

The Pontic Alps of Turkey IDS Trip

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The Pontic Alps, known in Turkish as the Kuzey Anadolu Dağları, is a range that runs parallel with the Black Sea coast of Turkey for about 1,000 km (620 miles). It is highest at its eastern end, known as the Kaçkar Mountains, where the highest peak is Kaçkar Dağı at 3,937 metres (12,917 ft). Due to the rain shadow effect the mountains have, the southern slopes which descend into Anatolia have a hot and dry climate, which significantly affects the vegetation. It is a different story on the northern slopes, where moisture-laden air driven off the Black Sea by prevailing winds rises up the slopes and produces heavy rain for much of the year. Average annual rainfall in this coastal region ranges between 1,500–2,500 millimetres (59–98 inches).

Along the eastern half of the Black Sea coast the foothills of the Pontic Alps rise straight up from the sea with almost no coastal plain. The north-facing slopes are heavily built-up. However, travel just a few miles inland and the urban sprawl quickly gives way to extensive tea plantations, hazelnut groves and the first patches of the globally significant Euxine-Colchic temperate rainforest. At higher altitudes and further inland these very wet Colchic forests merge into the slightly less humid ecoregion of the Northern Anatolian conifer and deciduous forests. At the far eastern end of the Pontic Alps, near the border with Georgia, the high mountain plateau has a more continental climate and is part of the Caucasus mixed forest ecoregion. The whole area has a diverse flora with some regional endemics, and compared to Western Europe has relatively unspoilt, wild and extensive forests somewhat protected by growing on steep slopes. Much of this forest is said to have its origins in the now defunct geologic period the Tertiary, which ended at the beginning of the last ice age 2.6 million years ago. These forests acted as a glacial refuge for plant species now found across all of Europe.

I joined this International Dendrology Society tour as a professional gardener working in a woodland garden in Sussex, it seemed a good fit for my interests. To see plants in the wild that I had only seen in gardens before would be beneficial to see where they grow, how they grow, what species they grow with and their soil and climate tolerances. I expected that I might be inspired by the landscape and species composition of the forests in Turkey, gaining ideas for planting schemes back home. A key aim however, was to see in the wild tree species that are heat and drought tolerant that could be planted for the changing future climate in Britain.



The Pontic Alps near Savsat

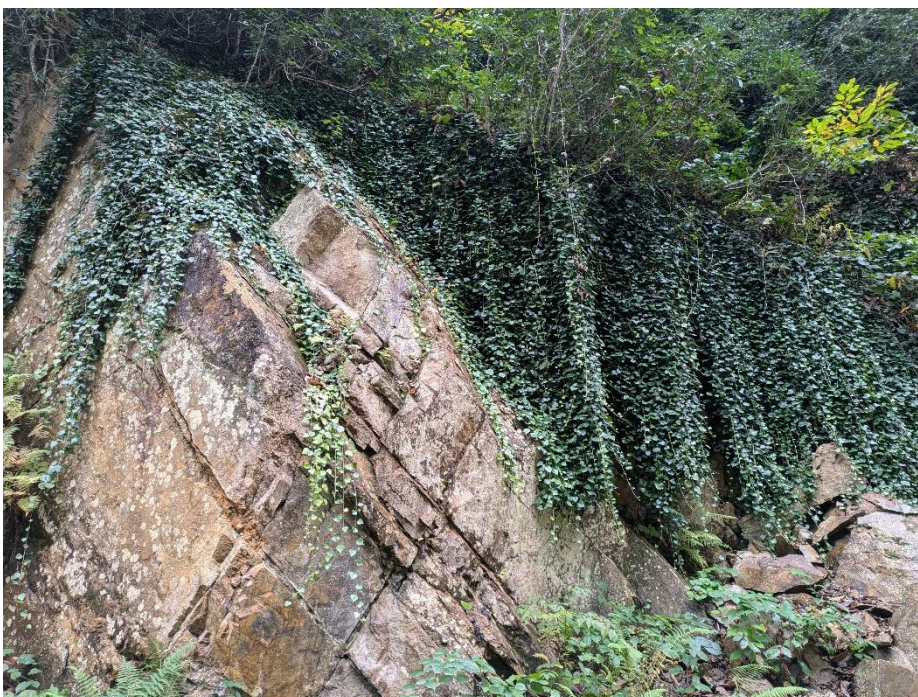
Day One Wednesday 23rd October

The starting point for the tour was the port city of Trabzon. On Tuesday 22nd most members of the tour who had arrived set off on a cultural tour of the city led by a local guide. The tour took in the Hagia Sophia Mosque – a late Byzantine era Orthodox church with painted wall murals that is now used as a mosque – as well as the Atatürk Pavilion, which was the stately home of the famous Turkish leader Atatürk. We also saw the ancient walls of the citadel and had lunch at a local restaurant that served traditional local food before exploring the labyrinthine market streets. All members of the tour formally met up and were introduced to the tour leaders Ian Green and botanist Andy Musgrove, as well as cultural guide Ozan Balkan at dinner in the lavish Grand Zorlu Hotel where we stayed for the night.

The tour properly started on the Wednesday morning, when three minibuses took us along the coast road eastward in the direction of Rize in fine, sunny conditions. We headed inland along the Ikizdere valley, a wide valley that runs almost north-south into the Black Sea and carries the Ikizdere river. It did not take long before we had left behind the urban coastal strip and were driving past extensive tea plantations that covered much of the floodplain and valley sides. It was now overcast and drizzly and the rural landscape had a definite Asian feel to it with wooden tiered houses set among the undulating fields of tightly clipped hip-height tea bushes.

Our first stop was at a bridge over the river where we got to see a tea plantation up-close, with large bags full of fresh clipped tea leaves ready to be loaded onto lorries. Being autumn, many of the tea bushes had flowers on, if the buds hadn't been nipped off. The river here was lined with dense stands of *Alnus glutinosa* with huge leaves indicating the high rainfall of the region. We learnt that invasive non-native species are a serious problem in Turkey and saw examples such as the climber *Persicaria perfoliata* that has unusual blue berries and the suckering shrub *Clerodendrum bungei*, which was in full flower by the river.

We carried on up the valley, through the small town of Ikizdere, then diverting up through a narrow side-valley where the river was full of granite boulders and dense deciduous forest clothed the steep slopes. Here we got out and walked back down the track that followed the river, surrounded by the humid, wet Colchic forest on all sides. The dominant tree seemed to be *Fagus orientalis*, mixed with *Castanea sativa*, *Alnus glutinosa*, *Carpinus betulus* and some dark evergreen spikes of *Picea orientalis* scattered throughout. The autumn colours of the trees was beautiful, with subtle varying shades of yellow, orange and ochre. Immediately striking was the dense understorey of shrubs, not browsed out by deer or sheep as in almost every wood in the UK. Here it was impenetrable, diverse and lush; with species such as *Prunus laurocerasus*, straggly *Ilex colchica*, *Osmanthus decorus*, *Viburnum orientale*, *Euonymus europaeus* and the larger-leaved *E. latifolius*, cascades of *Hedera colchica* and of course lots of *Rhododendron ponticum* and *luteum*. It was interesting to see *R. ponticum* in a natural context, where it is not invasive, where it mingles harmoniously with other shrubs and trees and still allows a diverse ground flora beneath it. By the



roadside were suckering clumps of *Sambucus ebulus*, still with some berries. Mosses and ferns clothed every rock.

Curtains of Hedera colchica



Lush mixed Colchic forest in the Ikizdere Valley

We then drove up onto the ridge above the valley via a very windy, narrow road where we soon found ourselves inside a cloud, surrounded by snow that impeded our progress. We didn't climb as high as we would have liked, but we still got out for a walk along the track, which was lined with bright scarlet and purple bushes of *Vaccinium arctostaphylos*. Here we also found small trees of *Ulmus glabra* and *Sorbus aucuparia* among the dense *Picea orientalis*, but despite our best efforts we could not find any of the regional speciality *Quercus pontica*.

It was then back to the valley bottom where we stayed in the comfortable Ridos thermal spa and hotel, surrounded by the sound of the rushing river.

Day Two Thursday 24th October

We started the day with a long drive up the Ikizdere valley, almost to its upper limit in the mountains, passing incredible views of vertiginously-steep forested slopes dotted with smallholdings and the occasional minaret. We stopped almost at the treeline, surrounded by deep snow and very few trees in an otherwise alpine landscape. By the roadside there was a specimen of *Acer heldreichii* subsp. *trautvetteri*, leafless but

adorned all over with bunches of samaras – the grey bark and reddish buds were distinctive. This tree seemed to be characteristic of the highest altitude woodlands in the region, absent lower down. Here also were stunted birches with mottled white bark and minutely downy twigs, making them *Betula pubescens* var. *litwinowii*.



*The group inspecting an *Acer heldreichii* subsp. *trautvetteri**

We walked back downhill along the road, descending into sparse, scrubby, boulder-strewn woods of mainly *Populus tremula* and *Corylus avellana*, with *Picea orientalis*, *Alnus glutinosa*, *Sorbus aucuparia* and a few blue towers of *Abies nordmanniana* mixed in. Cliffs and scree lined the road and here we found tiny twisted plants of *Rhamnus microcarpa* in crevices like bonsai, as well as spindly bushes of *Lonicera caucasica* and mats of dark green *Juniperus sabina*. A non-botanical highlight was a Wallcreeper that gave good views by the road. After an al-fresco picnic lunch we walked down a little further, spying a pair of Golden Eagles circling high above the valley.



Rhamnus microcarpa surviving in a crevice

The group was then driven further down the valley into the lower altitude forest, where we carried on walking along the river. There was a different flavour here, with *Carpinus betulus* the commonest tree. Now we found some *Quercus petraea* mixed in with the other trees, possessing smaller leaves than we are used to in Western Europe. Also in this area were *Ulmus glabra*, both species of *Euonymus* laden with pink fruit, *Acer platanoides* which had good foliage colour as did a few *Acer cappadocicum* that stood out from the understorey of dark *R. ponticum* and orange-leaved *luteum*. It was also good to see some flowering *Colchicum autumnale*.

Day Three Friday 25th October

We left early for a six-hour drive to our next hotel much further east, with stops planned along the way. Half of the group went in one bus for a cultural-themed day stopping at historic churches, while the others focussed on the botany. After incredible mountain scenery on the drive up to the top of the valley, we drove through a 14 km long tunnel bored straight through the mountain ridge which took us to the southern slopes of the Pontic Alps. Here is the great valley of the Çoruh river that runs roughly west to east before emptying into the Black Sea on the coast of Georgia. Due to the rain shadow effect of the mountain ridge the landscape is dramatically different on the south side, as soon as we emerged from the tunnel we were met with an arid

landscape of rocky slopes and scrubby hillsides, large trees were mainly restricted to the riversides and there wasn't a patch of snow in sight.



Variable leaves of Quercus hartwissiana

We made a short stop to sample this new habitat; rusty red bushes covering the hillside turned out to be *Cotinus coggygia* – which became a feature of the day as it was incredibly common and its autumnal colours were impressive in such density. Some oaks by a stream puzzled us with their strikingly variable leaf morphology; one tree had leaves that were narrow and deeply lobed while another had broad leaves with shallow lobes – yet both were *Quercus hartwissiana* with characteristic long peduncles attached to the acorns. Also here were bright yellow *Acer platanoides*, *Fraxinus angustifolia* and *Populus tremula*. Our long drive continued, following the river, which has many large hydroelectric dams along its length resulting in vast artificial lakes and the loss of all the riverine habitat. Where the river wasn't dammed there was a lot of *Tamarix* and *Salix* scrub and on the slopes above the river a lot of *Olea europaea* had been planted to stabilise the loose scree. A feature of this region were the tall, narrow spikes of planted *Populus nigra* 'Afghanica' with striking white bark.

Another stop to explore a scrubby valley produced new and exciting plants. The dominant trees here were the dark, glaucous *Juniperus oxycedrus*, mixed with the grey, pyramidal *Juniperus foetidissima*, both with beautiful twisted trunks and peeling bark.

Diverse woody plants we found here included *Crataegus orientalis*, *Rhamnus pallasii*, *Lonicera iberica*, *Berberis communis*, *Cotoneaster intergerrimus*, *Amelanchier ovata*, *Sorbus umbellata*, *Ephedra major* and the superficially similar maples *Acer cappadocicum* subsp. *divergens* and *Acer monspessianum* – both with very small leaves.



Dry landscape dominated by Junipers in the Coruh valley

At our lunch stop further finds were made along the roadside, with the distinctive *Paliurus spina-christi* covered in seed, as well as suckering and colourful patches of *Rhus coraria*, *Cornus mas*, fruit-laden *Diospyros lotus* and the unusual sub-shrub *Colutea melanocalyx* with its large seed pods. The landscape here was incredible, with stunning geology in the form of multi-coloured sedimentary layers on one side of the valley and solid granite on the other. After passing through seemingly endless tunnels cut through the valley sides we met up with the other half of the group at an ancient and crumbling Georgian church. In the graveyard were bushes of *Punica granatum* heavily laden with comically large pomegranates as well as large *Diospyros kaki* trees also heavy with fruit. A very unusual find was a tree of *Juniperus oxycedrus* suffering an infestation of the hemi-parasitic host-specific mistletoe *Arceuthobium oxycedri*.



Arceuthobium oxycedri

Day 4 & 5 Saturday 26th and Sunday 27th October

We awoke in the Black Forest Hotel, near the town of Şavşat situated at high altitude in the mountains near the Georgian border, to find a heavy blizzard was rapidly laying down a foot of snow. The weather wasn't expected to improve during the day so the decision was made to cancel the planned outing and stay in the hotel – with last minute but nonetheless informative and entertaining lectures from members of the group to keep us occupied. We ventured out for a hearty lunch at a local restaurant and then afterwards with the snow easing off somewhat our guides drove us across the valley to a mountain lake beauty spot. We walked around the lake surrounded by dense forest of almost pure *Picea orientalis* before heading back for fear of the roads freezing over.



Autumn colour of Populus tremula near Şavşat

On Sunday we drove up to the Çam Geçidi mountain pass which crosses the range at an altitude of 2,450 m (8,000 ft) above sea level. Heavy snow from the day before was still being cleared by snow ploughs and lines of articulated lorries were parked up the road waiting to cross the pass once the ice had been cleared – a few had already slid off the road into a ditch. Somehow, our minibuses made it over the pass. On the other side we were met with a view that could have been anywhere in Central Asia – a vast, flat open steppe surrounded by higher peaks, with barely any trees. In the distance was the city of Ardahan, which we drove through to get to our destination of ancient *Pinus sylvestris* forests. These pine forests were scattered around the edges of the plateau on rising ground and despite apparently having pre-ice age origins were mostly made up of younger trees, either replanted or self-seeded. The forest we visited was almost pure *Pinus sylvestris*. These trees were of the variety *hamata*, which has a population stretching from the Balkans to the Caucasus, being somewhat separate from the main range of the species.



Relic Pinus sylvestris woodland on the Plain of Ardahan

On the return journey we explored a small area of birch wood that covered a snowy hillside close to the top of the pass. It was mostly *Betula pendula*, *Betula pubescens* var. *litwinowii* and *Populus tremula*, but also with some scrubby *Sorbus aucuparia* and a few tiny *Viburnum lantana*. At ground level were large patches of *Juniperus communis* var. *saxatilis* (once *nana*) and very surprisingly patches of *Daphne pontica* – a plant normally found in the humid forests on the northern slopes rather than on top of an exposed mountain.



High altitude birch woodland on the Çam Geçidi pass

On the other side of the pass we stopped at a superb viewpoint called Sahara Millepark with an enormous vista of the mountain range and the huge forested valley dropping away below, everything thick with snow. We decided to explore a narrow forest track that curved around the side of the mountain slope. At this altitude the forest stretching away immediately below us on our left was pure *Abies nordmanniana*, many of them huge stately specimens like Roman columns. On the very steep slope above us on our right it was mainly mixed deciduous woodland with leafless *Betula pendula*, vast amounts of *Sorbus aucuparia* heavily laden with bunches of scarlet berries, *Acer heldreichii* subsp. *trautvetteri* and patches of short *Fagus orientalis* that were scrubby and multi-stemmed. Along the path were also bushes of *Lonicera caucasica* and our first plants of *Rhododendron caucasicum* showing its distinctive thin golden indumentum.



Abies nordmanniana with Rowans

Day 6 and 7 Monday 28th and Tuesday 29th October

On Monday it was a long drive all the way back to Trabzon, however, interesting things were seen from the buses during the drive and we also made a brief stop to explore a valley in the hope of finding *Quercus pontica*. During the initial part of the journey between Şavşat and the city of Artvin, we passed through a stunning deep gorge that was home to quite large, old and twisted specimens of *Juniperus communis* growing out of the rocky slopes and by the river were *Fraxinus angustifolia*, *Platanus orientalis*, *Ficus carica*, *Paliurus spina-christi* and oaks.

Having passed through Artvin on our way to the north coast the ecology changed once more and the valley we drove through was full of relic Mediterranean flora. On the dry slopes above the reservoirs were patches of *Pinus pinea*, the first wild plants we had seen and indeed these are part of the easternmost population of this species. Here again was more *Cotinus coggygria* mixed with *Pinus sylvestris* and also extensive stands of *Arbutus andrachne* – the beautiful red bark was obvious from a distance. On the cliffs by the road were clumps of *Cistus*.

We stopped in a valley when we were once again among the damp Colchic forests. Above the tea and hazelnut plantations was wild forest in which we found a new plant in *Staphylea pinnata*, sporting the distinct balloon-like seed capsules. We briefly explored the ridge nearby on an unsuccessful hunt for *Q. pontica* which was nonetheless worth it for the beautiful forest we walked through that was full of all the species characteristic of the area as well as a new species for the trip – *Rhododendron ungerii*. This was a low growing shrub scrambling through the dense understorey with attractive buds and foliage that had woolly buff and white indumentum. Later, while driving nearer to the coast we noticed a lot of *Carpinus orientalis* growing on rocky slopes above the road; its smaller leaves, more shrubby habit and preference for open, drier habitat was interesting.



Rhododendron ungerii



Small tea plantation with Hazel grove behind

On Tuesday we spent most of the day visiting the famous Sumela Monastery, which sits precipitously on the side of a cliff at the top of a wooded valley south of Trabzon. It is very picturesque and historically fascinating, not to mention heavily restored. The woods around the monastery were also wonderful, being mostly *Picea orientalis* with other species mixed in. We noticed a few *Crataegus (Mespilus) germanica* (presumably planted), *Torminalis glaberrima (Sorbus torminalis)*, some small trees of *Acer velutinum* and many large and impressive *Juglans regia*. Of note was the largest *Carpinus betulus* seen on the trip, a huge veteran tree growing literally in the middle of a road, the tarmac around its roots didn't look to be doing its health any good.

We parted ways on the Wednesday, having enjoyed an amazing introduction to this very special corner of the world, with its ancient and highly diverse forests and rugged landscape – a week wasn't really long enough.



The Sumela Monastery

I took a lot away from this trip, there really is nothing like seeing plants growing in the wild in their native habitats. *Picea orientalis* really made an impression on me in particular, it seems incredibly tough – growing on all kinds of terrain, sometimes with the thinnest of soils, in incredible cold and high altitude, tolerant of high rainfall but also heat and drought. It made a graceful plant, not thuggish and prickly like most other spruces, but neat and attractive with a rich dark green foliage, its upper boughs dripping with the small fruit-like cones. It really fitted in alongside all the deciduous trees, appearing most picturesque when growing thinly scattered throughout a forest of beech and hornbeam. Definitely a tree that is overlooked and under-utilised back in the UK and certainly a tree for the future climate.

Throughout the trip I was constantly thinking about the impact of climate change in the UK and how the trees growing in this part of Turkey could be useful for gardens and landscapes back home. *Fagus orientalis* and *Carpinus orientalis* stood out as trees that perform almost the same ecological function and have the same aesthetic

qualities as the equivalent species native to Britain, yet have the benefit of heat and drought tolerance. Other, more exotic, species seen on the trip may become useful in a hotter future – the two *Diospyros* species for example, or the Junipers.

I was also fascinated by the complex structure of the forests themselves. In Britain we are so used to all of our woodlands being a uniform layer of canopy trees with a scatter of a few leggy shrubs underneath, otherwise kept open and clear by the browsing of armies of deer, combined with human neglect. The rainforests in Turkey, which are mostly made up of very similar species to most British woods, had a diverse, mixed canopy layer and underneath an impenetrable tangle of evergreen and deciduous shrubs and saplings of many different species. No browse line could be seen. It was a vision of what we once had and should have in Britain (especially in our desert-like uplands), but have long since lost and seem to have no appetite to bring it back. I was happy to see such forests surviving in Turkey, I was inspired by the rich and complex forest structure, it gave me many ideas I might apply to woodland gardening back in England and I now have a wish list of Turkish tree species I want to grow there.



Forest of Picea orientalis