

A Botanical Culture Tour of Southwest China's Yunnan Province

30th May – 16th June 2019

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Figure 1 Traditional stone bridge and Pagoda, Black dragon pool, Lijiang.

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I would like to dedicate this trip to my dear friend William Suttill, who sadly passed away on the 16th of May 2019. William was a lifelong friend who lost his life to Pancreatic cancer aged just 32. Sadly I was unable to attend his funeral as it coincided with being away for this trip.

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Introduction

China has some of the richest diversity of temperate flora in the world, and for centuries, and still to this day, native plants have played a major role in Chinese history and culture. How is it then, that so many of these wild Chinese plants have become rooted as integral parts of our Gardens here in the UK?

Whether it is the beautiful spring *Magnolias*, *Rhododendrons* and *Azaleas*, or the *Paeonies*, *Camellias* and *Chrysanthemums*, all can be found growing in the wild in China, as well as being commonplace in gardens here in the UK.

Over the years plant hunters have introduced more than ten thousand Chinese plant species to the UK. That's over three times our native flora. Each of these plant introductions tells a story, one of travel, hardship and endeavour, one of an individual whose exploration has personally brought nature's stowaways back to the UK. These plants were not just collected for the purpose of science, but also as things of beauty, for us all to cultivate and admire.

Plant collectors from Britain, North America, Russia, France and many other countries have all traversed China on the hunt for new additions to their scientific collections, as well as for plants to introduction into cultivation. It was the stories of these plant hunters, their adventures, and the plants they subsequently introduced into our gardens, that inspired me to undertake this expedition.

China has an incredibly rich flora, and one that is unrivalled in the world's temperate latitudes. It is estimated that Chinese plants make up a total of 12% of the entire world's plant diversity. There are roughly 30,000 species of higher plants present within the country; these are spread between 3184 genera, within 353 families. Of these, it is estimated that 56% are endemic, which equates to 16,800 species, spread within 220 genera.

This huge diversity in plants directly reflects the broad range of habitats and variation in altitude found within the country. China also has a massive diversity in climate, with some parts receiving a huge amount of rainfall during the summer monsoons, whilst others are dry and desert. Tropical and subtropical regions rise up through temperate, and then onto alpine areas reaching extreme altitudes, the plant life then slowly fades as the mountain peaks transition into arctic conditions.

The floral richness of China is expressed nowhere better than in the west of the country, especially in the province of Yunnan. Yunnan province is situated in the southwest of the country and is highlighted in red in the map below (See Figure 2). It borders the other provinces of Guangxi, Guizhou and Sichuan, as well as the Tibetan Autonomous Region. Yunnan also borders the countries Vietnam, Laos and Myanmar.

Yunnan is situated in a very mountainous area of the China, with high elevations in the northwest and low elevations in the southeast. In the northwest, the altitude can vary from the mountain peaks to river valleys by as much as 3,000 metres (9,800 ft). Yunnan is rich in natural resources and has the largest diversity of plant life in the whole of China. Of the approximately 30,000 species of higher plants found in China, Yunnan has perhaps 17,000 or more, so over half of the entire flora of China can be found within a single province.



Figure 2 Map indicating the geographical location of Yunnan province within China.

Yunnan is also noted for its very high level of ethnic diversity and has the highest number of ethnic groups among all of the provinces and autonomous regions found within China. Among the country's 56 recognised ethnic groups, twenty-five are found in Yunnan, 38% of the people living within Yunnan are recognised as members of ethnic minorities.

It was both the huge diversity in plants and different ethnic groups of the province that inspired me to choose Yunnan as the province I would focus on during my trip. I was intrigued to see how these ethnic groups interacted with the wild plants of the region, as well as the plants they cultivated, and what roles these played in their everyday lives, be it food, religion, medicine, textiles or construction. Out of the 25 ethnic groups of the province, the trip saw me interacting predominantly with three; these were the Yi, The Bai and the Nashi.

The trip was undertaken between the 30th of May and the 16th of June 2019. The planned route encompassed the ancient towns of Dali, Weishan, Shaxi, Shangri-la and Lijiang as well as day trips out to the Tiger Leaping Gorge and Balagezong national park.

Travelling to, and staying at the locations mentioned above, enabled me to personally engage with the locals and to discuss and share our mutual passion and knowledge of plants, as well as allowing me to observe and document their everyday plant interactions. I also visited a diverse range of botanically rich habitats where I was able to observe and document naturally occurring wild plant combinations, in the hope of replicating them upon my return to the gardens at Gravetye Manor.

Dali Old Town

After flying from Heathrow to Shenzhen, and then taking an internal flight to Kunming I eventually met my guide Yang. Together we boarded a high speed train and travelled across the province, eventually arriving at the beautiful old town of Dali.

Dali old town is rich in history and culture; both of which are clearly evident within its ancient architecture; this includes the town's walls and entrance gates, old towers, streets and temples, as well as the town's iconic three pagodas. To the west of the town lie the incredibly botanically rich nineteen peaks of Cangshan Mountain. To the east is the beautiful Erhai Lake, the second largest highland lake of Yunnan. The peaks of Cangshan can be seen from all parts of the town, towering high above it and disappearing into the clouds and distance in all directions.

The traditional houses of the old town consist of three wings looking out onto a courtyard, the area enclosed by a large, flat, pure white wall. Historically the purpose of the wall is to reflect the light of the moon at night, lighting up the courtyards without the use of electricity. The courtyards I saw were almost always full of Bonsai trees being trained into wonderful architectural shapes, mimicking the huge and gnarled trees that can be found in the wild. It is as if every household has its own bonsai expert living there, each meticulously training their huge collections of the dwarfed and stunted trees. As well as bonsais the courtyards also often contained stone bridges, flowing water, and areas for burning incense.

Within the walls of the old town I witnessed many different interactions with plants. The markets were bustling with people trading in plants of all kinds, wild collected medicinal plants including orchids and many other species were being traded for medicinal purposes. Plug plants of many vegetables were being sold, these to be taken home and planted out by the home grower. Herbs, fruits, roots, leaves and seeds of an array of edible plants were all being traded around me; the markets are a feast for the eyes, the senses and the plantsman. Many different ethnic groups attend these markets to sell their fruit and vegetable harvests, each easily distinguishable by their traditional dress.

The urban planting within the old town was beautiful, many shop fronts enhanced by exterior container plantings. Many of the street trees were impressive specimens, usually with specific meanings or stories attached to them. One that I saw had thousands of painted wooden love hearts hanging from the branches, each with the names of a couple written on them. This was the tree of love; it was a romantic spot for young couples to declare their love for one and other. There were also huge *Ficus hookeriana* trees planted around the town as boundary markers to indicate when you are passing from one area of town to the next, trees were also planted to indicate where spring water arises too, so people are able to know that there is a fresh water source nearby.

The countryside surrounding Dali is dedicated to small scale agriculture, unlike the UK, the fields are full of people and agricultural tasks are still undertaken by hand, large scale mechanised agriculture is yet to reach these areas. A variety of crops are cultivated, these include Amaranth, Garlic, Onions, Taro root, cabbages, sweetcorn, garlic chives, pak choi, kohlrabi, ginger, radishes and bean crops.

These crops were all being grown in slightly raised beds of mounded soil, each with a level top. These beds were roughly two metres in width and usually as long as the plot itself. Each of the beds are surrounded by hand dug U shaped irrigation channels that can be flooded at will by diverting the flow of water from nearby streams, this in turn irrigating the crops and then slowly filtering back into the streams nearby.

The crops produced in these fields are to feed the family, with leftovers being sold to bring income. The waste material from harvesting, failed, bolted, or pest and disease affected crops are used as livestock feed. That way the waste is then being converted into a meat, egg, or dairy crop instead. The manure from the livestock is applied back into the soil as a fertiliser and conditioner, a very efficient use of produce where each waste product benefits something in the cycle.



Figure 3 A woman of the Yi cultural minority wearing her brightly coloured traditional dress, selling wild collected plums at the market in Dali old town.



Figure 4 Bamboo leaves being sold at the market as a wrapping material for traditional Chinese dumplings, Dali old town.



Figure 5 Wild collected Orchids being traded illegally at the market in Dali old town.

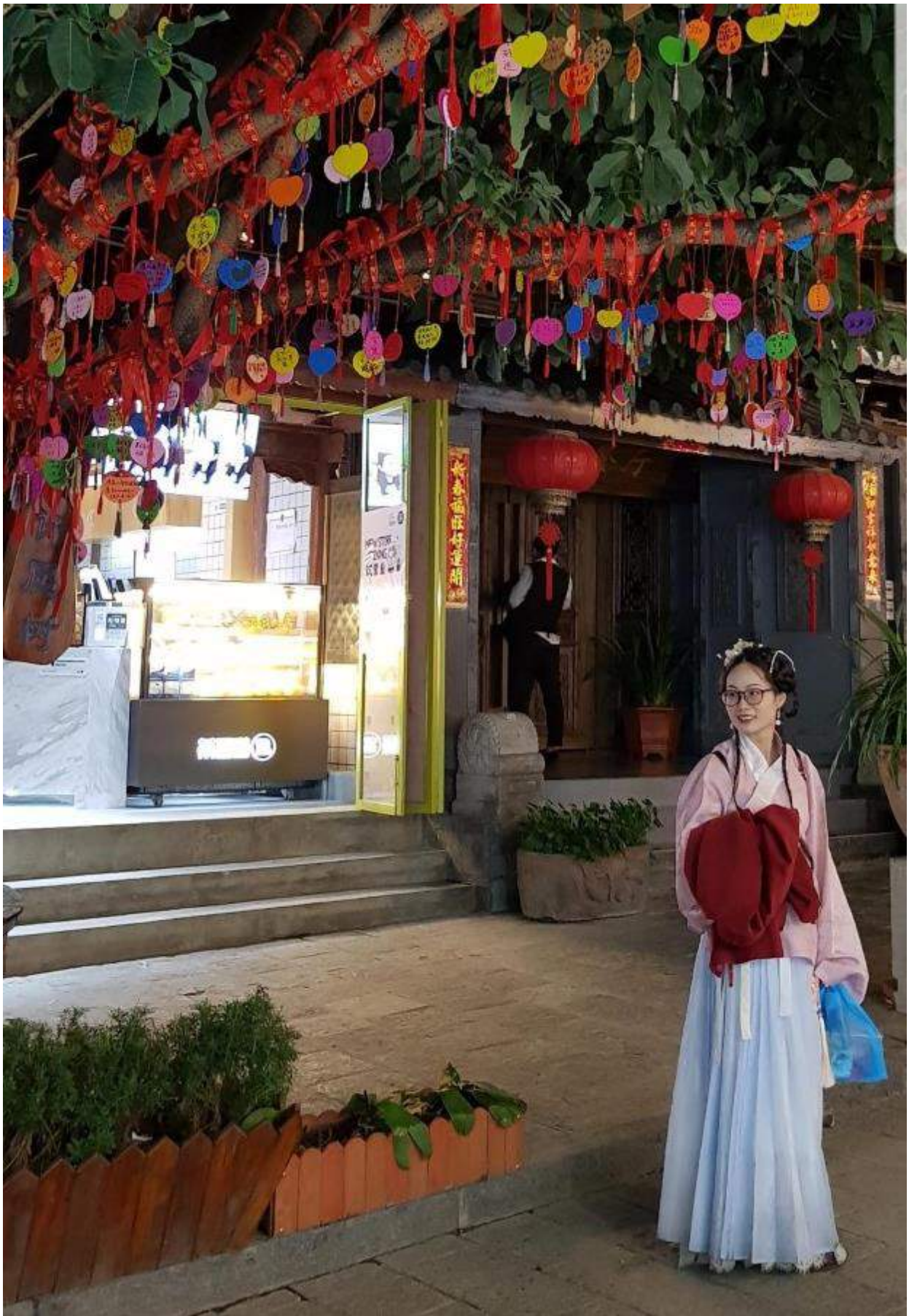


Figure 6 Girl wearing traditional Han dress, standing under wooden love hearts hanging on the branches of *Ficus hookeriana*. Tree of love, Dali old town.



Figure 7 Ancient gated entrance to Dali old town.



Figure 8 A farmer works the fields in the agricultural land surrounding Dali old town. Note the two metre wide beds and deep irrigation channels.

Cangshan Mountain

Cangshan Mountain, also known as Diancangshan, is located at the southern end of the Yunling Mountains. It measures 42km from south to north and 20km from east to west. The mountain comprises of nineteen individual peaks, each peak separated by a deep parallel ridge and valley, each valley containing its own stream, eighteen in total. Each stream joins the next at the base of the range and subsequently drains into Erhai Lake. All of the peaks reach over 3,500m in altitude, seven over 4000m and the highest summit, known as Malong, is 4,122m in altitude. The area as a whole is a UNESCO world heritage site and is a combination of beautiful natural scenery, historic sites, religious temples, interesting geology and an incredible number of plants.

The range is noted for its rich and diverse flora which consists of 2503 species, 45 subspecies and 194 varieties; these belong to 852 genera, found within 164 plant families. The canopy consists mainly of evergreen coniferous trees, below which grows a huge diversity in shrubs, grasses, and flowering herbaceous plants. Endemism is high on the range, 50 endemic species are present, these represented within 32 families. Visiting the mountains during the spring and summer months is particularly popular with Chinese tourists, as this coincides with the mass flowering of many of the *Azalea*, *Camellia* and *Rhododendron* species found on the mountain.

After taking a taxi to the base of Cangshan Mountain, Yang and I boarded a cable car and headed up to the beginning of the Jade Belt Trail. The Jade Belt Trail is 18km in length and runs horizontally along the mountain from South to North at an altitude of around 2600m. The trail takes you in and out of five valleys each carved by one of the eighteen streams. There were many botanical wonders and beautiful mountain scenes to be taken in along the way.

The main canopy trees of the lower elevations are *Pinus yunnanensis* and *Pinus armandii*, below the pines many difficult to identify ferns were growing, some of them stunning and definitely garden worthy plants. One in particular stood out to me (Figure 11), it was growing in dry shade underneath an overhanging rock, the fronds deep green and papery, the tips fading from green, through copper and into a deep red, I am yet to identify this beautiful plant. In amongst the ferns there were many beautiful understory plants, these included several species of *Berberis*, *Indigofera* sp, *Corylopsis himalayana*, *Pieris japonica*, *Funaria hygrometrica*, *Pteris cretica*, *Astilbe chinensis*, *Stachyurus chinensis*, *Gaultheria* sp.

In the higher elevations the canopy species became much more diverse, as did the understory. Many different genera were present, these including; *Populus*, *Birch*, *Sorbus*, *Schima*, *Abies*, *Picea*, *Cornus*, *Camellia*, *Rhododendron*, *Azalea*, *Larix*, *Pieris*, *Rubus*, *Polygonum*, *Berberis*, *Schefflera*, *Rosa*, *Deutzia*, *Philadelphus*, *Hypericum*, *Primula*, *Silene*, *Liriope* and *Roscoea*. So many made an appearance it was hard to keep track, I am sure we missed more than we saw. It was a fantastic day's plant hunting and definitely one of the many highlights from the trip.

Walking through the Cangshan Mountain was like walking through a botanic garden, the plant diversity so spectacular and like nowhere else I had seen. Around every corner was a new plant to stop and observe, many recognisable from English gardens, many more unknown to me.

At one point Yang and I were stopped in our tracks, we turned a corner and there right in front of us, stood a huge *Cardiocrinum giganteum* var. *yunnanense* in full flower. It was a perfect specimen and certainly my favourite find of the day.

The diversity in texture, form, structure, habit and colour of the plants on the mountain was inspiring. I felt I could relate to the first time plant hunters witnessed the sheer beauty and diversity of the Chinese flora and their realisation that these plants needed to be collected and bought back to our gardens in the UK for all to admire.



Figure 9 The Cangshan range rising high above Dali old town and surrounding agricultural land.

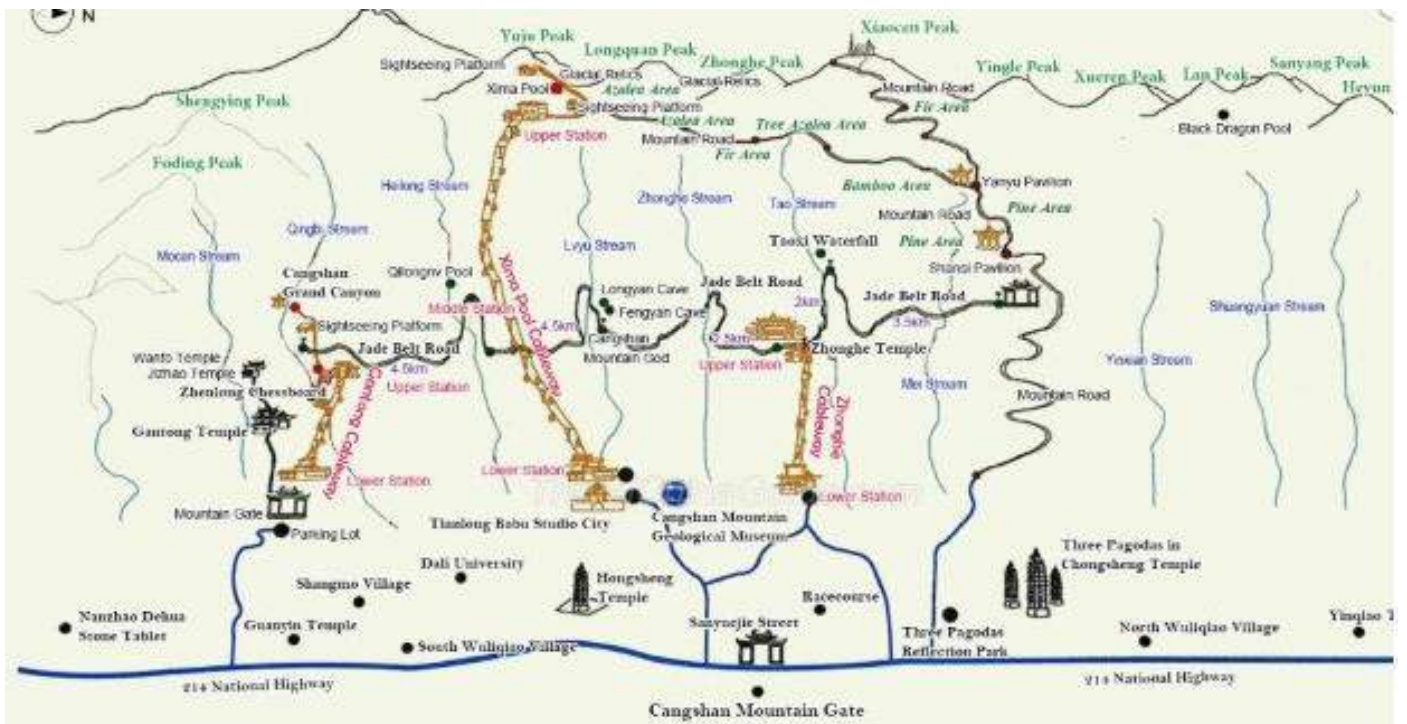


Figure 10 Map of Cangshan Mountain showing the Jade Belt Trail, highlighted in black, running left to right across the centre of the map.



Figure 11 A beautiful unidentified fern growing in dry shade under an overhanging rock.



Figure 12 *Cardiocrinum giganteum* var. *yunnanense* in full flower on Cangshan.



Figure 13 A huge 1300 year old *Cunninghamia lanceolata*, Wuwei temple, Cangshan.

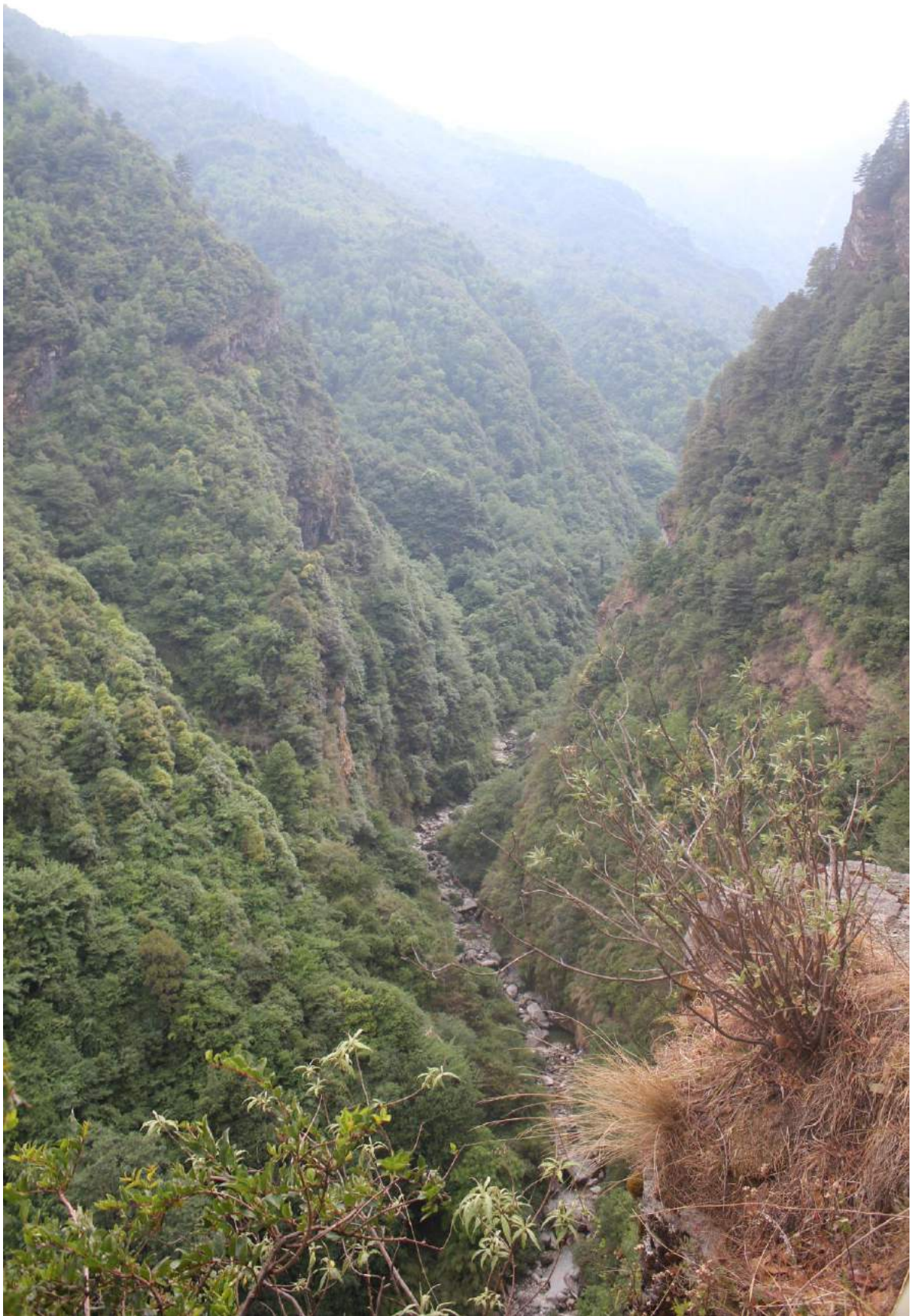


Figure 14 A steep sided wooded valley carved by one of the 18 streams of the Cangshan Mountain

Weibao Mountain, Dali

The day after visiting Cangshan Yang and I set off for Weibao Mountain. Weibo Mountain is located around 2 hours drive south of Dali Old Town. Its peak reaches 2509m in altitude and the mountain itself is sacred, housing over twenty Taoist and Buddhist temples and pavilions, it is also known to be the ancestral holy land of the Yi cultural minority. Due to the mountain being sacred, the vegetation has subsequently been largely protected and was notably different to that of Cangshan.

Many of the temples on the mountain are inhabited by Taoist monks who look after the temple gardens and care for the plants within them. Often medicinal herbs are cultivated as well as fruits, vegetables and other religiously important plants. The gardens are predominantly courtyards surrounded by rooms filled with beautiful and intriguing religious sculptures and paintings. The temple buildings are of timber construction and built in the traditional historic Chinese architectural style. The gardens contained large stone structures for the burning of incense and religiously associated herbs. The layouts of the gardens are almost always symmetrical, with the hard landscaping being constructed mainly from carved granite.

The forests surrounding the temples contained many large trees including some beautiful specimens of *Castanopsis delavayi*, *Pinus bungeana*, *Cornus capitata*, *Cinnamomum camphora*, *Keteleeria evelyniana* and *Platycladus orientalis*. Understory shrubs were plentiful, these including many species of *Schima*, *Camellia* and *Rhododendron*. Again Yang and I were stopped in our tracks, this time by a beautiful *Schefflera*, the species of which neither of us could identify. The pinnate leaves were huge, each leaflet was twice the size of my hand, the margins with huge notches, and it was a true thing of beauty. Herbaceous plants seemed few and far between, most had wilted and died back, this was possibly due to the extreme drought that was currently affecting the area.

In the garden of one of a temple known as ZhuJun, we came across a huge *Camellia reticulata*, the tallest cultivated Camellia in China in fact, this being previously confirmed by an official visit from the International Camellia Society. It measured a height of 18.43 metres and had a stem diameter of 40cm, its crown from east to west measured 6.4 metres and from north to south 7.4 metres. It is thought to be roughly 400 years old and responsibility of its care and cultivation has been passed down through the generations of Taoist monks that have, and continue to, inhabit the grounds of the temple. It seemed to me that to be a Taoist monk, is also to be a gardener.

In another of the temples, we came across a monk planting out *Roscoea* as a bedding plant. He had cleared the bed, dug it over, and had bundles of *Roscoea* bound together with plant fibres, sitting next to him in a basket. He used his miniature, short handled mattock to dig a few planting holes, he would then untangle a bundle of the plants, place them out and then firm them in. Looking around this garden was a joy, it looked as if the monks had ventured around the mountainside collecting wild plants that took their interest or had some use to them, and then subsequently arranged them into a beautiful wild garden within their temple grounds. There were Plums, Cherries, Pears and Peaches, these trees under-planted with *Arisaema*, *Polygonatum*, *Roses*, *Camellias*, *Paris* and *Fuschias*, all beautifully arranged in a naturalistic style.



Figure 15 A Taoist monk untangles a bundle of *Roscoeae* in preparation for planting out.



Figure 16 The symmetrical layout and granite hard landscaping, surrounded by traditional Chinese Architecture.



Figure 17 A stand of ancient *Castanopsis delavayi*, Weibao Mountain



Figure 18 *Cornus capitata* in full bloom, Weibao Mountain.



Figure 19 View from the peak of Weibao Mountain.



Figure 20 *Camellia reticulata*, the tallest in cultivation.

Shaxi

After travelling for a few hours from Dali we finally reached the beautiful old town of Shaxi. Shaxi (pronounced "Sha-Shi") is a historic market town located roughly halfway between the towns of Dali and Lijiang. The town started life as a trading point for tea and horses during the Tang dynasty (618 - 907), and is probably the most intact horse caravan town on the ancient tea route leading from Yunnan into Burma and Tibet. In the centre of the town is the beautiful and ancient Sideng square, which in 2001 was added to the World Monuments Watch List of the 100 most endangered sites. The square is a beautiful space and really does feel like the heart of the town, the main features of which are the beautifully painted theatre stage and an ancient specimen of *Sabina chinensis*, this tree providing some much needed shade.

Open streams flow alongside the ancient cobbled streets, the buildings are constructed from mud bricks, these created whilst excavation and construction of the surrounding rice paddies was being undertaken. The fronts of the houses are made from beautiful and intricately hand carved wooden shutters and panels. In amongst the town are some other majestic old specimens, mainly of the very rare and currently threatened *Pistacia weinmannifolia*. At the lower end of town the intimate alleyways open up to a beautiful river setting, over which arches the ancient, cobble stone Yujin Bridge. The reflection of the arch of the bridge, on the mirror like surface of the Heihui River, creates a perfect circle, which frames the incredible views of the surrounding mountains.

The flatter fertile land surrounding Shaxi is dedicated to agriculture and was filled to the brim with maize and rice. On the lower slopes of the surrounding mountains, terraced rice paddies had been constructed, along with a fascinating gravity fed irrigation system whereby each irrigated terrace fed down into the one below. These irrigation systems were fed by hand dug aqueducts which harnessed water from a nearby mountain spring known as Bailong Tan. The spring forms a crystal clear pool, over which hang magnificent specimens of *Magnolia delavayi*. The pool itself is sacred to the local Bai people and supplies all of the irrigation and drinking water to Shaxi and other surrounding villages.

As the best preserved market town on the ancient tea and horse caravan trail, Shaxi still hosts a vibrant market every Friday. The local Bai people from the Shaxi valley and the Yi people from the surrounding mountains, all come together to trade everything from fresh produce to everyday supplies and horses. Minority women are dressed in their colourful traditional clothes and men lead pack mules loaded with supplies back to their remote villages.

The markets are teeming with people, animals and plants. The produce on sale is bountiful and as fresh as can be, women sit at the roadside surrounded by mounds of ginger, garlic, onions, Shallots, chillies, mushrooms, coriander, peaches, plums, apples, pears, cherries, grapes, blueberries, skirret, lotus bulbs, quince and custard apples. Some walk past with huge bundles of wild collected *Artemesia argyi* strapped to their backs, others wave whole plants of wild collected *Paris polyphylla* whilst bartering with their customers. Men sell handcrafted horse tackle, farm tools and fruit trees. The market gave me a real sense of how important these towns were, and still are, in terms of bringing people, plants and trade together. It was easy to imagine the hustle and bustle of times gone by.

Early one morning I saw a woman of the Yi cultural minority drying her Rose petals, they were neatly laid out in wicker baskets that had been placed out in the sun. I approached her and asked if they were wild collected and what they were to be used for. She explained to me, translated via my guide Yang, that indeed they were wild collected and that both the Yi and the Bai people are known locally for their appreciation of flowers. This included their cultivation and collection from the wild for use as a food ingredient, she went on to tell me that her petals were being prepared for sale at the local market and that rose petals are particularly favoured because of their sweet flavour, pleasant aroma and nutritional benefits.



Figure 21 The ancient theatre stage in Sideng square, Shaxi.



Figure 22 Yujin Bridge over the Heihui River, Shaxi.



Figure 23 A busy scene at the Friday market in Shaxi.



Figure 24 A local woman selling her garlic harvest.



Figure 25 A Bai lady advertising her *Paris polyphylla*.



Figure 26 Farmers working at sunrise in the fields of maize surrounding Shaxi.



Figure 27 A beautiful cobble street in the historic market town of Shaxi.



Figure 28 Riding on horseback between the villages in the Shaxi valley

Tiger Leaping Gorge

After leaving Shaxi behind, and travelling for a few hours, we took a detour to the Tiger Leaping Gorge. Tiger Leaping Gorge is a scenic canyon on the upper reaches of the Yangtze River. It is located roughly 60km north of Lijiang, is part of the three parallel rivers national park, and is also a UNESCO world heritage site. At a maximum depth of 3790m from river to mountain peak, tiger leaping gorge is one of the deepest and most spectacular river canyons in the world.

The car dropped us off at Tina's guesthouse where we had some food and left our bags. After lunch we began the steep and winding hike down to the river, the views were breathtaking and the trail precarious, at some points the path was no more than a metre across and clung to a cliff edge with a vertical drop down to the raging river below. As we drew ever closer to the river we could see that there was a rope bridge crossing to the actual boulder that played a part in giving the gorge its name.

Tiger Leaping Gorge gets its poetic name from a legend that unsurprisingly involves a tiger. It is said that a hunter chased a tiger down the gorge until they both reached the water. The tiger found itself trapped between the hunter and the raging river below, left with no choice, the tiger leapt the 25 metre gap across the gorge using the boulder as a stepping stone, managing to escape the hunter.

The rope bridge had been constructed by a local family and certainly did not look particularly safe. However the sense of adventure had taken over and I had to cross it to get close to the raging torrent below, it was certainly worth it. Once onto the boulder I slid down slowly towards the river, using a rope as a safety line, until I reached a wire that I could hang onto to prevent me sliding in. It was an exhilarating moment. Once at the river's edge the true power of the water became clear. It was thundering through the gorge, surging and swirling with huge waves, the sound deafening. The view up from the water was awe inspiring too, a sheer two thousand metre cliff face, the power of the river and the scale of the cliff was enough to make me feel quite insignificant.

The trek down to the river took roughly one and a half hours and another two to climb back up. To climb back up we used the shorter but somewhat more dangerous sky-ladder route, this consisted of metal ladders held to the cliff face often by rusty bits of wire. It did feel like on more than one occasion that I was taking my life into my own hands. Amazingly some of the locals climb this route everyday, to and from parts of the trail, where they sell hikers water or charge admissions to certain viewpoints and photo opportunities along the way. It was definitely worth the detour to see the gorge and to witness the sheer power of the Yangtze first hand.



Figure 29 The view down through Tiger Leaping Gorge.



Figure 30 Me standing on the old rope bridge on the Yangtze river.



Figure 31 The steep and hazardous path down to the river.

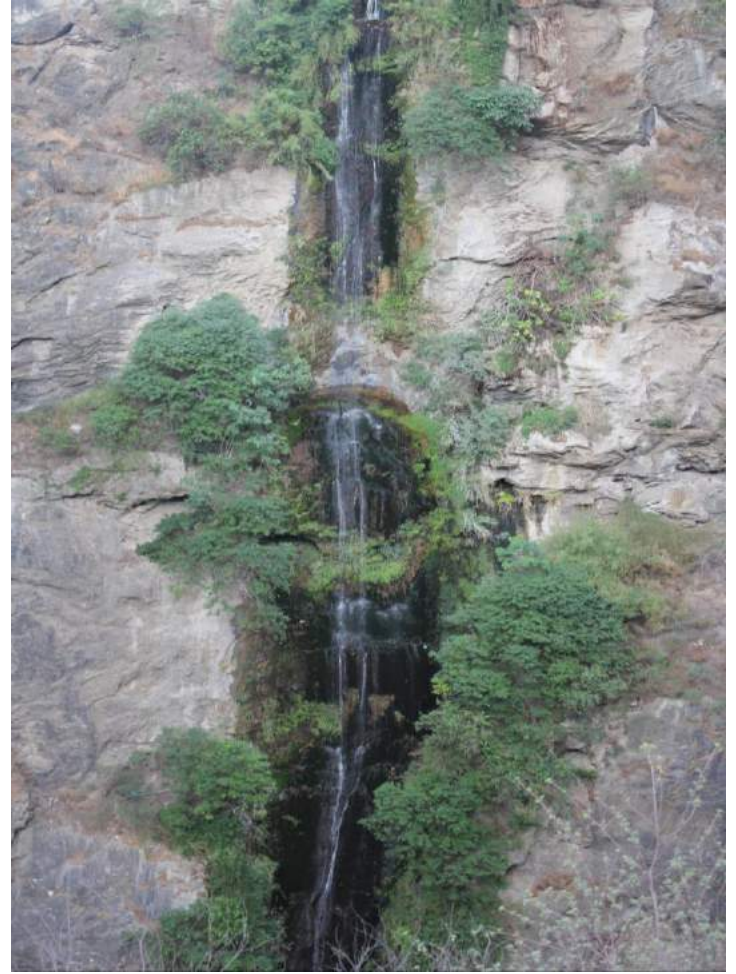


Figure 32 Vegetation clings to the rock around a waterfall.



Figure 33 Evening sunlight on the mountains of Tiger Leaping gorge.



Figure 34 The view across the rope bridge in Tiger Leaping Gorge.

Shangri-La

The next step of the journey took me to Shangri La, formerly known as Zhongdian County. Shangri-La is the capital of the Diqing Tibetan Prefecture. The town itself sits at 3160m, is located in the north west of Yunnan province, with Tibet to the west and Sichuan to the east. The name ‘Shangri-La’ comes from a Tibetan word meaning ‘a land of sacredness and peace’. The area is renowned for its unique alpine landscapes and interesting Tibetan culture. Twenty ethnic minority groups inhabit the area with Tibetans comprising the majority of the population; it is a wonderful place to experience the Tibetan lifestyle and religion. The wilderness surrounding Shangri-La is a mountain paradise filled with dense forests, alpine lakes, grasslands, wetlands, meadows and plains, a paradise for any plant lover.

The first stop after arrival was the Shangri-La Alpine Botanic Garden. Believed to be the highest botanic garden in the world, it sits between 3200 and 3800 metres above sea level. The garden has a number of different areas and habitats, from open sandy low growing heathland, to woody groves and some forest habitat. Many beautiful plants were to be seen around the gardens. *Primula polyneura* was spotted hiding in the shade under a beautiful specimen of *Rosa sericea f. pterancantha*. This is a rose that I would really like to add to the gardens back at Gravetye Manor, with the sun shining through its beautiful deep red winged thorns, these prominent on its bare arching stems, it comes into its own as winter performer. *Elaeagnus multiflora* was another of my favourites in the garden, it was in full flower and the leaves were just beginning to emerge, it was a new plant to me and another I would like to grow. Behind the *Elaeagnus* I noticed the light pink flowers of *Syringa yunnanensis*, another new plant to me and another to add to wish list.

Caragana sinica, *Rosa praelucens*, *Lonicera trichosantha*, *Androsace bulleyana* and *Quercus monimotricha* were making up the larger shrubs in the open heathland areas, growing in amongst those was a beautiful naturally occurring combination of *Icarvillea zhongdianensis* and *Stellera chamaejasme*.



Figure 35 *Syringa yunnanensis*



Figure 310 *Elaeagnus multiflora*

The following day my guide and I met up with a local plant expert and together we all headed up in to the mountains surrounding Shangri-La. There were so many beautiful plants along the way. *Thermopsis barbata* was the first to stand out, with its beautiful hairy silver foliage, dark purple flowers and sweet heady scent, these were found growing en masse in a grassy plane at the edge of the mountain road. Then as we headed on further we came across a damp meadow filled with *Iris bulleyana* which were in full flower, seeing it growing like this made me think this plant would make a striking addition to some of the damp, long grass areas we have in the Wild Garden back at Gravetye Manor. Climbing ever higher up the mountain we found our first Orchids of the trip. First up was the Chinese endemic *Cypripedium flavum*, there were so many, first one, then another, then a cluster of three, then a stand of around ten, all in unblemished full flower, it was a sight to behold.

Excited by the finds we felt we had a good location so spent quite some time scanning the nearby vegetation. More Orchids were found, large numbers of the beautifully spotted *Cypripedium guttatum*, these were present in high numbers but sparsely spread out, all hiding in the shade. Just twenty yards away another species was spotted, this time it was the tall slender flower spikes of *Oreorchis parvula*, standing out amongst the shade of low overhanging branches. Many pictures were taken and as a team we were all excited to see what else we would find along the way. The next incredible sight was at an alpine yak meadow. The fringes of which were absolutely teeming with *Primula sikkimensis* and *Primula secundiflora*, all in full bloom, it was a striking combination of yellow and purple, seeing them en masse like this was certainly more garden inspiration for areas of the garden back at Gravetye Manor.

Climbing ever higher up the mountainside, creeping to just over 3000m in altitude, we came across our first *Meconopsis pseudointegrifolia*, its multiple vibrant yellow flower heads poking out of a steep rocky slope. It was a fine specimen too, standing at around fifty centimetres and with seed heads, flower buds and open flowers all being present, another excellent find. Further along the track we found another, this time surrounded by *Primula amethystina subsp. brevifolia*, again the vibrant yellow and deep purple making a stunning combination, other beautiful plants in the surrounding vegetation included *Adonis brevistyla* and *Primula chionantha subsp. sinopurpurea*. Eventually the mountain plateaued at around 3400m, just below the main peak. The woodland opened up to an alpine lake surrounded by many species of flowering Rhododendrons, including the beautiful *Rhododendron racemosum* and the yellow *Rhododendron wardii*. In amongst the Rhododendrons we also spotted *Rheum alexandrae* and *Rheum likiangensis*, as well as the visually quite unusual *Mandragora caulescens*.

Heading back down the mountainside we took a different route to see what other plants we would come across. Most of the vegetation was predominantly the same as the way up, except for one last meconopsis, this time it was a fine specimen of the prickly *Meconopsis horridula*, its purple flowers spotted poking above some loose rocks on an alpine scree slope. All in all it was an incredible day's plant hunting, probably the best of the whole trip, there were so many beautiful plants spread along one single mountain.



Figure 311 The beautiful dark purple flowers of *Thermopsis barbata*.



Figure 312 *Iris bulleyana*.



Figure 313 A stand of *Cypripedium flavum*.



Figure 40 *Cypripedium guttatum*.



Figure 41 *Oreorchis parvula*.



Figure 42 *Primula sikkimensis* and *Primula secundiflora*.



Figure 43 *Adonis brevistyla*.



Figure 44 *Meconopsis pseudointegrifolia* and *Primula amethystina* subsp. *brevifolia*.



Figure 45 Rhododendrons flowering in front of a high alpine lake.



Figure 46 *Rhododendron wardii*.

Balagezong national park

Before heading out of Shangri-La and on to Lijiang, a last minute day trip to the Balagezong national park was arranged. The Balagezong national park is one of the core scenic reserves of the world heritage, three parallel rivers protected area. Located in the northwest of Shangri-La County, near the borders of Yunnan, Sichuan and Tibet, the Balagezong snow mountain reaches an elevation of 5545 metres and is the highest mountain in the greater Shangri-La area. At the foot of the mountain the Gangqu River, a tributary of the Yangtze, sits at an altitude of 2000 metres, and over millennia it has slowly carved out the incredibly deep and spectacular Balagezong Grand Canyon. The scenic area as a whole is roughly 167 square kilometres and is covered predominantly by primary temperate zone forest and alpine pastures.

Unsurprisingly there were lots of interesting plants to be found. Along the rivers edge, below the 1000m sheer cliffs, mixed forests of *Populus*, *Buxus*, *prunus* and *Pistacia* were present. Below the canopy of these trees was a huge variety of difficult to identify ferns as well as many familiar and beautiful climbers, these including, *Schisandra rubriflora*, *Trachelospermum jasminoides* and many species of *Clematis*. As we climbed higher up the mountainside the forest changed and became more coniferous, *Picea likiangensis*, *Pinus yunnanensis* and *Pinus armandii* being the main canopy providers. In amongst these there were huge specimens of *Cupressus torulosa* and *Cupressus duclouxiana*, some of which were growing straight out of the sheer rocky faces of the mountainsides, these were some of the most impressive wild trees I saw during the whole trip.

Higher up again and the soil layer thinned dramatically and subsequently the plants too. They became sparsely spread and gnarled and stunted in form. Above 3000m on the dry, steep, and rocky slopes, there were open scrublands of *Quercus monimotricha*, *Quercus aquifolioides* and *Betula calcicola*. On the more vertical parts of the cliff faces we were lucky enough to see naturally occurring wild bonsai trees growing out of cracks in the rock, the minimal levels of soil and water providing just enough nutrition and hydration to keep these stunted and gnarled trees alive.

Perched high up on the mountainside, within the valley, is the remote village of Bala. The village consists of several small earthen houses constructed from locally harvested materials. The views from village are absolutely stunning, panoramic views of the glacially carved mountains and the snaking river below were abundant. The villagers were really very welcoming and somewhat intrigued by the presence of a westerner, it was a pleasure to meet them.

The story goes that thousands of years ago, people fled from Tibet and eventually settled in the remote valley of Balagezong, with the hope of being hidden far enough away from the war and suffering of the time, and to survive unnoticed. From then on, the villagers lived an isolated lifestyle, producing their own food on terraces dug into the steep sided slopes.

It is believed that Bala village and its surroundings were the inspiration for the fictional land of “Shangri-La” in James Hiltons book ‘Lost Horizon’, hence why the area as a whole has now officially adopted that name. Looking out at the views of the mountains and forests surrounding the idyllic village, I could see the why this location had been chosen, it was mountain perfection.



Figure 47 A wild Bonsai of *Cupressus* clinging to the rock face.



Figure 48 A beautiful view of the forest covered glacial valley (Looking out from Bala village).

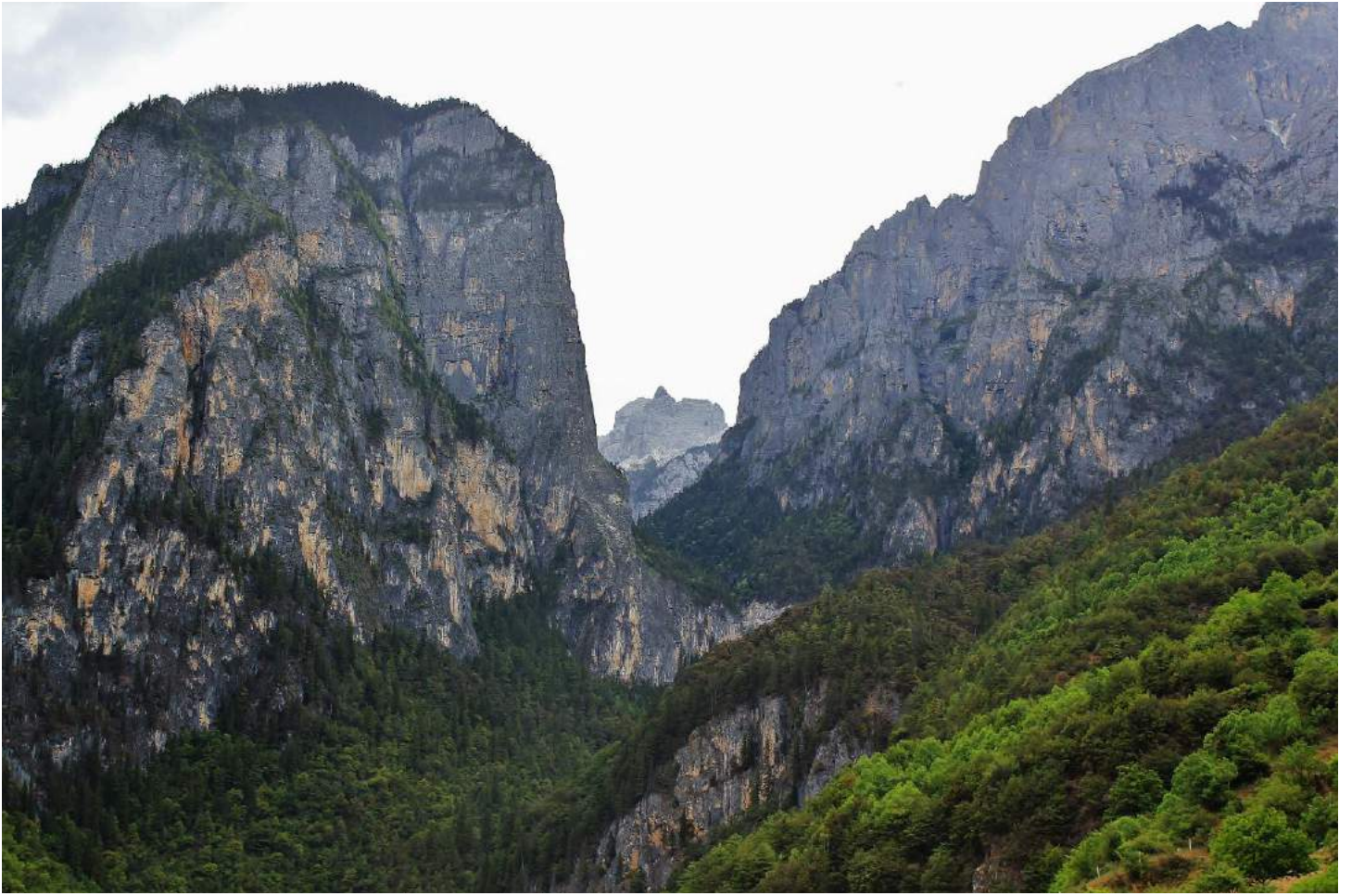


Figure 49 Shangbala Stupa, 5000m. A natural sacred Stupa on the mountain peak.



Figure 50 A line of Stupas adorned with prayer flags within the steep sided valley.



Figure 51 The view from Bala village of the Ganqu river and gorge.

Lijiang Old Town

Lijiang Old Town is located in the north west of Yunnan province and used to be the ancient capital of the Nashi kingdom. The town has now been classified as a UNESCO world heritage site and has a history dating back over a thousand years. The Old Town covers an area of roughly 4km square and is made up of traditional houses, thin meandering alleyways, historic market squares, and beautiful flowing canals. Like Shaxi, Lijiang was also a vital meeting point for trade along the ancient Tea Horse Caravan Trail, and was a melting pot for ethnic minorities such as the Nashi, Bai, Yi and Tibetans. Huge markets were held in the town's squares and people would travel from far and wide to buy and sell their traditional wares.

The American explorer and botanist Joseph Rock helped to make the wider world aware of this previously little known destination. Rock spent more than twenty five years living in the Lijiang area between the 1920's and 1940's. He spent his time there collecting native plant and bird specimens and sending them back to the west for study and scientific classification. Whilst in Lijiang he also became passionate about the Nashi people, their language and their unique culture. He imbedded himself into their way of life and was accepted into the Nashi community. With the help of local shaman priests, Rock became the first westerner to translate many of the historic Nashi manuscripts into English and is still well known in the area to this day.

Rock inhabited a small dwelling at the foot of the Jade Dragon Snow Mountain in a tiny village, just outside of Lijiang, named Yuhu. Yuhu village is set against the stunning backdrop of the Jade Dragon Snow Mountain and provides an excellent example of typical Nashi architecture. Bordering the meandering cobblestone alleyways the old wooden houses are adorned with hand carved wooden panels and bird wing rooftops and villagers can be seen in their gardens tending to their vegetables and going about their daily lives.

Yang and I made a visit to Rock's house to see where this inspirational man spent so many years. It was a small and simple, traditional Nashi residence, consisting of three rooms surrounding a small courtyard. Upstairs was his bedroom, which still contained many of his personal belongings, including his shotgun, fur coat and leather boots. Downstairs was an exhibition room containing many of the tools he used for collecting and processing plant specimens, as well as many of his personal photographs. It was a pleasure to visit his home and see where this fascinating man spent so much of his life dedicated to the plants of the area and its people.

Jade Dragon Snow Mountain reaches an altitude of 5596 metres and has been an area of plant exploration for over three centuries, this is due to the mountains rich and unique diversity of plants, it is thought that the mountain houses almost three thousand different species. Yang and I visited the area between 3000 and 3750m and were astounded by the plant diversity. This region is dominated by mixed coniferous and deciduous forest containing many wonderful woody species. *Tsuga yunnanensis*, *Larix potaninii*, *Pinus armandii*, *Abies delavayi*, *Picea likiangensis* and *Taxus wallichiana* made up the majority of the coniferous trees, with *Acer forrestii*, *Sorbus vilmorinii*, *Betula utilis* and *B. platyphylla* making up a large proportion of the deciduous canopy species. Below these trees grew an almost encyclopaedic array of different plant species, many of which were unknown to us. It was a fascinating place to explore and certainly another highlight of the trip.

On the way back down the mountain Yang and I stopped off at the Yufeng temple. The grounds were full of plants including many Roses and Rhododendrons, as well as some impressive specimens of *Magnolia delavayi*. However it is one old Camellia that makes the temple so renowned. It is reputed that for five hundred years the lamas of the temple have been caring for this plant. Meticulously pruning and training it into its unique shape consisting of hundreds of twisting branches all trained into an arbor for support. The plant is known locally as the “Camellia of Ten Thousand Flowers” and reportedly blooms in two separate colours for over one hundred days, sadly there was not a flower in sight during our visit. The Camellia is thought to be comprised of two grafts, one of *Camellia reticulata* and one of *C. hiemalis* ‘*Shishigashira*’. It was a beautiful specimen and one that would impress any gardener. Much like any gardener back in the UK, the lamas adored their favourite Camellia, however I felt that they had taken their love of it to a higher level, it was sacred to them.

Whilst in Lijiang Yang and I also visited the Black dragon pool park, which is a beautiful public park laid out around a sacred natural spring which feeds into the many canals that flow through the old town. From the park you get incredible views across to the Jade Dragon Snow Mountain. There were also many labelled plant species in cultivation, and it was an excellent example of how an amenity space can double up as a somewhere to house a botanical collection which can be used to educate locals on the plants that grow wild in the surrounding mountains.



Figure 51 The Camellia of ten thousand flowers, Yufeng Temple, Lijiang.



Figure 52 A species rich meadow at Jade Dragon Snow Mountain.



Figure 53 Mixed forest on the Jade Dragon Snow Mountain

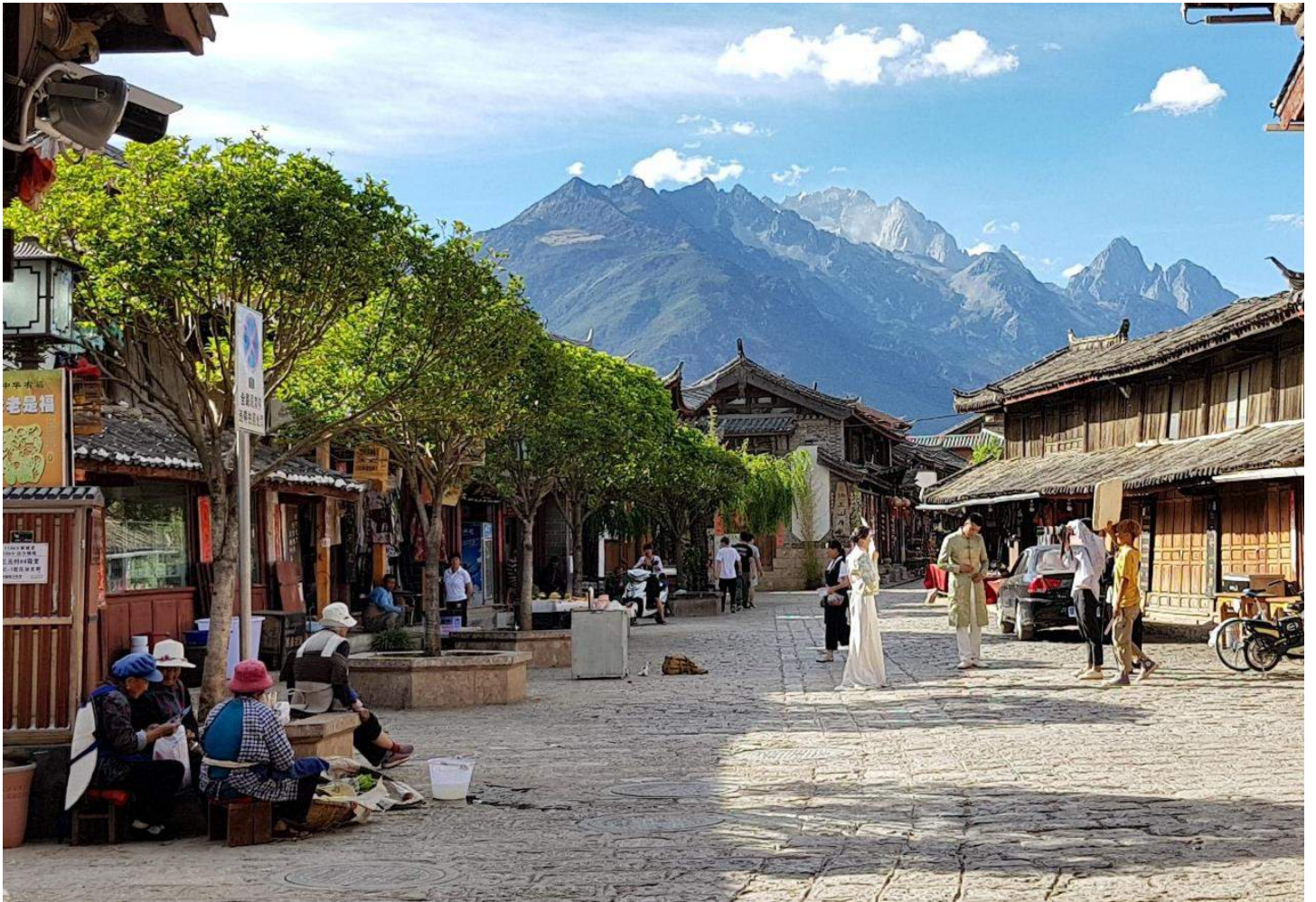


Figure 54 Jade Dragon Snow Mountain from Baisha village, Lijiang.



Figure 55 Agricultural fields at the foot of Jade Dragon Snow Mountain.

The Nashi Cultural Minority

The Lijinag area is also famous for the traditional culture of the Nashi people. The Nashi inhabitants have somehow kept their traditional culture alive within a town that has now become a major tourist destination for Chinese tourists and many others from all over the world. Many of the traditional houses and shops previously run by the Nashi have now all converted to selling souvenirs to the many tourists. But, hidden amongst the mass tourism, lies a beautiful and historic botanical culture.

“All plants are important to us; they cover the mountain we live under, they provide our food, air and clean water. We use them to feed our livestock, for firewood, medicine and clothing; we use them every single day. Without plants we could not survive, they are sacred to us”.

The Nashi people are descended from Tibetan nomads who settled in the Yangtze valleys centuries ago, they are a proud minority group who have kept many of their old traditions alive. Some still practice a matriarchal system, which was vigorously but not completely eradicated during the Communist era. Most Nashi people still practice the Dongba Jiao religion, believing that everything has spirits and that those spirits can never die. They also still grow and collect many plants for food crops, medicine, religious purposes, construction materials, textiles and also paper making. The Nashi people's lives and the plants that surround them have always been deeply intertwined.

Before the Nashi permanently settled, they used to roam the mountains with their livestock, harvesting and collecting wild plants for food. As they settled, their nomadic ways were slowly left behind and they converted to small scale agriculture, however wild plants still played a vital role in their lives and still do to this day. Wild plants are still commonly used as a food resource, but more often collected during times of crop failures due to pest and disease or extreme climatic conditions. It is recorded that the Nashi still collect up to 173 wild species, belonging to 76 families and 139 genera, for use as foraged food. Agriculture has also become part of their religion, and shamanic ceremonies linked to food production are commonplace.

The Nashi hold two shamanic agricultural ceremonies a year, one in spring and another in autumn. During the ceremonies a sacrifice of pigs and chickens is offered to the god of the five cereals (rice, two forms of millet, wheat and beans) and the six domestic animals (pig, ox, goat, horse, fowl and dog). A shaman fixes a date and then all of the families of the village will come together on that date to conduct the sacrificial ceremony.

Before the ceremony begins, all of the participating families will drive their livestock high into the mountains, the families then construct a stage out of stone and earth. This is then strewn with pine needles or a shaman's cape, as well as the five cereals, wine, and some meat. Three sacred stones are placed beside the stage and branches of pine, cypress and chestnut are placed beside those. The pig and the chicken are then slaughtered, and their blood is sprinkled onto the sacred stones, whilst the heart, liver, spleen, lungs and kidneys of the animals are then hung on the branches. The shaman then recites scriptures, and performs various rites as he offers the sacrifice to the ancestors and to the god of the five cereals and the six domestic animals. Prayers are then made for the prosperity of the livestock, that the land will yield good harvests,

and that its people will enjoy good health. Many plants play a vital role in the Dongba Jiao religion of the Nashi, and for many different purposes, below is a short list of the more common plants used by the Nashi for ritual purposes.

Arnredera cordifolia – Usage: Tubers are used as an adhesive for Joss stick production.

Artemesia argyi – Usage: A decoction of aerial plant parts are drunk as a tonic on Dragon Boat Day.

Cornus oblonga – Usage: and powdered leaves are used as incense.

Cinnamomum glanduliferum – Usage: Dried and powdered leaves are used as incense.

Cupressus funebris – Usage: Branches are dried and powdered for use as incense. Small pieces of wood are also used to light incense censurs.

Eupatorium heterophyllum – Usage: A decoction of aerial plant parts are drunk as a tonic on Dragon Boat Day.

Gaultheria fragrantissima – Usage: Dried and powdered leaves are used as incense. Leaves are used to produce fragrant oils via steam distillation.

Imperata cylindrical – Usage: Planted on top of graves to support prosperous family development.

Juniperus formosana – Usage: Dried and powdered leaves are used as incense

Juniperus squamata – Usage: Branches are dried and powdered for use as incense. Small pieces of wood are also used to light incense censurs.

Ligustrum sempervirens – Usage: Dried and powdered leaves are used as incense.

Pistacia weinmannifolia – Usage: Branches are dried and powdered for use as incense.

Populus sp. – Usage: Branches are placed on gates and walls to prevent evil spirits from entering.

Prinsepia utilis – Usage: Branches are placed on gates and walls to prevent evil spirits from entering.

Ternstroemia gymnanthera – Usage: Dried and powdered leaves are used as incense.

Traditional herbal medicine still also plays a vital role in the culture of the Nashi, and the wild plant communities that surround where they live are still heavily relied upon to as a source and supply of medicine to treat and cure many illnesses. Only wild plants are to be used as it is believed that cultivated plants will not hold the same healing properties as those of their wild cousins. Shamanic plant doctors hold an extensive knowledge of which plants are to be used to treat which illnesses.

Yang and I had the pleasure of meeting a traditional herbal doctor and discussing with him which plants are commonly used and what they are used for. Below is a short list of some of Nashi Medicinal plants that we discussed and the ailments that they are used to treat.

Aconitum carmichaeli – Usage: The roots are harvested between late June and the middle of August, these are then processed to alleviate their extreme toxicity. Processed roots are used to treat numbness caused by cold and dampness, joint pain, stomach pain, impotence, vomiting and diarrhoea.

Ainsliea yunnanensis – Usage: The whole plant is collected in summer and autumn. It is used both fresh or dried to treat stomach pain, indigestion and urinary tract infection. The roots of the plant are used to treat stomach pain and rheumatoid arthritis.

Althaea rosea – Usage: Roots are collected in autumn and winter. These are then used to treat inflammation of the small intestine, diarrhoea, urinary tract infection and inflammation of the cervix.

Anemone rivularis – Usage: The fruits are gathered in autumn when they are ripe, this is then dried and used to treat stabbing pain, snake bites, tumours and gonorrhoea. The leaves are gathered during active growth whilst the roots are only collected in autumn. These are both then dried and used to treat sore throats, a choking cough, dysentery, traumatic injuries, rheumatic pain and stomach pain.

Arisaema erubescens – Usage: Tubers are collected during autumn and winter, these are then washed and peeled before drying. The dried tuber is then used to treat stubborn coughs with phlegm, apoplexy, hemiplegia, epilepsy and tetanus. Raw tubers are used to treat carbuncles, insect stings and snake bites.

Dactylicapnos sandens – Usage: The whole plant is gathered in summer and autumn, cut into segments and then dried. It is ingested to treat traumatic injuries, high blood pressure and traumatic bleeding. The plant can also be used as a topical application to treat snake bites, swelling and pain.

Delphinium delavayi – Usage: The tuber is collected in summer and autumn, and is then soaked in lime for two days, it is then washed and cut into segments or ground into a powder. It is then used to treat infantile convulsions, pain pneumonia, stomach pain and traumatic injuries.

Erigeron breviscapus – Usage: The whole plant is collected during summer and autumn and then dried. The dried plant is then used to treat numbness caused by cold winds, paralysis, toothache and the common cold.

Gentiana cephalantha – Usage: Roots are collected and then dried in autumn. These are used to treat hepatitis. A decoction of the whole plant is used to treat sore throat, lung pain, cough and liver disorders.

Houttuynia cordata – Usage: The leaves and stems are harvested during active growth. These are then used either fresh or dried to treat coughs with phlegm, dysentery, pyretic stranguria and boils.

Hypericum bellum – Usage: The whole plant is collected year round and used both fresh or dried to treat respiratory infections, hepatitis, dysentery and kidney inflammation. It can also be applied topically to treat wounds, fractures and dog bites. The roots are harvested in autumn and used to treat common colds, kidney inflammation and mouth cavities. The leaves are gathered before flowering and are used internally to treat stomach pain and externally to treat deep wounds and snake bites. The fruits are gathered when ripe and used to treat, stomach pain, a bloated stomach and chronic cough.

Mirabilis jalapa – Usage: roots are collected in autumn, they are then washed and sliced. These are then used against tonsillitis, irregular menstruation, uterine erosion, prostatitis, urinary tract infection and diabetes. The leaves are eaten raw against furuncles, inflammation of breast tissue, infection of bones or bone marrow and eczema. The seeds are collected when ripe and used against flecks and acne.

Nicandra physaloides – Usage: The whole plant is collected in autumn and can be used fresh or dried to treat rabies, mental illness, rheumatic arthritis, colds and urinary tract infections.

Paris polyphylla – Usage: The roots are harvested year round, these are then cut into slices before being dried. The roots are then used against inflammation, pain, asthma, cough and bleeding.

Pharbitis purpurea – Usage: Seeds are collected in autumn once they have ripened. These are then dried and used to treat constipation, urinary tract infection and parasitic worms.

Scutellaria amoena – Usage: The root is collected in autumn and winter and then dried. This is then used to treat coughs, swelling and pain in the eyes.



Figure 56 Nashi elders in their traditional dress.

The Nashi have traditionally cultivated staple crops such as Maize, rice, millet, wheat, beans, Tibetan barley, sorghum and citrus. However over the years more modern vegetables and their cultivation have crept into the Nashi way of life. Fields of staple crops are often situated further from the house, often grown on manmade terraces dug into the hillsides. Closer to home are the more intensive vegetable plots for personal food production. Yang and I visited many of these smaller plots and communicated with their owners in order to gain an understanding of their production practices and what vegetables they were producing.

The smaller plots were being used to cultivate many of the vegetables we are used to seeing back in the UK, these including; potatoes, cabbages, sweet corn, shallots, leeks, garlic, chives, lettuce, chillies, spinach, pumpkins, carrots, swede and turnips. There were a few unusual food crops being grown, including many different shaped and coloured radishes and also lily bulbs. Lots of fruits were also being produced, including apples, pears, grapes, blueberries and blackberries. Often the fruit trees/shrubs were planted sparsely throughout the plots, with the vegetables being grown beneath or between them.

Many of the vegetable plots were entirely organic and managed most commonly by elderly women who had learned and retained the techniques used by the generations of growers before them, these skills being developed before the introduction, and subsequent reliance upon, of agricultural chemicals and fertilisers to China. Many of the areas where the vegetable plots were situated were not far from extremely rich ecosystems so lots of predatory insects and animals were present to help keep pests under control. Any crops that were affected by pests, had bolted, failed or were no longer of use, would be fed to the livestock.

Crop rotation systems were being practiced, as well as intercropping and double cropping. More often than not crops were grown in blocks rather than rows, these directly sown or planted out from plugs on slightly raised beds of mounded soil surrounded by irrigation channels. Each crop would be rotated each year into a different block, ensuring that the same crop would not be grown on the same soil two years in a row. Faster growing crops such as radishes were being inter-planted between larger crops that take longer to mature such as cabbages etc, maximising the amount of food produced in what was often a relatively small area.

The irrigation systems were intricate and somewhat fascinating, with water being channelled and managed over extremely long distances and drops in elevation. The water supply is also somehow equally distributed between all of the vegetable production plots, with none being short of a supply, even whilst others are channelling water. The Nashi are very conscious about not polluting or wasting water and have developed an impressive system whereby their spring water is channelled through three separate pools, before being used on the fields. The first pool is used for drinking water, the second for cleaning vegetables and the third for washing clothes and irrigating the crops.

Some plants of each crop were deliberately being left to go to seed, these seeds then being collected, dried and stored each year, by each family, in preparation for sowing next years crops, or for producing plug plants to be sold at market for a profit. Many of the varieties being grown were probably extremely old and on many occasions apparently new seed had not been purchased for many generations.

A variety of different materials were being used as soil conditioners and fertilisers, most commonly crop waste from the fields of staples, mixed with pig, cow, horse or ox manure, however on some occasions human waste was being used. Mulches were common and were often nutrient rich aquatic plants, collected from nearby lakes or rivers.

In the smaller vegetable plots hand tools and manual labour were being used for all soil preparation, planting, harvesting, weeding and maintenance, with no mechanical machinery being present. However in the larger plots livestock would be used to plough soil in preparation for cultivation.

The Nashi people were very welcoming to Yang and I, and took great pride in showing us around their vegetable plots and discussing with us their techniques and processes. It was a joy to spend time with them and to gain a better understanding of their practices, beliefs and interactions with plants, be them wild or cultivated.



Figure 57 A Nashi woman tending to her Vegetable plot.



Figure 58 Aquatic plants being used as a nutritious mulch around pear trees.



Figure 59 A traditional Nashi vegetable plot.



Figure 60 Urban vegetable production, Lijiang Old Town.



Figure 61 Garlic chives mulched with fresh animal manure.



Figure 62 A Nashi woman carrying spent crops to feed to her livestock.

Conclusion

The aims and objectives of the trip were as follows;

1. To observe and document the organic fruit and vegetable production within the Nashi cultural minority.
2. To study and document the interactions the Nashi have with the wild plants surrounding their villages.
3. Observe, document and identify the species within some of the many wild plant communities and unique plant habitats found within the mountains of Yunnan province.
4. To gain a better understanding and further my studies of alpine plants of the Himalayas.

I feel that I successfully achieved the aims and objectives I set out to achieve, to the best of my ability, within the time frame available. This trip allowed me to observe and document the organic fruit and vegetable production techniques of the Nashi cultural minority. This was achieved by visiting subsistence farming villages within the surrounding areas of Lijiang, and speaking to villagers about their growing/harvesting techniques, the types of crops they grow, the tools they use, irrigation, crop rotation, and how they manage pests and diseases. By meeting these villagers I also gained the opportunity to study and document their interactions with the wild plants that surround their villages and what they are used for.

The trip also allowed me to observe, document and identify the plant species present within some of the many wild plant communities and unique plant habitats found within Yunnan province. Studying these plant communities has given me the inspiration to recreate some of the natural plant combinations that I have seen in Yunnan, with the hope of adding them to the gardens at back at Gravetye Manor where I work. Observing these plant communities in the wild has also allowed me to gain valuable knowledge on the differences in environmental conditions required by these plants in order to thrive, and a better understanding of their cultivation requirements when attempting to grow them here in the UK.

I was also able to gain a better understanding of the unusual alpine plants of the Himalayas by visiting alpine botanic gardens and the high alpine environments where these plants naturally thrive. Whilst visiting the botanic gardens, my guide Yang also introduced me to many of his contacts with the aim of strengthening connections between their gardens and ours here in the UK.

This trip as a whole was a life changing experience and one that I will never forget. To travel to China and follow in the footsteps of some of the worlds greatest historical and modern plant hunters was an absolute privilege and a pleasure. China is a fascinating country and one that is teeming with botanical riches, incredible views, astounding mountain ranges, and interesting cultures. The knowledge and experience gained from this trip is immeasurable, and I am sure it will continue to contribute to my horticultural career for many years to come. Thank you to all those that helped make this dream trip become a reality.

Summary of costs

Air Fare	£655.02
Train	£101.23
Car hire	£621.19
Accommodation	£563.67
Food	£336
Visa	£151
Insurance	£13.79
Entrance fees	£75.56
Guide/translator	£1073.84
Total cost	£3591.30

Plant List

Abies delavayi

Acer forrestii

Adonis brevistyla

Androsace bulleyana

Angelica sinensis – An important plant used medicinally by the Nashi shamans for rituals and as a traditional medicine.

Artemesia argyi

Astilbe chinensis

Bauhinia sp.

Begonia sp.

Berberis mouillacana – Wild flowers are harvested as a snack whilst travelling.

Betula calcicola

Betula platyphylla

Betula utilis

Buxus sp.

Camellia reticulata.

Caragana sinica – Flowers and seed pods eaten as a vegetable.

Cardiocrinum giganteum var. yunnanense

Castanopsis delavayi – Used as a construction timber.

Celtis tetrandra

Cirsium sp.

Clerodendrum sp.

Combretum indicum – Used in making traditional Nashi jewellery.

Corallodiscus sp.

Coriaria nepalensis

Cornus capitata.
Corydalis sp.
Corylopsis sinensis
Corylopsis himalayana
Cinnamomum camphora
Cryptomeria japonica
Cunninghamia lanceolata
Cupressus duclouxiana
Cupressus torulosa
Cypripedium flavum
Cypripedium guttatum
Davidia involucrata
Debregeasia orientalis
Deutzia sp.
Elaeagnus multiflora
Eritrichium thymifolium
Euphorbia jolkinii
Funaria hygrometrica
Hydrangea sp.
Incarvillea sinensis
Icarvillea zhongdianensis
Iris bulleyana
Jasminum yunnanense
Juniperus chinensis
Keteleeria evelyniana

Larix potaninii

Ligustrum lucidum

Lonicera trichosantha

Lycopus lucidus – Rhizomes are eaten as a vegetable and also used in traditional Chinese medicine.

Mandragora caulescens

Magnolia delavayi

Magnolia wilsonii

Mahonia lomariifolia

Meconopsis horridula

Meconopsis pseudointegrifolia

Michelia maudiae

Morina nepalensis var. *alba*

Musella lasiocarpa – Native to Yunnan, One of the six plants that the Bai ethnic minority grow in Buddhist temples.

Myrica rubra – Chinese bayberry

Nicandra physalodes – Seed used by the Nashi ethnic minority to make a jelly like snack.

Ophiopogon sp. – Roots harvested and used in Traditional Chinese medicine.

Oreorchis parvula

Ottelia acuminata – Whole plant is harvested as a vegetable. Plant can only be found in clean flowing water.

Paris polyphylla – Root used in traditional Chinese medicine, often made into a formula used to treat trauma and bleeding.

Pedicularis sp.

Phoebe zhennan – A large tree endemic to Guizhou, Hubei, and Sichuan provinces. Currently threatened by habitat loss and is now under protection in China. Historically timber from this tree was so valuable that only the Royal family were able to use it, it

was used in the construction of the Forbidden City. The wood is particularly valuable when it is partially fossilised and is then referred to as “Wu Mu” or “Black Wood”.

Phytolacca acinosa

Picea likiangensis

Pieris japonica

Pinus armandii

Pinus bungeana

Pinus Yunnanensis

Pistacia chinensis

Pistacia weinmannifolia – Foliage used to make incense for ritual purposes.

Platycladus orientalis

Polygonatum sibiricum – Stems and flowers widely used in Traditional Chinese medicine.

Primula amethystina subsp. brevifolia

Primula polyneura

Primula secundiflora

Primula sikkimensis

Primula chionantha subsp. sinopurpurea

Primula viallii

Princepia utilis – Oil extracted from the seeds is highly prized as a food and also widely used in the production of cosmetics.

Pseudocydonia sinensis – Chinese Quince, widely cultivated in Dali. Fruit can be preserved by candying, drying or being made into vinegar.

Pteris cretica

Pueraria montana var. lobata – Tubers used in Traditional Chinese medicine.

Punica granatum

Pyracantha crenatoserrata

Pyrus calleryana

Quercus aquifolioides

Quercus monimotricha

Rosa sericea f. *pteracantha*

Rosa praelucens

Roscoea sp.

Rheum alexandrae

Rheum likiangensis

Rhododendron haematodes

Rhododendron racemosum

Rhododendron wardii

Sabina chinensis

Sagittaria sagittifolia – Bulb eaten as a common vegetable

Schisandra rubriflora – Fruit used as traditional Chinese medicine.

Scutellaria baicalensis

Selaginella sp.

Smilacina japonica

Sorbus vilmorinii

Sophora japonica – Flower buds and seeds used in traditional Chinese medicine.

Stachyurus yunnanensis

Stachyurus chinensis

Stellera chamaejasme

Syringa yunnanensis

Taxus wallichiana

Thermopsis barbata

Trachelospermum jasminoides

Tsuga chinensis

Tsuga yunnanensis

Typha angustifolia – Young shoots eaten as a Chinese delicacy.

Vaccinium bracteatum

Zizania latifolia – Common name Manchurian wild rice, it is the only member of the wild rice genus *Zizania* that is native to Asia. Both the stem and the grain are edible. Often gathered from the wild and was once an important grain crop of China.