



**Alpines without Frontiers  
The 8th International Rock Garden Conference  
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In 14-17 April, thanks to the Merlin Trust funding, I had a privilege to take part in the 8<sup>th</sup> International Rock Garden Conference which took place in Nottingham.

To summarize the experience: amazing places brought back to UK in photos and words, great lectures, extraordinary people. All had one thing in common: the enthusiasm about the alpinists.

The leading title of the Conference was: 'Alpinists without Frontiers'. I think it could have been explained in many ways but the way I looked at it had a more ambiguous or challenging context. Plants do not know political borders what is important for them is similar climate and environmental conditions. Therefore we find similar alpine species in the mountains of North Africa as in Mediterranean region. I think the subject might be more complex if we vain into it. Whether it is the migration or evolution or both of these factors that played role in constituting the montane habitats, the fact remains that the flora of the Eastern North America's mountains (presented by Todd Boland) seems to have a lot common with some European mountain ranges. For instance species like *Bartsia alpina*, ground cover willows *Salix reticulata*, *Salix herbacea*, ferns *Woodsia alpina*, *Asplenium trichomanes* etc. I came across during botanizing in the Tatra Mountains.

At present travelling to the most remote parts of the world became more possible for more people. People found the means to overcome nature's frontiers. Ironically it becomes more evident it is the man whose activity (environment pollution, deforestation, tourism etc.) causes the creation of the frontiers for nature! As John Good said in his lecture "Alpinists in a changing world", the climate change triggers the change in phenology of plants and animals. The plants and some insects migrate northwards regarding latitude and upwards regarding the altitude. Therefore if the alpinists were occupying the peaks of the mountains there is no way for them to move higher. According to his data coarse sub-alpine species moved upwards 200-300 m in 66 years. The climate change affects the snow beds vegetation drastically; melting glacier causes the reduction of snow bed habitats. Among the worst affected habitats are a tundra and snow beds with species like *Soldanella alpina*, then less adversely affected are a rock crevice and an open scree and on the contrary the positively affected become the woodland and the alpine meadow. Also the high level of nitrogen in the ground has a negative impact on the alpinists growth. They become more susceptible to pests and diseases, their flowering and fruiting potency is reduced and in extreme situations it may cause damage and a death. The alpinists have a lower ability to adapt to rapid changes unlike coarse grasses and associated meadow plants which respond positively to added nitrogen therefore as a result they outcompete the alpinists. Too much of the element in compost causes atypical growth of the alpinists. These data convinced me that the

practice we do at my work by using compost without the fertiliser to grow the plants on the Rock garden is the most appropriate and advisable.

As long as conservation *ex-situ* is meaningful and necessary it is not prior to conservation *in-situ* but only complimentary to it or in some cases - the last resource. Plants need critical mass of population, e.g. it is better to have one habitat of 200 individuals than 4 habitats of 50 individuals. This is why fragmentation of habitats is so destructive. Part of it is due to the rising needs of the tourism, a part of it due to the damage made by air, soil and water pollution. However another significant factor is a wild collecting by unscrupulous people. It has been a long time (since 1975) since the Convention CITIES had been implemented and has regulated collecting plants material and seeds in wild. It affects not only institutions but everyone. How great was my surprise and disbelief when I found out that amongst the alpine enthusiasts are those who do not respect the International Convention and moreover, they are deeply convinced they have an absolute right to these resources! Luckily this kind of attitude is not popular amongst the young horticulturists and botanists!

Another fascinating lecture that brought up the subject I have not come across before was presented by John Grimshaw. In his talk titled: "Giants and Dwarfs" he was exploring diverse flora of the Africa continent. I only knew the "dwarfs", I have never come across giant alpinists (it even sounds to me like an oxymoron), neither was I familiar with African mountains' flora. The adaptations the plants evolved in those conditions: very hot days and frost during the nights ("summer every day, winter every night" as you could say); are amazing: bulky size, big inflorescence – therefore they have been named: megaphytes. The size of giant *Lobelias* and *Dendrosenecios* helps to absorb as much heat during the day as possible and then slowly releases the heat during the night. It is like a big storage heater. Moreover they developed other more sophisticated adaptations e.g. old leaves in *Dendrosenecio* protect the stems from freezing cold, both *Lobelia* and *Dendrosenecio*'s leaves present incurving movements and *Lobelia* also produces antifreeze secretions. All I would like to say is: wow! How clever! Anything that man has invented, Mother Nature created millions years ago. That also reminded me the self cleaning properties of London plane's leaves. Similar adaptations, I mean going for a bigger size, we find in big *Puya* plants at comparable altitudes in northern Andes in South America. We grow a couple of *Puya sp.* on the Rock Garden in the Royal Botanic Garden, Kew. But at this point I think that my approach in maintenance was not quite right. Being too tidy I was removing all the dead foliage off the plants. Having the knowledge about the giant alpinists from Africa I should restraint from doing that as that gives them an extra protection over the winter especially that English winters can be quite wet but still reaching freezing point.

While John Grimshaw concentrated on one continent, Bob Wallis on the other hand has "gone through" four continents while exploring the genus *Fritillaria*. I was so excited about this lecture because fritillary is one of my

favourite plants. All I want to say to the organisers is: Thank you very much for that! Fritillaries are just amazing! All 200 species are. I just could not understand when it was mentioned that some people do not like them referring to them as brown bulbs. How is it possible (I am asking it loudly with disbelief)? They are just perfect! It would be hard for me to specify which one is my favourite (being patriotic I would probably say: *Fritillaria meleagris*) but I was so enchanted with dark purpled *F.armena* which is so dark that almost reflects as blue, and white flowered *F. japonica* which has dark purple leaves as another part of interest. Fritillaries inhabit 4 continents in Northern hemisphere and 4 types of habitats (within each of the continent). That distinction helps to understand the growing requirements for cultivation. Taking that as a basis we distinguish: the lowland species (e.g. stunning purple *F. pluriflora* from Californian grassland); the woodlanders also called the shade lovers (e.g. almost black *F.camschatcensis* which has quite a wide range of distribution, from Oregon in the US into China and Japan); the steppes inhabitants (e.g. dwarf North-American white beauty with black spotting: *F.purdyi* which grows on volcanic soil); and desert margin species (e.g. white *F.bucharica* from Tien Shan). Surprisingly I found the common characteristic for the arid Fritillaries – they quite often present pink coloration/spotting of flower (*F. gibbosa*, *F. stenantha*, *F. ariana*). I do not have that deep knowledge about the light absorption by different pigment. It is obvious that glaucous/grey foliage which these species developed would reflect more light therefore it is more efficient in plant's water economy. So do white or pale coloured flowers. But why exactly pink? I presume there must have been some evolution factors that caused. Perhaps it is critical for the pollination to happen? Hmm, something for me to dig deeper and find out!

After such an inspiring lecture I could not resist from buying a monograph on Fritillaries. That could be my first preparation aid for the trip to Kurdistan Province in Iran (I am just being overoptimistic but one says: 'Never stop dreaming'!) which Robert Wallis referred to as the most wonderful place in that country. There is one pass named unofficially as 'Eight Frit Mountain'. That must be an amazing place!

If someone has not been drawn by a wonderfully checked world of frits there was another chance to get addicted by a different genus: *Iris*. In fact it can be an addiction! I have seen the 'victims' but why blame them?! They are great plants. I particularly admired well-presented photographs. Initially I thought they were grown in those compositionally ideal conditions at their home (perfect gravel, perfect moss, naturally scattered rock). Only then I realized that Michael Kammerlander prepared a photographic studio for his Juno *Irises*! What a magnificent idea! A great hint indeed. It really makes a difference at presentation.

The conference must have attracted some *Primula* enthusiasts as John Richards was giving a lecture: "Something Old, Something New". What I

understood, it was more a *Primula* debate on a higher level. I feel ashamed to admit that it was quite intimidating for me. He had such a vast knowledge about it and it seemed to me that most of audience were following what he was saying. Apart from one person: me. Well, a long way ahead of me then.

The conference was an opportunity to be taken to remote parts of the world (the Himalaya, southern hemisphere mountains, the Tien Shan, Tibet) through stories and slides of amongst others: Harry Jans, Vojtěch Holubec, David Haselgrove, Toshio Yoshida. Just enough to catch an “alpine-botanizing bug”. Again in many species I noticed a variety of adaptations to high altitude conditions. For instance *Rheum nobile* (another bulky size alpine) called Noble rhubarb has another common name: a glasshouse plants. Do not get confused, it is not because one could think you grow it in a glasshouse but because it produces a curtain of translucent bracts which create a greenhouse effect to the flowers inside. The bracts let the visible light through but block ultraviolet radiation. Is not that amazing? *Saussurea gossypiphora* on the other hand, which grows at 5400 above sea level developed very hairy organs which protect the flower inside, act as a defence against harsh conditions and gives it a funny look like a woolly cocoon. This kind of adaptations can be found in other alpines of other parts of the world, for example in Patagonian *Hamadryas kingii* with purple buttercup-like flowers which appear as one of the first after the snow melts. As writing about the southern hemisphere treats, which were presented by David Haselgrove, the biggest *curiosum* for me were rosulate violas like yellow flowered *V. coronifera* or white *Viola sacculus*. They either grow in crevices or inhabit the screes. As they age they form a bizarre cylindrical shape and flower at the top.

There was much more to hear and see. Keith Wiley presented his holistic approach to the alpine in the garden; a Scottish grower Ian Young introduced us to his magnificent alpine collection and Robert Rolfe to his encyclopaedically broad knowledge about alpine, their locations and endemism. I was also delighted to listen to Roy Lancaster. All speakers brought something new to me; however those I focused the most attracted my attention the most and let me stay in my seat for nearly 4 days. What a challenge for me!

I enjoyed the conference a lot and it was an inspiring experience for me which I hope rooted a lot of knowledge too, something to grow on.

Thank you very much!