International Rock Gardener

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In case the weather is not too good where you are, we will try to cheer you with a summer trip to Greece, reported by Davie Sharp from the Highlands of Scotland. It would be wrong, of course, to imagine that there are not interesting, diverse plant communities to be found everywhere. George Garnett, one of the younger members of SRGC, is a very motivated plantsman with a wide sphere of interest. George has already botanised in various parts of the UK as well as on a five week trip to the Peruvian Amazon. We are pleased to share here version of a report George gave to the annual exhibition meeting of the BSBI (Botanical Society of Britain and Ireland) in 2015 on 'Botanising on Guernsey' – where he lives.

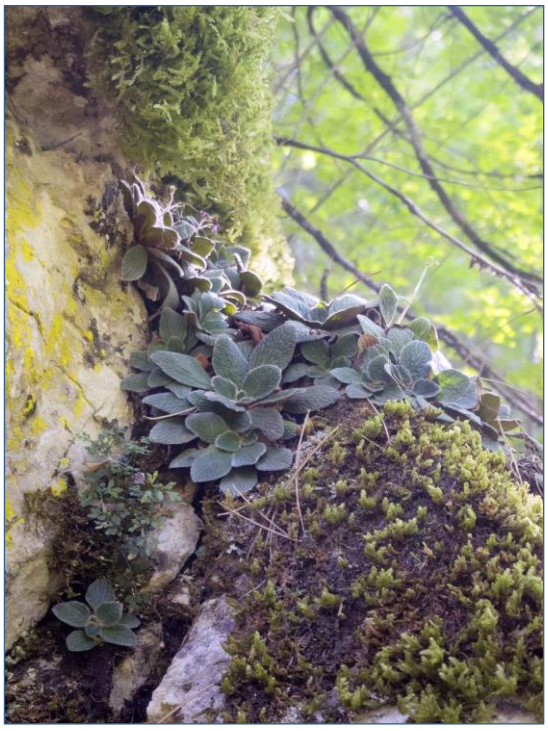
Cover picture: *Anemone blanda*, pictured in habitat in Greece by Stavros Apostolou

Northern Greek Sojourn 23rd June – 7th July 2015 by David Sharp, Lhanbryde.

Olympus Mts.

The early summer weather in the hills of northern Greece was as erratic, or as fickle, as mountain weather can be at the best of times. The plans were to visit, and look at the plants on offer, in four areas; Mt. Olympus, Mt. Kajmaktcalan, Mt. Smolikas and the Timfi Range.

With fourteen days for our sojourn, my wife Maggie and I together with our friends Klaas and Jose Kamstra set off from Thessaloniki for the Mt. Olympus area. After exploring the northern side of Mount Olympus, we were enthused by the beauties that we found such as ***Jankaea heldreichii*** (right) out of flower, along with the ethereal *Aquilegia ottonis* subsp. *amaliae,* among others in the limestone gorges and the *Anacamptis pyramidalis, Dactylorhiza saccifera* and the *Orobanche* in the pine forests, so our sights were set on the hill and what may be found there.



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We approached Mt. Olympus from the south, taking the road through the village of Kalivia, which winds its way up to Refuge Christakis at circa 2550m. From the road/track we made forays, finding many wonderful treasures. At the end of the day, our plant list numbered 50, so I will only mention a few that captured my imagination. The first of the many reminded me of patches of the waxy white challises of *Gentiana saxosa,* topping the water worn stone of a sea shore*,* but it being a Kiwi, obviously it couldn't be. In this case it was ***Cardamine carnosa*** (right and below)*;* its rhizome roots soon establishing colonies, growing in damp stable limestone scree, with a raceme of white flowers and the pinnate, slightly fleshy, obovate leaves.

Cardamine carnosa

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Further up the stable scree, where it started to level out, we came across a plant that subconsciously had a 'collector effect' on me that found me giving it more than a cursory glance when I came across it. The plant in question was Knapweed or *Centaurea*, specifically ***Centaurea pindicola*** (below): ~10 - 15cm stems raised from a rosette of felt, grey-green, ~3cm broad, wavy leaves. The thistle-like terminal flower appears to be white tubular ray-like lobes, interspersed with black horns.

On gaining height, achillea became abundant, especially the Mt. Olympus endemic, ***Achillea ambrosiaca***, (below). Unfortunately, most of the flower buds were still closed.

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In damp hollows on the watershed slopes, there were masses of ***ranunculus*** growing and every now and again we came across a double form (below right).
Lurking amongst the boulders, were one or two golden yellow flowers of ***Ranunculus brevifolius*** (below left).

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A couple of kilometres from the refuge, the track became impassable with snow, too deep to dig through to allow the passage of the VW campervan. This gave us the opportunity to explore screes above the road and to investigate around the snow patches, in search of melt water plants. Up where the screes plateaued out, hunkering down against the weather, was another Olympus endemic; ***Veronica thessalica***. Once again my mind was transported back to New Zealand. As I got down to have a close look at this hebe relation, with its miniature foliage and deep to sky blue flowers, it looked as if it should have an aroma, but none was detected. (Ed. This fine alpine dwarf herb is one of the earliest rock garden plants in full sun.)

Veronica thessalica

Fortunately, our luck was holding, for in the snow meltwater grew a number of light to dark lilac ***Crocus veluchensis*** (left) and dainty, dark blue flowers of ***Scilla bifolia*** (below).

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By the time we reached the Refuge and botanized the policies time was up! Even though we may not have achieved our objective of conquering the 'Throne of Zeus', we were bordering on botanical indigestion, but there was a little space left for one more, especially if it was an endemic! As we were quickly descending to the van, a scent caught our olfactory glands. It was distinctive but we couldn't put a name to it until we saw the golden yellow clusters of the plant. It looks like the wallflower, *Erysimum olympicum*, but actually this plant was ***Alyssum handelii***, which is, I believe, endemic to Mt. Olympus!?

(Ed. We appreciate this picture of local saxicole bellflower ***Campanula oreadum*** (below) a divine alpine from dolomitic limestones, endemic to Mt. Olympus, which is never easy in cultivation).

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Mount Kajmaktcalan

After Mt. Olympus, which is primarily limestone, we headed north to Mount Kajmaktcalan, 2524m. It is the third highest mountain in Greece, situated on the Greek border with Macedonia. Here the rock in the lower zones is limestone and as you ascend it becomes acidic and schistose. This hill has just recently been reopened to the public after being a military manned border. Now that it is reopened to the public, entrepreneurs have seized the opportunity to use the hill for winter sports and have erected ski tows and other ski facilities. Kajmaktcalan, is a graceful hill, not a spectacular rugged hill as is Mt. Olympus, but, nevertheless, it is a hill that will become indelible in one's mind after climbing it.

Dactylorhiza* aff. *cordigera

Dactylorhiza* aff. *baumanniana

In 1916 during World War I, the mountain was the site of a battle between the British allied Serbian army and the Bulgarian army, involving 100,000 soldiers. The battle resulted in high numbers of casualties. The Serbians had c10,000 casualties, dead and wounded. The hillside is sculpted by trench scars. Many have been grown over and all that can be seen is shallow depressions, while others, such as the great trench, are more obvious as seepage water has taken the line of least resistance and has deepened it in parts. As you reach the summit you find the detritus of battle and dry stone walls and other military buildings that have fallen into ruin. But standing majestic is a small monument Chapel, surrounded by a low wall, with finials made from bomb cases and hanging from those are swags of entwined barbed wire. The gate in the wall into the chapel ground, and the chapel door are made from metal in keeping with the ethos of the site. On each corner at the top of the tower are roundels depicting poppies or stylised flowers.

The approach slopes are mixed wooded and on the damp to boggy fringes grow ***Dactylorhiza* aff. *cordigera*,** and ***Dactylorhiza* aff. *baumanniana***; my nemesis is trying to identify *Dactylorhiza* as well as other plants! Higher and on more exposed but still damp ground, were colonies of the striking bright red/orange ***Geum coccineum*** but unfortunately going out of flower. Following the tarred road up to the ski field and past the Border Guard post, where it turns into a well maintained track, we came upon a cushion zone. The cushions, of flowering ***Minuartia attica,*** varied greatly in size from c2.5cm – 38cm. Unfortunately, the angle of the light was all wrong for taking photographs.

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Geum coccineum

Minuartia attica

Senecio abrotanifolius* subsp. *carpathicus with a background mat of ***Bruckenthalia (Erica) spiculifolia.***

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Right: ***Geum coccineum*** seedheads

Among this cushion land were stands of the most beautiful orange/red ***Senecio abrotanifolius* subsp. *carpathicus,*** the cream to white pin cushion heads blowing in the breeze of ***Armeria sancta*** (left), and the intriguing ***Bruckenthalia (Erica) spiculifolia.***

As you start climbing the track, the ground to the left is wet, with occasional standing water. The plants of note were two achillea, the golden yellow flowers of *Achillea coarctata* and also *Achillea millefolium* and also the feathery seed heads of ***Geum coccineum*** blowing gently in the wind. Climbing higher and contouring the hill, the slope becomes well drained with more surface schist. As we crossed over the ski tow track and climbed higher, more small cushions became apparent, probably minuartia and dianthus. On further fossicking, we came across the striking cerise cushion of ***Dianthus myrtinervius* subsp. *caespitosus***, which sucked up the Kodachrome; when we were coming off the hill we found another colony of the dianthus that contained both **white flowered cushions and intermediate forms** (below).

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The hillside is quite lush grass and other herbage. It is punctuated with large slabs of rock and many plants make use of these. ***Jovibarba* (*Sempervivum*) *heufellii*** (left) is found following rock fissures and others take advantage of overhangs or undercuts in the lee of the prevailing winds. One plant in particular, ***Saxifraga pedemontana* subsp. *cymosa,*** often took advantage of these undercuts or in the shelter of the Chapel walls. A few brave plants of saxifraga were growing exposed, on the edge of outcrops, as was the purple ***Viola doerfleri*.**

Left: ***Viola eximia***

Right and far right: ***Gentiana punctata***

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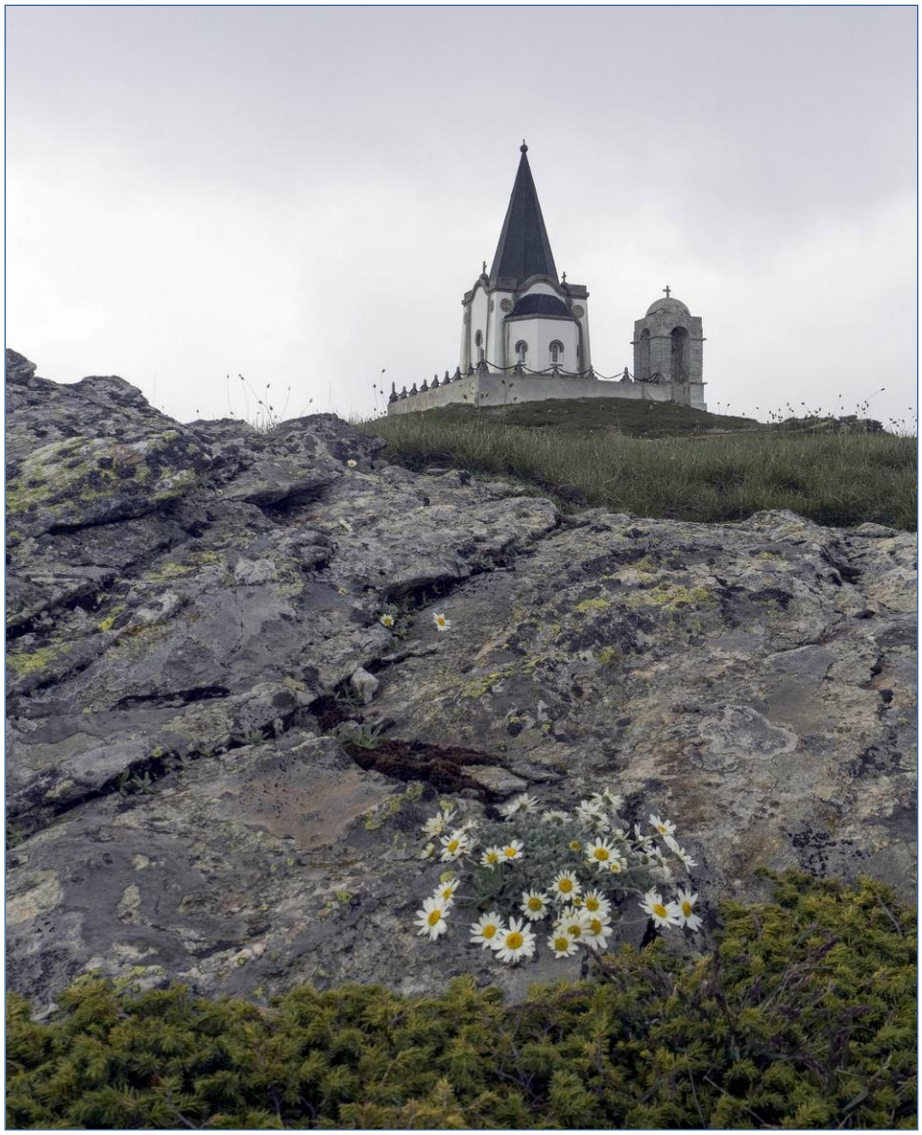
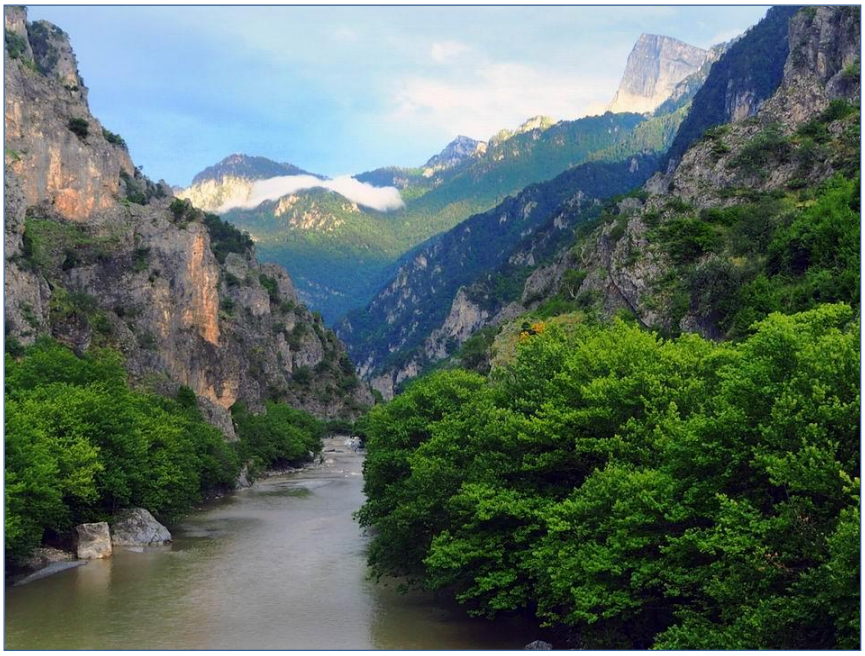
Nearing the summit, we came across a single flower of the yellow ***Viola eximia*****.** Among the detritus of military buildings were a few plants of ***Gentiana punctata****.* I believe it is the only place in Greece where it grows due to over-harvesting to produce some elixir.
Descending quickly out of the bitter cold wind, I turned to look back up to the Memorial Chapel. There was an ***Anthemis cretica*** **subsp. *columnae****,* asking for its picture to be taken with the backdrop of the chapel.



Aoos Gorge

Walking over to the right hand side of the River Aoos via the high arched pack horse bridge, we walked up stream in search of the elusive green felt-like leaved cushions of ***Silene intonsa****.* The heavens opened, followed by torrential rain, thunder and lightning, in other words a concerning storm. We became saturated to the skin before we could don our waterproof over-trousers and jackets.
The water in the river soon started to rise, but we were determined to carry on, while keeping a respectful eye on the river.



The Aoos Gorge and the Konitsa Bridge over the River Aoos.

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The rocky habitat of ***Silene intonsa*** and of ***Pterocephalus perennis***

Plant of note was the large light to dark pink flowers of ***Pterocephalus perennis*** (left) growing on limestone rocks. A short distance on, we found small cushions of the silene; working on the basis that where there are one or two there may well be more, we kept looking about!? Close by there was indeed a couple of large cushions, high on the rocks, with the possibility of a few seeds.
Klaas managed to climb up and collect a few seeds from the densely hairy leaves of ***Silene intonsa*** (right, in seed).

Walking on up the track, due to the increasing river level, we had to call a halt and retreat as I react badly to the sound and smell of falling rock since being avalanched out of a gully as a fourteen-year-old infallible boy. So with fancy foot work at waddle factor five, I led a healthy retreat out of the restrictive gorge into the open.

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The pass of Vasilitsa

As we headed for Konitsa via the Vasilitsa ski resort, the skies became ominous, threatening rain; which eventually led to wet weather alternatives for the next two days' explorations.
As we approached the Vasilitsa ski grounds, inviting patches of blue/violet and yellows were seen, which we discovered were growing on serpentine bedrock.

The blue/violet plants turned out to be 10 – 12cm high ***Campanula hawkinsiana*** (above) which is mostly found growing on serpentine. That whetted our enthusiasm as to what else we could find as one of our exploration days was to the Mt Smolikas serpentine massifs. The other plants were the large flowers of the upright ***Potentilla* aff. *geoides***, (below left) the crucifer ***Aurinia saxatilis*** syn. ***Alyssum saxatile* var. *compactum*** and, nearby the yellow bugle or ground pine, ***Ajuga chamaepitys*** (below right).

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Aurinia saxatilis syn. ***Alyssum saxatile* var. *compactum***

In the damp meadow were two self-heals, the large purple pink flowers of ***Prunella grandiflora*** (below left), and the shorter white ***Prunella lacinata*** (below right) on the drier stony ground.

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Katara Pass on to Meteora

In the remaining few days of our sojourn, we were to head for Katara Pass and then onward to the monasteries, nunnery, ‘towers’ and ‘coffins’ of Meteora. On the approach to the pass, we stopped by the roadside to look at two fresh orchids, the fragrant orchid, ***Gymnadenia conopsea*** (above left) and ***Dactylorhiza saccifera*** (above right). This was the first occasion that I have smelt the light vanilla scent of *Gymnadenia conopsea*, probably due to the freshness of the long spike. The *Dactylorhiza saccifera* looked good with its beautiful purple marking on the contrasting pink background.

The road climbs up the pass, through a ski ground. Here, in a damp meadow were the last remaining c30 – 40cm tall spikes of ***Gladiolus imbricatus*** (left), the rich purple/pink flowers with lighter tear-like markings.

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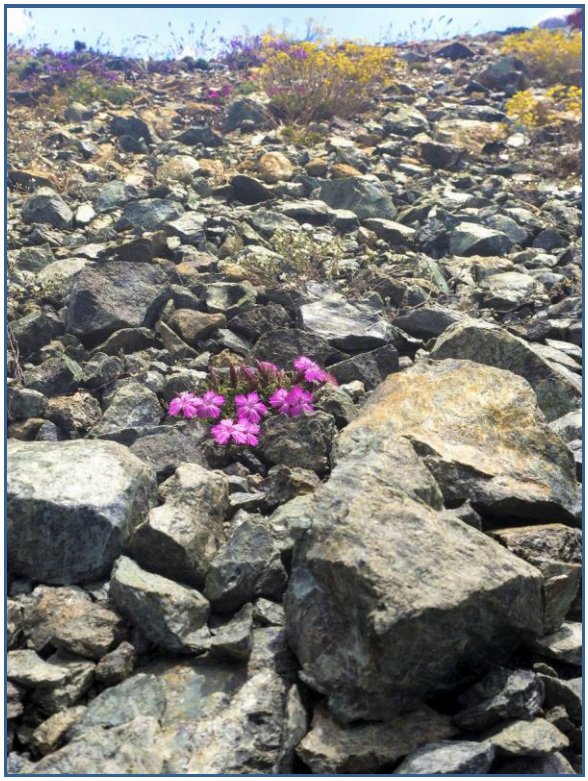

At the top of the pass, growing in and on serpentine rock, were gorgeous small cushions of ***Dianthus haematocalyx subsp. pindicola*** (above). The size of the deep pink flowers was remarkable; the few hairs on the petals were prominent. The flower size varied little between most of the plants, although there were a few plants that appeared to have larger flowers, but we weren't measuring. Looking around, your eye was again attracted to the beacons of golden yellow, *Aurinia saxatilis* with a large corymb of small yellow flowers. On a bank of coarse shale were large sprawling bushes of *Daphne blagayana,* out of flower. However, we did find ***Campanula hawkinsiana*** (below), with darker violet flowers than those seen on the Pass of Vasilitsa.

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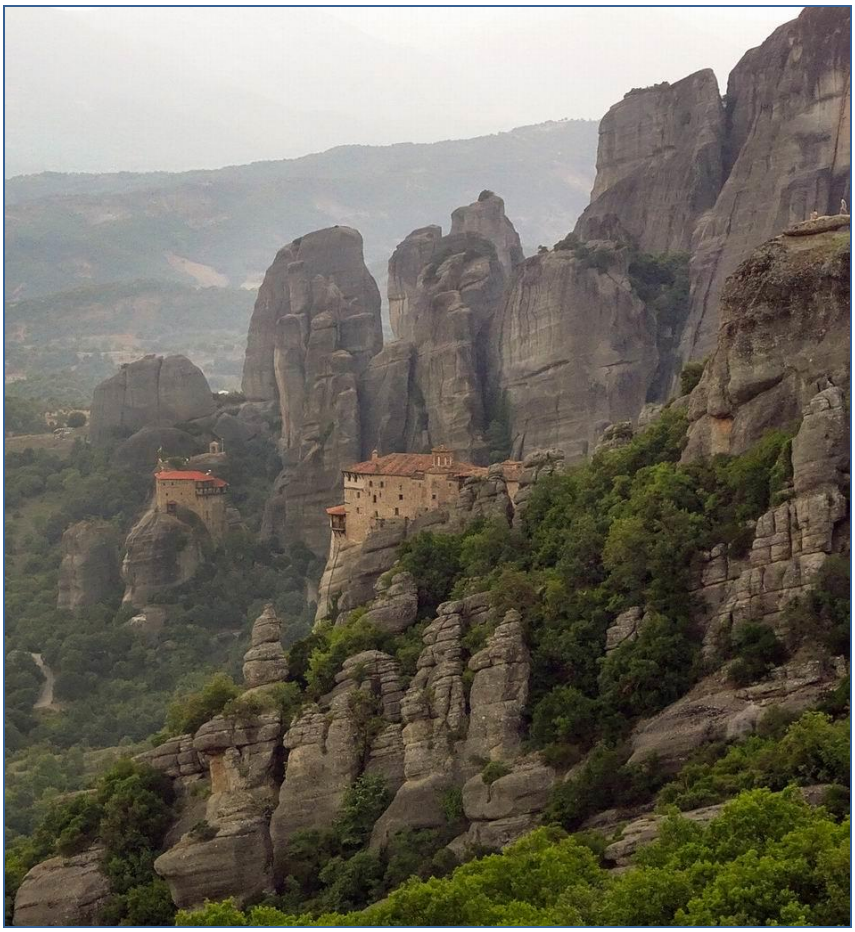
Our next stop was down to the World Heritage Site of Meteora to view the spectacle of the rock formations and the monasteries precariously perched on top.



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Davie Sharp, by Klaas Kamstra

Timfi

Perched below the impressive limestone cliffs of Papingo, is the old village of Mikro Papingo, our launch pad to wander up the path to the Refuge Astraka, on the saddle west of the summit. The path starts by meandering through pine slopes, eventually gaining height to more exposed dry rocky ground punctuated by juniper and other bushes. What soil there is, is quite thin. Progress up to the Refuge was slow due to our curiosity. In glades among the trees were stands of digitalis, dactylorhiza, the strong animal odours of lizard orchid; *Himantoglossum hircinum.* On leaving the trees, there was just one bloom of the beautiful red/orange lotus flower, perhaps *Lotus* aff. *tetragonolobus*, and the purple/pink *Saponaria glutinosa,* exuding a sticky excretion and here and there were fresh upright plants of *Orobanche* aff. *reticulata*. The air was alive with flying insects that became more noticeable where there was moisture. This moisture was provided by the four springs beside roofed shelters, two or three hundred meters apart. We soon christened these shelters 'Tea Hooses'. The water from the fountains was collected in troughs, and each was commandeered by young toads and tadpoles!

Among the juniper scrub there were large rocky scrapes resembling dry stream beds. In here were large c30 – 60+ cm mounds of the stabby (Scots for spiny) ***Drypis spinosa***.

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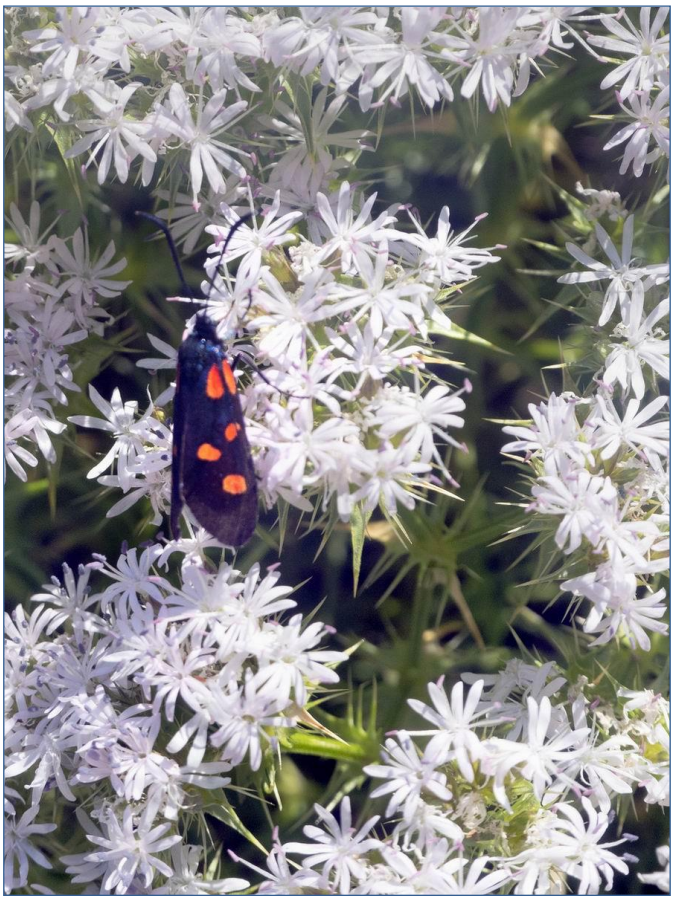

The scent given off by the plants attracted different Burnet Moths. The amount of radiated heat was noticeable.

Above: **Transparent Burnet Moth (*Zygaena purpuralis*).**
Left: ***Drypis spinosa* with 5 Spot Burnet Moth (*Zygaena trifolii*).**

Growing high in a crevice in a man-sized boulder in the same vicinity was a loose cushion of ***Minuartia pseudosaxifraga*** (left) with a few of its white saxifrage flowers open. In the same area of rock out-crops were other crevice plants such as *Saxifraga paniculata*. Nearby was a rose that was a quite low, woody and dense bush with fine straight thorns and the small pink flowers of ***Rosa heckaliana*** (below).

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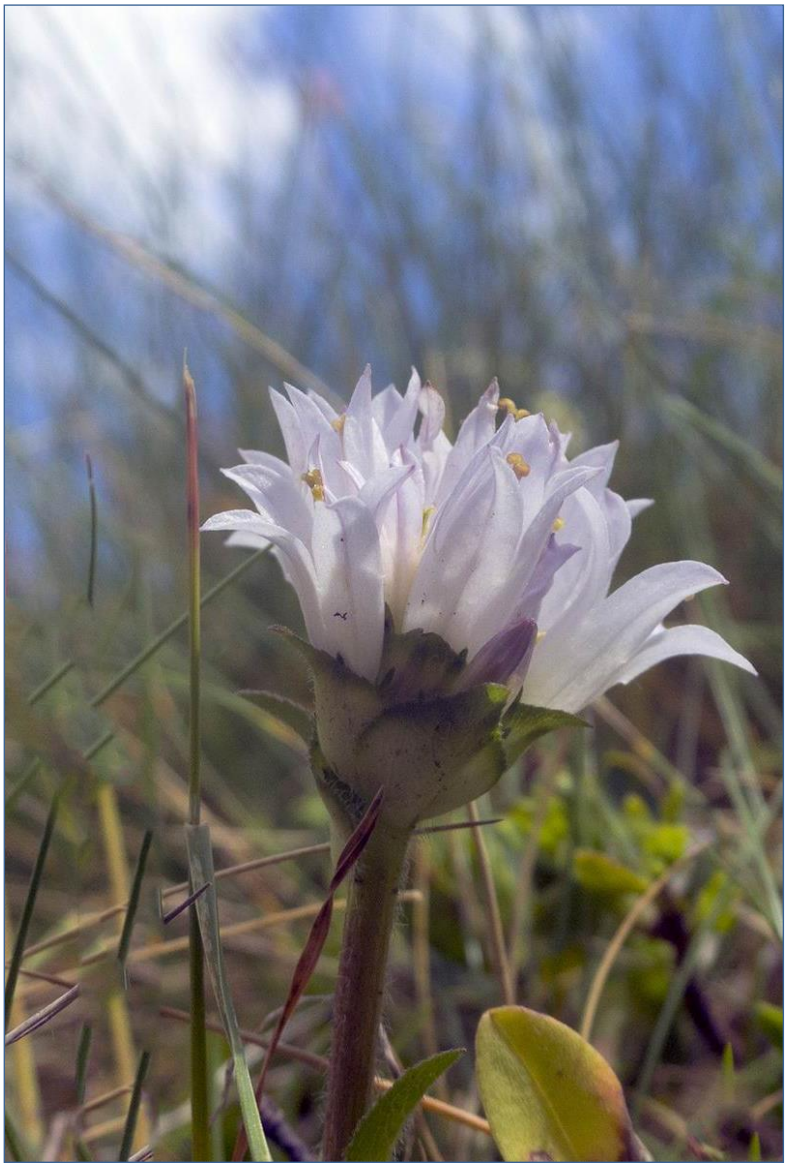
Leaving the juniper scrub, we found lovely tight heads of a feisty ***Carlina acanthifolia*** (right) with its circa 5 -7cm cupola dome protecting its yellow daisy flower, surrounded by its acanthus-like leaves.

Above the third Tea Hoose, in a shaded depression, were another two plants worth mentioning; the large white and pink spotted flowers of *Lamium garganicum*, that reminded me of a tropical sea horse creature and another pink flower gently blowing in the breeze, but this time it was the large pink flowers of *Geranium macrorrhizum.* Throughout this section there were euphorbia skeletons. It wasn't until we found one isolated euphorbia that was festooned with the caterpillar of the moths that we realized why the others were skeletons.

After leaving the fourth Tea Hoose, the path gently zigzags up the upper slope below the refuge.



Here we came into the campanula zone where the ground was liberally sprinkled with *Campanula tymphaea* in various shades of violet and the yellow rattle, *Rhianthus mediterraneus.* At the upper extremities of the zone, we found a beautiful **white form of *Campanula tymphaea*** (left). In the scree was *Arenaria* aff*. cretica*, found in large numbers.

Ah! Then off for a cool beer at the **Refuge Astraka**. D.S.

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Botanising on Guernsey: A report by George Garnett.

Guernsey's outstanding biodiversity is remarkable considering it isn't even the largest island in the Channel Islands, its area being just 30 square miles. It boasts a range of habitats, from wet acidic meadows to woodland to coastal turf. For the most part, the soil is acidic to neutral and the geology is gneiss with patches of granite on the west coast; so no chalk downland as you would find in Southern England, but biodiversity that certainly rivals it.

Right: George Garnett in Peru

Obviously being such a small island, the coast is always nearby. For me personally, I find coastal habitats the most fascinating. It's full of those small insignificant plants that are really quite special, whether that is due to their rarity, quirks or their beauty. It's easy to think of the coast as one big habitat but that's actually not the case at all. *Cochlearia* species growing in 4 millimetres of seagull faeces on a cliff edge obviously differ in requirements to *Ammophila arenaria* in sand dunes! That being said, most of the coastal plants I'd like to show you come from the sandy coastal grassland that lines the west coast of the island. Admittedly at first glance the yellow brown turf doesn't look particularly special but spending hours on your hands and knees searching for tiny plants is what botany is all about, right?

These diminutive plants are both alike in their strong preference for the coastal turf that lines the west coast of the island**. *Romulea columnae*** (below) preferring the short well drained turf and *Isoetes histrix* generally preferring eroded peat patches, although it seems that once established*, I. histrix* can tolerate some competition from other plants. Both of these plants are also similar in their 'blink and you miss it' nature. *R. columnae* flowers for just a few weeks in early spring. Its flowering period is also the best time to find it; you'd be surprised by how many species in the same habitat have long, strappy leaves!

So why exactly is this plant special? According to the Online Atlas of the British and Irish flora, it has been recorded in just two 10km squares in Great Britain and Ireland. In the Channel Islands it occurs in fourteen 10km squares! So why are there so few occurrences of this species in the rest of the British Isles? I think the answer lies in that *R. columnae* is really a Mediterranean plant, it simply gets too cold in the rest of the

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British Isles. Its only locality in the 'mainland' is in Southern Devon where it just about hangs on its two 10km squares!

As for ***Isoetes histrix*** (right) - it doesn't look like much, I know, I'm sorry - but this little fern ally is really quite amazing. It appears in winter; only to disappear again by early summer back to a corm. Its ability to spread seems limited, its spores are released underground and still, no one is one hundred percent sure how they get anywhere. That being said, the species hangs on in the patches where it always has and as long as the ground stays sufficiently wet and eroded, it certainly sticks around. Its resilience is so great that it doesn't seem to mind growing in footpaths where I've found quite a few thriving populations.

I hope you weren't expecting any *impressive* plants… I introduce to you, ***Mibora minima*** (left): probably Europe's smallest species of grass.
Fear not. You'll love this plant.
This little annual plant is teetering on the edge. Literally. It appears to favour eroded patches on exposed cliff edges. On my first hunt for it, the wind was so strong on the cliff that I could have probably leant off of the edge and trusted the wind to stop me falling to my death and yes, it only appears in winter when conditions are at their worst. I later decided

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leaning off of the cliff would probably be unwise. My point is this though, I find it amazing that something can grow in such extreme conditions: it could explain the species' tiny size. It's not just far away deserts that have amazing survivors.

Even more amazing? The fact that this little grass is found in just seven 10km squares in all of Britain and Ireland. It is found in ten in the Channel Islands. This doesn't make it any easier to find however.

The elusive ***Ophioglossum lusitanicum*** (below) is probably my favourite native fern. The Online Atlas of the British and Irish Flora states that the first British record of this was in Guernsey during the mid-19th century. It wasn't discovered anywhere else in the British Isles for another century, eventually being spotted growing in the Isles of Scilly.

This species only occurs in three 10km squares in the Channel Islands. Although this is more than the one 10km square in the Isles of Scilly, it is still a very small area; especially when in Guernsey the populations only span a couple of metres squared. Looking at old Guernsey herbarium specimens, this species used to be far more common around the coast of Guernsey. Preserving the species is far easier said than done however. Firstly, it is a bit of a *diva* in terms of habitat; only growing in south facing areas with peaty soils, and most crucially, grazing. The grazing is the big issue, too much means the plants are eaten before they can reproduce, too little and the habitat is over taken by thugs like gorse and bracken. This balance is incredibly difficult to maintain and I know for a fact that it is still a problem in populations that are sustaining themselves. The plant in the photo was the only one that had a spore bearing structure, even this had been nibbled. The culprits… rabbits. Rabbits somehow graze this patch in such a way that *O. lusitanicum* can survive. By doing this though, some of the plants inevitably, are eaten. A "Catch 22" situation indeed.

Anyone who knows me will be aware that these ferns just *had* to be included, they're probably also wondering when I'll shut up about them! They really do deserve to be included on their own merit however.

Now forget British distribution maps because, apart from the odd short lived record in Europe and the Azores, Guernsey is the only place on the planet that these hybrids are found forming regularly. There are three of the hybrids; the most famous of them is the aptly named 'Guernsey fern', or ***Asplenium x microdon***. This is a hybrid between *Asplenium scolopendrium* and *Asplenium obovatum subsp. lanceolatum* and it looks exactly like you would imagine it to.

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The second hybrid is probably the most common of the three. The Guernsey Spleenwort, *Asplenium x sarniense*. This is a hybrid between *Asplenium adiantum-nigrum* and *Asplenium obovatum subsp. lanceolatum*. I guess right now you might be thinking, 'but it looks like *Asplenium adiantum-nigrum*'. This hybrid is really under recorded for this reason. There are differences, I promise.
The final hybrid is really rare, so rare that I've never seen it outside of a herbarium. The hybrid in question is ***Asplenium x jacksonii*** on the right there, a cross between *Asplenium adiantum-nigrum* and *Asplenium scolopendrium*. It basically looks like *Asplenium x microdon* but with a more triangular frond.



The three hybrid *Asplenium*: photos by George Garnett and far right, Fred Rumsey.

Now unlike the other plants mentioned, these hybrids are not coastal specialists. Instead, these occur in the 'hedgebanks' that line many of the rural roads in Guernsey. It is the unique management of these combined with Guernsey's warm climate that aid in the formation and persistence of these most incredible plants.

Earthbanks or Hedgebanks

- Line the sides of many rural Guernsey lanes – 826 km!
- A result of inheritance laws splitting fields, often with a new access road
- Earth piled into a vertical bank, often with large rocks at the base
- Habitat for hundreds of plant species
- Cut twice a year

This is an edited transcript of my talk at the 2015 BSBI Annual Exhibition Meeting. I'd like to thank the BSBI for providing me with this opportunity. I hope it has been of interest to those who've listened to or read this talk.

All distribution information was taken from the Online Atlas of the British and Irish Flora
http://www.brc.ac.uk/plantatlas/

G.G.

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Bulbs of Attica – an occasional series with photos by Stavros Apostolou, Greece.

After George Garnett's mention of this plant from its Channel Islands habitat, it seems appropriate to begin with Stavros Apostolou's photo of ***Romulea columnae*** (below) on Philopappos Hill (Λόφος Φιλοπάππου) in Athens. Throughout its range it occurs mainly near the coast. *R. columnae* Sebast. & Mauri, also known as Sand Crocus, is a Mediterranean-Atlantic species which extends from southern England to the Azores and eastwards to Turkey. The diminutive flowers are about the size of a human fingernail.

Anemone blanda Schott & Kotschy

Also known as the Grecian Windflower this delightful anemone is one of the best known "bulbs" in commerce. This tuberous member of the Ranunculaceae family can be seen each year for sale in just about any garden centre – and with good reason – these small plants with their divided leaves and starry blue flowers are easy to grow in a number of garden situations and associate well planted with Crocus for Spring colour. They may seed a little in the garden when established.

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