

# International Rock Gardener

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The Scottish Rock Garden Club

January 2020



Welcome to a new year of IRG - we look forward to bring a varied range of articles again this year. Issue 121 begins with a tale of how a shed roof can become a garden – and the great results that can be obtained from such a garden, even using the most readily available alpine and rock garden plants as Michael Thomson shows to spectacular effect. As Robbie Blackhall-Miles showed us in [IRG 58](#) an esoteric range of plants can make such a garden space a rarefied place but Michael's version could be easier to achieve. Michael and his wife Paula provide [garden maintenance services](#) in central Scotland and Michael's [varied career](#) history in military service, social work and as a lawyer

has given him a wide appreciation of the world – not to mention the benefit of plants and nature. From America, nurseryman and expert photographer Jeff Wagner, who has a soft spot for woody plants and trees, as well as alpinists, shares his photos showing the scenery and town life of Yunnan, from a NARGS ( [North American Rock Garden Society](#)) trip to China in 2018 - Panayoti Kelaidis wrote of this trip in IRG 121, with more emphasis on the flowers. It's good to have here a wide flavour of the country they experienced.

Finally for this month we cooperate with The Rock Garden, the twice yearly print journal of SRGC to show a range of photos to accompany an article in the January issue, TRG144 of a trip by Connor Smith to have a work placement in the [Schachen Alpine Garden](#), the mountain garden of the Munich Botanical Gardens. Connor was pleased to have grant aid to make this visit and learn from Jenny Wainwright-Klein and Thomas Heller who are working to improve the garden and spread knowledge of it. Based at the Royal Botanic Garden Edinburgh, Connor has already lived and worked in several countries, in various capacities and spheres, in pursuit of his horticultural career and is now doing more writing, too. 2019 was a busy year for him, visiting, working and speaking in the UK, Europe and America – so 2020 has a lot to live up to for him – and we hope for us all!

Cover photo: Chinese roadside - photo by Jeff Wagner



Michael and Paula Thomson and Blade, the company team from East Kilbride!

# ---International Rock Gardener---



Connor Smith



Jeff Wagner

## **Corrigendum:**

In IRG 210, December 2019, a photo was published, stating it to be of Peter Hadland Davis. Regrettably this image was incorrect and we apologise – the correct photo of the renowned botanist is shown here . Our thanks to friends of John Watson and to the RBGE for their help in correcting this.



[Peter Hadland Davis](#) BSc, PhD, DSc(Edin), FLS. – photo courtesy of R.B.G.Edinburgh

# ---International Rock Gardener---

---Garden inspirations---

## Creating a Shed Roof Garden by [Michael Thomson](#)



**Health & Safety Warning** – *This article DOES NOT provide personal safety advice about the load bearing capacities of garden structures. This is NOT a ‘how to’ article. It simply sets out the method I used to create a garden on the roof of a shed I designed and built by hand from scratch, in full knowledge it would need to hold the weight of my planned roof garden with ease. My shed was a bespoke design and build from the ground up. The type and size of wood I used is deliberately not included here, and neither is the build design nor the method of construction. The focus is on the roof garden itself, not the materials or the structural integrity of the shed.*

*If you take on any project that involves adding weight to the roof of any structure, be absolutely certain about what you are doing, and seek professional advice if you are in any doubt.*

*There are no second chances when it comes to safety. If a shed roof collapses you risk serious injury to yourself, your family, friends and visitors to your garden. DO NOT just add a roof garden to a shed without being mindful about the safety issues involved. Off-the-shelf sheds are not built to withhold the weight of a garden on their roof. One cubic metre of soil is likely to weigh between 1.2 – 1.7 metric tonnes (1,200 – 1,700 kg). If you add on the weight of plants, plus the weight of water after heavy rain, there could potentially be 2 tonnes of weight on the roof. Only take on this type of build if you have experience of wooden framing under load, and only if you have the self-awareness to seek advice when unsure. Don’t try to cut corners to save money. This type of solid structure is not a cheap build. My 2015 roof garden shed is 4 metres long x 2 metres wide x 2.5 metres high. The materials, including a secure double glazing sliding door, wood, insulation, liners, guttering, soil and plants cost in the region of £3,000.*

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In January of 2013 the wind blew off one side of the roofing felt on one of our sheds. Instead of applying more felt, I decided to see if I could grow some plants on the roof. I strengthened the roof with battening on the inside of the shed, both horizontally and vertically. I laid a double layer of green damp-proof membrane across one side of the shed roof, and put decking boards around the edge to hold the compost in. I mixed up bags of compost with bags of sand (70/30) and put them on the roof. The maximum depth was only about 10cm. I then



covered the whole area with landscape fabric and applied a thin layer of decorative stone chips. I selected alpine plants in 9cm pots, and cut holes in the fabric to plant them into the shed roof. It worked! I didn't know it at the time, but this roof garden and planting experiment would be the prototype to the larger shed and roof garden I went on to build in 2015.



I had grown lots of alpine plants in our garden, but never on top of a shed. Alpine plants are accustomed to growing on rocky hillsides, often with very little soil. I hoped the 9cm plants I selected would grow to 2 – 3 times their potted size, and they did. They seemed to like the south facing shed roof. I did need to water the plants in the height of summer. Any moisture that is in the soil does permeate down the inclined slope of the shed roof and drain out of the lower end of the decking boards. The landscape fabric and layer of decorative stone does help to prevent some water loss and drying out through evaporation. I added *Dianthus*, *Primula vialii*, and *Ophiopogon*, and they did well too. I was really happy.

There's no direct correlation to the creation of our first shed roof garden, but later that year in April 2013 we set up our garden maintenance business in East Kilbride.

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My first attempt at a shed roof garden in 2013 was such a success that in January 2015 I set about building a new larger shed with a roof garden. I decided I wanted less of an incline on the roof to ensure the water didn't drain too quickly, but at the same time it did need an incline to ensure sufficient run off and drainage – I didn't want a pond. Having said that, I did use some of the principles of building a pond in order to protect the shed. The first layer of protection I used on the roof was a blue vapour permeable membrane. I was using this around the walls of the shed so used what I had left on the roof. I then added a layer of pond fleece liner. This material is used to protect a pond liner from damage from stones when water pressure is forced down onto the liner when filled. Although I wasn't building a pond of water, I still wanted to offer the liner and roof some added protection.

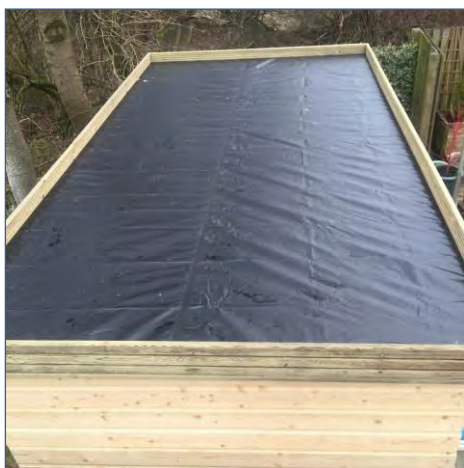
Once the pond fleece liner was in place I applied a pond liner to protect the roof from water ingress. Not all pond liners are created equal. They will come in various grades. I chose a liner with a 40 year lifespan. I used a staple gun to fasten my protective linings and pond liner to the underside overhang of the shed roof. It may seem obvious, but it's worth noting, DO NOT staple through the top surface of the pond liner. If there is even a tiny hole, water will find its way through eventually.

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One mistake I did make was folding the liner under the overhang and fastening it too near the edge of the line where the roof met the wall. By doing so I didn't leave a drip edge. Without a drip edge water runs around the liner and right up to the wall and roof joint. You don't want this. Cut the liner so that the cut edge faces directly to the ground. That way the water will roll over the edge and drip down to the ground. I have since rectified this error and all is well.



The new shed in progress – the earlier roof garden to the centre left of the photo.



With the liner in place I then attached the deck board edging. This would hold in the soil. From the surface of the roof to the top edge of the deck board there was a depth of 10cm. This was all I had on the 2013 shed roof garden, so I decided that was all I needed. Plus, any more depth and I would need more soil to fill it, and more soil meant more weight.

There was one more item to apply before adding the peat free composted soil – and that was water matting. Water matting is a horticultural product often used by commercial plant nurseries. It's not to be confused with capillary water matting, that is also used widely in the commercial plant growing sector.

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The water matting I selected was a matting that is specifically designed to hold onto water. It will hold more than 5 litres of water in 1 square metre. In addition to these water retention qualities, I also wanted my plants to have something to get their roots into. I didn't use this matting on the 2013 shed roof garden, and it was something I thought was lacking from this earlier prototype. If the roots grew into the matting, and the matting held onto water, then I was giving the plants the best chance at surviving and thriving. If you look closely you can just make out this water matting on the surface of the shed roof in the photo below, where I am applying the soil.



Next came the plants. When spring finally arrived I purchased approximately 150 plants in 9cm pots to cover the 4m x 2m roof. They were mainly alpines, saxifrages, a few sedums, heather, *Primula* 'Wanda', and also some aquilegia. I chose plants that are widely available. The plan was for the plants to grow and create total coverage of the area – no soil was to be left exposed.



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The plants arrive.



A rehearsal of the layout.

The roof was planted in March 2015. You can see from the photos how much space there was initially between each plant. The plants would form clumps of about 3 times the size of their original 9cm potted size. By the time we were in June there was a colourful spread of plants on the roof.



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The roof planting grows and settles in.



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That first year my newly planted shed roof garden exceeded all my expectations. I had achieved what I had set out to do. There was a riot of colour from early spring through until August. Sadly, all things come to an end, and by the time we hit autumn most of the plants had finished their display. They needed a rest, and they went to sleep for the winter.

I still had good green coverage on the roof, so I was a very happy gardener. I also added crocus, snowdrop and dwarf daffodil bulbs.



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Spring 2016 came and I was excited to see the bulbs I planted in autumn appearing on the shed roof. I also added some plants to remind me of my late father who had passed away before we set up Mr & Mrs Gardens Limited. I already had a large planter in the garden dedicated to him, and I wanted my Dad to share in the pride I had in the roof garden. I added forget-me-nots in the traditional blue, together with a pink and white variety. I also transplanted a sedum I had in my Dad's planter a variety called 'Dragon's Blood'. It absolutely thrives on the roof garden and gives great coverage even to this day (December 2019).

*Sedum spurium* 'Dragon's Blood'



Michael's second planted roof.

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--- Travels in China ---

Articles on the wonderful plants to be found in this area are many and various - here we concentrate on Jeff Wagner's excellent photographs to give more of a taste of the towns and landscapes which can be seen in Yunnan.

## Yunnan 2018 – A flavour of the place : text and photos by Jeff Wagner

Yunnan, the size of California, straddles Vietnam, Laos, Burma, Tibet, and Sichuan. It has the greatest diversity of climate, topography, flora and fauna, and of ethnic peoples of any of China's provinces.

### Lijiang and environs

#### Lost in Translation

Many older Yunnanese do not speak English in public. Most younger ones can and do, and usually always show a friendliness and openness towards Westerners. It is not difficult to find someone nearby in larger towns and cities that speaks English passably well, or even fluently. They are certainly more adept than most Westerners are at speaking Chinese.

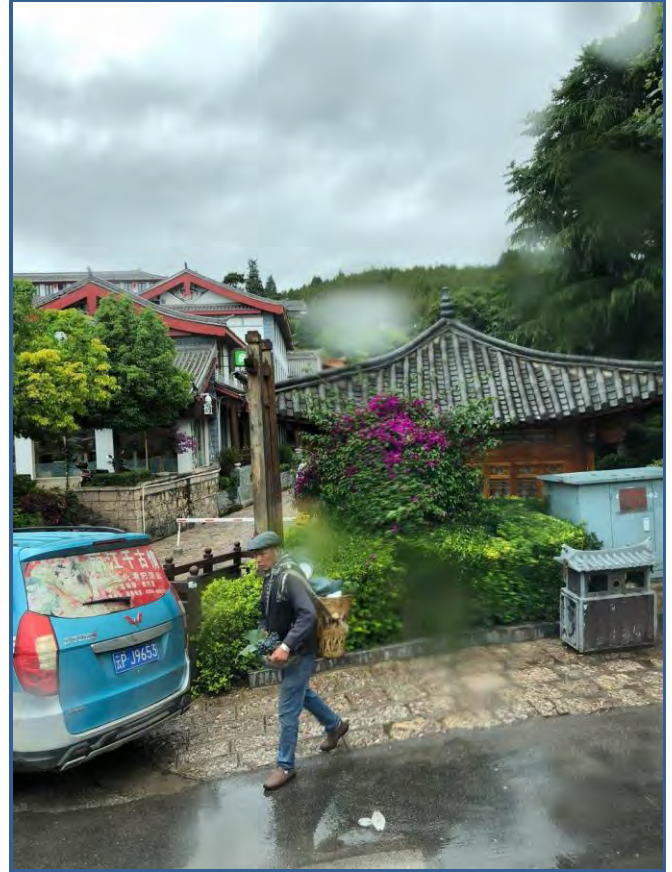
“Commercial & Official” English is often a stab in the dark and probably is a literal translation or some gloss from a dictionary. Other signs are just pronunciation errors or are indifferent to grammatical English. And some are deliberately funny. One stuck on all of the mens' urinals in an airport restroom said “Take a small step forward for civilization”, which in English is perfectly correct and no doubt an accurate translation of the Chinese characters posted above the English.



Notice also that many signs are in three languages: Chinese, Tibetan, and English. The tolerance for languages in a society is always a hallmark of its strength and intelligence and is a great lesson for insular and backward societies, tendencies of which we are unfortunately now seeing in several First World countries.

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Around Lijiang.....



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At the house of Joseph Rock



Walnut sellers from Yufeng Monastery. The walnuts are *Juglans sigillata* and are very sweet.



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Scenes around Lijiang Old Town and Heilongtan



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Plant excursion to Yulong Shan

View of a woodland meadow at 2700 m



*Picea likiangensis*



Yunnan Aspens

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Wet weather causing some floods

*Incarvillea* looks good even in the rain



Montane meadow with Bracken Fern

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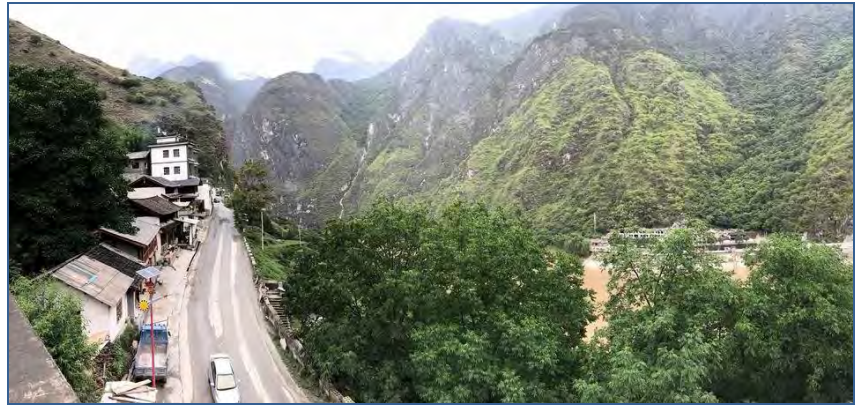


On the Road to Shangrila, the Yangtze River and terraces along the river



Upper part of Tiger Leaping Gorge

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Songzhanling Monastery and its main gate, Zhongdian



Large pots of water are kept handy in case of fire.

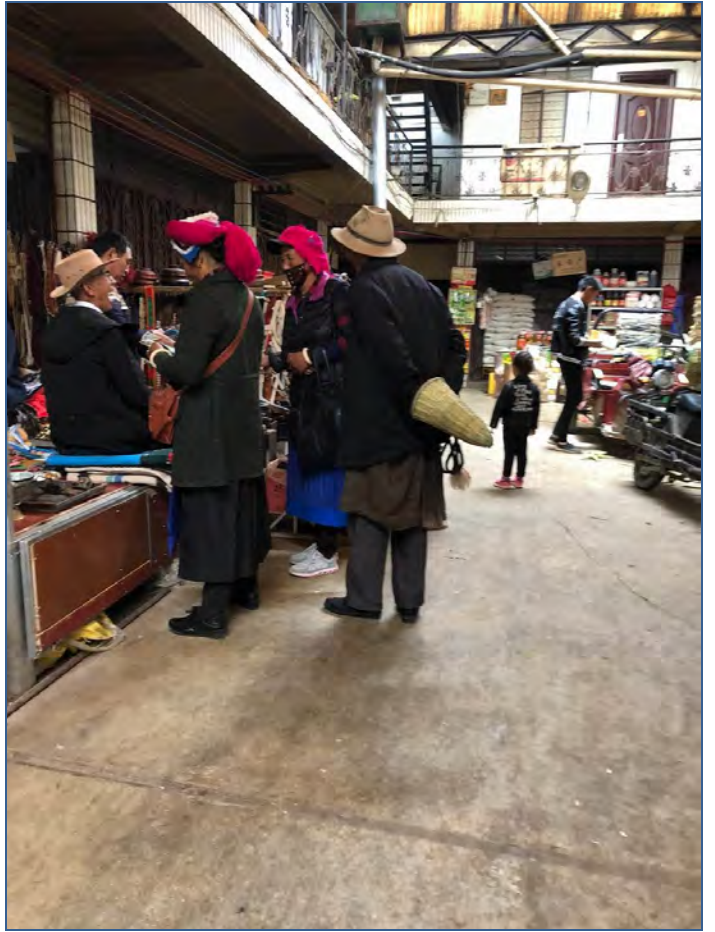
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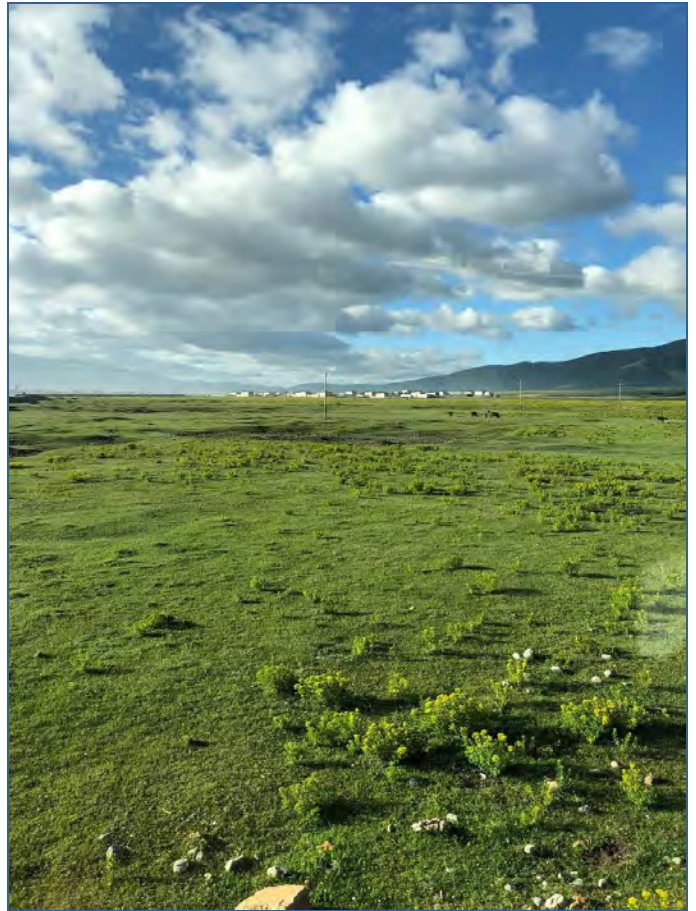
Zhongdian market and old town buildings



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Shika Shan- Blue Moon Mountain, an excursion to 4400 m



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On Zhongdian plateau and around Lake Napa Hai



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To Tianchi Lake, 3850m



*Rheum* flower in close-up



Rheums and primulas in a meadow





*Schisandra rubriflora* (above) illustrates, along with many other of S & SW China's flora the astounding similarities and differences between this part of Asia's, Europe's, and North America's floras. Well into the 20th century botanists were puzzled about this, especially as they began to

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understand the diversity and richness of especially China's plants, many of which have close relatives in the West's extant flora. Geologists made a considerable contribution to our understanding of this puzzle. If one studies plate tectonics, the prehistoric arrangement of the Earth's continents, and the fossil record, then the picture becomes much clearer. The Ice Ages wiped out much of the diversity of the Western Hemispheres floras but the fossil record clearly shows that they once were as diverse and rich as China's are today, whose flora survived the Ice Ages largely intact. Worldwide, one can see that Conifers as a group are on the decline from their heyday long ago. The number of monotypic groups in the conifers is large compared to flowering plants. Also, many coniferous families contain only a few genera or species. Most of the world's conifers have been pushed to habitats where few flowering families can effectively compete. Outside of New Caledonia, where conifers have reigned supreme, Asia, and especially China has the largest number of conifer species in the world. Many of these exist only as fossils in the West. Looking at flowering plants the richness explodes compared to Western floras. China, especially SW China is the centre of distribution and evolution of many flowering plant families. Magnolia species are one of these groups. Rowans are another, as well as Rhododendrons, Corydalis, and the list goes on. *Schisandra* is represented in Western floras. It has an ancient history on the planet and shares a common ancestor with Magnoliids. It is a vine that grows all over the Himalaya from India and Nepal and into China and has thrived here for a very long time. It is only one of numerous examples of our planet's incredibly wondrous and beautiful plants, and here in SW China when one wanders in the forests and mountains a new discovery is around every corner.



Zhongdian to Hong Shan: an Excursion to the Tibetan Borderlands up to 5200 m - this is at 4850 m.



Rhododendrons on a high hill summit at 5140 m.

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*Rheum nobile* in flower on a scree





*Primula nanobella* in flower on a rocky slope

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View across the water to mountains

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More scenes from the Hong Shan - Prayer wheels operated by running water



Old second growth fir and spruce can be very large & impressive trees



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Heavy rains soak the slopes and valleys in the evening & create cloud forest conditions in the early morning.....

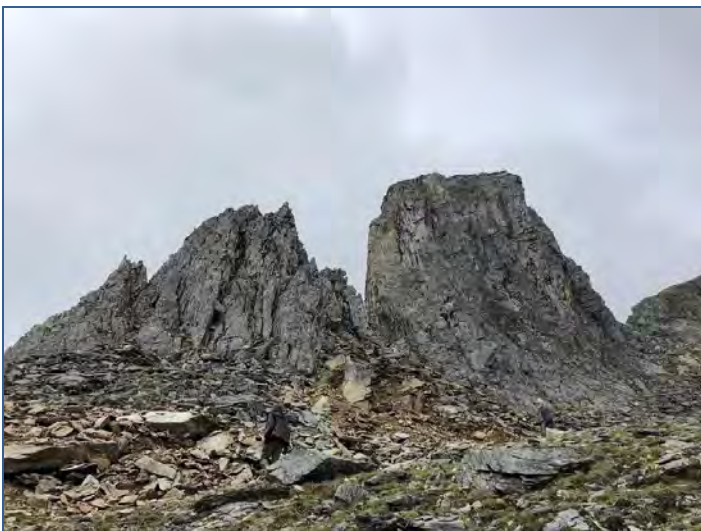


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Zhongdian to Dêqên - deeper into the Tibetan Borderlands and close to Meili Xue Shan, whose highest peak, Kawagebo reaches over 7340 m. The road we took is the modern highway to Lhasa and climbs from Zhongdian to near 4840 m. On the way it passes through very xeric terrain that reminds one of Colorado, however when it reaches the Yangtze River it drops to 2500 m where Eucalyptus, corn, walnuts, and grapes are grown.



*Saussurea quercifolia* in bud at 5000 m.



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Summit of of Kawagebo, tallest of the Meili Xue Shan

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Looking toward Tibet just over the top of the glacier- flanked by the Meili Snow Mountains



Leaving Zhongdian, the Songzhanling Monastery is in the valley above the two distant hills.

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The road we took is the modern highway to Lhasa.

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Climbing back out of the Yangtze Valley driving towards Dêquên

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Marking the pass at 4840 m ' - the Yak La viewpoint where Bai Ma Shan dominates the skyline to the southeast. Its peaks reach nearly 6000 m.



We took our lunch at this pass where there were herders with their yaks and also Equus kiang, which we saw for the first time. The mules were very friendly and had an impressive bray. All of the yak had bells around their necks that sounded very sonorously even from a distance. This area is very reminiscent of Colorado's high alpine. It receives less rainfall than the other mountains we have visited. On the climb up we passed *Pinus armandii*, *Pinus densa*, possibly *Calocedrus*, oaks, Tibetan cherry, birch, spruce and larch. Several *Rhododendron* species also grow here, but there is an element of this flora that corresponds remarkably to Colorado's. There are *sibbaldias*, *caltha*, *pedicularis*, *violets*, *astragalus*, and others. This is obviously a cold and snowy place in the winter.

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The descent to Dêqên

Dêqên's old name was Atuntze. The high mountains to the west separate the Mekong and Salween Rivers. It has always been a predominately Tibetan town in character, but with a wild western feel and a mix of all kinds of people. Plant hunters of the early 20th century had little fondness for the place and wasted no time getting past it and into the surrounding mountains. Today it is a Han stronghold dominated by a large government and police presence and a crazy pace of new construction everywhere. There are many thousands of people crammed into a deep valley in the space of a few miles. This is our base for the next few days as we explore the Bai Ma Shan.



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The Bei Ma Shan

Overlooking  
Dêqên



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Guardian of our hotel's front desk - he brings increasing profits.



To the summit of 4292 Monument, Deqin Xian, Diqing Zangzuzhizhou, (on the flank of Baimang Snow Mountain)

One excursion took us to high alpine meadows – we hoped to reach closer to 5000 m but a couple of miles in we were caught in a frigid downpour of sleet and rain and had to retreat to a yak herder's cabin at 4800 m. We ate a quick lunch and beat a path back to our bus where our guides Peter and Carolyn had thoughtfully prepared hot tea and biscuits to revive our spirits. We did manage to see some breathtaking scenery and beautiful plants though. And experience has now taught me that although we are at 28 degrees latitude; being above 4500 m in inclement weather requires warmer and more rainproof gear. Upon our arrival in Yunnan we were advised to buy umbrellas. I have never considered them as essential mountaineering gear, and it looks odd to see hikers climbing above timberline with umbrellas, but I was very happy to have mine!



Just before the downpour began.....

Yak herder milking one of his herd



The storm overtaking us

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# ---International Rock Gardener---



Scenes from Dêqên – ceramics on sale



Woks on the bottom are 90cm diameter - made for cooking a whole dinner!



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Construction site in full swing at 7pm

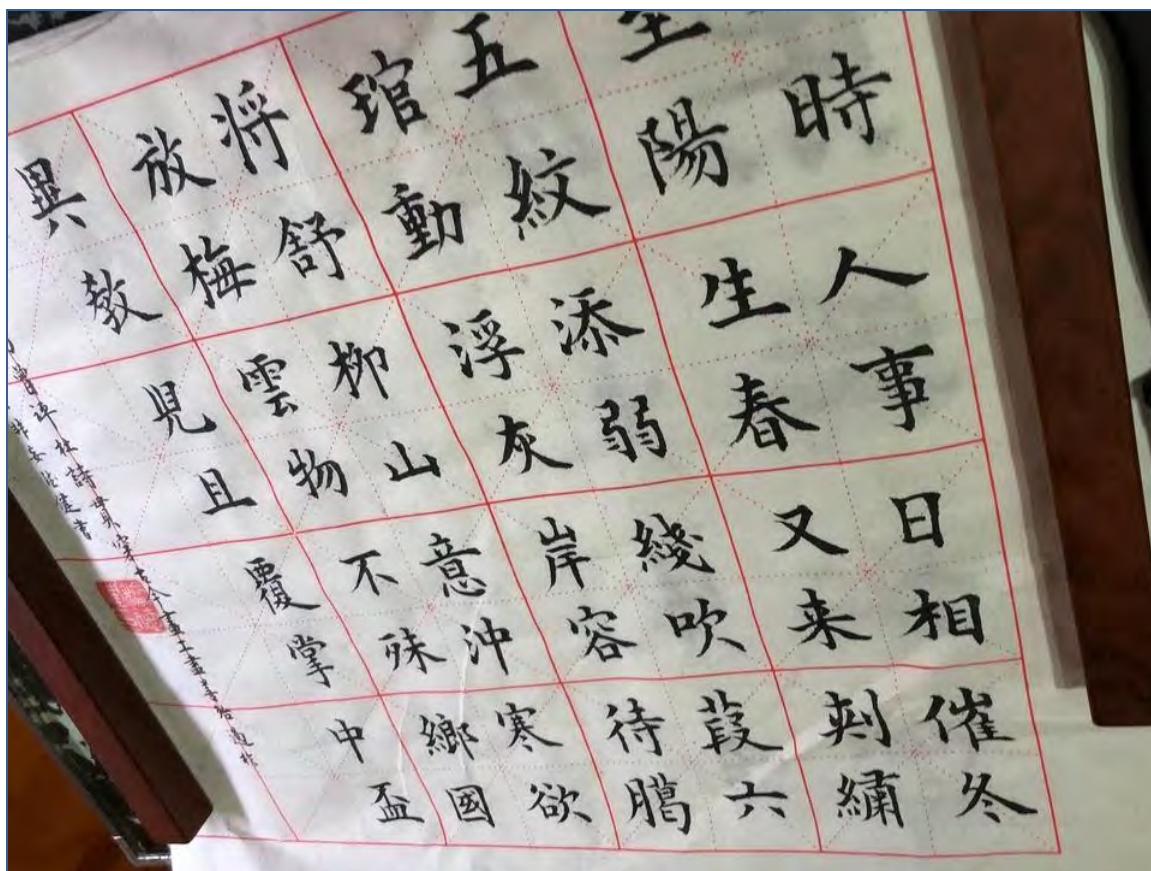
One of our best meals in Yunnan. This is an authentic Sichuan Hot Pot. The smaller dish in the center is for cooking your meal less spicy and the surrounding pot cooks it more spicy. There are beef, pork, lamb, fish, lotus stem, cabbage, lettuce, melon, mushrooms and more served with a bowl of rice and an excellent dish of spicy sauce.



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Local bakery caters to Western tastes



Calligraphy practice



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Puppy sleeping  
on plumbing  
supplies



Cattle in the street

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To the summit of 4292 Monument, Day 2, North side of the pass to 5200 m

The beautiful weather and abundance of alpine plants at their best made the day's excursion, the last of our trip, an unforgettable day. We quickly gained elevation from 4600 m to a little over 5200 m and began to discover myriad alpine jewels.



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A look back to the slope we climbed the day before.



Among the flowers

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This boulder with *Paraquilegia* all over it was a natural garden in itself!



This cliff was plastered in dozens of *Paraquilegia*. The variation was extremely interesting to observe.



*Paraquilegia* were on the open scree, too.

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Another great view of the Meile Xue Sha

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In the plain again

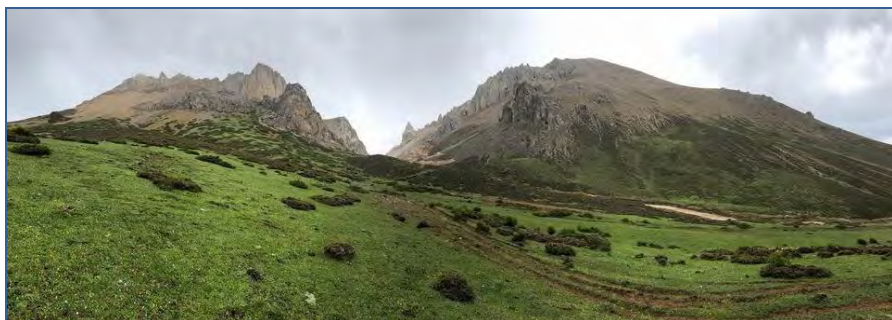
We left Dêqên on a cool misty morning and retraced our steps back to Zhongdian on the Lhasa highway. We took a brief stroll at the Bai Ma Shan pass to see if there weren't some alpinists we'd missed on our last stop. Those with eyes for *Corydalis* spotted a few nice ones, one new, otherwise it was a final beautiful walk in the clouds with a small group of yak that were grazing on the slopes. Driving down from 4600 m the larch, that formed the dominant alpine forest, stood in huddled groups, their tall rigging of branches appearing in the mist like old ships at sea.

We broke into warm sunlight when we reached the Yangzi gorge and halted for a final picnic for one of the worlds' best lunches with a view at the Yangzi Bend overlook. A friendly large dog took an interest in our spread and ingratiated his way close enough to the boiled eggs that he made a grab for a bag of the last dozen. We cheered his intelligence and boldness while he trotted away with his prize.



Zhongdian was a blur of final packing, shopping, and last minute checking of flight arrangements. Our group enjoyed a wonderful farewell dinner at the Tibetan family restaurant. And so, an unforgettable epic, wonder-filled wander among Yunnan's rich life of plants, peoples, history, and landscapes draws to an end. Its lofty snow-capped peaks and alpine jewels will forever beckon as we conjure up the sounds of the herder with his yaks and their bells moving further up the slope to places unknown.

J.W.





# ---International Rock Gardener---

## --- Photo supplement to The Rock Garden issue 144 ---

*As an adjunct to Connor Smith's article on the Schachen garden in 'The Rock Garden' journal of SRGC, issue 144 of January 2020, we are delighted to share here more of Connor's photos from the garden and from his other adventures during his time there.*



A view of the lower part of the Schachen garden and the hut.

There are many great gardens in the Alpine world, but few have attained the level of fame that the [Schachen Alpine Garden](#) has over its 118 year history. Despite being so well respected, an air of mystery surrounds the garden. Few have made the journey south of Munich to see the garden in person. The three-hour drive south to Garmisch-Partenkirchen is just the beginning of the trip to one of the most remote gardens in the world. This hidden oasis can only be accessed on foot via one of the forestry trails. The three-hour hike makes it even more special once you reach the garden resting at 1860m. The hike sounds daunting, but one is occupied with the rich surrounding flora. When I reached the Schachen, I was met by Jenny Wainwright-Klein, the Zambian born horticulturist has been based at Kirstenbosch

Botanic Garden, Kew Botanic Garden and now Munich Botanic Garden. Jenny has worked in many areas of horticulture including garden centres, nurseries and botanic gardens. She has been on many collecting trips to Lesotho, - the most recent one co-funded by SRGC and Hamburg BG – Caucasus, and the native plant areas of Germany. Thomas Heller, an experienced horticulturist, greeted me at the doorway of the house. He has an excellent knowledge of the surrounding vegetation and the locations of the most prized plants. He also attributes his cooking skills to the purchase of food supplies two weeks at a time at the Schachen.

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Kenton Seth, a fellow temp worker and SRGC member, from Colorado, USA, had joined the team a week or so prior to learn additional skills as he paves the way for crevice gardens of the future and we enjoyed some hikes together.

Both Jenny and Thomas have been coming to work at the Schachen for the last 26 years or so during the 12 weeks the garden is open. Both have a tremendous knowledge of the garden past and present, the area and the plants.



*Saxifraga mutata*



*Moneses uniflora* grew in well shaded mossy topsoil; shown with a hand for scale!

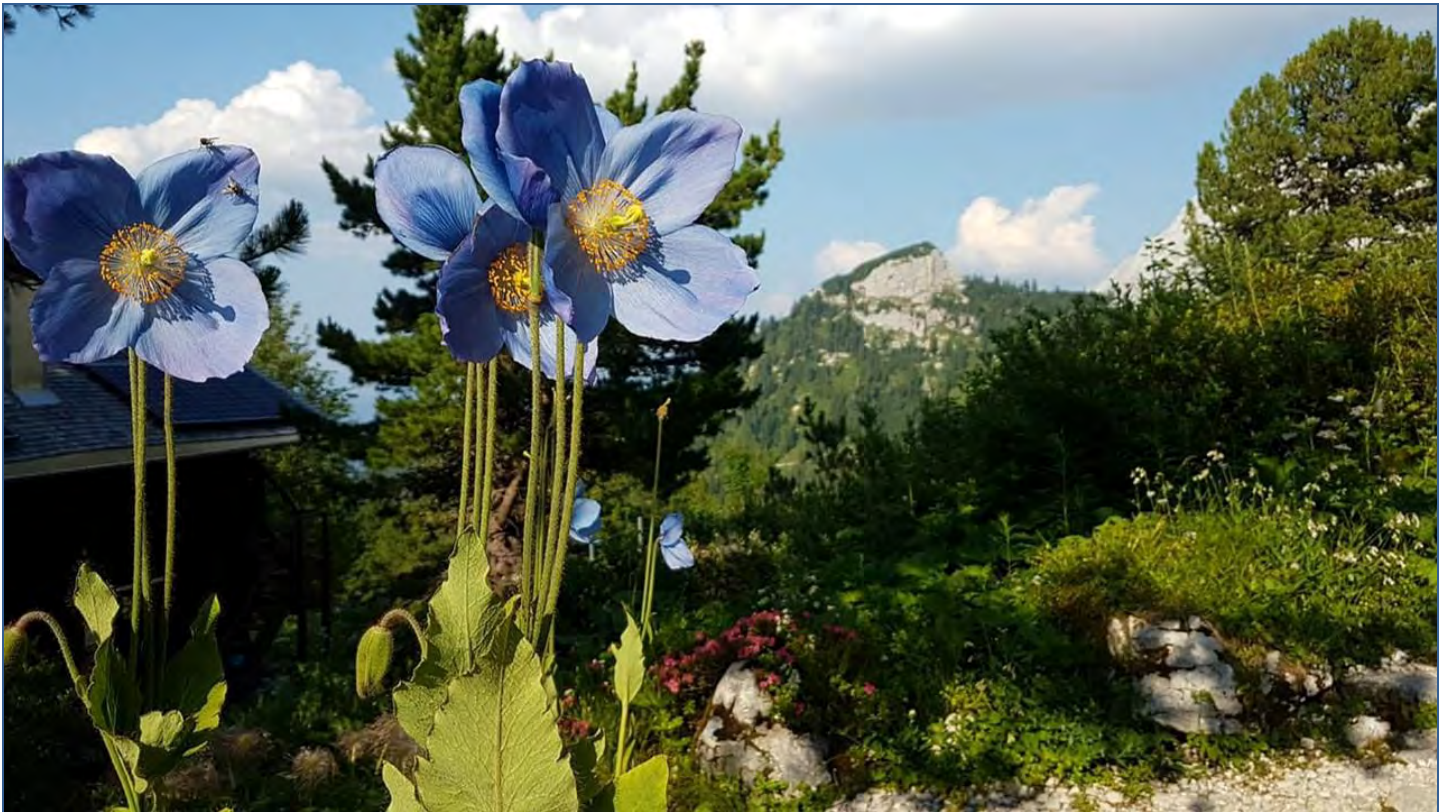
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*Primula involucrata*



*Meconopsis balangensis* var. *atrata*



*Meconopsis* 'Huntfield'

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*Meconopsis racemosa*



*Gentiana lutea*



*Campanula pulla*

---International Rock Gardener---



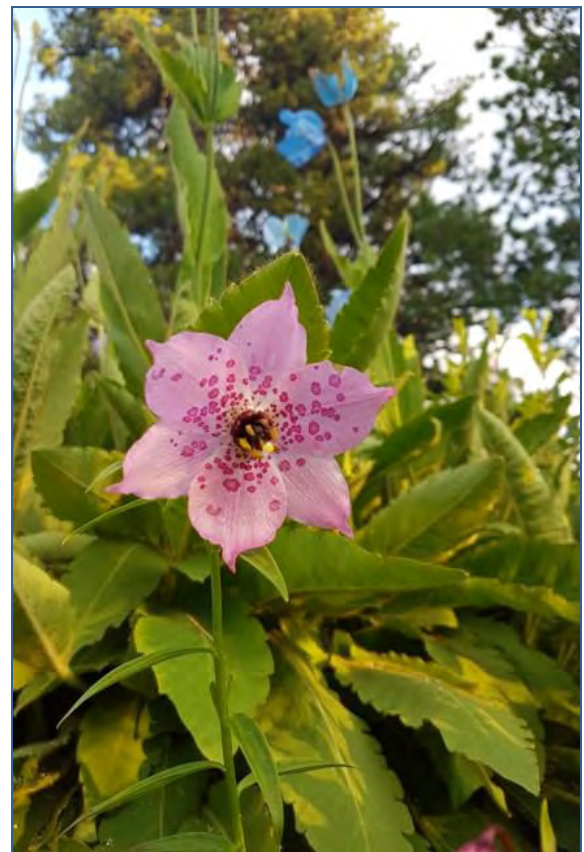
*Campanula thyrsoides*



*Campanula barbata*



*Moraea alpina*



*Nomocharis aperta*

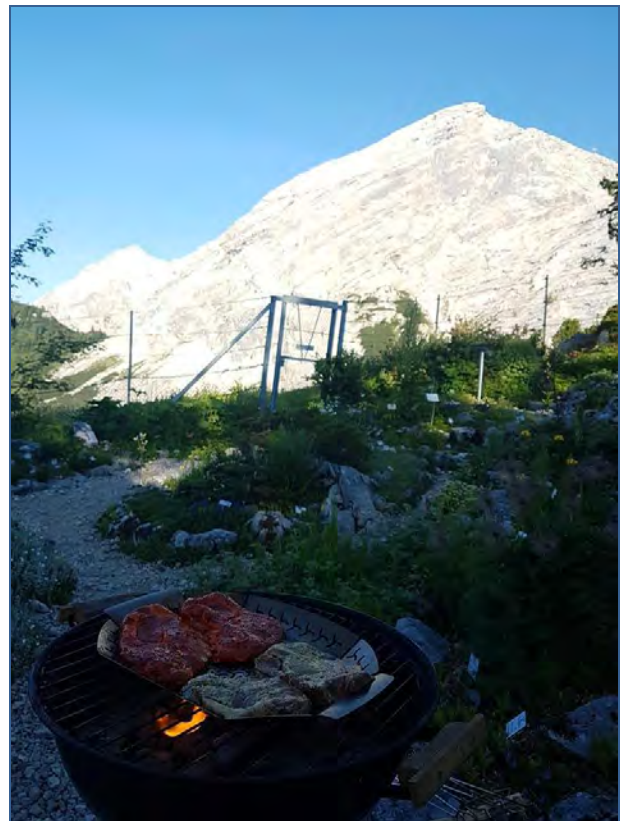
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*Nomocharis oxypetala* (syn. *Lilium oxypetalum*)



*Castilleja elmeri* (hosted here on an Erigeron)



BBQ at the Schachen



*Gentiana lutea*

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***Gentiana verna***



***Gentiana bavarica* var. *subacaulis***



***Pinguicula alpina* flowering with *Primula farinosa*.**



***Primula auricula***



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***Saxifraga caesia***



***Saxifraga aizoides***



***Soldanella pusilla***

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*Saxifraga oppositifolia*



*Papaver sendtneri*

---International Rock Gardener---



***Globularia cordifolia***

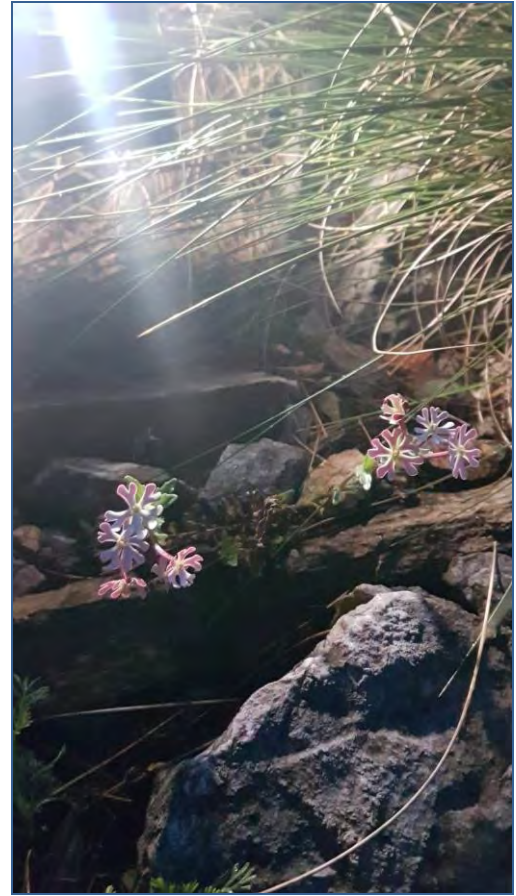


***Phyteuma orbiculare***

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*Leontopodium alpinum*



*Zaluzianskya ovata* or *Z. oreophila*



Kenton Seth steps into Austria

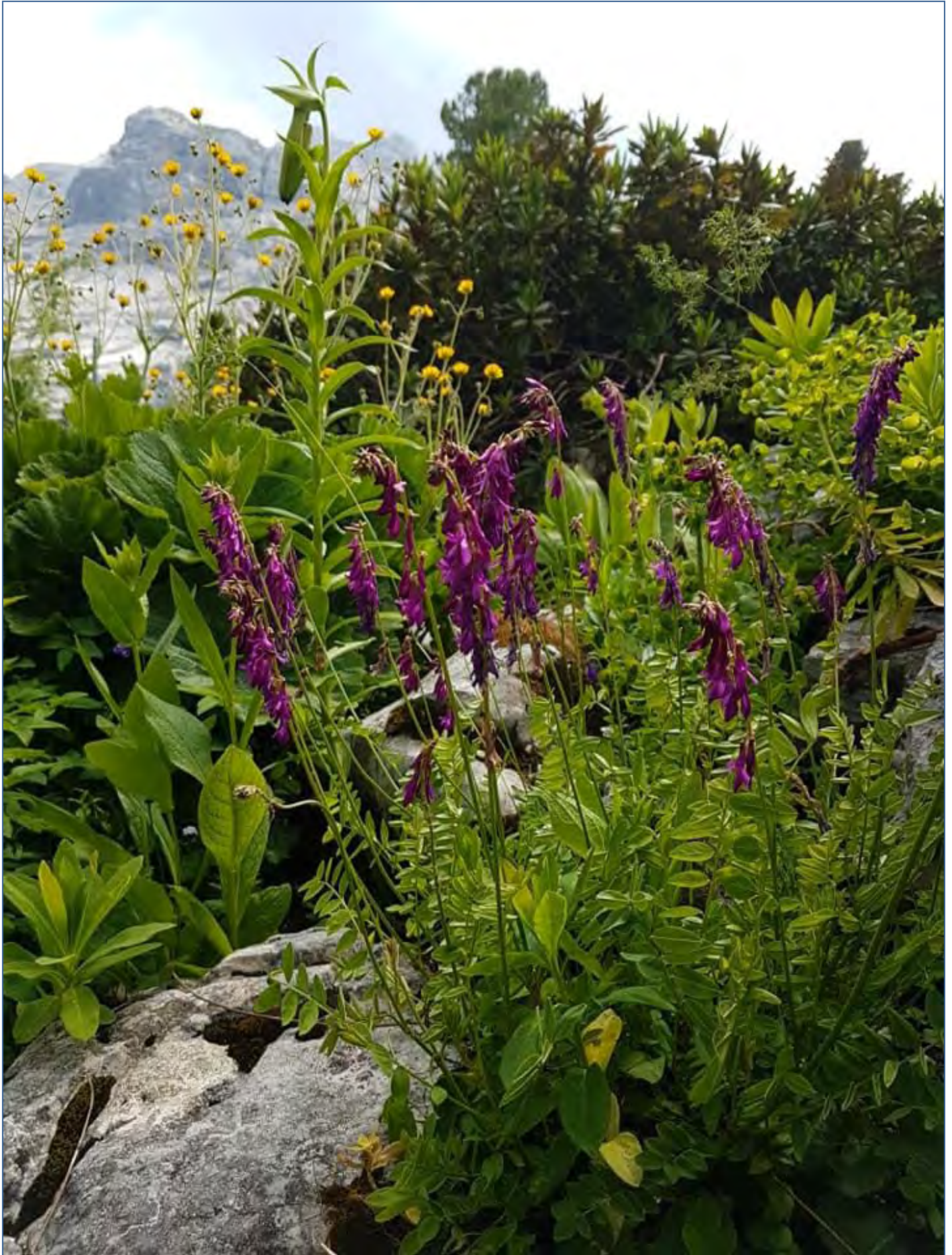
# ---International Rock Gardener---



Hike down to the *Betula* forest



Mountain view



*Hedysarum caucasicum* in the garden, with a view of the mountains behind.