GREAT LAKES CHAPTER

North American Rock Garden Society (NARGS)

FALL NEWSLETTER, AUGUST 2011

CALENDAR OF CHAPTER MEETINGS **meeting details below**

****SUNDAY, SEPTEMBER 18: FALL GARDEN TOUR & PLANT SALE**
[NOTE the change to SUNDAY to avoid the Saturday football traffic]

MEETING:	11:00 AM – ca. 3:30 PM
PLACE:	**Arrowhead Alpines, Bob & Brigitta Stewart** – see map insert
	11:30-ca. 1:00 visit the gardens and nursery
BAG LUNCH:	while touring gardens and nursery
PLANT SALE:	1:30 PM

****SATURDAY, OCTOBER 22: FALL MEETING**
[NOTE this is not a football Saturday]

MEETING:	1:30 PM – ca. 3:00 PM
PLACE:	**Matthaei Botanical Gardens** – see map insert
PROGRAM:	1:30 PM – brief business meeting
	1:45 PM Tony Reznicek:
	Alaska Alpines: from Sea Level to the Mountain Peaks

Mark Your Calendars:

Saturday, January 21, 2012: Our Annual Winter Potluck, with **Don Wild** speaking on: *Dwarf conifers for the Rock Garden*. We will send out our usual timely postcard.

Sunday, April 22, 2012: We will have **Fritz Kummert** from Austria giving two talks bracketing a lunch, courtesy of the NARGS Speaker's tour. The tentative topics will be *Searching for Plants in Albania* and *Our New Alpine-House & Crevice Garden*. Final details will be in the Spring Newsletter.

Details about the Spring Plant Sale will be in the Spring Newsletter.

UPCOMING NATIONAL MEETINGS:

The Annual meeting and Western Winter Study Weekend March 9-11, 2012, Everett, Washington.

The Eastern Study weekend will be held in Pittsburgh, Pennsylvania in October 2012.

More information on both meetings will be in the upcoming Rock Garden Quarterly.

From the Chair

So, how is your garden doing? Ours is looking ragged. Starting with the monsoon spring that went directly into a dry desert summer and now we have a garden full of feral kittens. The mother and kittens have eliminated the plague of chipmunks that we had and also the bunnies and mourning doves. The downside is they love to romp and play, which has been cute to watch, but they mow over everything like Alliums and Arisaemas. They bat at and chew anything in flower that moves; even the ends of raspberry bushes. Ouch, those pickers have to hurt.

It's fall and that means it's time for our Plant Sale. Please bring lots of nice things. These sales allow us to bring in speakers, cater lunches, and do workshops. The places I had hoped to host this Plant Sale fell through for several reasons. So at the last minute Arrowhead Alpines said they would let us have our Sale there. For those that don't know it's been a difficult time lately for Bob and Brigitta. Please remember these are the people who for years have given us plants for our auctions and door prizes and let us use their place for our workshops. So to thank them for the support they have given our group I'm asking you to help support Arrowhead. We have lost so many specialty nurseries lately and are fortunate to have places like Arrowhead and Broken Silo so near to us. Without our support, the only plants you will be able to buy will be those that the big box stores may have. YUCK! See the instructions for the Plant Sale on how to have a very good chance to receive a nice gift certificate.

I also hope you have been collecting seed from your gardens and in the wild for the NARGS Seed Exchange. It's a very important project on so many levels. If you have any questions about how to do this please ask Laura or myself.

John Serowicz

The April 23, 2011 meeting featured two talks by Chris Chadwell, a plant explorer specializing in the Himalaya. Chris runs a seed business [www.chadwellseeds.co.uk] that focuses mainly on species rare in cultivation, and is a leading authority on the study and cultivation of Himalayan plants including their use in traditional medicine. He has led 25 seed-collecting, plant-hunting, scientific conservation expeditions to the Himalaya. One of the purposes of his visit to Ann Arbor was to work at the U of M Herbarium, which has quite a number of plant collections from that area. Chris' talks were from the perspective of a seed collector and he thinks it is useful to get an insight about growing plants and exploring new plants from that aspect.

Paradise on Earth: The Beautiful Alpines of Kashmir

Chris took us on a journey up into the north-west Himalaya to Kashmir and showed us some of the alpine and rock garden plants from that region. Kashmir is bordered by Pakistan, Afghanistan and Tibet and is in a very sensitive and troubled area. Chris visited Kashmir many times in the 1980's. Sadly now politics have intervened in Kashmir and the main Kashmir Valley remains an unsuitable place to visit. Chris shared with us some of his experiences and images of the 1980's and a few more up-to-date journeys he has since taken to the outskirts of the Valley.

Chris calls the mountain range the Himalaya (rather than Himalayas) because the word comes from Sanskrit meaning "abode (or home) of snow" which is singular. The best guide to Himalayan plants available is still *Flowers of the Himalaya* 1980, by Oleg Polunin & Adam Stainton, concentrating on the region from Kashmir through to Nepal.

Chris started off with some forest dwelling plants. *Arisaema propinquum* from India (Cobra Lily or Snake Plant), has a black-and-green-striped inflorescence, but is a bit of a challenge to grow as it comes from the more deeply shaded areas. *Arisaema jacquemontii*, a good one to begin with, is named after a young French botanist who visited Kashmir for the first time in 1830. Many plants in the region were named after him. This one grows in more open conditions up to 4000m in the Himalayas and is much tougher; it can also cope with some warm temperatures during the summer.

The high mountains of Kashmir boast many fine species such as yellow-flowered *Pedicularis bicornuta*, which is semi-parasitic growing on the roots of grasses and sedges, and used by local girls as ornaments in their hair. There are two species of *Meconopsis* in Kashmir, the common one is the West Himalayan Blue-poppy, *M. aculeata* which is used in Tibetan medicine as a general tonic. The typical color is sky-blue but there are lots of different color variants and moving a little further east into the bordering states you find reds, pinks and purples as well.

Early in the year you find an abundance of *Primula rosea* one of the easier of the Asiatic Primulas, though fairly short-lived. While Chris was at the U-M Herbarium he came across a pressed specimen of *P. rosea* gathered by Dr. Walter Koelz, a biologist from the University of Michigan who went into the western Himalaya in the 1930's. Koelz described the *P. rosea* he saw as "a delightful and beautiful thing, the first thing to emerge from the snow in the spring." Kashmir is also home to the world's highest altitude recorded Primulas with *P. macrophylla.*

There are several fine Geraniums from Kashmir such as *Geranium wallichianum* a highly variable plant. One that Chris showed is very close to a variety in cultivation known as 'Buxton's Variety' or 'Buxton's Blue', with a pale white center. To demonstrate the variability of the flowers Chris showed a photo taken by Henry Taylor, a plants man from Scotland, who picked a wide variety of color forms varying from white, pink, red, blue, and purple, of *G. wallichianum* from one meadow in the western Himalaya. Another variable border Geranium to consider is *G. clarkei*, with cultivars such as 'Kashmir Pink', 'Kashmir Purple' or 'Kashmir White' widely available in cultivation. One Geranium that Chris will be particularly keen to obtain seed of this autumn when he goes to Ladakh, Little Tibet, is the lovely little bluish *G. regelii* which he thinks is well-worth having in anybody's rockery. One thing also to bear in mind is that Geraniums rapidly get mixed up in cultivation and the ones you grow in your garden are often of some sort of hybrid.

One of the most desired plants is *Gentiana kurroo*. Gardeners may have obtained seed as this, but it is highly unlikely that it is the genuine article, and as far as Chris can see it isn't in cultivation at all. When Chris first started going out to Kashmir people said to him "it's common in Kashmir, please get some seed of it", and he spent about 20 years searching for it before he eventually found it. It grows on sheer limestone cliffs quite unusual for Gentians and it can cope with more varied conditions. Typical autumn Gentians from the Himalaya and China need acidic soils. *Gentiana kurroo* does have an absolutely extraordinary blue flower so Chris would like to get more seed of it, but unfortunately it flowers very late in autumn in October, which is normally about the latest he is out collecting in the western Himalaya, and when the snows start coming, it is still flowering. He would have to go back later just to collect seed!

There are many American connections with this part of the world; one of the major ones is with the late Dr. Ralph Stewart. When Chris first went exploring for plants on a university expedition he looked all the references up for the region known as Ladakh and what he found was a paper called *The Flora of Ladakh, Western Tibet*, published in 1916-17 by Columbia University as part of Dr. Stewart's doctorate and based on his collections in 1912-13. Chris had thus assumed he had passed away, but when he came back from his trip he discovered that Dr.

Stewart was still alive so in 1983 Chris flew out to meet him at his retirement home. Dr. Stewart was a Presbyterian missionary turned botanist spending all his spare time exploring for plants and coming back to the New York Botanic Garden to identify them. His life's work was a thousand page checklist titled *An Annotated Catalogue of Vascular Plants of West Pakistan and Kashmir*. When Chris met him, Dr. Stewart gave him his final, personally annotated version which has been invaluable to Chris as a good field guide with species information on locations and altitudes, and it has helped him put names on the material he is collecting. Since identifying what you have collected is crucial, Chris pays tribute to Dr. Stewart for his decades of exploring in the western Himalaya.

Dr. Stewart also had a Michigan connection. He spent many years later in his life in Rawalpindi, Pakistan as Principal of Gordon College. When he came back to the US he was invited to U of M to identify the tens of thousands of pressed specimens collected from that part of the world by Dr. Koelz and he spent many happy years as a research associate in Ann Arbor. The material at the herbarium covers the same places that Chris goes to so it helps Chris identify and recognize things that he has collected in his seed expeditions. Chris discovered at the herbarium that Dr. Koelz included horticultural aspects of the plants providing more information for the seeds he collects and lots of information to help him with his studies of the plants.

Chris mostly spends the summer or autumn collecting seed but he has been there rarely in the spring. The bulbous flora of Kashmir or anywhere in the Himalaya is fairly modest compared to Central Asia and Turkey, but there are some worthwhile ones growing in Kashmir, such as the delightful red and white Star Tulip, *Tulipa stellata* and *Fritillaria roylei* which some consider just a variant of the more widely grown *F. cirrhosa*. The first thing to come into flower in the Kashmir valley as the snow recedes is the lovely golden *Colchicum luteum*, and as with most all the bulbs from the region tend to be short-lived in cultivation, but they don't require baking or special treatment. When something dies off after a few years gardeners often say it is because the conditions in our garden (climate, soil or whatever) aren't suitable. However, in the wild most things grow in a colony, with first-year plants, second-, third- and maybe forth-year plants, the older dying off naturally, and often only living for several years, so we can't really expect things to survive in our garden for significantly longer periods.

Some very famous plants have their origins in Kashmir including the Drumstick Primula, *Primula denticulata*. It is the mostly widely grown Asiatic Primula in the UK. Most Asiatic Primulas like their feet wet but this one will cope with more ordinary conditions. For most people in England (as opposed to Scotland) it is also fairly short-lived, but it is readily propagated and garden centers and nurseries have it, so many people grow it. There is a distinct form from Kashmir which John Richards, in his book *Primula*, has recognized as a separate species and this has a particularly yellowy-creamy meal on the undersides of the leaves; it is known as *P. cachemiriana*.

Early in the year you will find several *Bergenia,* including *B. ciliata,* one of the best when it's emerging in the garden, with lots of attractive pink-flowered variants. Himalayan Peony, *Paeonia emodi* has wonderful pure white flowers, but you have to be patient as it takes about seven years from seed, but once you've got it going it really is a prized plant and highly desirable. Most of the sold as *P. emodi* are not the true species.

There are many restrictions on the collection of orchids. Even though there are plenty of common orchids in India and Himalaya, growing them requires special knowledge and the right medium to use. Just collecting seed of orchids and sending them out to people, particularly when you are not always sure what it is you've collected seed of, isn't very productive so he tends to avoid collecting orchid seeds and never takes plants themselves. Chris remembered spending an evening with Fred Case on his previous visit to Michigan, and recalled Fred's passion for orchids, and his awe when he showed a photo of *Cypripedium cordigerum*, Kashmir Lady-Slipper Orchid.

Campanula cashmiriana, Kashmir Rock Bell-Flower, with zigzagged silvery-gray stems and relatively large mauve, blue or purplish flowers is a very popular rockery subject from Kashmir, typically growing on rock cliffs and crevices. Flowering in the autumn in September-October, it is often listed in cultivation, although Chris suspects some forms are hybrids. It is fairly short-lived but normally sets seed from which it can easily be raised again. Rock-loving *Corydalis* can be a real challenge to identify and grow. For many of them, drying the seed too much weakens viability and it's a challenge on a long expedition to keep the seed moist, and when you pass through very hot temperatures on the way it's liable to rot. Only in 1983 when Chris stayed with an Indian family with a fridge in their home was he able to gather *Corydalis* seed, store it in the fridge and when he allocated it they had much better results. Finding a fridge to store in isn't always practical on his expeditions.

Grazing is a major problem in Kashmir – too many sheep and goats – but if you cross a river on a suspension footbridge that sheep can't get over you may find good displays of flowers. In the meadows you will see things like *Lilium polyphyllum* and *Codonopsis clematidea*. In the seed exchanges in the UK a lot of seed that claims to be some exotic, rare species of *Codonopsis* from the Himalaya turns out to be *C. clematidea*, it's a very attractive plant and has markings on the throat that are superficially like a passion flower and large calyxes that are up and reflexed, so you can distinguish it quite easily from other species. Also in the meadows is the common mauve-purple *Iris hookeriana*, with quite an array of color variants. *Androsace sempervivoides* often appears at rock garden shows in the UK and growing it to perfection it is liable to win you a prize even though it is a fairly common species. This species spreads by strawberry runners in alpine meadows and tucked into rock crevices. On very steep slopes there are some fabulous birch (*Betula*) forests, with many of the trees having a characteristic curvature at the base of the trunk from snow load. Many species have attractively colored bark which peels off in strips; the people use the bark strips as paper, wrapping material and even roofing material. In amongst the birch forest you will find white-flowered *Anemone tetrasepala* and a gorgeous pale blue *Codonopsis ovata*. *Codonopsis* from seed exchanges and nurseries often don't turn out to be the ones they claim to be. Also in the forest you will find *Gentiana cachemirica*, a good Trumpet Gentian. Close to a campsite at 3000m Chris found *Bergenia stracheyi* a really tough, rugged, resilient, very hardy plant that occurs on relatively dry, rocky alpine slopes in full sun and has white flowers that are sometimes more greenish or even pinkish.

Cotoneasters are often neglected but Chris finds they have great potential and there is almost always one that will fit practically any objective in your garden. Recently, Jeanette Fryer has published the book *Cotoneasters* through Timber Press, recognizing a number of new species that used to be included in *C. microphyllus* (Rock Spray or Small-leaved Cotoneaster). These form a network over rocks and one with good plump pinkish fruits is *C. cashmiriensis*. *Cotoneaster chadwellii* a large shrub, has some ornamental merit, which Chris is relieved about as there is also a *Saxifraga* named after him that is undistinguished muddy yellow Saxifrage that he was told was not worth growing.

Kashmir is fairly dry and the soils are not particularly acidic (unlike further east in the Himalaya) but there are a few ericaceous things and because they are not from the high rainfall/monsoon areas, they can be more widely grown. The abundant *Gaultheria trichophylla* is a shrublet with cobalt blue berries which taste of wintergreen and white or pinkish flowers. Kashmir only has four *Rhododendron* all worth considering. Two are worth looking at for the rock garden: *R. anthopogon* a dwarf little shrublet typically with creamy white flowers and aromatic foliage which are burnt as incense in the temples and the larger *R. lepidotum* normally has reddish/scarlet flowers. They are adaptable and if you get good forms they are well-worth trying, even in places where typical Rhododendrons might struggle. *Swertia,* a Gentian relative, is not so frequently grown, but well-worth having and looking at in detail, such as *S. petiolata.* Most *Swertia* tend to be fairly tall but are very often attractive. *Rhodiola* identification is a real nightmare, but they shouldn't be neglected just because we have some uncertainty as to names. Chris showed a brilliant red-flowered one.

An unusual looking *Silene* sp. caught Chris' eye, but he hasn't been able to put a definite name on it. Some audiences are a bit surprised that he, supposed to be an expert on Himalayan flora, is showing them species without giving a full identification. Many people assume that it is straightforward and easy to put a reliable name on plants but it's not, and particularly in the Himalaya where the plants have not been as well-studied as in the UK or America. When Chris is unsure about a species it is often better to be cautious with naming. So sometimes there are some unknowns that are labeled as "Primula sp." or "Meconopsis sp." with a collection number which can then help in getting a firm identification later. Saying "I think it is *this* because of so-and-so…" allows others to chip in with their opinions. Those who absolutely, categorically insist they know every name perhaps don't know quite as much as they think they do, so some caution is very wise.

As a permanent record Chris generally gathers a pressed specimen which allows him to refer to it at a later stage, examine it more fully, and help with the identification. Books like *Flowers of the Himalaya,* a great starting point, only cover some of the species, with brief descriptions, and you often can't name with certainty from them. For confirmation you need to physically compare, and with specimens of the two growing together you can compare and contrast. However good your picture is or how good the description, two things close together really makes you look closely sometimes immediately spotting a feature that you would not notice otherwise. Chris also records where a specimen was collected and the collection number. Years later if someone raised a plant from his seed and they didn't have a name on it he can look it up. Of course, the easy bit with plant identification is to say what it's not, the hard part is to say firmly what it is.

Sunset Peak (over 4500m, 15,000') is home to some glorious snow bank plants growing in little snow pockets with the snow lying latest on top of them. *Saussurea simpsoniana* looks like a ball of wool with flower heads sticking out of it. Amazing plants but not to everybody's taste, Chris always says that if anyone actually succeeded in flowering one for a show-bench it probably wouldn't win a prize anyway. They germinate readily but are a real challenge to grow. Also here is *Primula reptans* a lovely creeping Primula which tends to be a real challenge for seed-collectors because it either it has no flowers at all or else is still flowering when everything else is over and in seed.

Nichinai Pass at 3900m (13,000') is a good place to find *Saxifraga jacquemontiana* which has glandular hard mats of green leaves and yellow flowers that turn an attractive golden orange-yellow. Also up here is *Androsace mucronifolia* which is occasionally successfully grown in gardens, it has a gorgeous sweet scent and lots of different shades of pink. *Adonis chrysocyathus* tends to be rather slow to bulk up in cultivation. There are many color variations of *Anemone obtusiloba* including whites, yellows, oranges, blues and purples, the yellowy forms tend to be known as the Sulphur Anemone. In amongst them grows dark blue *Lagotis cashmeriana* a member of the Scrophulariaceae, the Figwort family. *Gentiana carinata* and *Androsace studiosorum* are also found up there if they are not eaten by a Himalayan marmot. At first glance *Arnebia benthamii*, a member of the Borage family, might not look worth growing but Chris promised to show some more of it in the second talk which may make some change their mind. *Aquilegia nivalis*, Snow Columbine, is a gorgeous thing with purplish-black flowers just as the snow is receding.

Chris then took us to a ridge in Kashmir which is arguably the best locations for choice high-alpines in the whole Himalaya but he hasn't been able to get back to it in the last 20 years. It is a meeting point of granitic, more acidic rocks and the base rich limestone rocks; it is a gorgeous place for all sorts of things. It is home to *Saxifraga pulvinaria*, White-pitted Saxifrage. In the screes you will find *Corydalis crassissima* with lovely clusters of flowers and large inflated almost balloon-like fruits. On the north-facing limestone cliffs at 4300m (14,000') are *Paraquilegia anemonoides*. The early introductions of *Paraquilegia* collected by Ludlow and Sherriff were from Bhutan further east in the Himalaya and were typically bluish or mauve, in the western Himalaya they are whites and violets. There is much debate as to the number of *Paraquilegia* species with *P. grandiflora* now considered a synonym of *P. anemonoides*. One high alpine that is particularly noteworthy is a Rock Jasmine, *Androsace muscoidea,* which is found growing on vertically arranged flattened limestone rocks – a naturally occurring Czech-style crevice garden. Chris collected seeds of this in 1985 and it was raised by various nurserymen. Another Himalayan Blue-Poppy from this region, *Meconopsis latifolia*, has broader leaves, this rare Poppy is found only in restricted areas in Kashmir. Up on north and north-west facing slopes you will find *Oxygraphis endlicheri*, *Allium carolinianum*, and *Pseudomertensia moltkioides var. primuloides*. There is a general principle in the mountains that the north-facing slopes invariably have the best/choicest things.

To close the first talk Chris gave acknowledgement to an Indian Forestry Officer turned horticulturist and conservationist, Prem Nath Kohli, who set up an Indian horticultural firm, exported bulbs from a nursery, not directly from the wild. He was writing about, and concerned with, plant conservation in the 1930's, 40's, and 50's long before it was a big matter here. In addition to collecting seed, Chris also is helping traditional Tibetan doctors at the Dalai Lama's Tibetan Medical and Astrology Institute in Dharamsala, India. Chris left us with images of this Paradise on Earth in spite of the difficulties with the politics and with visiting Kashmir, where up in the mountains there are fine forests, meadows carpeted with wildflowers, turquoise green lakes, and stunning plants.

Growing Himalayan Rock Garden Plants

There is a chapter in *The Plant Hunter's Garden* by Bobby J. Ward about Chris, with his garden described as "postage stamp-sized" with two 15 x 30 foot plots, front and back yard. Part of the fun of doing things in limited circumstances is that it attracts attention – he even had BBC Gardener's World TV show film in his garden. He doesn't have a proper alpine house or any special facilities so the really demanding high alpine plants are largely out of his scope. Just before Chris left his home for his trip to Michigan he took a few shots of things that had just come out in

his garden to give a glimpse of some of the things he grows, they included: *Aquilegia moorcroftiana* (or maybe a hybrid thereof), *Podophyllum hexandrum*, Himalayan May-apple, assorted Himalayan *Bergenia*, and the Kashmir Star Tulip, *Tulipa stellata*.

Chris won't be able to tell you the answer to growing things that have always failed for him, even the best growers struggle with certain genera. *Gentiana* is one that he struggles with in his own garden, being lucky if he gets them to the seedling stage and then they expire. Beyond pH and soil, he hasn't been able to figure out why he can't grow Gentians.

Chris often tells groups, especially in southern England, that if they want to grow *Meconopsis* well, they should move to Scotland, and for some of the more demanding high alpines they need to move to arctic Norway. Also we can all grow certain things easier than others yet have difficulties with things that may be easy elsewhere. Likewise there are many ways to germinate various seed and Chris shared with us some of his general thoughts throughout the talk.

Chris came across a book review for *Columbines* by Bob Nold in the NARGS Rock Garden Quarterly a few years back that he quoted from: "One area that is a bit confusing is propagation, which he states in the first sentence is "easy" and spends the next pages…explaining several different methods for germinating seed without recommending one as the best for the genus…trying any of them at random may work, but there must be a "best" or "easiest" method." Chris asked "why must there be?" and said there often isn't a best/easiest method, certainly not applying to a whole genus. We all want there to be and would like to say this is how you treat all *Meconopsis* or all *Primula*, but it doesn't quite work that way, even within the species there are variation in methods and results.

Chris showed very briefly a bit about sowing on paper towels. One of his expedition shareholders, Martin Carter, tried using the towel method once and everything rotted so he gave up doing it that way. He has had some health issues of late and decided to try it again and this time has had much better success, this spring he showed Chris some of the seeds of *Primula munroi* from last year's expedition that germinated as well as some seed of *Primula sp*. from Chris' 2007 collection in Tibet that he had stored in the freezer that also germinated on the paper towel. Not everything will germinate with such treatment but there are some things that have rather greater viability than you imagine, there are some sections of *Primula* that have the reputation of having extremely short viability, Norm Deno commented that all *P. rosea* seed from the seed exchanges are DOD (Dead On Delivery). If you ever get too much seed try storing it in the fridge or freezer and sowing it later. After his success Martin commented that he is too old now to be bothered with all the pots so he is going to do the paper towel method from now on. There is an issue with transplanting some of the finer seed to pots from the towel, but for larger seed and with a bit of practice it is worth trying particularly if you have certain things that are a bit erratic in their germination. If you are the sort that enjoys examining seed and seeing it germinate you can have a lot of fun regularly checking these instead of having to poke about in pots. It's also a very good way to test viability because if the seed rots in a week it means the seed was no good and you don't have to spend the next 3 years hoping that the rest of them might germinate. It also avoids contamination by other seeds in the pot that germinate and that you think it is the original seed, but it turns out to be something else (especially weed seeds blown into pots).

Chris wants to challenge some of the conventional wisdoms in the UK. He's found that a lot of that "you mustn't do this or you have to do it that way" stuff is a disadvantage if you follow them too closely. He's had people come up to him after certain lectures and tell him that he has given them permission to try these things, as if they weren't allowed to do them another way.

Also going against conventional practice, Chris sows his seed very thickly sometimes, especially early on if he had a lot of seeds leftover. With a very small garden, not much time, and too few pots he just put all the same seed in one container, even though they were crowded. The seeds all sprout very nicely, there are issues with certain things damping off, but it is surprising the number of things that have no problem at all. Once they germinated he didn't have the time to prick them out to pot on, so he just left them and come next year they were still alive, growing very well with strong root systems. Leaving them alone until he had time and found a spot in the garden for them, he then just dug a hole and put whole lot in. The survival rate for a lot of things is very good. Chris also finds that a lot of people kill off a high proportion of their plants when they prick out. Frustratingly you tend to get good germination for the things you don't particularly want many of and poor germination for the things that you do. Feeling a sort of legal/moral obligation to prick them all out and repot them you then ask "What are you going to do with them all? You've got too many pots to take care of and then they die from neglect." So you answer that "In the wild things are not neatly spaced out, and quite often things do grow all cramped together." Nursery people have told him that they often prick out half of the seedlings in a tray into pots so that they have half of them ready to sell and often by the next year the ones left in the tray are bigger than the ones that were potted up, the root systems being stronger if not disturbed, and there could even be some benefit in being nursed on by the other plants surrounding them. Not long ago we didn't really understand the mycorrhizal fungal associations with orchids and other things, so maybe there is more to the nursing effect both in the early germination stage and when they are growing all crammed in together. Also small alpines you want in a nice little grouping, germinated in a clump and you've got that look already. Not to say that pricking out early doesn't work, because some of the best growers prick out as soon as they can, but they care for them and look after them. Borrowing the expression "If it ain't broke, don't fix it," if you prick out early and it works well for you, continue doing so – but if you kill a lot of stuff off, consider trying it his way, with the caveat that it does not work in every instance.

Something to look for in plants is the natural variation in looks and how they perform where they grow. Then there is the issue about how garden-worthy something is or if we should put it on the compost pile. Knowing the provenance, where it came from, may mean a plant can cope better with your local conditions if they are similar or it may grow worse if certain conditions are different. Whether it was difficult or easy to grow can depend on your conditions. Also different species react differently to different conditions, and if a plant is not what it is labeled as, it will certainly confuse things. In some cases identification is complicated by hybridization. Some genera like *Aquilegia* and *Geranium* are well-known to hybridize. Many other things may hybridize once they are established in cultivation; so that even things that appear on the show bench are not always the real thing. If you are talking to someone about a plant you both think you have, it helps if you are actually talking about the same plant, and not something misidentified or that is a hybrid. One word of warning with the misidentification side of things – what you are growing in your garden under a particular name you may like better and it may perform better than the real thing, so you need to find out what it really is. If you are reading about it in the Quarterly/Journal or talking to someone else and the information doesn't match up you may need to consider whether the identification is correct. We do need to strive to have

a higher proportion of our plants correctly named. Chris visited Tromsø Botanic Garden in Norway and there was a lovely *Anemone* flowering well that had supposedly come via his seed. He didn't want to say anything, but it was most likely from his collection of *A. polyanthes* that had hybridized with one of the local species.

Even if you don't grow from seed, the principle of encouraging introductions from the wild that are correctly labeled with the collection number and a provisional identification is important. With the caveat that even collectors can misidentify, if not verified by an expert in the genus, you can hope to grow a correctly identified plant and that helps to make a clearer understanding of what is in cultivation. It doesn't matter whether a plant is a hybrid or a species from the wild, if it is attractive and a good ornamental then grow it and enjoy it. But in terms of our sharing information on how to grow it, what we think of it as a garden plant, conservation terms or whatever, you really do need to be aware of what it really is.

Chris mentioned previously his visit to Tromsø, in arctic Norway last June. He recommends a visit there for anyone who can afford it as they grow some splendid things, including an excellent Saxifrage bed. The head of the main garden part came from Prague Botanic Garden [Czech Republic] and really excels with *Saxifraga*. While in Norway, Chris was also able to visit Ole Olsen, a shareholder from 20 of his expeditions and an original member of the Sino-Himalayan Plant Association [SHPA]. He is a wonderful record keeper who labels all his plants with not only the name, but also the collection number and the expedition they came from, he also takes copious notes so Chris was able to record lots of things about the plants. Ole also donates seed from his plants to the SHPA with the collection numbers so Chris is able to check the validity of what is being submitted and a high proportion of their seed exchange is the genuine article.

Chris has a universal taste in plants; he likes all plants and collects seed of all sorts of things. The three most requested groups of plants he gets for his expeditions now are *Primula*, *Meconopsis*, and *Arisaema*; *Arisaema* not so popular 20-30 years ago but have gained in popularity in recent years. One fairly widely grown Himalayan plant that will perform well and look good is *Androsace sempervivoides*, an attractive plant with clusters of pink flowers, and strawberry-like runners.

Again some people are a bit surprised that he, supposed to be an expert on Himalayan flora, is sending out seed packets that just says *Primula* sp. or ??, surely he should be able to tell what all these things are. But it is not as straight forward as people think since when he is collecting the seeds the plants are past flowering and often the leaves and stems are dried up or shriveled so there may be few identifying features to go by. Having a pressed specimen is very useful for identifications but none of the books have pictures that you can match with dried specimens. You might collect something and need to know if it is worth collecting, is it going to have sufficient ornamental merit. Chris has lots of information on plants that have been collected in areas before, or he may have previously been to that area but he still finds himself faced with plants that he struggles to identify and decide if it is worth collecting.

Once the seed is collected you need to dry the seed, and drying them in cotton seed bags is very useful because this allows the seed to dry in all sorts of conditions and keeps it safe. On his earlier expeditions he would spread it out on the canvas when the wind wasn't blowing, if doing that at high altitudes the ultra-violet light will shrivel up the seed and it will be no good. Cotton bags are also good in the heat or damp, plastic bags are good for the first day, but after that it's trouble, and paper envelopes can disintegrate. You want to dry all the seed out, sieve and clean it up then package it, so there is lots that needs to be done and it needs to be stored well so that it is in good order. Sometimes you can collect loads of seed and sometimes not. Also as a responsible collector Chris' fundamental principle is that we do not have a right to have the opportunity to grow plants directly from the wild if we are damaging the populations, intelligent seed collection does not damage the populations, and in most populations there is a lot of over production of seeds. Clearly if you come across something that you know what it is and there are only a few seeds and a small colony it isn't appropriate to scour to find the few seeds that are around. It is all right to collect seed wisely but we have to be conservation minded.

To help illustrate the variety of plants that occur in the Himalaya Chris took us to the Indian state of Himachal-Pradesh, which borders on southern Kashmir. He started in the forests and went up into the meadows and on to the cliffs and then into the dry Tibetan borderlands. He talked about the typical Himalayan plants that grow in the different areas so that we can understand the aspect of attempting to recreate the sort of conditions they have in the wild. He did include some examples that occur further east but that occur in similar conditions but in a slightly wetter area.

The area Chris began with is Kullu, known as "the end of the habitable world". This is one of the main areas that Dr. Walter Koelz collected in, so Chris was able to view lots of his specimens at U of M Herbarium to help with naming. Starting in the deep forest in northwest Himalaya Chris began with *Cardiocrinum giganteum* which doesn't really count as a rock garden plant. *Arisaema*, amazing plants with interesting foliage and inflorescence, are gaining in popularity. There is a wide variety of them in the Himalaya. Most seeds that are enclosed in pulpy fruit need to have the pulp removed as it often contains germination inhibitors. Gather the seeds of the *Arisaema*, hopefully when they are already turned plump and red, store in a cotton bag until it is fully red, then soak it in water and with the aid of a sieve remove the pulp. If you have a lot of *Arisaema* seed wear gloves when handling them because the pulp has quite powerful chemicals that can affect your fingers and hands causing the skin to peel off. Good plump seed will germinate, and *Arisaema* seems to have a high percentage of germination. It is good to sow them fairly fresh because if they dry too much the germination rate goes down. You need to be patient with *Arisaema* once they do germinate because the first year you usually just get one small leaf that dies back down then over the years the corm builds up until it is of sufficient size to grow well, but you need to stay conscious of moisture levels because they can rot off if too wet. You can grow them in pots but shaded beds with some organic material in the garden are probably ideal since most species are deep forest plants. Many of them can be on the tender side, seed from the northwest Himalaya should be perfectly hardy. Some of them are used to very warm summers, such as *A. tortuosum* which can get to about 2m tall. The easiest one to grow is *A. flavum* which is one of the smallest with a small yellowish spathe and flower head, it produces massive amounts of seed which is why it gets into all the seed exchanges and is a good one to begin with. *A. jacquemontii* is another good one to try that is very hardy.

The Himalayan Mayapple, *Podophyllum hexandrum*, are found in similar type of conditions as our native *P. peltatum* and sometimes in a bit more open area as well, in a fairly light soil with a reasonable amount of organic material and provided it is not too dry they should be able to perform quite well. There is lots of variation in the flower color, shape and mottling of the leaves. It is an important medicinal plant with podophyllin, an alkaloid extracted from the rhizome, the Himalayan species

having a higher concentration of the alkaloid than our native one. The bright red fruit is also a remedy for sore throat.

Various forms of *Bergenia ciliata* have won prizes on the show benches in the UK when in flower stage with the leaves barely open, but the leaves do get quite large afterwards. There are many variants, with *var. ciliata* very hairy all over the leaves and that is typically from the eastern Himalayan area so needs a little more moist conditions, *var. ligulata* has lots of color forms and has less hairy, rounder leaves. *B. stracheyi* is less hairy, much more robust and opens with a more sharp edge to the leaves. The forms Chris has typically raised have been cream or slightly greenish but there are whites and pinks as well.

Tulipa stellata were obtained by Chris from P. Kohli and Co. 25 years ago and they have been surviving in his small front garden since then. There are 3-4 species from Kashmir, none from further east in the Himalaya, and they do not require any special treatment, bulb frame or summer baking as do some other tulips. Other bulbs of the region include *Alliums* and *Fritillaria roylei* which unfortunately Chris finds many of the *Fritillaria* are eaten off by goats so by the time he gets there, there is no sign of any seeds. *Lilium nepalense* does not occur in Himachal-Pradesh but is a lower forest plant. Chris has never had it flower where he gardens but further north in places like Scotland it is possible to get the stunning maroon-centered lily flowers. It has a long, almost rhizomatous root run so you need cool moist conditions to allow it to perform well and some forms would be a little tender.

Heading up the mountains, there is a pass with a moist cliff which Chris had passed by for several years before he spotted a colony of *Primula reidii* on a ledge about 10' up on very slippery rock. His excellent collecting assistant from Nepal (whom he flies in for his expeditions in India) stood on Chris' shoulder then scrabbled on the rocks and collected seeds/specimens. *P. reidii* is a gorgeous ivory white, sweetly-scented Primula with a lovely white farina, it grows in good deep shade on a rocky substrate with a small pocket of soil. They are an absolute delight if you do well with them. *P. sikkimensis* doesn't occur in Himachal-Pradesh but often grows along wet streams and is quite wide-spread in eastern Himalaya and southwest China. It performs perfectly well in pots (or in an old bathtub). One of the easier to grow Primulas in the UK and more widely spread forms is *P. munroi*, used to be known as *P. involucrata*, the Himalayan Marsh Primula. Not the showiest of all Primulas, but a good one to start with, it tends to bulk up quite well, and has a beautiful scent. The typical forms in Kashmir are pure white but in Himachal-Pradesh you get various pinks and plums as well.

There aren't many ericaceous shrublets in western Himalaya but there certainly are plenty elsewhere, Chris showed *Gaultheria trichophylla* and *Rhododendron lepidotum*. Having a special ericaceous mix and technique when sowing those seeds is a good idea, surface sowing is important and Chris puts the pot inside a plastic bag and seals it so the seed stays moist. Chris surface sterilizes the mix to cut down on mosses and lichens from growing on the surface, Norm Deno found that complete sterilization of the mix led to poor growth but sterilizing the surface to a depth of about 1cm worked well. It doesn't totally eliminate the mosses and things but allows the seed a chance to get started. We are always envious of other people's areas where it is much easier to grow things and Tromsø grows some wonderful plants, many believe they can grow everything with consummate ease. But they had trouble growing *Rhododendron* and were told that it really wasn't possible to grow most of the Chinese and Himalayan ones, but with the aid of getting material over from a nursery in Scotland they've had some success. So even though their conditions are ideal for some things they do struggle with others.

Potentilla fortunately tend to be quite straight forward, don't dismiss them as there are some very good ones including the well-known *P. atrosanguinea* which means blood-colored, although a number of forms have yellow flowers; they are usually easy in the general rockery. *Geranium* can be a real nightmare to collect much seed of for shareholders, but fortunately most of them germinate quite readily, grow on easily and usually perform nicely in the garden in a wide variety of conditions. Chris had showed *Arnebia benthamii* in the first talk, but showed some more pictures of it. Ole Olsen, the expedition shareholder from Norway whom he had mention earlier, said it was his favorite plant ever, some people who visit his garden say it's ugly, some say it's pretty and some say it's weird. It has chocolate-colored flowers on a spike surrounded by long shaggy-hairy bracts. *Androsace* can be very difficult to get much seed from but once you've got a plump seed the germination rate tends to be fairly good and the plant will gradually build up. A number of them, like *A. sarmentosa*, have strawberry-type runners so they will spread and bulk up quite nicely.

Chris knows high alpines are challenging in Michigan but two he would love for us to try just in case anybody can perfect the technique. These two, *Eriophyton wallichii*, which is a Dead Nettle, and *Corydalis crassissima*, which has succulent blue leaves, grow on the edge of screes. They are known as solifluction acrobats, solifluction is the slow creeping of moist debris down a slope. What these plants do is they have their shoots appear above the ground in summer and they die back to the buds during the winter and the actual root system grows at the same angle as the slope because the whole thing will move a little bit down the mountain during the winter months along with the debris. So Chris has this concept of recreating this perfectly in our gardens, with a slow moist slope for these things.

Norm Deno is particularly keen on discarding the archaic English term "stratification" – the treatment has nothing to do with stratification meaning layering. He also emphasizes that it has nothing to do with freezing, and is actually a period of chilling to about 40°F so it isn't a question of having long seriously cold winters. Another big misconception when Chris began being involved in rock gardening some 30 years ago was the standard convention that all alpine seed needs to be chilled, "stratified," or frozen – in fact very few of the things he collects need chilling, a few do but they are the exception rather than the rule. Ones that do seem to benefit from a period of chilling include *Paraquilegia* as well as the related *Aquilegia*.

The final section of Chris' talk covered high alpines starting with *Primula minutissima*, which does set better seed than *P. reptans*, perhaps because it is in more open conditions and grows high, cold, and hard, often in moist gravel where it performs nicely. If you get material from up in the dry, arid Tibetan borderlands many of them have a very long, deep taproot and botanic gardens that know this grow the plants in very deep pots, sometimes it appears they are almost growing in pure sand. Norm Deno and various other NARGS members have incorporated sand beds into their growing methods for those types of plants.

by **Laura Serowicz**

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