I won't dig up more lawn as you need somewhere to view the plants, and an even smaller lawn would look out of place.



Above: The bulb lawn in bloom, dominated by blue *Scilla siberica*.

We have a large liriiodendron which was planted in 1987. Lower branches have been removed so there is enough light for grass to grow fairly well between the tree's roots. This is a suitable place to plant bulbs, as many species die down rapidly and are ideal for deciduous shade.

In 2011, I dug pockets in the lawn and inserted bulbs of *Fritillaria meleagris*, *Tulipa sylvestris*, *T. turkestanica*, *T. humilis* 'Lilliput', *Muscari armeniacum* and *Narcissus pseudonarcissus*. Leaves emerged the next spring with good flowering from the tulips and muscari plus a few lovely bells of white and regular checkered fritillaria. I was not surprised to see *Scilla siberica* spontaneously joining the group. However, many of the bulbs did not perform.



Top: *Crocus tommasinianus*
Bottom: *Fritillaria meleagris*



Tulipa humilis 'Lilliput'

We let the flowers die down, and the grass (plus dandelions and other weeds) grow up. I scattered seeds from the few seed pods. The area is mown in early July when it reverts to a normal weedy lawn.

A *Dodecatheon meadia* 'Alba' appeared the next year unexpectedly even though I hadn't grown one for ten years. It was joined by more scilla, *Mertensia virginica*, *Chionodoxa luciliae*, *Crocus tommasinianus*, *Galanthus nivalis*, and *Puschkinia scilloides*. These have all seeded in from nearby beds. The fritillaria increased and some of the narcissus flowered.



Tulipa turkestanica



Non-bulbous arrivals in the bulb lawn: *Mertensia virginica* (top) and *Dodecatheon meadia* 'Alba' (bottom).

Now *Corydalis solida* is coming up in the main lawn. I have a colony of varying shades under a yellowwood plus some 'Beth Evans' nearby. As they seed, I keep only the best colors.

Primula veris grows close by in a semi-shaded bed, and now small plants are arriving in the bulb lawn area. They do not appreciate the July mowing and have not yet flowered.

I loved big patches of *Tulipa* 'Angelique' in my grandmother's lawn 75 years ago so I planted five bulbs. Only one flowered in my lawn, and I think they have died through lack of light. Small strawberries suddenly appeared last year. I delightedly ate one, but it was seedy and tasteless. However, the small, red dots add to the green lawn. The flowers hardly show. It must be *Duchesnea indica*, the mock strawberry (or Indian strawberry). I had never seen it before!

This year I am planting seeds from the NARGS seed exchange in the lawn as soon as the snow melts. The habitat should work for cyclamen, camassia, and *Lilium martagon*. The latter self-seeded under my uncle's beech tree. Will this work here?

There are a few problems, mainly lily beetle. These are easy to find and remove by hand. Perhaps *Mertensia virginica* is too rampant, but it is easy to pull up. The grass is also too vigorous. I will try planting seeds of the hemiparasite *Rhinanthus minor* (yellow rattle). This is used extensively in Britain to reduce the growth of grasses in wildflower meadows.

It is exciting to see what appears and how my plantings have grown. Why not establish a bulb lawn in a corner of your garden?



After the bulbs die down, the space reverts to a perfectly normal looking lawn.



How I Root Cuttings

JOSEPH TYCHONIEVICH

I'M NOT THE most talented gardener in the world. I'm not one of those mad geniuses who has a garden full of thriving plants that shouldn't be able to grow in my Zone. But I do have one skill that does more than anything to save my rock garden: propagation.

Growing from seed is essential to my garden because I can acquire all sorts of interesting plants from the NARGS seed exchange and elsewhere. Seed allows me to grow large numbers of plants at virtually no expense, and provides useful genetic variance. For example, going into last winter I had about two dozen *Aloe striatula* (Syn. *Aloiampelos striatula*) seedlings in the rock garden. As of this spring, I have three left. The three hardiest individuals, presumably, which is only a good thing.

But maybe even more important than starting plants from seeds is rooting cuttings. Being able to grow plants from cuttings means that when I do get an exceptional plant in a batch of seedlings, I can make more of it. I can produce backups of favorite plants so that if one bites the dust, I have a supply of new ones to replace it. I can propagate rarities and give them to friends as gifts, which, selfishly, means that if I lose something, I can beg a piece back. And, finally, when I visit gardens, I often come home with some cuttings in a bag that I can then root and grow in my own garden.

So if you don't grow from cuttings, I think you should. As a beginning gardener, I found rooting cuttings very difficult. But what I've learned over time propagating at home and in various professional settings is that successfully rooting cuttings depends less on the skill of the person taking the cuttings, and more on having the right equipment for the job. And after a lot of trial and error, I've found a simple, inexpensive setup at home that works great for me.

But first, some biology. Any discussion of rooting cuttings has to start with the word totipotent. Plant cells are "totipotent," which means that any given cell can, under the right conditions, divide and give rise to any other type of cell. This is unlike the cells in our bodies. Human skin cells can only produce more skin cells and muscle cells, more muscle cells. This is why we can't grow a new finger if we cut one off, but when we take a piece of a plant and put it in the right conditions, the cells in the stem can divide and produce roots. First, the cells have

Opposite: This *Dianthus* 'Red Penny' was a gift from the great Minnesota rock gardener Betty Ann Addison. It has performed beautifully in my hot Virginia garden, so now I want to make more of it.

to dedifferentiate, producing generic cells called callus, and then those cells divide to produce differentiated root cells. There are a few ways that the details of this process matter for the practical process of rooting cuttings.

First, the process of dividing and growing these new cells takes time and energy. The details vary by the particular plant and a host of other factors, but while the cells are shifting into their new forms, the cutting needs to avoid drying out despite not having any roots, and it needs to be able to photosynthesize to produce the energy to grow those new roots.

Second, though all plant cells are, in theory, totipotent, not all parts of the plant will actually be able to grow roots. While a handful of plants can grow roots from detached leaves, most require a stem with leaves attached, and with few exceptions, new, soft, tender growth can grow roots faster and easier than older, more mature, hardened growth.

Third, plant hormones regulate the process of cells switching from one type to another. Plants produce many hormones naturally, and actively growing stems produce hormones that travel down the stem and promote root growth, while actively growing roots produce hormones that travel up the stem and promote top growth. In an intact plant, this helps keep roots and shoots in balance. When rooting cuttings, this is one of the reasons cuttings from the tips of growing plants generally root the fastest, and we can amplify these effects by using artificial rooting hormones to speed up the root growing process.

These facts leave us with a few contradictory requirements for successfully rooting cuttings. Young, tender, actively growing shoots root the fastest and easiest, but they also are the most prone to drying out and dying before those roots get up and running. Cuttings also need light to photosynthesize and grow roots, but that same light will speed up cuttings drying out.

Rooting cuttings is a balancing act. If you search for a name of a plant and the word “propagation” or “cuttings,” you’ll often turn up information on whether to try to root them as softwood (softest, newest growth) hardwood (hard, mature growth) or semi-hardwood cuttings (in between). This is a matter of finding the sweet spot for each species between ease of rooting and not wilting and dying before those roots get going. For virtually everything in my rock garden, I take tip cuttings of new growth, whether from shrubby things like daphnes or herbaceous plants like dianthus. I start with new growth that is still tender but not completely soft, and that usually works. If I have trouble rooting a particular plant, I like to take a few cuttings every week or two, taking notes as I go, so I can find the best stage of development for that particular plant.

The other issue – giving cuttings enough light while not letting them dry out – has been the biggest challenge for me as a home gardener. When I was new to gardening, I tried putting cuttings in plastic bags on windowsills, or draping plastic wrap over pots of cuttings, and had very little success. The plastic worked to keep moisture in, but also acted like a greenhouse, roasting the cuttings if they got enough light.



New growth without flower buds is usually the best source for easy-to-root cuttings..



LED shop lights and disposable baking pans are an affordable way to provide the right conditions to root cuttings with ease.

Then I went to college and met my first mist bench. Professionals root their cuttings on a bench with fine nozzles that spray the cuttings on a regular schedule. The constant mist keeps the cuttings hydrated and cool while they soak up the sunshine required to root.

Mist systems make rooting cuttings easy, but they're not really practical at home. Most of us don't have a greenhouse, let alone one big enough to dedicate a space to a mist system. Mist systems are also fairly expensive and require regular maintenance as the fine mist nozzles are prone to clogging or breaking.

However, in the past few years, I've settled on a technique that works well for me, with very little expense, space, or effort.

The first part of my system for rooting cuttings is LED lights. I use cheap, white, LED shop lights from the hardware store, but if you want you can buy the fancy red-and-blue ones specific for growing plants. I've had great results from both, and much prefer the affordability, white light color, and convenience of the LED shop lights. LEDs are



Pure vermiculite is an easy, nearly sterile medium for rooting cuttings.

my first choice because they are incredibly energy efficient, producing the right wavelengths of light for photosynthesis with very little heat. Cuttings in the sun can easily bake. Cuttings under LEDs stay cool. I use the same LEDs to start seeds in the spring, and once the seeds are out, shift them over to cutting duty. These lights help me produce a steady stream of new plants, and thanks to the energy efficiency of LED lights, cost me very little to run.

To keep my cuttings moist, I used to use resealable plastic bags, and they work, but they're a giant pain. They are awkward to fill with soil, hard to stick the cuttings in, fall over, collapse onto the leaves and promote rot, and don't work very well. Now I use a very high-tech solution. I go to the dollar store and buy the disposable aluminum baking pans that come with a clear plastic cover. They cost all of a dollar, and they work great. I stick the cuttings in baking pan, place the plastic cover over, and have a perfect little terrarium to keep the cuttings from drying out, no mist system required. Once I stick the whole thing under the lights, my cuttings root like a charm.



Add water until moist, but not soggy.

I have used regular potting media to root my cuttings, and that certainly works – I still use it sometimes – but now I prefer to fill my rooting pans with pure vermiculite. It is light, holds a lot of water, and ideally, it is nearly sterile. The 100% humidity in the container is prime habitat for rots and molds, but I find I have far fewer problems when I use vermiculite than when I use potting soil. I've used pure perlite also and had pretty good results with it as well.

I use rooting hormones on all my cuttings. There is a lot of research into the best hormones to use for different plants. The exact amount and balance that is best for each plant varies, and some people swear by liquid over powder, but I just buy powdered rooting hormone at the garden center, dip everything in it, and get good results. Rooting hormone is absorbed best through freshly cut or wounded surfaces on the cutting, so I dip the cuttings in the hormone immediately after pulling leaves off and trimming the base of the stem.



Ready to stick cuttings: moistened medium, rooting hormone, a sharp blade, and trimmings from the dianthus.

Here's my actual process for rooting cuttings.

For most alpine and rock garden plants, the best time to take cuttings is early summer when they are pushing new growth. Avoid taking cuttings immediately before plants flower, as flower buds will sap much-needed energy away from growing roots. If you can't find cuttings without flowers, pinch the buds out as early as you can. Ideally, take cuttings first thing on a cool morning, when the plants are fully hydrated. If the weather has been dry, watering thoroughly the night before can help as well.

Fill your container with a layer of vermiculite, perlite, or potting medium. Add water until it is thoroughly moistened, but not to the point that water runs out the bottom. Keep some dry medium on hand to mix in if you accidentally make it too soggy.

Take cuttings from the tip of new growth, and cut them long enough that you can remove a couple of leaves from the bottom of the cutting while still leaving several at the tip to photosynthesize. For plants with very large leaves (not usually an issue in the rock garden), leave just one or two leaves on the plant, and cut them in half to reduce water loss.

Bring the cuttings to a comfortable seat at a table. Have rooting hormone in a small dish or container, and your tray filled with moistened medium on hand. If possible, work indoors or in the shade, so that your delicate cuttings aren't roasting in the sun while you work.

Trim the stem of each cutting to immediately below the lowest leaf, and pull or cut off a few of the lower leaves. With some plants, leaves will pull off easily and cleanly. With others, like dianthus, if you try and pull off the leaves you will end up snapping off the bottom of the stem as well, so you will need a sharp blade to cut the leaves off. A sharp knife, razor blade, or craft knife all work well.

Dip the bottom of the cutting in rooting hormone, shake off any excess hormone powder, and insert it into the moistened medium. Continue with the rest of the cuttings, add a label with their name and the date, cover with the clear plastic dome, and stick under your lights.

Then you wait. Some plants will root as quickly as one or two weeks, others will take longer. Check the cuttings every week or so, and pull out any that have turned brown or rotted. Promptly removing any dead plant material from the cutting tray will reduce the chances that a rot or mold will spread to the other cuttings.

You can test and see if a cutting has rooted by gently lifting it up out of the rooting medium. If you use a light-weight medium like vermiculite or perlite, you have little chance of damaging baby roots while pulling the cutting out. If you use a heavier, peat-based potting medium, it is best to stick your hand down into the media and lift from below to avoid damaging new roots.



Top: Tip cutting before trimming (left) and after removing the lower leaves and trimming the stem to just below where the lowest leaves were (right).
Bottom: Cutting being dipped into rooting hormone powder (left) and inserted into moist vermiculite (right).

Once the cuttings have a nice crop of roots, pot them up individually, and keep them in a bit of shade and constantly moist while they adjust to life outside the humid bubble of your propagation trays.

The last step is to write down what you did and how successful you were. Snap some pictures of what the plant looked like when you took the cuttings and record when you cut them and how many rooted. Over time, those records will be invaluable as you learn just the right time to cut each plant for the maximum rooting.

This is by no means the only way to successfully root cuttings, but it is a technique that has worked very well for me with minimal expense or effort. I hope you'll give it a try, and if you have had success with a different method, please write in a letter to the editor (send to gsparrowgardens@gmail.com) so we can share your techniques with the rest of the NARGS community.



Good labels and record keeping are key to successful propagation.
Lucky for me, good handwriting is not.



Top: Cuttings under lights ready to start rooting.
Bottom: A successfully rooted dianthus cutting with vermiculite clinging to the new roots.

Atypical Seeds in the Seed Exchange

CAROL CLARK WITH THE ASSISTANCE OF GABRIELA COSTEA AND ANNA LEGGATT

REVIEWING THE DONATIONS to our recent seed ORG&HPS (Ontario Rock Garden & Hardy Plant Society) exchange brought to mind the problem of non-viable seed. It's disappointing when the seeds you ordered don't germinate. What might have gone wrong?

Hydrophilic seeds will not survive desiccation

Some seeds have a high moisture content. If they lose much of this moisture, the embryo inside will die. Even when stored at optimal temperatures, they quickly lose viability. This group is classified as "recalcitrant" (Eric H. Roberts, 1973); Bill Cullina of the New England Wildflower Society introduced the term "hydrophilic" to describe them. Gabriela Costea, who owns BotanyCa, uses the latter term. "Recalcitrant" suggests "obstinate." In fact, these seeds are anything but obstinate. Their embryos are raring to go.

In the past, many gardeners referred to these seeds as "ephemeral," but that term causes confusion. "Ephemeral" is rightly applied to those spring-flowering woodland plants which die back shortly after blooming and disappear until the following year. Some of them produce hydrophilic seeds; others do not.

Success in propagating hydrophilic seeds is straightforward. Collect them as soon as they are ripe, then immediately clean and sow them. If you must store them, put them in sealed plastic bags in slightly moist vermiculite or peat moss. The medium must be just moist, not wet and you need to use a fairly roomy bag. In small bags, the seeds have the tendency to rot, perhaps because they lack oxygen. There is no need to spray the seeds with any chemical. The bags should be kept at the same temperature that the seeds would experience out of doors. Keep them warm during summer, coolish towards the fall and then 40°F (4°C) at the onset of winter. Do not store them in the freezer because the formation of ice crystals will damage cell membranes.

Many groups are unable to ensure the proper conditions for storage and frigid temperatures encountered during shipment will kill any remaining embryos. The NARGS seed exchange will accept damp-packed hydrophilic seeds from the United States, but not from outside the country. If donating seeds to other exchanges, check to see if they will accept hydrophilic seeds.



Seed moist-packed in vermiculite. Photo by Gabriela Costea

Exchanging hydrophilic seeds informally

If you are willing to collect and share hydrophilic seed, you will need to plan ahead. Make it known within your group in advance which specific species you are going to have available. Your offerings could also be posted on Facebook or Instagram.

Those who want to obtain these seeds can then send self-addressed, stamped envelopes, one for each species, to the donor who will ship them as soon as they are ripe. The first of the seeds might be ready early in May, but some species don't mature until late summer.

Some seeds have a short lifespan

Many genera include species bearing seeds of fairly limited viability. However, not all species in a given genus will necessarily demonstrate this characteristic. If sown after six months, they might germinate but are less likely to produce vigorous plants. Within this category, germination is affected by a wide range of factors like genetics, temperature and moisture conditions under which the seed ripened, the maturity of the seed at harvest and the altitude at which the mother plant grew. Alpines, with their brief growing season and cool conditions for seed maturation, often bear seed that is of shorter viability than the identical species grown at lower elevations.

In addition, some species of aconitum, adonis, delphinium, epimedium, erythronium, and trillium are partially hydrophilic and will tolerate a degree of drying. If you are planning to save them, you might want to provide temporary storage in barely moist vermiculite. Gabriela Costea comments that species with green seed coats at the time of collecting (for example, anemone, erythronium, hepatica, jeffersonia) need to be left for one day or so to dry a bit; if placed in moist medium right away, it's a sure disaster.

ORG&HPS lists over 8000 different kinds of seed in the Germination Guide of its website www.onrockgarden.com. When your seed order arrives, check the Germination Guide and heed the advice, particularly if it is recommended to sow seeds immediately.

All seed deteriorates over time, especially if improperly stored

After collection, seeds must be dried well and placed in a paper container. Mold can destroy seeds stored in plastic. Glassine envelopes work well for storage. Once seed has been collected, it should be stored in a cool, dry place such as a basement. In his blog, Robert Pavlis, an ORG&HPS member, explains that placing freshly harvest seeds directly into storage in the refrigerator can interfere with maturation of the embryo. His full article on the subject is on the web <https://www.gardenmyths.com/storing-collected-seed-fridge-or-freezer>.

Your own stash of leftover seed presumably will be very dry if it is not sown within a year. The stash probably will not then be harmed by storage in a freezer or refrigerator. Old seed can be coaxed into germinating by using GA-3 (Gibberellic acid, a plant hormone that encourages germination if used properly).

No matter how carefully you have stored your seed, whether of garden origin or purchased commercially, if it was not collected in the current year, it should not be donated to seed exchanges. Exceptions might be made if the species is particularly valuable. Every seed exchange's reputation for offering good seed relies on donation of fresh material.

Chaff is not the same as seed

The family asteraceae (commonly known as composite flowers), as well as some others, must be prepared carefully before donation. Many of the fruits are empty and only a few contain viable seeds. Achillea, aster, anaphalis, solidago, and syneilesis are but a few examples of plants whose seed heads are composed primarily of chaff.

Your seed should be thoroughly cleaned before donation. Searching through seed heads and calyces for seed can be quite time-consuming. Seed is the hard, plump material which cannot be crushed between your fingers. Discard any soft, loose fibrous material.

462

ORG&HPS 2018-19

A

Erigeron pinnatisectus

PE Fern-leaf fleabane. May-June. Reblooms in fall.
MAUV
10 cm

7



Top: An example of a recent ORG&HPS seed exchange envelope.
Bottom: The recipient found just one hard seed. The rest was chaff.
Photos by Gabriela Costea

With thousands of packages of seed to prepare, packaging volunteers usually cannot spare the time to go through a pile of chaff looking for viable seed. You should hear the groans when a packer encounters uncleaned seed! In cases where the donation contains a lot of chaff, packers at ORG&HPS are told to put a generous quantity of the questionable material in each package in hopes that there are at least three good seeds in each order. Unfortunately, if the order is being sent to a jurisdiction where the import of uncleaned seed is prohibited, the package might be confiscated.

If you are keeping the seed heads for your own needs, cleaning is not as important. Break apart the seed head and sow the entire contents. The few seeds amongst the chaff will likely germinate despite the non-viable material around them.

The following lists can help you decide how to pack your seeds, and which seeds will be accepted by various seed exchanges. These lists are kept up-to-date in a permanent posting on the ORG&HPS website <http://www.onrockgarden.com/page/seed-exchange>. If you are unsure about a particular plant not on these lists, a search online combining the scientific name of the plant with the word "germination," "hydrophilic," or "recalcitrant" will often turn up useful information.

Hydrophilic seeds, accepted, damp packed, by the NARGS seed exchange as long as they are posted from the USA:

Adonis vernalis

Amaryllis

Anemone nemorosa

Anemone quinquefolia

Anemonopsis

Anthurium

Asarum

Caltha palustris

Caulophyllum

Castanea sativa

Claytonia

Clintonia

Clivia

Coptis trifolia

Dicentra

Dysosma

Eomecon chionantha

Hepatica

Hylomecon vernalis

Jeffersonia

Lindera benzoin

Medeola
Maianthemum
Nerine
Paris quadrifolia
Plagiorhegma
Podophyllum
Ranzania
Sanguinaria
Symplocarpus
Stylophorum
Trillium albidum, grandiflorum
Uvularia

Seeds with short viability, which are welcome donations to most seed exchanges:

Acantholimon
Aconitum
Anemone
Astrantia
Callianthemum
Corydalis
Daphne
Delphinium
Epimedium
Eranthis
Erythronium
Fritillaria
Gentiana
Glaucidium
Helleborus
Primula
Pulsatilla
Ranunculus
Saxifraga
Soldanella
Tanacetum
Thalictrum
Tiarella
Trillium chloropetalum, erectum, kurabayashi, rivale
Viola
Zephyranthes



REGINALD FARRER AND *THE ENGLISH ROCK GARDEN*: A HUNDRED YEARS

JOHN GRIMSHAW

REGINALD FARRER WAS a unique and complex character, who many of us would probably find rather irritating. The eldest son of a landed Yorkshire family, he was born in 1880 and died in what was then called Upper Burma in 1920. In that short span, he wrote a series of unsuccessful novels, traveled widely and became a nurseryman.

Short of stature but with a gigantic ego and a way with words, he did not suffer fools, in person or in print. His most often reproduced photograph shows a plump face, with a luxurious mustache grown to conceal a hare-lip and cleft palate (which also caused him to speak in a high-pitched squeak); the plumpness was not restricted to his face, to judge by Euan Cox's tactful description of "a frame which was hardly built for long days of climbing and searching." He stood for Parliament as a Liberal, but spent all his campaign funds on plants; later he experienced the Western Front as a war correspondent. Following early travels in Korea and Japan, he became a Buddhist, which went down very badly with his family, with whom his life was always one long skirmish. Nor would it have helped that he was clever, a trait regarded by many upper-class English people as deeply suspicious. And he was gay at the time when Oscar Wilde was walking the treadmill in Reading Gaol.

Above all, however, he is remembered as the founding father of rock gardening, even its patron saint, proselytizing for a natural style of rockwork and carefully prepared soils in which to grow the alpine he wrote about in glowing terms. Who could fail to chuckle at his disparaging descriptions of the rockeries then in vogue, of the "dog's grave" and "almond pudding" varieties (though neither is wholly extinct), or lap up some of the flamboyant descriptions of his favorite plants?

The Farrer family owned – and indeed still do – the vast Ingleborough estate in North Yorkshire, which encompasses the square-topped peak of Ingleborough, a regional landmark at 2,372 feet (723 m).

Opposite: Portrait of Reginald Farrer.
Image courtesy of The Royal Botanic Garden Edinburgh Archives.



The rocky landscape of Ingleborough, where Farrer grew up.
Photo by Joseph Tychonievich

With its lower slopes formed of carboniferous limestone in classic karst formation, and its upper levels of the hard sandstone known as millstone grit, the mountain (as we call it) supports a wide diversity of habitats and a rich flora, including many “alpines,” which spread out over the surrounding limestone hills of the Yorkshire Dales. *Primula farinosa* is locally common, and *Saxifraga oppositifolia* still grows on the highest coldest parts. Open woodlands have nice things like *Convallaria majalis* and *Aquilegia vulgaris* as natives, but even in Farrer’s time the prime specialty of the district, *Cypripedium calceolus*, had been harried to almost total extinction by collectors.

It was, therefore, an ideal habitat for a plant-obsessed boy, educated at home on account of his physical disabilities (he barely spoke until he was 15, after which he hardly stopped), and he was able to make his debut in print at the age of just 14 by publishing a new location record of a rare plant (as *Arenaria gothica*, now *Arenaria norvegica* subsp. *anglica*, endemic to the Yorkshire Dales). About the same time he started constructing his first rock garden in the grounds of the

family home, Ingleborough Hall, falling in love with the waterworn limestone as (in his view) the perfect stone for the rock garden. His avid recommendations were to lead to the despoliation of many areas of the limestone pavement he so loved, as gardeners followed his advice, including myself when constructing the rock garden at my parents' home almost 30 years ago. In those bygone days of biological plenty, Farrer and his contemporaries had no qualms about collecting whatever they fancied from the wild, often in large quantities for both private and commercial use, in his case supplying his own Clapham Nursery.

His first rock gardening book was *My Rock Garden* (1907), a great success, soon followed by *Alpines and Bog Plants* (1908) and *In a Yorkshire Garden* (1909). Then there were the travel books, *Among the Hills*, subtitled *A Book of Joy in High Places* (1911) and *The Dolomites* (1913), enthusing himself and his readers into ecstasies over the floral delights of the Alps. By the time he wrote *The Rock Garden* (1912), these and a host of articles in the horticultural press had firmly established him as the rock-gardening authority and he could happily write: "As for books on the subject, I should be an idiot if I didn't urge you specially to read my own. And there are others."

These works were mere preliminaries to the magnum opus that is *The English Rock Garden*, first published in 1919, an encyclopedia of plants Farrer deemed suitable for the rock gardener to grow. Many were but names to him, ferreted out in what must have been a genuinely thorough literature search and written-up in 1913 (the man must have had prodigious energies!). In 1914 he went to the Tibetan borderlands of Gansu in western China with fellow plantsman William Purdom, having selected that area as being likely to produce plants well-suited to the English climate (a view modern plant-explorers tend to share). Their experiences, though typically written up by Farrer as if he was the only participant, were recounted in the two volumes of *On the Eaves of the World* (1917), covering 1914-15, and the posthumous *The Rainbow Bridge* (1921) for 1916: the balance has been redressed in the recent book *Purdom and Farrer, Plant Hunters on the Eaves of China*, by Alistair Watt (2019). As the preface to *The English Rock Garden* recounts, the text "was corrected for press at Lanchou-fu [now Lanzhou]... during the winter of 1914. The exigencies of war have delayed its appearance ever since..." It was only on emergence from Gansu in 1916 that they discovered the full horrors of the First World War.

In *The English Rock Garden* Farrer was able to give free rein to his wordy flights of fancy and plant snobbishness, with "miffs," "mimps," and "squinny" all being frequent terms of disapprobation. A typical example might be the entry for *Gentiana andrewsii*, which "is the Gentian that never wakes up. It has a slender stem of some 9 inches, at the top of which in summer appear two or three bulging bags of dull dark blue,





tipped with white. These give high hope of glory; unfortunately they never do any more. In America, where it lives, the disappointing plant is known as Dumb Foxglove, and, as it never opens or has any charm, there seems no reason, except its indestructible easiness, why it should so often find a place in catalogs." (No longer, in the UK at least, as no nurseries list it in the *RHS Plant Finder* for 2018.) But it's memorable stuff and one cannot fail to enjoy a description of oenothera as "a group of plants as polymorphic as a range of clouds at sundown;" "the irresistible silver wads" of *Eritrichium nanum* "nestling into the highest darkest ridges of the granite" (and on for no less than six pages), or the immortal description of *oncocyclus iris* as "silken sad uncertain queens," "chief mourners in their own funeral-pomps."

The end of the war in November 1918 enabled him to leap back into action, immediately planning a trip to northern Burma (now Myanmar) in 1919 with a young man called Euan Cox, who was to keep the fire of Farrer's memory alight with two accounts of this expedition, *Farrer's Last Journey* (1926) and *The Plant Introductions of Reginald Farrer* (1930), illustrated by a sample of Farrer's field sketches in watercolor. They are not the finest of botanical art, but are very charming and convey the feel of the plants in the wild.

Watercolors by Farrer.

A mountain view (opposite) and *Androsace tibetica* with *Iris goniocarpa* (above.)
 Images courtesy of The Royal Botanic Garden Edinburgh Archives.



Towering rhododendrons planted by Farrer in a ravine above Ingleborough Hall.
Photo by Joseph Tychonievich

Cox went on to establish the great rhododendron collection and nursery at Glendoick in Perthshire, Scotland, and his grandson Kenneth has recently expressed his debt to Farrer in his superb *Woodland Gardening* (2018). In her admirable essay on Farrer, *A Rage for Rock Gardening* (2002), Nicola Shulman reveals that relations between the two men were not entirely cordial for the whole time, but by 1926 Cox was able to write generously: "His character was so intricate that it is impossible... to make definite statements. All who knew him recognized his moods, and if they were wise, laid their plans accordingly. His learning was quite out of the ordinary, and I was content to sit at the feet of the master. A year is a long time to be alone with a single companion, but we came through with flying colors and with our friendship unimpaired." Farrer himself stayed on in Burma, working at his collections through the summer monsoon of 1920, but in early October he became ill and died, apparently of diphtheria.

How should we assess Reginald Farrer's legacy, a hundred years after the publication of *The English Rock Garden* and almost a century since his death? His collections of European alpine plants soon disappeared unremarked into the mixing pot of garden stock, though a few of us still grow the mossy *Saxifraga* 'Wallacei' as a direct descendant of stock bought from the Clapham Nursery: "the flowers are pure white, of enormous size and amplitude, produced in generous branching sprays that hide the whole green wave in early summer with a crest of refulgent snow." His Gansu collections arrived in the midst of the First World War, when everyone's attention was diverted, but of these *Gentiana farreri* appeared from a packet labeled "mixed muck." Probably the most important of all his plants is the winter-flowering *Viburnum farreri*, though it had previously been introduced by Purdom, and another from Gansu is the lovely *Buddleja alternifolia*. Few plants became established from Burma, but among them are two we grow in the Yorkshire Arboretum, the early-flowering scarlet *Rhododendron mallotum* Farrer 815, with rich rufous indumentum, and the shimmeringly glaucous, drooping-branched spruce Farrer 1435, named *Picea farreri* only in 1980. His rock gardens have disappeared, and Ingleborough Hall is an outdoor education center belonging to Bradford City Council. Only in the ravine above the house, in a fault that exposes acidic rock among the limestone, are any of Farrer's plants to be seen: towering old rhododendrons fighting with the woodland trees, a magical sight when in flower. Joseph Tychonievich and I snuck in to see them one spring; otherwise, they have to be viewed from the path leading from Clapham village to Ingleborough – for which the Farrer family grants right of access for a small fee paid through a ticket machine.



The author's copies of *The English Rock Garden*. The 1980 reprint set won as a school prize and a 1930 set, protected in charming hand-embroidered jackets.
Photo by John Grimshaw.

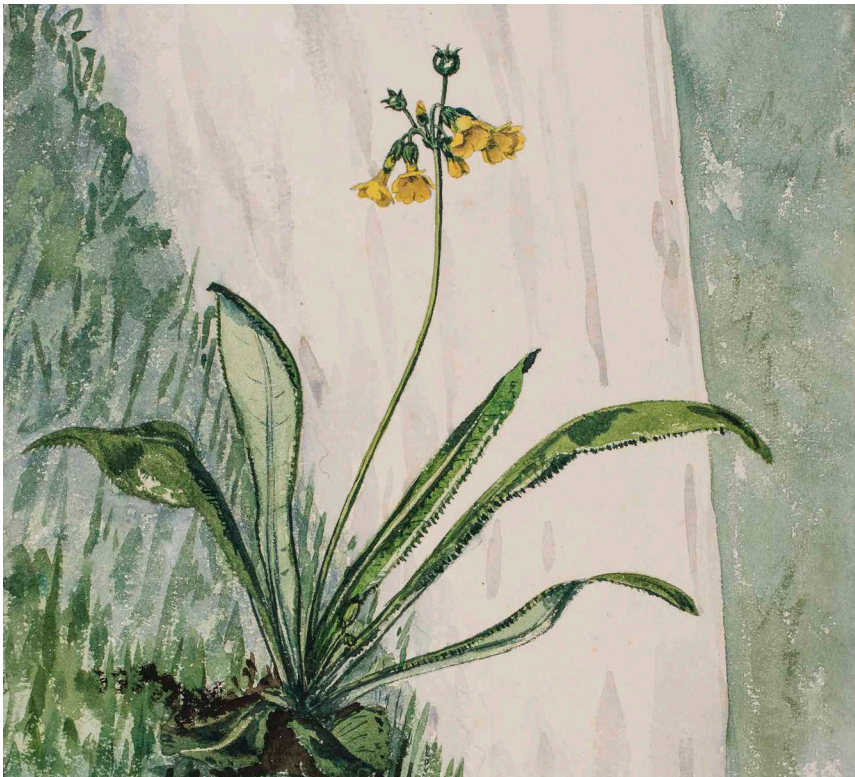
Farrer's prolific writings assured him an unassailable place in the rock gardening literature for the first eight decades of the twentieth century: it is noteworthy that the last reprint of *The English Rock Garden* appeared in 1980. It was this that I was awarded as a school prize in 1985, costing £35 from the Royal Horticultural Society's bookshop at Wisley. The prize itself was only £30-worth of books, so a fiver had to be put to it from family funds. It has been a constant companion ever since, referred to on occasion when a picturesque quote is required or other books fail to provide information. The baton has passed through the decades, as is inevitable, though the replacement *Encyclopaedia of Alpines* from the Alpine Garden Society is itself now 25 years old. The Alpine Garden Society continues to award the Farrer Medal to the best plant in each of its shows, ensuring the constant evocation of his name in rock gardening circles.

A perusal of *The English Rock Garden* will take you on a roller coaster of words, conjuring up images of glowing alpines or mountain scenery. There's no wonder generations of gardeners found it inspiring. The present-day reader may well revolt at the purple prose, be irritated at the weird spellings and pronunciation diktats insisted upon by Farrer, and think that much of the cultivation advice is utter tosh. But this does not affect *The English Rock Garden's* seminal position, or diminish its revolutionary influence a hundred years ago – and there are times when one just has to wallow in its words for pure pleasure, as Farrer did.

Many thanks to the The Royal Botanic Garden Edinburgh (RBGE) Archives for providing images for this article.

The RBGE Archives have looked after an incredible collection of Reginald Farrer's letters, photographs, lantern slides and paintings since they were donated by his family in January 2005.

The Royal Botanic Garden Edinburgh has a website www.rbge.org.uk, and details of the Farrer collection can be found by searching the Archives catalogue there <http://atom.rbge.info/>



Watercolor of *Primula brachystoma* by Farrer.
Image courtesy of The Royal Botanic Garden Edinburgh Archives.



Whistling Gardens

Winner of the Linc & Timmy Foster Millstream Garden Award

ANNA LEGGATT

WHISTLING GARDENS IS owned by Darren and Wanda Heimbecker. The 20-acre garden is set on a 56-acre farm, in Wilsonville, near Brantford, Ontario. It opened to the public in 2006 and is the only private botanical garden in Canada.

The garden was constructed by Darren with one main helper. It now consists of gardens and various collections, featuring over 4,000 different plant species and cultivars. Paths are wheelchair accessible so all can visit and admire flower beds, many bordered with native plants. The garden includes small to large water features including a babbling brook and a large pond.

The conifer collection has over 2,300 different taxa, making it the largest public display of conifers in North America, possibly in the world. Many of the specimens in the conifer collection are the only examples of their type in all of Canada. One exciting plant, the Baishan fir (*Abies beshanzuensis*) is very rare with only three specimens left in the wild. The conifers are displayed both in island beds and mixed in harmoniously with other plants.

There are over 1,200 varieties of peonies in display beds and mixed with other plants, making it North America's largest public peony collection. The gardens are included in the *International Garden Destination Map* produced by the American Peony Society.

The rock garden occupies nearly an acre of alpine plants, succulents, cacti, perennials, dwarf conifers, and Asian maples. These are nestled in between local limestone and granite rocks. There is a fossil collection in this garden, displaying stony specimens of plants and small aquatic life from the ancient seas of the Lower Devonian and Upper Silurian Periods.

In the spring, 1,200 muscari bulbs create a blue river between the boulders. There are many other bulbs as well and beautiful buns such as *Dianthus freynii*.



Dianthus freynii



Two view of the rock gardens at Whistling Gardens.



Treasures blooming amid the stones in the rock garden.



Some of the garden's extensive conifer collection.

Hundreds of rare trees, especially those native to southern Ontario, grow throughout the gardens. This collection focuses on uncommon species and new varieties. Some plants are being tested and evaluated at Whistling Gardens for the first time in Canada to determine hardiness, ornamental value, and economic production viability. Different shrubs are used extensively in the beds. New varieties are continuously brought in for evaluation. Other shrubs include magnolia, *Cercis canadensis*, cornus and many *Acer japonicum*. Spring, summer, and fall color is provided by many annuals, grasses, iris, lilies, echinacea, etc.

The Marsh Garden (Le Marais) was inspired by the Palace of Versailles. The main feature is a living tree fountain. Water drips from the branches of a contorted willow on an island, surrounded by aquatic and semi-aquatic plants.

If this was not enough, Darren has created formal gardens. The fountain garden was inspired by Andre Le Notre's 1634 design at the Palace of Versailles. It has over 90 (at the moment) fountains in a granite amphitheater. The fountains are choreographed to play to Darren's own compositions using state of the art digital technology.

The Temple Garden has a classical design with the use of circles and squares. A wrought iron dome, on pillars 10 feet (3 m) high is surrounded by four fountains. There are floral displays and statues completing this garden.

As an environmentalist, Darren encourages wildlife. You may see many birds; even a killdeer pretending to be injured, to draw you away from its eggs. Butterflies flit among the summer flowers. Endangered badgers have been seen on the property.

When visiting the garden, you may see a particular shrub you like. Always ask about it! Darren has a nursery attached, and if he doesn't have that particular plant he will try and get it.

This is one of the most exciting gardens in Ontario, all created by the hard work of a single determined man, and well deserves this award.

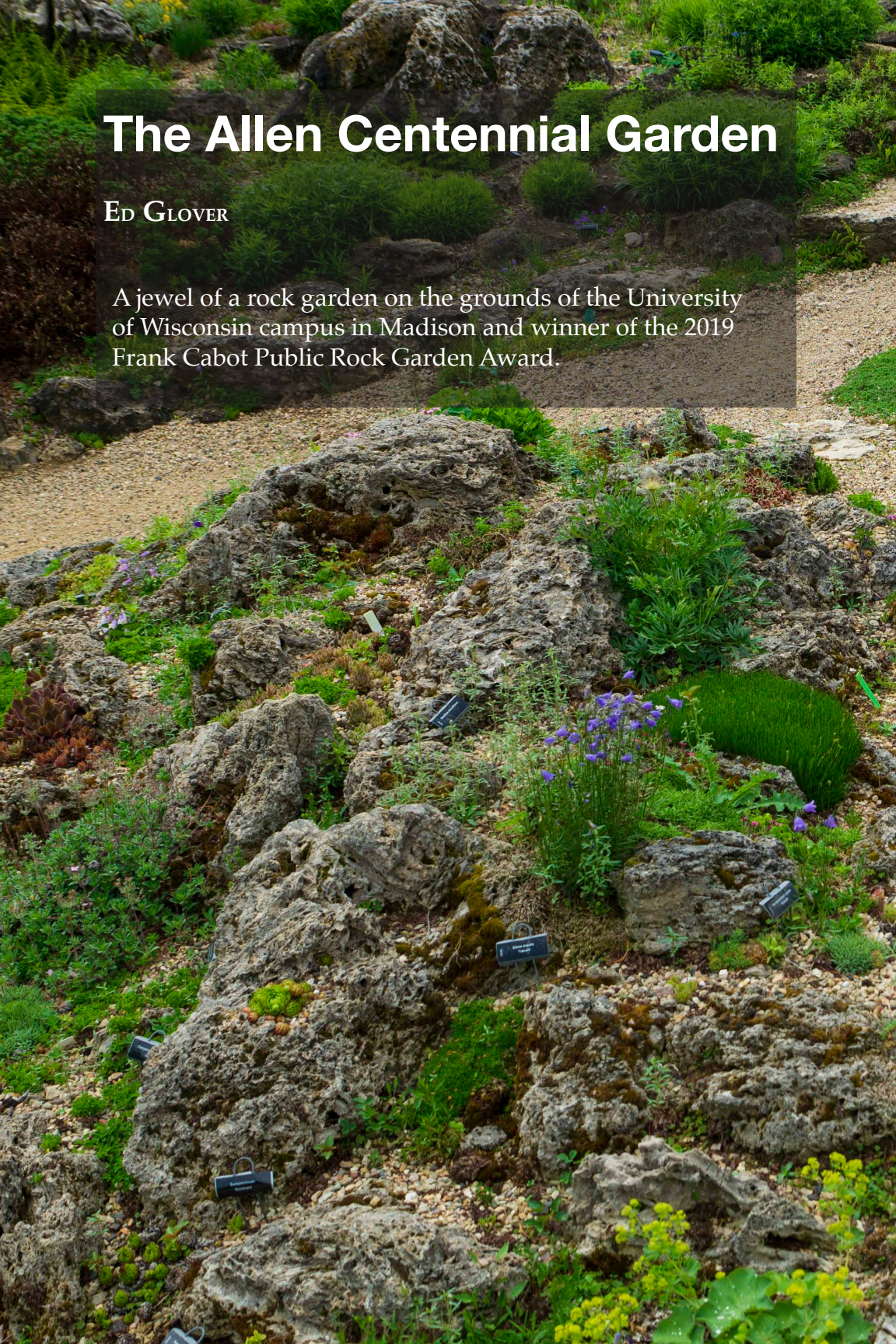


A killdeer pretends to be injured to lure predators away from its nest.

The Allen Centennial Garden

ED GLOVER

A jewel of a rock garden on the grounds of the University of Wisconsin campus in Madison and winner of the 2019 Frank Cabot Public Rock Garden Award.





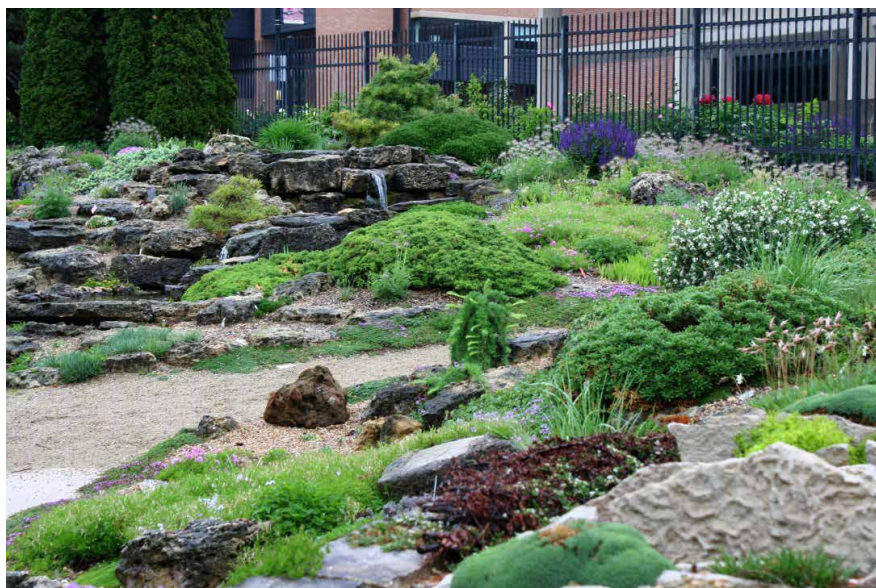
The Allen Centennial Garden

Winner of the Frank Cabot Public Rock Garden Award

ED GLOVER

ALLEN CENTENNIAL GARDEN is a 2.5-acre jewel surrounding a historic Victorian home in the middle of the bustling University of Wisconsin campus in Madison. Garden construction began in 1989, with its main focus as a teaching garden for the Horticulture Department. Since then, it has become an oasis of beauty and serenity for the students, faculty, staff, and campus visitors who wander its paths.

A favorite spot in the garden (especially in spring and early summer), the rock garden occupies approximately 7500 square feet (700 sq m) in the southwest corner of the gardens on a north-facing slope in full sun. The garden was constructed in 1989 with over 20 tons of beautifully featured limestone, which had weathered on a local farm for over 100, years plus 8 tons of sandstone. Tom Vanderpoel, a NARGS and Wisconsin-Illinois (WI-IL) Chapter member, designed the garden and oversaw its construction. The inclusion of a rock garden was proposed by Warren (Professor Emeritus of Horticulture) and Alberta Gabelman, WI-IL Chapter NARGS members, who planted and faithfully maintained the garden for 14 years.





In 2003 Ed Glover, a long time member of NARGS and the WI-IL Chapter volunteered to guide the future work in the rock garden. About a half-dozen volunteers from the WI-IL Chapter, who have labeled themselves the "ACG Rockheads," currently maintain the garden along with a summer student intern. Usually, one WI-IL Chapter meeting a year is designated as a workday in the garden.

Two main goals of the rock garden are to show visitors a variety of methods of growing alpine rock plants here in the Midwest and to display a large variety of those plants from easy to challenging.

Since 2003 we have renovated many areas of the garden and added new features to meet these goals. The garden currently includes scree, moraine, tufa beds, a dry stream bed, a sand bed and pavement for xeric plants, a raised bed, a collection of troughs, and the most recent addition of a crevice garden. In 2006 we received a generous grant from the Singer Endowment Fund to help underwrite the tufa beds.

The Wisconsin-Illinois Chapter hosted a Study Weekend in the spring of 2017 with the rock garden at Allen Centennial being a major focus of the meeting. At the NARGS Annual Meeting in 2019, the garden received the Frank Cabot Public Rock Garden Award.

The following pages are a photo essay on this inspiring garden.





Opposite: A sea of flowering phlox, with one of the garden's waterfalls in the background.

Top: Species tulips bloom in front of *Arenaria* 'Wallowa Mountains'

Bottom: Pulsatilla shifting from flower to seed heads.



Above and opposite: Crevices filled with alpines in the garden.



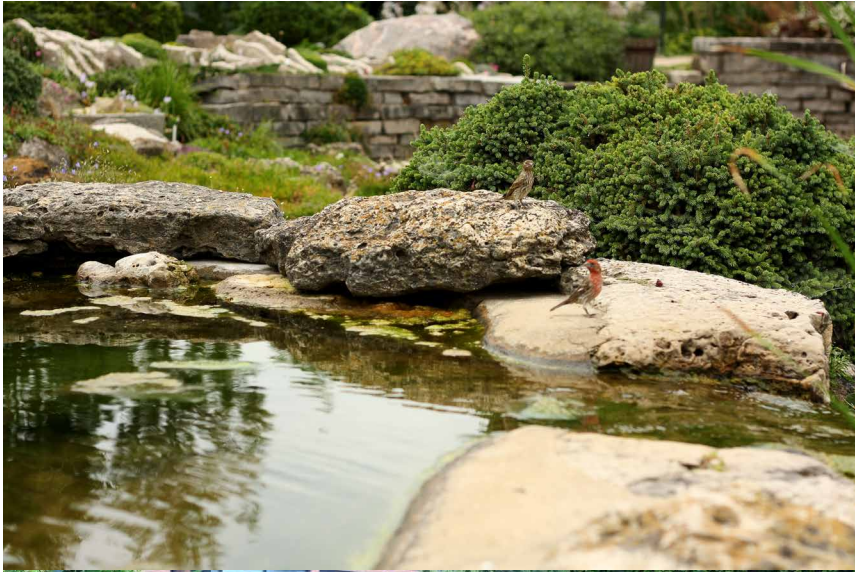
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Sedum neri

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Opposite: Water moves through the garden, making habitat for diverse plants.

Above, top: Feathered visitors enjoy the water as well.

Above, bottom: The rock garden abuts a large pond in the garden.



Top left: Sempervivum and other plants growing on tufa.
Top right: Spring flowers in the rock garden.
Bottom: *Arenaria* 'Wallowa Mountains' with the yellow foliage of *Aquilegia flabellata* in November.
Opposite: Campanula and dianthus making their spring show.



Award of Merit Winner: Carol Clark

ANNA LEGGATT

Rock and other gardeners around the world should be grateful to Carol Clark.

She is a treasure for the Ontario Rock Garden & Hardy Plant Society (ORG&HPS); and for anyone who grows seeds, the germination guide she created is used worldwide.

Carol started growing seeds from available sources over 20 years ago. However, she found she needed more germination information for rock garden plants in particular. The available books were in short supply, and the internet had fewer leads than it does today.

In 2002, she suggested compiling data and sharing it with ORG&HPS members. She volunteered to do this and combed through multiple resources, communicated with alpine experts around the world and experienced rock garden society members to compile an enormous list of information on germinating seeds, now available as the online germination guide on the ORG&HPS website. The list is used to create germination codes for seeds in the seed exchange, providing members with easy access to the information they need to germinate their seeds.

At first, only 30% of the seeds in the ORG&HPS seed exchange had germination codes. By 2016, only 1% lacked codes. Information today is easier to find by internet searches. Carol asked seed exchange recipients to send in their experiences, especially from varying regions. She also requested pictures for the germination page on the website. If a plant has no germination code, she requests growers to send in their successes and failures. Leftover seed with unknown germination requirements is distributed for research, with Carol often testing them herself.

Recently, she has been concerned about a group of seeds that refuse to germinate because they have been stored dry. Requesters don't receive them till mid-January and its too late for them to germinate. Carol found these seeds were now called hydrophilic. Some call them recalcitrant or ephemeral. She researched and wrote an article explaining the problem and including a list of these seeds which are likely to be submitted to seed exchanges; the article has been published in the ORG&HPS *Journal* and in this issue of the NARGS *Quarterly*.



Carol makes sure information about ordering seed goes to the ORG&HPS *Journal*, proofreads the seed exchange, contacts donors for clarification, checks for changes in nomenclature, monitors online ordering, updates and maintains the seed exchange webpage, and is in constant communication with the webmaster. She also deals with innumerable questions from the public worldwide ranging from “Do any of your members grow *Hylomecon japonicum*?” (A request from Japan) to “Why don’t you use common names?” Those who request to buy seed are encouraged to look at the NARGS and ORG&HPS seed exchanges and then join.

It was logical for her to combine the job with that of Membership Secretary. She keeps track of members, gives out statistics, encourages renewals, and points out that there are more resources if they join NARGS. She also works on our informative Members Handbook, produced annually. This gives information about other rock garden societies and suppliers in Canada, the United States, and other countries across the world.

ORG&HPS hosted a NARGS Winter Study Weekend a few years ago. Carol helped in the organization of that event and will be Registrar when NARGS comes to Toronto for the Annual Meeting in 2022.

Carol well deserves the NARGS Award of Merit.



Bulletin Board

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President's Letter

Greetings fellow gardeners. Yes, we found we did have the funds to cover printing our summer *Rock Garden Quarterly*. Yay. This was due in large part to Tours and Adventures receipts as well as the high level of support from our chapters and your generous donations. Thank you. That said, we still need to cut costs, or, better yet, add more revenue. We are moving from a time where a printed copy was essential. But the cost of postage is rising to prohibitive figures. There are many more ways to accomplish getting articles to you, with perhaps more concern for our environment. Next year, your NARGS board will revisit the issue.

In the meantime, check out our website. You can already read every article in every issue of the *Quarterly* NARGS has ever published, and we will be adding "digital only" materials using video and lots of images to make how-tos, virtual garden tours, and more. Now you can already see related app posts of interest to every passionate gardener. From Facebook groups, we flow members posts through our nargs.org home page. It took the recovery period of an illness for me to become interested in the Facebook groups, but now I realize how helpful they are. Where else can one ask questions like "How do I grow *Viola beckwithii*?" and get an immediate response from several worldwide expert growers? Essentially it is the new form of a forum, with international expertise. Even if one just views the posts, they can be saved to your own profile. Personally, I save posts to know which plant's seed I wish to order from our Seed Exchange.

Back to the current printing. Please join me in thanking the Tours and Adventures Committee (David White, Mariel Tribby, and Michael Guidi) for their tireless work at putting together trips for us whose profits enabled the printing of your *Quarterly*. Also thanks to Jody Payne, Lola Horwitz, and Malcolm McGregor, the previous team members. Brilliant!

Not to be outdone, thanks go also the chapters who so generously posted the dollar challenges. Not only did it fill the coffers, but also created a group spirit of fellowship among chapters. Well done!

I want to thank the tremendous efforts of the out-going members of the NARGS board who worked diligently on your behalf during their terms of office: Betty Spar, Richard Lane, Don LaFond, Matt Mattus, Dave Brastow, Julia Caroff, and David White. And I welcome the in-coming new members Jeffrey Hurtig, Cyndy Cromwell, Brendan Kenney, and Jerry Rifkin.

And a big appreciation to the organizers of the Delaware-Valley Chapter for the splendid Study Weekend in early May. Applause for Janet Novak, Chuck Ullman, Mike Slater, Matthew Ross and Jerry Rifkin and the whole chapter for presenting native flora and their exquisite gardens.

And did you catch one of our Traveling Speakers Tour lectures? Now, due to a five-year endowment from a NARGS member, we will be able to send more speakers on tour each year. This year we have Ger van den Beuken, Eleftherios Dariotis, and Cliff Booker. Next year we will contact chapters who did not have any speakers this year. They will get first option from several choices.

One other item came out of the last board meeting. We will be contacting all members without registered email addresses. It would be really helpful if you would give us your email. Not only will it defray printing and mailing expenses, but it will "save the trees." Environmental concerns are of great interest to our group. And this would be a great step in the right direction.

Have a great summer!

Elisabeth Zander

Message from the Out-Going President

Dear Members,

Do you ever wonder why our NARGS trips sell out in three days? It is because we enjoy seeing each other as well as the plants. Our society is 85 years old (yes, it was founded in 1934 in New York City), and although I've only been a member for 30 years, I do miss hearing about some of the plants persons who formed this group of avid enthusiasts. Their excitement was contagious, and you can still feel a palpable sense of emotion at NARGS meetings and events wherever they are held.

Despite the cold and rainy weather, our past Delaware-Valley Study Weekend in early May was welcoming and warm, full of outstanding gardens, plants, lectures, sales, as well as new and old friends. Yes, we do have our local chapters to come home to, but these regional get-togethers are gems. Better than family in some ways.

Sharing was one of the key tenets of our society, fostered early on by Geoffrey Charlesworth, Norman Singer, Linc and Timmy Foster, Harold Epstein, Larry Thomas, Tom Stuart, J. C. Raulston, and many more we remember. We are very blessed.

And there is more coming. NARGS "family reunions" annual meetings are being scheduled for Ithaca, New York (June 2020); a special destination in the Rockies in 2021, and Ontario in 2022. And there are trips to Greece (2019), the Adirondacks and Hudson River Valley (2020), Argentina (2020), and planning has begun for 2021.

I've enjoyed the ride as your president these past two years as we have all pulled together to stay afloat and to stay relevant in the plant world. Thank you for your generosity.

Betty Anne Spar

NARGS 2019 Awards

Recipients of the 2019 NARGS Awards were announced at the Study Weekend in Frazer, Pennsylvania, on May 5. The awards were announced by Panayoti Kelaidis, chair of the Awards Committee, and by Betty Spar, NARGS president.

Frank Cabot Public Rock Garden Award to Allen Centennial Garden, University of Wisconsin-Madison, Wisconsin.

Linc & Timmy Foster Millstream Garden Award to Darren Heimbecker, Whistling Gardens, Waterford, Ontario.

Award of Merit to Carol Clark, Ontario Rock Garden & Hardy Plant Society, Toronto, Ontario.

Geoffrey Charlesworth Writing Prize (published in *Rock Garden Quarterly*): Glenn Shapiro, Carnforth, Lancashire, for "A Journey Up the Rocky Road of Hepatica."

Norman Singer Endowment Grants awarded to:
Evergreen Arboretum and Gardens, Everett, Washington
Laurelwood Arboretum, Wayne, New Jersey
Juniper Level Botanic Garden, Raleigh, North Carolina

NARGS Needs Your Email Address

Many of you have never supplied NARGS with an email address. Having your email address helps NARGS communicate with you for membership renewals, upcoming meetings, and special announcements. And it reduces costs to NARGS by saving postage and printing costs. Remember: NARGS DOES NOT share your email address. It is used only for NARGS-related communications. Please take the time and email your address to: nargs@nc.rr.com.

If you don't have an email address or choose not to share it, let us know that, too: NARGS, POB 18604, Raleigh, NC 27619-8604 USA.

NARGS Donations

Donations to NARGS between February 1 and April 30, 2019.
To support the Seed Exchange, Rock Garden Quarterly, and the
general fund, and in memory of Ralph and Mary Moore.

- | | |
|-----------------------------------|--------------------------------------|
| Anonymous (Colorado) | Mizin, Michael (Pennsylvania) |
| Bouffard, Vivien (Massachusetts) | Moscetti, Paula J. (New Jersey) |
| Brastow, Dave (Washington) | Ogden, Lauren Springer
(Colorado) |
| Brink, John (Colorado) | Olmsted, Amy (Vermont) |
| Brown, Allison (Maine) | Pacholko, Helen (Alberta) |
| Brunjes, Diane (Colorado) | Pharr, Walter (North Carolina) |
| Carrier, Bernard (Quebec) | Quiggle, Catherine (Michigan) |
| Coleman, Brian (New Jersey) | Ratko, Ron (Washington) |
| Conway, Gregory (Quebec) | Rembetski, John (New Mexico) |
| Cook, Scott (United Kingdom) | Rieder, Corina (California) |
| Cummings, Julia (Colorado) | Rodriguez, Jaime (Alaska) |
| Curtis, Lee (Colorado) | Rose, Barbara (Virginia) |
| Deeg, Shelia (California) | Sanderson, Amy (British
Columbia) |
| Donahue, Maura (Massachusetts) | Schneider, Paul H. (Tennessee) |
| Dussler, Barbara (Germany) | Scott, Caroline (Alberta) |
| Fisher, Alister (New Zealand) | Seth, Kenton (Colorado) |
| Franklin, Catherine W. (Alaska) | Simpson, Carol (New
Hampshire) |
| Gamlin, Robert G. (New Hampshire) | Simpson, Franklin (New
Hampshire) |
| Gentling, Peter (North Carolina) | Smith, Carole P. (Ohio) |
| Guillet, David (Texas) | Snow, Barry (Arkansas) |
| Hall, Steve (Oregon) | Swanberg, Joan (Virginia) |
| Hewitt, Sigrid N. (Rhode Island) | Swick, Kathleen (Alaska) |
| Hickey, Dale (Washington) | Tarrant, Georgina (Nova Scotia) |
| Hildick-Smith, Neil (California) | Turunen, Michael (Finland) |
| Hollyfield, Hedy (North Carolina) | Vermeeren, Danny (Belgium) |
| Huggler, Carol M. (Alberta) | Waltz, Peter (New Hampshire) |
| King, Tasha (Oregon) | Whyman, Steven (North
Carolina) |
| Kinlen, Lois (Wisconsin) | Wysocki, Raymond (New Jersey) |
| Koch, Helen (Maine) | Yatko, John (Ohio) |
| Kosonen, Kirsi (Finland) | Yokome, Pamela (British
Columbia) |
| Lenkoski, Peter (California) | Young, Michael K. (Montana) |
| Maker, Mary (Ohio) | Zubrowski, Stanley
(Saskatchewan) |
| Martin, Robert (Washington) | |
| Matheson, Ellen (Massachusetts) | |
| McGowan, Alice (Massachusetts) | |
| McKenzie, Laurel (New Hampshire) | |
| Midgley, Jan (Colorado) | |
| Mitchell, Colleen (Michigan) | |

Patrons

The following recently became NARGS Patrons:

Caroff, Julie (Michigan)
DuPont, Elise (Delaware)
Jones, Michelle (New York)
Langdon-Paff, Dawn (Michigan)
Salman, David (New Mexico)
Smedley, Mike (Colorado)

YOU CAN HELP KEEP NARGS SOLVENT!

Circle of **100** Challenge

Be among the 100 NARGS members willing to give \$300

DONATE AT NARGS.ORG

Deaths

We have learned belatedly of the death in August 2016 of James B. "Jim" McClements of Dover, Delaware. He practiced obstetrics and gynecology for 35 years in the Dover area. Jim was a member of the NARGS board, including recording secretary in the early '00s.

Helmut Milde, Fremont, New Hampshire

Show off your Garden

A new regular feature on the NARGS Facebook page will be a weekend photo from a NARGS member, showing a plant or vignette from their garden.

If you would like to have a photo featured, please send a photo to Todd Boland at nfld.todd.boland@gmail.com

2019 Election Results

The results of the 2019 NARGS election, managed independently by Association Voting, have been certified by the NARGS board and announced by Joyce Hemingson, recording secretary.

Elisabeth Zander (Connecticut), President

Panayoti Kelaidis (Colorado), Vice President

Jeffrey Hurtig (Ontario), Treasurer

Joyce Hemingson (Connecticut), Recording Secretary

New Directors for three years: Cyndy Cromwell (North Carolina), Brendan Kenney (New York), and Jerry Rifkin (Pennsylvania).

NARGS Annual Meeting and Tours in June 2020

Next year's NARGS annual meeting will be held in Ithaca, New York, on June 18 – 20, 2020, on the campus of Cornell University. It is hosted by the Adirondack Chapter of NARGS and co-sponsored with Cornell Botanic Gardens. Registration for the meeting will begin in January 2020.

In conjunction with the annual meeting next year, the NARGS Tours and Adventures Committee has organized a pre-conference tour on June 15 – 17, 2020, to see the native flora of the Adirondack region, including vegetation of Whiteface Mountain and bogs of the western Adirondacks.

A post-conference tour will be on June 21 – 23, 2020, and will visit five public and private gardens in the Hudson River Valley. Registration for both tours is open now.

More information on the meeting and tours is on the NARGS website:

<https://www.nargs.org/news/2019-01-31/annual-meeting-and-tours-june-2020>



In Memoriam: Vale Lesley Gillanders

Ken Gillanders

Lesley was born in 1932 in Swan Hill, Victoria, Australia and moved with husband Ken to Tasmania in 1975 to start a specialist plant nursery. She shared 37 years at Woodbank Nursery with Ken, where her love of horticulture was displayed working alongside him as true partners in life and business.

Ken and Lesley traveled widely over 32 years, known for attending and speaking at international conferences and collecting and introducing plants to the horticultural industry.

Lesley also contributed greatly to seed distributions of the societies she was a member of worldwide.

Lesley traveled to every continent climbing mountains to see plants in their natural habitat and collecting seeds including the sub-Antarctic islands. Her travels encompassed unique places including climbing Mt. Kilimanjaro, the glaciers in Tierra Del Fuego, camping in the highland steppe of Kyrgyzstan, the Andes and the Rockies, bamboo forests in Japan, Easter Island, Canada, USA, UK, Ireland, NZ, China, Chile, Ecuador, Egypt, Bolivia, Peru, Lesotho, Kenya, safari plains in South Africa, and the Galapagos Islands.

Lesley was also a gifted artist, and her beautiful botanical and bird watercolor paintings have been enjoyed worldwide and recognized in many displays and competitions. She shared much with plant enthusiasts as a respected and recognized regular writer in numerous Australian and international botanical magazines. Her last article was published in April 2019.

Lesley passed away very peacefully in May 2019 and is survived by her husband Ken, five children and a tribe of grandchildren and great-grandchildren.

SEED EXCHANGE

The 2018-2019 is now history; onward to 2019-2020!

Because a decision was made earlier this year to publish the summer issue of the Quarterly in a digital format only, the Donation forms and import permits and labels were mailed with the spring issue. If you did not receive those necessary forms, or they have been misplaced in the interim, contact Laura Serowicz immediately for a new set:

15411 Woodring Street
Livonia, MI 48154-3029
U.S.A.
seedintake@gmail.com
734-522-2294

The decision for the summer issue of the Quarterly to go strictly digital is currently being reassessed, so that all members will have easy access to all issues of the Quarterly.

That said, this should have no effect on your seed-gathering activities. The gardening season is in full swing; the seeds of early-blooming plants are ripening now, and please be sure to gather the seeds of spring ephemerals. We hope that the U.S. members will consider packing these hydrophilic seeds in moist (not wet) vermiculite and store them at room temperature to extend their brief period of viability. If you would like to send these seeds now, rest assured that Laura will keep them in prime condition until the exchange begins this winter. I have had very good luck germinating these properly stored seeds, leading to plants that previously were impossible from dry exchange seeds.

You can find seed donation instructions (and the donation form) online at <https://www.nargs.org/seed-donation-instructions>.

All of your seeds must be in Laura's hands by November 1, 2019, at the very latest (pre-deadline shipments are most welcome), in order to be included on this year's Seed List. To be sure that the seeds arrive in good time, U.S. members should mail their donations by October 25. Canadian and overseas members need to mail no later than October 15, to allow time for the postal services and the necessary seed inspections.

If you will have additional seeds of late-ripening plants, please include those taxa on your Donation Form when you send your main seeds. U.S. members can then mail the late-ripened seeds so that they arrive before December 1.

Members living in Canada or overseas may also send late-ripening seeds, but must first request a second set of import permit and mailing labels from Laura – and then be sure to send the late seeds early enough to arrive by December 1.

The return on these contributions is well worth the effort: For the donation of a mere five packets of different seeds, each member will harvest an extra ten packets on their orders. Also, their orders in the Main Distribution will receive priority in being filled, which is very helpful when those first choices are for rare seeds.

The fall issue of the Quarterly will contain further information about placing orders for seeds, and the exchange will be open to receive orders on December 15. The Seed List will be posted a couple of days before the opening, so that members can browse the offerings at their leisure and make choices after researching the plants and assessing their gardens' needs.

Those members who prefer not to place their orders electronically on our website can request a print copy of the Seed List and order form from:

Joyce Fingerut
537 Taugwonk Road
Stonington, CT 06378-1805
U.S.A.
alpinegarden@comcast.net

You must ask for the print form by December 1.

As for the tallies from the last seedex: The number of members has remained steady, and the number of members placing orders for seeds has also remained roughly the same. This offers a strong indication of its importance to our membership.

One of the factors affecting the seed orders was a new requirement by the government of Japan for a phytosanitary certificate to accompany all seeds entering Japan, as well as a formal request by the resident in Japan to have the seeds inspected. While NARGS was willing to cover the expense of the phyto for seed orders in the Main Distribution, we had to draw the line and deny the members in Japan access to the Surplus Distribution, as the costs and the expenditure of time were beyond what we could reasonably handle.

As the Government Liaison for NARGS (two hats), I have been discussing with APHIS some possible solutions to this issue, hoping that they can bring ideas to Japan's government to change this requirement.

We hope that all our members everywhere enjoy an unexcelled growing season.

Joyce Fingerut, Director
NARGS Seed Exchange

New and Rejoining Members

*Welcome to all those who joined or rejoined between
February 2 and May 15, 2019.*

Bartlett, Lisa, Smith-Gilbert Gardens, 2382 Pine Mountain Rd NW, Kennesaw,
GA 30152-4127

Barton, Hughes, 741 Elbert St, Denver, CO 80221-4024

Beard, Victoria, 1357 Colby St, St. Paul, MN 55116-1806

Beasley, Angelia, 8319 Wycombe Ln, Raleigh, NC 27615-3039

Bliss, Roslyn C., 165 Colony Ln, Rochester, NY 14623-5413

Bowen, Ed, Issima, POB 273, Little Compton, RI 02837-0273

Brody, Jesse, 491 12 St, Apt 3L, Brooklyn, NY 11215-5240

Brown, Kathryn S., 10986 Ambush Rock, Littleton, CO 80125-9005

Burns, Paula, 100 W Montgomery Ave, Apt 2, Ardmore, PA 19003, 1421

Conway, Heather J., Pyle Herb Farm, 19088 440th St, Oakland, IA 51560-4585

Crumley, Nancy M., 324 Seventh Ave, #4R, Brooklyn, NY 11215-4140

David, James, 246 Hadisway Ave, Santa Fe, NM 87501-1108

De Vore, Jan, 1617 Sheely Dr, Fort Collins, CO 80526-1927

Dean, Kathleen, POB 194, Rhinelander, WI 54501-0194

DuPont, Elise, POB 120, Rockland, DE 19732-0129

Elkins, Judith, 629 NE Union Loop, Prineville, OR 97754-3241

Emanovsky, Sue, 256 N Dorchester Rd, Wentworth, NH 03282-3714

Farage, Stefan, 5639 Netherland Ave Apt 3-D, Bronx, NY 10471-1865

Fendley, Mollie, 6997 Quay Ct, Arvada, CO 80003-3541

Giguère, René, 5810 Rue du Parc, Pierrefonds, Quebec H8Z 2V5, Canada

Gillmor, Reg B., 4 Wachusett Cir, Lexington, MA 02421-6906

Good, Marion, 1290 Sioux St, Los Alamos, NM 87544-2830

Gould, James, 626 NE Russell St, Portland, OR 97212-3828

Hall, Marietta, 9341 Jaclaire Ln, Anchorage, AK 99502-1339

Hall, Michele, 49 Waterwheel Way, Glenn Mills, PA 19342-1335

Hardman, David, 417 Main St, Dunstable, MA 01827-1805

Heimbecker, Darren, Whistling Gardens, 698 Concessions 3, RR1, Wilsonville,
ON N0E 1Z0 Canada

Hickey, Dale, 10609 NE 19th Ave, Vancouver, WA 98686-5652

Hill, Zac, 1214 Poplar Ave, Garner, NC 27529-4137

How, Sarah, 203 Forest Dr, Ithaca, NY 14850-2266

Ingle, Arezu, 7306 Dulany Dr, McLean, VA 22101-2713

Jones, Michelle, 162 Latta Brook Rd, Horseheads, NY 14845-8501

Karl, Patrick, 8520 Lake Rd, Grosse Ile, MI 48138-1957

Kerlin, Michael, POB 4275, Ann Arbor, MI 48106-4275

Kodis, Ellen, 1327 SW 57th Ave, Portland, OR 97221-2509
Koski, Helen, 1002 – 45 Livingston Rd, Toronto, ON M1E 1K8, Canada
LaBonte Juliette, 806 Red Hawk Ct, Fuquay-Varina, NC 27526-5525
Lamm, Jack R., 4204 Lamm Dr, Apex, NC 27539-7600
Langdon-Paff, Dawn, 1130 Kern Rd, Fowlerville, MI 48836-8209
Lee, Nora, 1288 Bonnie Cres, Ottawa, ON K2C 2A2, Canada
LeFevere, Cynthia, Wellyssa's Womb, 8538 E 163rd Ct, Brighton, CO 80602-7573
Lindsey, Trina, 712 N 11th St, Grand Junction, CO 81501-3210
MacLeod, Camilla, 1163 Chenango St, Binghamton, NY 13901-1676
Matsuzawa, Azusa, Nakasuzuranminami 1-3-12, Otofukechou, Katougun 01, 0800308, Japan
Mauz, Kathryn, 30361 Rainbow Hill Rd, Evergreen, CO 80439-8228
Moore, Catherine, 388 Simonds Rd, Ashby, MA 01431-1818
Nadane, Darlene, 1301 Harwood Ct, Midland, MI 48640-2751
Nelson, Lee, 8 Peer St, Binghamton, NY 13901-1676
Parrish, Michael, 100 Cherry Ln, Kerhonkson, NY 12446-1441
Pearson, Richard G., 132 Wee Loch Dr, Cary, NC 27511-3885
Pennington, Bob, Agua Fria Nursery, 1407 Agua Fria St, Santa Fe, NM 87505-0907
Pick, Ben, Meadow Edge LLC, 3521 Broad St, Clyde, NC 28721-6806
Pomfret, Marlene, 36 Landsdowne Ave, Brantford, ON N3T 4T3, Canada
Saperstein, Raleigh, Atlanta Bot. Gdn., 1345 Piedmont Ave NE, Atlanta, GA 30309-3366
Scott, Norman, 518 Beach 134 St, Rockaway Park, NY 11694-1444
Shapiro, Glenn, Hazelwood Farm, Hollins Ln, Silverdale, Carnforth, Lanc LA5 0UB, United Kingdom
Spiess, James, 713 W Braemere Rd, Boise, ID 83702-1310
Squitieri, Michelle, 1332 Shattuck Ave, Apt 6, Berkeley, CA 94709-1401
Stella, Albert, 4403 Graceland Ct, Raleigh, NC 27606-1348
Swab, Janice, 1402 Lorimer Rd, Raleigh, NC 27606-2622
Ukkonen, Tapio, Salokatu 20 A B AS.57, Jyvaskyla, 40630, Finland
Utberg, Wendy, 230 Morris Tpke, Randolph, NJ 07869-3506
Van Tassell, Elizabeth, 72 Buena Vista Ave, Suisun City, CA 94585-1759
Walker, Donna, POB 774, Crested Butte, CO 81224-0774
Wang, Denis, 37 Graceland Way, Port Hadlock, WA 98339-9791
Welch, Marianne, 11811 Covered Bridge Rd, Prospect, KY 40059-9540
White, Nancy, POB 211, Huntington, OR 97907-0211
Williams, Barbara, 465 Akins Rd, Berkshire, NY 13736-2232
Yarbrough, Rudy, 631 Kingwood Dr NW, Salem, OR 97304-3656
Zaparanick, Linda, 30 Polo Field Ln, Denver, CO 80209-3331

Treasurer's Report

Introduction and Summary

Thanks to the generosity of our members and to the success of our Tours and Expeditions Committee, the activities of NARGS in 2018 resulted in a profit of \$63,954. A profit of \$17,073 was projected in the 2018 Budget. The areas primarily responsible for this net profit are as follows:

- Donations to the society totaled \$36,144 versus a budget of \$50,685. You were again generous to the Society, although below the level of last year.
- The Newfoundland and China tours were a tremendous success in 2018 generating \$44,911 in profit for NARGS. Thanks greatly to our Tours and Expeditions Committee and their volunteers for this huge financial boost.
- Our membership revenue turned around in 2018, rising 26% or \$12,824 from 2017 to 2018. The increase in revenue resulted both from our increase in membership and increase in dues amounts.
- The Seed Exchange program returned another positive profit in 2018 due to increased revenue and a large number of member donations (which are included in the donation total above).
- General internet services in support of our website increased significantly in 2018 due to the programming necessary to implement our dues changes, provide the capability for an electronic Quarterly, and provide increased search capability to the website.
- Insurance expenses decreased a little this year due primarily to a change in provider.
- The Norman Singer Endowment Grants for 2017 were not funded until 2018 making our expenses significantly higher for 2018.

As of 12/31/2018, all bank accounts and investments have been recorded into our QuickBooks accounting system and all accounts have been balanced to the appropriate year end statements.

Below, I have listed those areas of net income and net expense that have a significant impact on our operations. Net income in this table is the net of total income minus total expense for each program to more clearly show each program's impact on our finances. The formal NARGS financial statements as of December 31, 2018 follows:

Net Income:	2017	2018	Change
Memberships	48,848	61,672	12,824
Donations	48,394	36,144	-12,250
Interest and Dividends	7,386	8,910	1,524
Advertising	1,011	1,656	645
Book Service	23	1,118	1095
Amazon Payments	754	631	-123
Seed Exchange	1,753	1,625	-128
AGM and Tours	21,606	44,911	23,305
Total Net Income	129,775	156,665	26,890
Net Expense:			
Grants and Awards	5,100	10,984	5,884
Bank Fees	80	157	77
Speakers Tour	0	0	0
Internet Services	7,627	13,717	6,090
Quarterly	51,969	50,188	-1,781
Administration:			
Exec. Sec.	15,333	15,334	1
Insurance	3,283	1,477	-1,806
Other	733	854	121
Total Net Expense	84,125	92,712	8,587
Net Profit & Loss	45,650	63,954	18,304

North American Rock Garden Society

Profit & Loss

January through December 2018

INCOME

CONTRIBUTED SUPPORT

Memberships	61,671.76
Donations & Special Requests	36,143.56
Total Contributed Support	97,815.32

EARNED REVENUES

Interest	243.99
Credit Card Rewards	763.61
Dividends	7,901.93
Advertising Revenues	1,655.86
Program Revenue:	
Book Services	1,179.23
Amazon Pmts.	630.82
Seed Exchange	14,773.95
AGM & Study Weekends	1,202.63
Total Program Revenue	17,786.63

Tour Income	
Newfoundland Tour	57,099.96
China Tour	66,275.15
Scotland Tour	12,737.65
Greece Tour	8,904.29
Total Tour Income	145,017.05

Total Earned Revenues 173,369.07

TOTAL INCOME 271,184.39

EXPENSES

GRANT & AWARDS	10,976.13
BANK FEES- S/C & MERCHANT	157.45
ADMINISTRATIVE EXPENSES	
Executive Secretary	15,334.36
Accounting	16.00
Legal & Filing Fees	27.50
Insurance - non-employee	1,477.00
Supplies	7.51
Postage, shipping, delivery	21.84
PayPal Virtual Terminal	360.30
Annual Elections	399.00
Total Administrative Expenses	17,643.51
PROGRAM SERVICES EXPENSES	
Annual General Meetings	85.00
Book Service	60.81
Seed Exchange	13,149.10
Internet Services	13,717.47
Committees	29.35
Quarterly	50,187.96
Total Program Service Expenses	77,229.69
FUND RAISING EXPENSES	
Newfoundland Tour	32,617.87
China Tour	46,964.30
Scotland Tour	12,737.65
Greece Tour	8,904.29
Total Fund Raising Expenses	101,224.11
TOTAL EXPENSES	207,230.89
NET INCOME	63,953.50

North American Rock Garden Society

Balance Sheet

As of December 31, 2018

ASSETS

CHECKING/SAVINGS

Wells Fargo - Membership	15,566.92
Wells Fargo - Main Account	17,102.17
Wells Fargo - Savings	189,336.70
Wells Fargo - CDs	20,055.66
Total Checking/Savings	242,061.45

ACCOUNTS RECEIVABLE

Accounts Receivable (Delaware Valley)	4,200.00
Total Accounts Receivable	4,200.00

INVESTMENTS

Norman Singer Endowment	
Fidelity - Cash - NSE	17,401.09
Investment Account - NSE (MKT)	
Investment Bal - NSE (Cost)	151,730.36
Unearned Capital Gain/Loss - NSE	(15,962.66)
Total Investment Account - NSE (MKT)	135,767.70
Total Norman Singer Endowment	153,168.79
Adjustment – Unearned Capital	15,962.66
Total Investments	169,131.45

OTHER ASSETS 954.60

TOTAL ASSETS 416,347.50

LIABILITIES & EQUITY

LIABILITIES

Credit Cards	
Capital One SPARK Business	9,827.53
Total Credit Cards	9,827.53
Tour Deposits	
Scotland Tour Deposits	
Scotland Tour Deposits	7,620.35
Scotland Tour PayPal	(418.09)
Total Scotland Tour Deposits	7,202.26
Greece Tour Deposits	
Greece Tour 2019 PayPal	(354.59)
Greece Tour Deposits	7,325.71
Total Greece Tour Deposits	6,971.12
Total Tour Deposits	14,173.38
Total Liabilities	24,000.91

EQUITY

Unrestricted (ret. earnings)	172,229.23
Restricted Funds	
Norman Singer Endowment Fund	151,730.36
Robert Senior Award Fund	1,275.72
Carleton Worth Award Fund	3,157.78
Total Restricted Funds	156,163.86
Net Income	63,953.50
Total Equity	392,346.59
TOTAL LIABILITIES & EQUITY	416,347.50

NORTH AMERICAN ROCK GARDEN SOCIETY
2018 Financial Review Report

Betty Anne Spar, President
North American Rock Garden Society
5051 N. Gray Mountain Trail Tucson, AZ 85750-5942
February 4, 2019

Dear Ms. Spar:

I have examined the NARGS financial records for calendar year 2018 maintained by the Treasurer, Richard Lane. The records include the following:

- Balance Sheet and Profit and Loss Statement as of 12/31/2018
- Account Statements and Reconciliations for each of the NARGS bank accounts for the period ending 12/31/18
- Account Statements and Reconciliations for each of the NARGS Certificate of Deposit Accounts for the period ending 12/31/2018
- Account Statement and Reconciliations of the Fidelity Investment Money Market Fund and Exchange Traded Products as of 12/31/2018
- Account Statement and Reconciliations of the Spark Business Credit Card as of 12/3/2018
- Samples of several disbursement records and supporting documentation from the Wells Fargo Main Checking Account
- Samples of several transactions and supporting documentation for the Spark Business Credit Card

After reviewing these financial records, I find that the year-end Balance Sheet and Profit and Loss Statement accurately represent the financial status of the North American Rock Garden Society as of December 31, 2018. All bank accounts, Certificates of Deposit, Fidelity Investment Cash Account and Exchange Traded Products, and the Spark Business Credit Card have been consistently and correctly reconciled and are accurately recorded in the financial statements. The examination of several samples of disbursement records from the Wells Fargo Main Checking Account found that the appropriate documentation and/or authorization was obtained to support the disbursement. However, several samples of individual charges to the Spark Business Credit Card did not have supporting documentation and/or receipts that should be provided by the person using the card to verify that the charges are legitimate and authorized. Although most charges are anticipated and preauthorized, a greater effort should be made to obtain the supporting documentation. The policy and practice regarding the issue and authorization of the individuals using Spark Business Credit Cards is well designed to mitigate fraud and unauthorized use.

In conclusion, the review found no significant issues of concern.

Sincerely Yours,

William Adams 330 Carlile Ave., Pueblo, CO 81004

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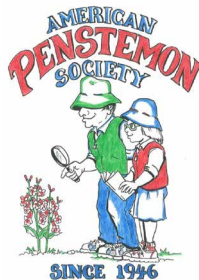
*Yearly in-depth Bulletins

*Seed Exchange

*Annual Meetings with penstemon and wildflower viewing

For information, visit our webpage or e-mail
the membership secretaries at:

aps.membership@yahoo.com



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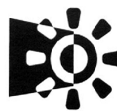
ARS Website: <http://www.rhododendron.org>

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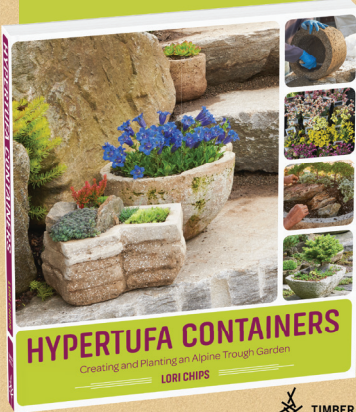
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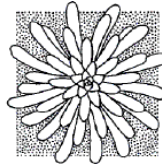
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The officers of the North American Rock Garden Society consist of a president, a vice-president, a recording secretary, and a treasurer. The officers are elected by the membership.

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.

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Back cover: *Thymus* at Allen Centennial Gardens, Ed Glover.



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