

# *Stop the car!* Steppe and Alpine adventures through Georgia

June 2025

We had only just left Tbilisi when it happened again. “Stop the car!”. To my driver’s dismay, this was becoming a habit. Trust me, fellow plant-nerds, you would have done the same.

Nestled between mountains and seas, Georgia, the gateway to the Caucasus, is one of the most floriferous countries in Europe. It is home to 4,130 plant species, 900 of which are endemic to Caucasia. I came to study plants for tough conditions, namely steppe and alpine environments. I’d spent the past few months studying aggregate gardening techniques at Beth Chatto’s (Essex), John Little’s Hilldrop (Essex) and Peter Korn’s Klinta Tradgard (Sweden). These radical gardeners employ a mixture of native, mediterranean, steppe, prairie and alpine species within their drought-tolerant sand and substrate gardens, but steppe and alpine plants are surely the toughest of the bunch? Steppes are dry, grassy plains in central Asia characterised by hot summers and cold winters. They’re semi-arid (20-50cm annual rainfall) with blistering winds, swept in from the Urals. Alpines have adapted to growing in scree at altitude between months of thick snow. I came to Georgia to observe steppe and alpine plants’ climatic superpowers. How do they utilise gales, snow, heat, drought and lack of soil for their survival? And how can we recreate this symbiosis within an ornamental context? These questions were at the heart of my Merlin Trust application.

I extended my trip to enjoy a self-funded Khachapuri-fuelled holiday with my fiancé. Unfortunately for him however, I’d failed to predict the sheer abundance of interesting flora all over the country, so the plant-hunting didn’t stop. From military firing-ranges to monastery toilet blocks, luxury vineyards to hand-scythed meadows, plants adorn every surface of Georgia. Neither rare nor endemic, they were still showstoppers (or should I say ‘carstoppers’?). Ordinary garden specimens, wild and free, colonising anthropocentric contexts and thriving. Comprehending the nature of their autonomy - where and how they grew, in competition and in conjunction with one another - taught me how to be a better gardener. Furthermore, these experiences revealed a new way to learn: replace goals and objectives with an open mind and an observant eye; honest learning will ensue.

What follows is an account of my entire trip in plants, from the arid south-eastern steppe through wine-country and up into the north-western snow-capped mountains of Upper Svaneti. If you read no more, fellow plant-nerds, hear my cry: visit Georgia, you won't be disappointed.

### **Military shooting range**

#### **Lemshveniera-Davit Gareji monastery road**

It was the officious red hand on the sign that gave it away; we'd definitely taken the wrong route. And the lack of other vehicles. And perhaps the dilapidated military huts, covered in bullet holes. Come to think of it, the board reading 'MILITARY FIRING RANGE, STRICTLY NO ENTRY' in plain English felt suspicious... Yes, perhaps we should have stuck to the motorway.

We'd driven about an hour from Tbilisi south-east, towards a monastery within the driest region of Georgia. I was looking for *Salvia gareji* - a rare shrub-salvia which only grows on the foothills of David Gareji monastery, a sacred complex hewn into the rock escarpment marking the border with Azerbaijan. But what looked like a direct route turned out to be a military backroad. Unsure whether to proceed, I stepped out of the car to take a look around.

Strictly speaking, the Eurasian steppes halt at Georgia's other border, the Greater Caucasus (next stop Russia). The steppe-like conditions which characterise Georgia's south-east are of anthropocentric origin, developing after deforestation and intensified through overgrazing during Soviet times. Hot winds blow in from Iran up through Azerbaijan along the old Silk Route. They carry with them seeds and pollen from these xerophytic shrublands and deserts.

We weren't going anywhere for a while, so I took a look around. We were surrounded on all sides by a plain, punctuated by small hills. Grasses dominated, pulsating mesmerically in the wind. Strips of blonde *Stipa* and byzantine *Poa* marked areas of relative dry and damp. *Achillea millefolium* and *Artemisia vulgaris* stood out as the only flowering plants happy to compete. In the foothills, the ground was more sparsely populated by glaucous spiny-leaved things: *Eryngium campestre* and *Centaurea solistialis* grew in bunches close to the ground. In dips, with more humidity, purple dominated: *Phlomis tuberosa* and *Salvia nemerosa*, the only flowering plants over 40cm tall. In rocky areas close to the road, *Teucrium polium*

grew in tight and compact bunches. Its silvery hirsute leaves are perfectly suited to the heat. Wind shapes plants into tighter structures, which has the added benefit of bringing its flowers closer together, making pollination easier.

I bent down to feel the soil. It appeared compacted and dried, but beneath the surface was damp black earth, otherwise known as Chernozem. Steppe plants have large root systems and many of them are annuals. When they decay over winter, there is a large turnover of biomass, which degrades throughout the soil, not just on the top layer. This creates a rich and fertile store of nutrients for the year ahead despite the region's low precipitation.

We'd lost phone signal and were about to succumb to the long road behind us when we could hear music. A car with Azerbaijani plates and a booming stereo appeared on the horizon, trailing dust into the heat. Gingerly, we flagged it down. The lads spoke no Georgian or English, but could tell we were confused. We pointed to the sign with worried expressions and they erupted with laughter, slapping our backs and giving the road ahead the enthusiastic thumbs up. My companion was not totally convinced by their bravado but we took our chances, inspecting the fine print of our rental agreement whilst keeping an eye out for snipers and camouflage. 'Welcome to Azerbaijan' my phone pinged. We really were right on the border! After a cool thirty minutes the monastery emerged on our horizon and we arrived unscathed but blushing.

## **Sacred salvia**

### **David Gareji Monastery**

Built in the 6th century, the David Gareji monastery is a site of religious pilgrimage. Cut directly into the rock, it's a complex of 19 monasteries that once housed up 5000 monks. Its chapels are adorned with murals. Sadly much of the interior is closed to visitors due to restoration concerns. But it was the exterior that lured me.

My pilgrimage was to the endemic *Salvia garedji*. Having recently spent a month working in the garden at Beth Chatto's, I wanted to dig deeper into the specificity of 'right plant, right place'. Endemic plants only grow in one region of the world, but this *Salvia* solely exists within a square mile. Swept up by the romance of endemism, I was curious: why does it only grow here? Could it simply be that it was propagated and protected by the monks? Was there agriculture surrounding the protected area? Or is there another reason?

My field guide included several photographs of this Lamiaceae subshrub, growing in groups amongst *Astragalus* on dry slopes on sandstone outcrops. It blooms June-July, so my timing

was perfect. I made my way around the monastery up towards the watchtower. The footpath was sunken from centuries of plodding pilgrims, so the vegetation grew at waist height. Out of the wind, the heat and humidity soared. Dragonflies zipped along with me. Crickets chirruped within the Vetch, Couch grass and *Onobrychis cyri*, all growing in thick competition. As the slope began to test my thighs, I spotted her. Growing right beside the pathway, its pirouette pink petals fluttered in a gentle breeze.

So why here? I felt the soil. Unlike the black earth from the plains, this stuff was pale and sandy. I'd hazard a guess that it grows beside the path because there's less competition for light and more moisture, running down the slope. I also found it growing at 700m beside the watchtower, close to another endemic species *Jurinea elegans*. A perennial from the Asteraceae family, *Jurinea elegans* is thistle-like in appearance, with soft glaucous stems (60cm) and vivid pink composite flower heads. Growing between two rocks, I figured both the *Jurinea* and the *Salvia* must enjoy having a cool root system and their heads in the sun and wind.

From the top of the watchtower I had a clear view of the countryside. The monastery hadn't been inhabited for over a century and the surrounding hills were not grazed or cultivated. However the geology was beautifully varied. Many of the surrounding hills were streaked with hues of terracotta, brown and white. Also known as the 'Rainbow mountains', these layers of coloured sediment were formed over millions of years by earthquakes. Unsurprisingly, not much grows on them. Perhaps the monastery was founded upon a uniquely sandy section?

I wandered back down the hill feeling dissatisfied. I'd found my *Salvia*, but the reality didn't live up to the romance of her story.

With my guard down and my mind open, I began to notice so much more. Like the haze of silver and lilac *Xeranthemum annuum* growing at 750m beside the car park toilet block. Their papery phyllaries are almost translucent, sparkling as they sway. Peppered amongst the shimmering annuals were one or two lemony *Alcea rugosa*. Swifts glided over the flowerheads, catching insects in their beaks.

And the humdinger of an *Alcea*, chock full of blooms right beside where we'd parked the car. Almost sitting on the pavement, begging to be noticed, yet I'd totally disregarded it in my quest for the *Salvia*.

These two specimens - *Alcea* and *Xeranthemum* - are annuals that thrive in areas of disturbance. Whilst the monastery and the *Salvia* are legally protected, these plants require the chaos of human or animal disruption to germinate. The slope must have been created when the visitor facilities were built, waking the seedbank from dormancy. It's reassuring to be reminded that some of the most beautiful scenes from nature are created from the chaos of our destructive habits. Thank goodness something is.

Back in the car, I turned the page within my notebook away from the list of learning goals onto a blank page. The steppe phase of my plant hunting expedition was technically over. Or was it?

## Steppe of dreams

### Ø172 road to Sagarejo from Udabno, 4km south of the Jikurebi Lake

We drove north from David Gareji beyond Udabno into Kakheti. The landscape changed quickly. From arid plains to verdant valleys. *Cotinus coggyria*, Pistachio and Mulberry trees lined the roadside. Neat rows of grapevines emerged on the horizon; we were approaching wine region. But before we got too attached to the prospect of a large Saperavi, it happened again: "Stop the car!".

It was the flurry of pink and yellow that caught my eye. We were at the top of a windy ridge (870m elevation, 30mph wind) heading down towards a salt lake, Jikurebi Lake. Peter Korn once mentioned that some of the most interesting steppes and prairies grow on or beside ancient salt lakes, so I wasn't surprised that the plain beside us was a technicolour dreamscape. Beside the road, *Achillea* and *Salvia nemerosa* grew abundantly, flashing yellow and purple. The next layer undulated steeply. At the crests grew *Stipa pennata*, interspersed with *Phlomis tuberosa*, *Cephalaria media*, *Eryngium campestre*, *Cardus acanthoides*, *Cirsium incanum*, *Tanacetum sorbifolium* and *Echium vulgare*. In the troughs, sheltered from the wind and thick with humidity, grew *Thalictrum simplex* (pink and yellow), *Carthamus oxyacantha*, *Dianthus*, *Phlomis pungens*, bulbs (Ornithogums and Muscari) and a type of *Malmpyrum* (possibly *mulkijaniani*).

*Malmpyrum* is an interesting one: an annual hemiparasite, its seeds are dispersed by ants and germinate twice, the first time in Autumn/Winter (triggered by cold temperatures) when it grows a radicle. The radicle attaches itself to the xylem of a nearby plant, so it spends its

winter dormancy feeding off its neighbour. The second germination happens in Spring (triggered by warm temperatures) when it grows a stem. It photosynthesises and is pollinated by bees, but it continues to depend on its neighbour for sustenance.

Downhill the wind drops and humidity rises. A sea of pea forms the next layer. *Astragalus*, *Onobrychis cyri* and *O.transcaucasica* amidst *Onosmos caucasica*, *Echinops spaerocephalus* (covered in Striped Shield Bugs (*Graphosoma italicum*) feeding off its sap and seeds), *Stachys recta*, *Salvia viridis*, *S.nermosa*, *S.verticillare*, more *Melampyrum*, *Anchusa azurea* and *Inula orientalis*. A gorgeous umbel was about to bloom; I can't be certain but it may have been *Falcaria vulgaris*, a dainty steppe plant that thrives in drought and wind, flowering from July-August. The dominance of Fabaceae implies the soil must be rich in Nitrogen, which might explain the sheer abundance of flora.

Yet further downhill, with no wind and even higher moisture levels, was a colony of butterfly, *Galium verum*, hosting that crafty *Melampyrum* once again. Strata upon strata of ecosystems and colour: this was surely the real 'rainbow mountain'?!

Mysteriously, the field south of the road was a different story. Just rows of *Stipa*, with nothing colourful even in bud. Why? Hard to say. A geologist might know more. The south side was fairly flat, so perhaps moisture and seed-carrying insects have fewer ecosystems to benefit from and less downward momentum for dispersal? Perhaps the north side was once grazed by animals that brought seeds from other areas? This was the silk route, after all, which connected Europe with China (hence all the Mulberry trees).

I could have stayed all night, enjoying the buzz of insects and sway of stems, but that glass of Saperavi was calling, so on we drove.

### **Welcome disturbance: plants along the long road to Svaneti Tsinandali - Kutaisi - Zugdidi - Mestia (580km, 1.5 days)**

The joy of a roadtrip is witnessing the landscape unfold. Our journey from Kakheti to Mestia nearly spanned the entire breadth of the country, so we were treated to a whistlestop tour of Georgia's varied geography, by way of the changing roadside plants. Disturbance plants are generally annuals or biennials whose seeds only germinate with disruption of some kind - hooves, car tyres, roadwork maintenance. Small and isolated areas between us and the landscape beyond. I came to Georgia to study remote and wild landscapes, yet it was these liminal spaces that stole my heart.

From east to west the climate changes dramatically, resulting in varied landscapes. The two mountain chains flanking its north and south (Greater and Lesser Caucasus) are connected by the Surami Ridge (134km west of Tbilisi) which acts as a watershed as well as a climatic divide. To the east, the river Mtkwari continues into Azerbaijan and empties into the Caspian Sea. Reinforced by the leeward situation, the climate in eastern Georgia (as previously mentioned) is continental and much drier. We began our journey in Tsinadali, perched on the foothills of the Gombori mountains within the Alezani river bed, for which Kakheti owes its famous terroir. We would travel south west over the forested Gombori range around Tbilisi through a large tunnel through the Surami Ridge. West of the Ridge, the river Rioni drains into the Black sea, through the Colchis plain, which is characterised by a moist Mediterranean climate. Look north and jagged toberone peaks fill the sky - Caucasus mountains 'Greater' by name and nature.

We set off with two new tyres, ready for the long (potholed) journey ahead. The road wound down from Kakheti's flora-dense steppe-meadows into a forest of Fagus, Quercus and Carpinus. Honey sellers were parked on each lay-by, prospering from this intersection of habitats and travellers. Bees are revered in Georgia, playing god-like roles in folklore. Perhaps with good reason: the endemic Georgian honey bee, *Apis mellifera caucasia*, has the longest proboscis in the honey-bee world (7.2mm) and is known for being both productive and meek.

The humidity rose with every bend. *Achillea millefolium* took advantage of sunny shafts to soar above us. Young boys on horses trotted beside us, chucking drinks and bread to one another with bravado. Descending deeper, our ears popped at the sight of Gunnera and Equisetum, then to *Filipendula ulmaria* and Heracleam in boggy hairpin puddles. At Gombori the honey stalls were replaced with Chanterelle mushroom shacks, indicating the damp dank of the broad-leaved forest beyond.

Bypassing Tbilisi, we were back riding the harsh Kartli plains. Yellows dominated: *Spartium junceum*, Euphorbias and dried husks of Carduus bobbed amidst shimmering blonde grasses. Row after row of *Verbascum speciosum* lined a recently-built spaghetti junction. This Muybridge-esque rush of sunshine continued for a mile, peetering out when we hit the E60. "These are biennial, so we're lucky to see them" I explained to my partner, who was enjoying the scene as if it were an art installation.

We followed the Kura river through the Surami ridge past Gori (Stalin's birthplace) towards Kutaisi, eventually hitting the Cholchis plain. On average, Kutaisi's annual precipitation is three times higher than that of Tbilisi (1500 vs 500mm) and it showed. Lush farmland and deciduous forests grew south of the city. To the North, colline hornbeam-oak forests dominated the higher ground.

Our final stretch was from Zugdidi up 1300m in elevation to Mestia, a remote ski-town and farming community in the Svaneti mountain range. Colour re-emerged in areas of disturbance. *Centranthus longiflorus* bobbed perilously on the cliff-edge through hot schist. Around the corner, Verbascums, *Genista transcaucasica*, *Medicago papillosa* and *Artemisia* created a pleasing pattern of grey and yellow. Eventually, snowy peaks filled the horizon - nearly there! *Rosa canina*, bursting with blooms, clung to roadside barricades, spilling its sweet fragrance into the abyss below. It was heartening to see natural instances of plants choosing this environment, having recently spent months experimentally planting drought-tolerant species in similar aggregates.

A herd of long-horned cattle welcomed us into Mestia, their cowbells clanging like an official 'gong!'. Our long journey was over.

## **Alpine revelations**

### **Mestia**

Before becoming a gardener, I looked down on Alpines. I was a snob. To me, they were little trinkets grown by Nans with bungalow rockeries. But a month working with Peter Korn changed my mind completely. I get it now: Alpines are, literally, rock stars. Tough creatures, clinging like limpets onto rock surviving bitter winters and fierce summers. They may be short and stubby but their blooms are large and dazzling. Their foliage is often glaucous and other-worldly. Alien plants! They thrive in cracks and gaps, peeping cheekily at unexpected angles. Plant them into a north-facing green wall and you have a 9-months of floriferous interest. Not bad at all.

In Mestia, I discovered the thrill of encountering Alpines in nature. At 3000m there's still plenty of snow on the mountain tops, but crampons aren't required. Down in the valleys, Alpine meadows tinkle with summer colour and buzz with insects. Between them, forest glades are alive with plants that flower in British springtime. Four seasons in a day. Furthermore, it's home to some really rare species. A large proportion of Caucasian

endemics are alpines, having evolved to suit the unique conditions that sub-nival and alpine elevation brings. I was hoping to see a number of these. *Pulsatilla aurea* being one - a Georgian-endemic golden pulsatilla which only grows on the far western edges of the Greater Caucasus in subalpine and alpine meadows and Rhododendron thickets. *Jurinea moschus* ssp; *pinnatisecta* was another - a stemless perennial Caucasian endemic found in ravines and clay slopes. Its flowerhead is striking: a 10cm wide explosion of purple and white filaments set amongst a ruff of spiny foliage. A firework for ants.

I'd hired Misha (a.k.a Svan Alp) to take us on two day hikes to witness as much plant diversity that Svaneti could offer. Misha's a Russian-American mountaineering guide and artist who lives in Mestia, so he knows the local area and people intimately. He is easygoing and great company; I highly recommend him. I was particularly keen to see Subnival and Alpine vegetation that grows in rock and scree due to my recent adventures with aggregate gardeners. So our mission was to get as high as we could. But like so much of my time in Georgia already, the journey was my real education.

Day one was Misha's 8 hour Laguzamere Plateau Hike involving a 1600m rise in elevation (up to 3000m). Day two was a secret circuit of Misha's invention to a similar elevation, encompassing transhumanist routes and mountaineering trails. We saw many of the same plants on both days, so I'll compress them.

Each morning we had barely left Mestia when I had to cry 'Stop!'. A meadow of purple and yellow species carpeted the ground. *Stachys macrantha*, *Coronilla coronata*, *Salvia verticillata* interspersed with white Trifolium and Scabious species. Beyond, a wash of The floral abundance, the fresh air and the snowy mountains were breathtaking. I could feel the opening bars of "Sound of Music" bubbling inside, but - luckily for Misha - that was kept down.

I may have been looking for endemics, but an unexpected lesson was how versatile many ordinary garden plants are. Take *Alchemilla mollis* for example. This most acerbic member of the Rosaceae family is known for its reliability, thanks to its ability to thrive in the majority of contexts without out-competing other species. I encountered Alchemilla on various legs of these two-day journeys: in forest glades, alpine bogs, growing fat beside streams and scrawny in scree. Perhaps the prettiest sight was the Alchemilla floating in a bed of pine needles nestled within an old rooty tree stump. The more free-draining the growing medium, the smaller the rosette. This kind of knowledge takes years of gardening to experience; how delightful to learn it in 48 hours.

We bounded on up a cow-track into a mixed broad-leaved and coniferous forest. *Betula* and Hazel dominated with *Berberis* shrubs on the lower levels. Misha explained that farmers bring their cows to graze between April and October, but the number of people herding is reducing, as tourism and the city calls younger people away from rural life. Above the tree line the wind picked up and golden clusters emerged in the distance. These were thickets of *Rhododendron luteum*, a bushy deciduous shrub with bright golden yellow flowers that smell of honey. Restricted by the wind here, it grew to 1.5m but on lower ground they can reach up to 4m.

As we ascended, the plants got smaller yet discovering them was far sweeter. *Ajuga orientalis*, *Myosotis*, *Centaurea iberica* and *Daphne glomerata* (the latter an evergreen dwarf shrub) emerged from the grass 10-20cm in height. Amongst them were old *Pulsatilla* stumps, with the seed head and flowers long gone. At 1900m, I saw a form of Borage new to me - *Aipyanthus pulcher*, a perennial from NE Turkey, Caucasia and Northern Iran. It has vivid yellow petals with distinctive brown dots in its inner petals, presumably to attract pollinators. It was growing beneath *Rumex*, which Misha explained is a tell-tale sign of horse and cattle grazing, so perhaps it found its way here via an animal. Or perhaps it simply thrives from the nutrients their dung releases into the grassland.

At 2400m the wind began to whip. We hit a field of *Anemone fasciculata* growing between thickets of *Rhododendron caucasicum* - also known as the Georgian snow rose. *Rhododendrons* favour acidic ground. The Svaneti range is generally composed of sedimentary and metamorphic rocks such as mica, schist, quartz and slate. Only quartz would create acidic conditions, indicating a seam of it here.

At 2500m it was back to purples and yellows, this time much shorter, with *Campanula*, *Pulsatilla aurea* and *Euphorbia illirica*. Georgia has 67 species of *Campanula* out of the total 110 in the world, so I struggled to identify mine.<sup>1</sup> *C. alpigena* is my guess. Known as the 'High-mountain bell flower' it grows in alpine short turf at 2500 - 3,200m. It produces a single, erect inflorescence and is distinctly hairy all over. These hairs, or 'trichomes', protect the plant from wind by reducing transpiration and also help it catch pollen, thereby increasing its reproductive chances. It flowers the entire period between snow, from May to September. A very hard-working little plant. *Pulsatilla aurea* was a welcome sight, as was its purple sister,

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<sup>1</sup> 1, Todua, Vazha, '[Endemic Flora and Fauna of Georgia. Biodiversity, Peculiarities and Ecology](#)', Sokhumi State University, 2018.

*P. violacea* another 300m beyond. Compared with its neighbours, Pulstailas are remarkably tall (approximately 30cm). Perhaps its cauline leaves provide ballast and balance in the wind? Shining yellow all over, no pollinator could miss this golden beauty.

Approaching 3,000m we were almost breathless. Our pace was reduced to a plod and conversation was pointless. We were in the clouds and all I could hear was the crack of scree beneath my boots and icy wind. With Mestia miles below us, we were approaching the heavens. A small part of me wished I didn't find more plants, just to avoid removing my gloves to snap a photo. But alas, the heavens answered. Graceful *Fritillaria latifolia*, marian blue *Gentiana angulosa*, electric pink Sedums and Saxifrages and - last but not least - my firework display *Jurinea moschus* ssp; *pinnatisecta*, found basking in a saintly shaft of alpine sunshine. These plants mean business. They grow right through the brittle scree, taking root in its cracks. They're showy and brash to attract attention from far-flung insects battling gales. Hardly able to stand myself, I couldn't imagine a bee driving down here with any precision, yet they do. They can withstand extreme temperatures - the *Jurinea* is hardy to -23C! The succulents store water in their juicy rubbery leaves to keep them going through months without precipitation. Their vivid pink pigmentation is caused by Anthocyanins, a chemical which protects the plant from UV radiation. Beauty and brains.

We paused at the peak. I was wrong about Alpines. Having spent hours trekking uphill into the weather, having not encountered a soul, head down to mind your step, breath short and thighs burning, these treasures emerge like a secret in the schist. They're gnarly and battle-ready, with spiky armour and warpaint. These tough plants carry memories of adventure. Of a youth (or retirement) finding nirvana. Hats off to the Nans.

## **5-day hike through Upper Svaneti**

### **Mestia - Ushguli**

One of the biggest lessons this trip taught me was to embrace the unknown. This beautiful 5 day hike was originally the focus of my bursary funding. It's a beautiful way-marked route between various remote mountain villages in Svaneti. These are villages with a population in the hundreds, which only gained electricity in 2010 and indoor plumbing 5 years later. Yet the hospitality at these villages is remarkable, with some of the best Georgian food and wine served each evening. As a hiking holiday, I highly recommend it! But for plant life, you're best to stick with Misha. I had planned to spend this trip discovering rare alpines, but nothing compared to the specimens and abundance we witnessed with Misha. The waymarked hike

only reached 2000m elevation, and the route follows trails used by locals to graze horses and cattle. Even the ungrazed meadows weren't half as floristic as the secret spots Misha showed us.

Thankfully, one rather special plant surprised me - the *Lilium monadelphum*.<sup>2</sup> After crossing the glacial Adishi River, we steeply descended the valley and the humidity rose sharply. We instantly thawed, rejecting our thermals to enjoy the June sunshine. Repacking my rucksack, I spotted it. The lilies rose like a sword amongst *Heracleum* and *Primula auriculata*, right beside the track. The first grew under the shade of a *Betula*, the others were more exposed, but always on the slope where it benefits from glacial run-off. Each flower head dangling near head height like a bunch of ripe bananas, lightly spotted. *Monadelphum* comes from 'monadelphous', meaning 'having the stamens united' at the base. This is the identifying feature which sets this Lily apart. Unlike its doppelganger *L. Szovitsianum*, its leaves aren't hairy. Native to Crimea and N. and S. Caucasus, *L. Monadelphum* is known as the Caucasian Lily. I stuck my nose into its yellow pollen centre to better appreciate its perfume. Heady and sweet, it was an unexpected finale to my plant-hunting adventure.

## Conclusion

I came to Georgia to study plants for their climatic superpowers, but left with a richer understanding of how plants grow.

I learned how to read a landscape, going beyond its painterly attractions to understand it as something dynamic and living. Beyond simply learning where plants naturally grow, observing plants in the wild teaches you how they grow together - in competition and collaboration with one another, with the weather, with animals and humans to shape the landscape.

I discovered a love for annuals and biennials, whose beauty erupts out of the ugliness of human destruction.

And I realised the Alpine Nans were right, that the tiny treasures emerging from hard rock and scree are small but oh, so mighty.

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<sup>2</sup> Four liliium species have been recorded in Georgia (*L. kesselringianum*, *L. monadelphum*, *L. ponticum* and *L. szovitsanum*) and the characters used to distinguish them are weak. I consulted Botanist Dr James Compton, who confidently identified these as *L. Monadelphum*. Thank you, Jamie.

I learned how amenable some species are and how restricted others, like endemics, can be. Currently, this can only be learned from the real thing. Garden borders - however naturalistic they claim to be - rarely contain the climatic or topographical variations of a natural landscape. This lack of microclimates limits our ability to learn the remarkable extent of plants' adaptive habits. Topographical variation is also a major win for increasing surface area in a small garden and creating more ecotones, boosting biodiversity. This is something John Little and Benny Hawksbee champion heartily with good cause. Which begs the question, why are our borders still so flat? I will endeavour to introduce more topographical variation into my work as a result of this trip.

Finally, I learned to learn with an open mind. We fill our lives with plants because they surprise and delight us. Take the slow route, hire a guide, enjoy the journey and stop the car.

## Bibliography and credits

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# Bursary spend breakdown

Total amount received by The Merlin Trust = £667.00

Item	Cost (£)	Detail
Hire car	460	€531
Guide ( <a href="https://www.svanalp.com/">https://www.svanalp.com/</a> )	155	€90 per day (two days)
Accommodation (3 nights)	60	£20 per night
<b>TOTAL</b>	<b>675</b>	
personal contribution	-8	
<b>Bursary</b>	<b>667</b>	

## *Stop the car!* Accompanying images

### Military shooting range



A sign to stop?



**The steppe**



**Teucrium polium**



***Phlomis tuberosa***

**Sacred salvia**



**David Gareja monastery**





**Salvia gareji**



**Jurinea elegans**



**The patient driver, behind 'Rainbow mountains'**



**Xeranthemum annuum and Alcea Rugosa**





**Alcea whopper**

**Steppe of dreams**





Technicolour dreamscape



**Thalictrum simplex**



*Onobrychis cyri*



*Phlomoides tuberosa* and *Phlomis pungens*, benefitting from slightly different microclimates



**Mystery umbel - *Falcaria vulgaris*?**



***Onosmos caucasica***



***Echinops spaerocephalus* emerging. The salt lake beyond**



Shield bugs feasting on *Echinops spaeocephalus*



**Stipa pennata**



**Tanacetum sorbifolium**



**Melampyrum**



*Carthamus oxyacantha*



**Strata of buttery *Galium verum* - is this the real rainbow mountain?**



**The left side of the road - mostly grasses.**

**Welcome disturbance: plants along the long road to Svaneti**



**Traffic**



Hot schist approaching Svaneti



*Centranthus longiflorus*



*Centranthus longiflorus*



***Artemisia, Genista transcaucasica, Medicago papillosa***





**Rosa canina**



**Mestia. View from our guesthouse**

**Alpine revelations**



**Day-one hike, start (1600m) and end (3000m)**



The hills are alive!.....*Stachys macrantha*, *Coronilla coronata*, *Salvia verticillata* interspersed with white Trifolium and Scabious species.



Fairy meadow: *Bistorta carnea* and *Leucanthemum vulgare*



*Alchemilla mollis* growing in a pine stump



***Heracleum*** - a common site all over the mountain, from woodland and meadows to scree at 3000m



*Rhododendron luteum*



*Daphne glomerata* and *Melampyrum*



*Aipyanthus pulcher*



*Aipyanthus pulcher* amongst *Rumex* - symbiosis?



*Rhododendron caucasicum*



*Rhododendron caucasicum*



*Anemone fasciculata*



*Campanula ? (alpigena?)*



*Pulsatilla aurea*



*Euphorbia illirica* and *Anemone fasciculata*



*Fritillaria latifolia*



***Fritillaria latifolia***



*Gentiana angulosa*



**Gentiana carpet**



**Looking down as we ascend the last few hundred metres**



**Sedums**







*Jurinea moschus* ssp; *pinnatisecta*



Sunshine at 3000m

**5-day hike through Upper Svaneti**



**Poppies at the foot of Adishi glacier**



**Village life**



*Lilium monadelphum*



*Lilium monadelphum*



*Lilium monadelphum*



*Lilium monadelphum*