

Puri and Primulas

An Alpine Garden Society Expedition

Indian Himalaya, Himachal Pradesh: 2nd - 24th July 2011



Adam Bowley- A.G.S./Merlin Trust funded placement

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Group picture- Trek 1, courtesy of Tim Lever



Group picture- Trek 2, courtesy of Tim Lever

Group picture - Trek 1

Back row, left to right;

Barbara Murray, Claire Cockcroft, Jean-Francois Gambin, Hugette Weiss, Margaret Thorne, Pieter Meijer, Peggy Anderson, Tim Lever, Odd Kletтели, Nicola Starkey, Adam Bowley, Rosie Steele, Joan Read, Celia Wright, Iain Wright, Sheena Hesketh, Susan Read

Front row, left to right;

Sunil, Jing Dol, Amajit, Nawang, Sunda, Tashi, David Thorne, Bir Singh, Tenzin, Ranjit, Mukesh, Satish Kumar, Cabal Ram, Ashok Kumar, Daya Ram, Deepak Kumar

Group picture - Trek 2

Back row, left to right;

Odd Kletтели, Jean-Francois Gambin, Peggy Anderson, Gotje Hunke, Hugette Weiss, Dirk Hunke, Adam Bowley, Joan Read, Pieter Meijer, Susan Read, Iain Wright, Tim Lever

Middle row, left to right;

Rup Singh, Barbara Murray, Celia Wright, Nicola Starkey, Sheena Hesketh, Claire Cockcroft, Rosie Steele, Maragret thorne, Tenzin, David Thorne, Virender Kumar, Mohan Singh, Nawang

Front row, left to right;

Jing Dol, Tashi, Amajit, Sunda, Sunil, Ran Jit, Bir Singh, Dalip Singh, Tek Chand

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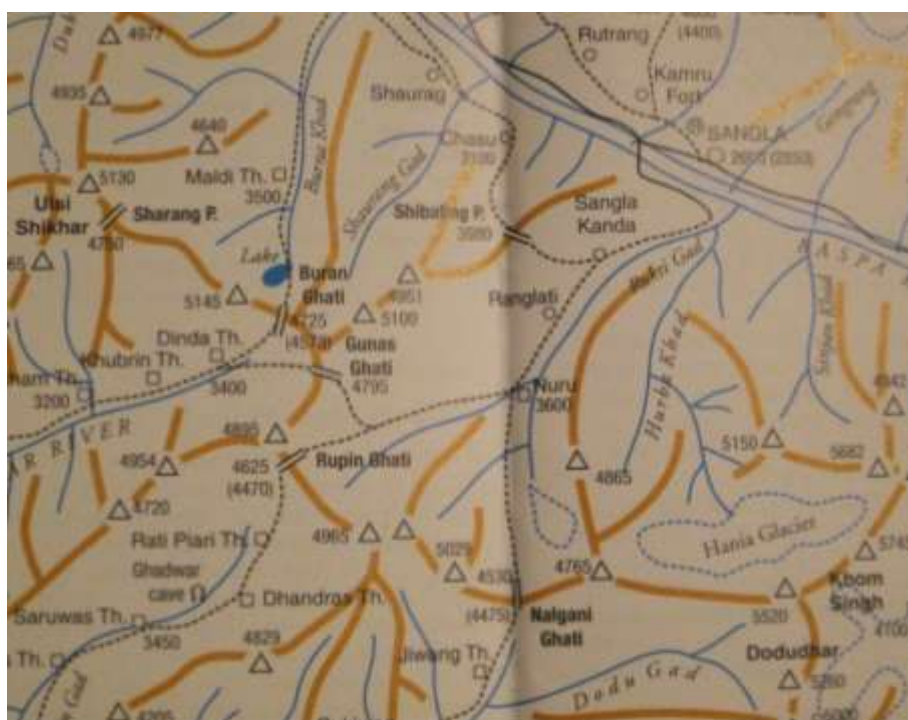
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Introduction

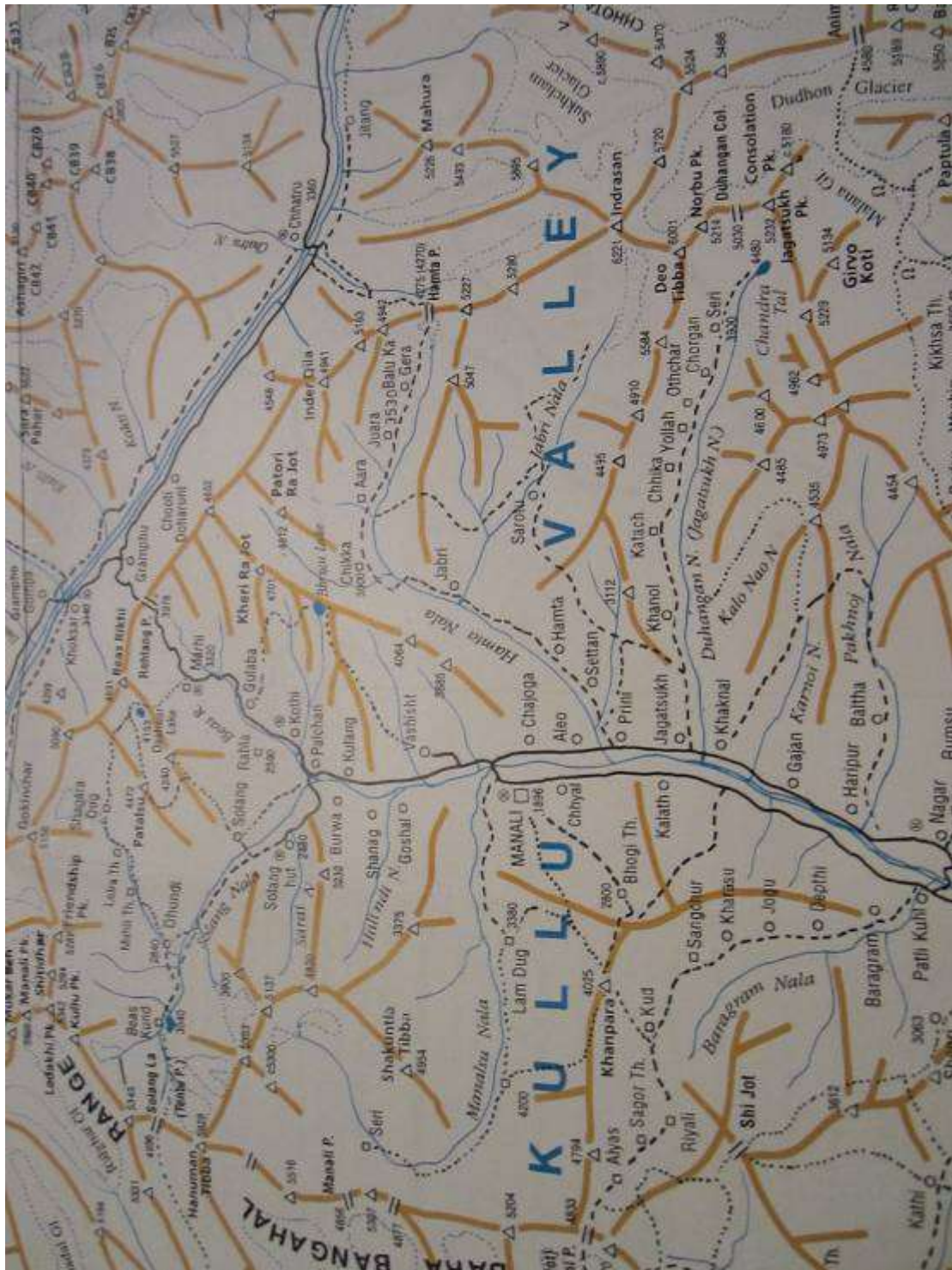
This report serves as an account of the AGS tour to Himachal Pradesh in the Indian Himalaya from 2nd - 23rd July 2011, lead by David and Margaret Thorne. Located in the southern part of the state, to the south of the Baspa River and west of the Hania Glacier, the first trek explored the valleys of the Rupin and Nalgan passes. The second trek commenced with the crossing of the infamous Rohtang La, lying to the north of Manali, from where we followed the Chandra River, separating the Kullu Valley and the Central Lahul Massif, before turning south-east to cross the Hampta Pass.

In the main body of the text I have attempted to outline the structure of the tour in an easily digestible manner, highlighting species of interest. It should be noted that we encountered a far greater variety of plants than are mentioned or depicted here, the inclusion of which would have made for a rather unwieldy document. I hope that I have included enough detail to provide the reader with a feel for these mountains and the plant communities that inhabit them, although there is no substitute for experiencing these plants in their own environment. I would encourage plant enthusiasts to make the effort to explore this region either in a group or on their own terms, as it will indeed bring great reward.



Above – Area covered in Trek 1.

Indian Himalaya Maps; Sheet 6, Himachal Pradesh – Kalpa Kinnuar, Gya, Spiti and Shimla North Areas. Leomann Maps, UK



Above - Area covered in Trek 2
 Indian Himalaya Maps; Sheet 5, Himachal Pradesh – Kullu Valley, Parabati
 Valley & Central Lahul. Leomann Maps, UK

Trek 1

2nd July- Meetings, greetings and farewell to Blighty

At 7.00 a.m. on a Saturday morning I awoke with excitement in anticipation of an adventure to the Roof of the World, the Himalaya. We were instructed to pack lightly, but with my backpack bulging, filled to the brim with extras such as waterproof clothing, sleeping bag, maps and an array of emergency medicines I wondered if I had over done it. There was still several hours until I had to catch a bus to Heathrow from Woking station so after double checking the list and contents of said bag I decided that I was merely well prepared as I sat back and nursed a final cup of tea.

I had been waiting for an hour before I spotted them. My fellow trekkers, alpine enthusiasts clad in checked shirts, sporting well worn walking boots and an air of urgency were gathering in a circle around a smart gentleman with an A.G.S. placard. With relief I walked over to the group and introduced myself their kind faces and jolly disposition dispelling any remnants of anxiety about the forthcoming trip. After the checking-in of bags and a fond farewell from the smart gentleman (Martin Lindop), we passed through security and milled around the duty-free shopping and drank coffee prior to boarding the non-stop overnight flight to New Delhi.

3rd July – Namaste New Delhi!

After a trouble free flight the group convened inside the glistening terminal at New Delhi International Airport. We proved an eclectic mix of nationalities with Dutch, Swiss, German, Norwegian and American representatives tempering our British reserve. As we stepped outside to meet our beaming tour leaders (David and Margaret Thorne) and guide (Tenzin) the wave of gangetic heat enveloped us the blaring horns and stench of car fumes in the moisture-laden air was indeed confirmation that this was India.

As we rounded an amenity planting of *Lantana camara*, a modern air-conditioned coach far exceeded my expectations and was a vast improvement on my memories of hard going yet colourful Indian travel. Bleary eyed, we hunkered down on the coach and prepared for our long 350km haul across the plains of Haryana toward our final destination, Himachal Pradesh.

If pushed I could sum up my impression of the Gangetic Plains in a single word, flat. Flatter than Norfolk the plains are characterised by extensive agricultural plantings of rice, wheat and maize, intermittent flares of crimson *Canna indica* flowers puncture the wayside ditches and despite its American origins, remind me of its less used common name “Indian Shot Plant” and the alleged use of its hard seed as an emergency ammunition substitute in periods of unrest under the British Raj.

Lunch was a pleasant affair, thali and a cup of sweet chai for me, whilst others quenched their thirst with bottled water and fizzy pop. Thali is a wonderful solution for the undecided; many tasters of curry based delights to suit your fancy with a smattering of chutneys and japatris along the way. After refuelling we piled back into the coach and continued north.

It was 6 o'clock when we reached Himachal Pradesh, a restricted speed limit meant we had lost time but as the light was fading we snatched glimpses of trees as the road wound its way into the Himalayan foothills. Through the window I saw shadowy outlines of what I took to be *Typhonium venosum* (syn. *Sauromatum venosum*) its sinister leaflets poking through underlying vegetation. Sometime later a call of "Shimla" rang out across the bus. This however proved wishful thinking on the part of our tour leader David Thorne, as the lights were those of Solan, a town laying some 25kms prior along winding hillside roads to our hotel in Shimla.

As the coach neared the old summer capital of British India the group and luggage were decanted into a patiently waiting convoy of cars. This was our first meeting with the men whom would come to drive us up and down the winding valleys of the state in the coming weeks. After a brisk if somewhat stunted ride through crowded streets, our tired and hungry party finally arrived at the Woodville Palace Hotel nestled in the boughs of fine specimens of *Cedrus deodara*. The solemn head of a long expired water buffalo presided over a hearty buffet of curry, rice and japatris from the dining room wall, before folk drifted off to their rooms for a night's rest in preparation for the onward journey in the morning.

4th July – Shimla to Sarahan

In the morning I awoke to enjoy a final hot shower for some time to come before thinking about exploring the area in the vicinity of the hotel. This was not done before I took the opportunity to chat with my roommate Tim Lever of Aberconway Nursery in north Wales. A very agreeable chap, it transpired that he had himself been a Merlin on previous A.G.S. trips to China and Bhutan, being a mine of useful information as well as an avid alpine enthusiast.

Outside our room I noticed a steep slope leading to a copse of *Cedrus deodara* and hoped that I may find something worthwhile in the surrounding vegetation. I scrambled quickly through the undergrowth and exposed water pipes and was not disappointed when I came across several sizeable clumps of *Arisaema tortuosum* beneath the trees. Although a common understory plant in the region with a widespread distribution from Myanmar into the Himalaya and as far south as Sri Lanka (Gusman and Gusman, 2002) this stately aroid is an old favourite and easily cultivated in the British woodland garden. The plants were 1.5m at their tallest and lacking markings on the pseudostem, the s-shaped spadix appendage was a dark brown in colour and the spathe tube a uniform lime green with very faint white markings (Fig.1).

Once everyone was packed and well fed we assembled by the vehicles as our luggage was loaded onto roof racks and well wrapped in tarpaulin to prevent water damage. Already at an altitude of some 2150m and with a full days drive ahead of us we set out on the 180km journey to Sarahan.

As the ride commenced the sun began to beat down on the vehicles and people began to sweat. Open windows provided some relief whilst allowing for dust and close-up encounters with the wild Indian driving style. With nature's inevitable call along the way came our first chance to scour the roadside verges under clearings in *Cedrus* and *Picea* forest. The eagerness of the group became quickly apparent as we soon

discovered *Aquilegia pubiflora*, *Anemone rivularis*, *Potentilla nepalensis* in addition to more arisaemas namely, *Arisaema jacquemontii* and *A. propinquum*. A sharp-eyed Jean-Francois also spotted a solitary *Roscoea alpina* forcing its way through a crack in a rock face. Of the aforementioned plants *Anemone rivularis* had a delicate charm its perfectly symmetrical pure white petals flushed underneath with a shot of purplish blue (Fig. 2).



Fig. 1 - *Arisaema tortuosum*, Shimla



Fig. 2 - *Anemone rivularis*, showing contrast in the front and rear of the petals.

Our next stop yielded the adorably fuzzy foliage of *Bergenia ciliata* and extended scapes of the white flowered *Androsace lanuginosa*, gripping onto the rock for dear life in the baking noonday sun whilst Himalayan Griffon Vultures circled majestically above. After a picnic lunch at the amusingly named Hatu, a rummage in the surrounding woodland revealed similar species, although there were good examples of *Arisaema propinquum* and tantalising foliage of an unknown orchid species whose flowers had long since gone over.

At 6 pm after descending into the Sutlej valley and one flat tyre later the convoy finally ascended to Sarahan, a village boasting a fine temple to the Hindu goddess Kali. At a modest camping site on the outskirts of the settlement, a slightly frazzled group of individuals were met by their guides in a touching traditional way, the offering of silk scarves or katas symbolising friendship and devotion. In the Himalayan regions influenced by Tibetan Buddhism katas are often given as a gesture of goodwill as well as auspicious offerings to the clergy.

With the sun setting on the horizon and the echoes of chanting from the temple below filling the air I caught glimpses of the Himalayan range between the clouds and my heart filled with joy, as I knew for certain that this was where we were going.

5th July - To the Hills! Well, nearly...

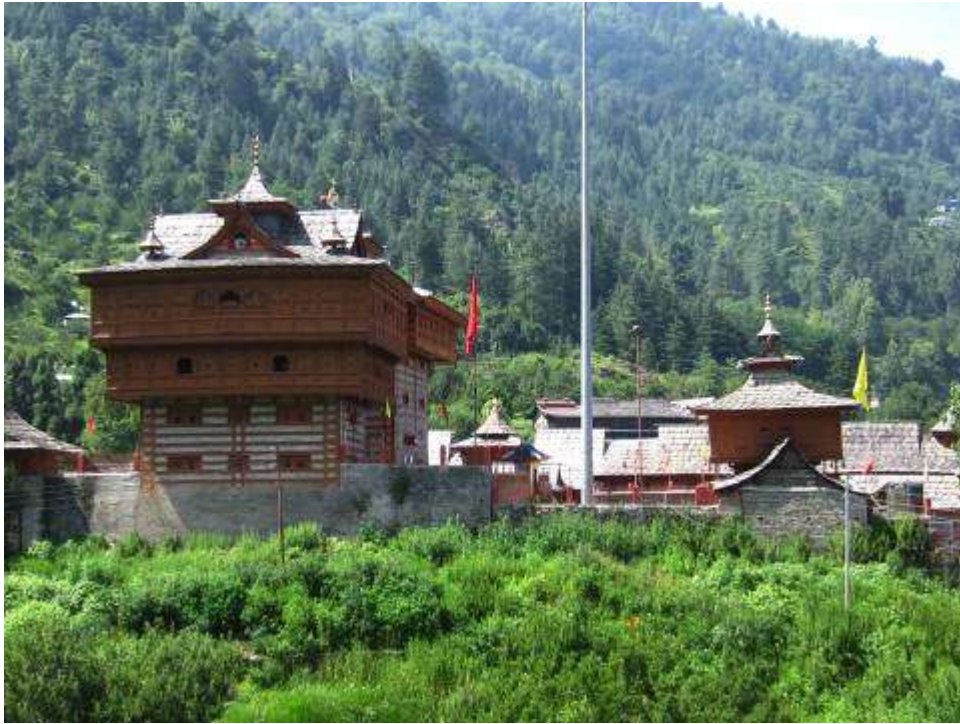
As light began to break through the curtain of night chanting and the ringing of bells called the faithful to worship at the Bhimakali Temple in the village below. The Hindu goddess is worshipped here in her benevolent aspect as Mother in contrast to the depiction of her in wrathful manifestations and as the consort to Shiva, one of the trinity of principle gods in mainstream Hinduism.

After my first experience of “Bed Tea”, where one is provided with a hot mug of the rejuvenating liquid through the tent flap, I washed and proceeded to survey the plant life in the surrounding area. Species of note included the majestic *Pinus wallichiana*, distinguished by its five needles and clusters of 2-3 long pendulous cones (Polunin & Staunton, 1987), the aroid *Typhonium venosum*, *Mazus surculosus* a diminutive member of the Scrophulariaceae and the dainty purple/blue flowers of *Delphinium cashmerianum*.

Once the party had eaten and was prepared for departure, bags were packed and we descended on foot into Sarahan via winding paths flanked by small dwellings sporting trees of apple and almond for a closer look at the temple. On arrival all were asked to divest shoes, socks, cameras and any weapons and leather items of clothing. Tim Lever and our head guide Tenzin safeguarded the belongings and we filtered in small groups through the complex (Fig. 3). With head covered and accompanied by Nicola Starkey, I passed through the finely carved doorways adorned with intricately worked silver depicting the various Hindu deities toward the main temple, a tall tower at the top of which a shrine room was devoted to the Mother goddess. In keeping with custom we rang the bell stationed here and descended respectfully, retracing our steps before assembling outside.

The day's onward journey was hot and rather uneventful. The views of the Sutlej Valley were beautiful and after lunch in the shade of a small apple orchard on the banks of a river we ascended once more on a dusty pothole ridden road, scarred by the unpredictable fall of boulders from the cliff face above. Continuing on the rough track we passed by a hydro-electric facility and neared the town of Sangla at 2700m large clumps of *Incarvillea arguta* protruded from fissures in the rock face, their dainty pink trumpet shaped flowers nodding in the wind.

The campsite at Sangla was nestled in the town under a large specimen of *Juglans regia* surrounded by new hotels, some of which still under construction. Here we rendezvoused with the horsemen, ponies and mules that would accompany us on the first trek and without which our venture would have proved near impossible. As the sleeping tents were erected the party assembled in the Mess Tent for tea, biscuits and excited chatter about the adventure that lay before us. Our position at the foot of the mountain range afforded glimpses of the peaks above us crowned with pure white snow and swathed in billowing cloud. Dusk heralded the call to dinner, a review of the plants and birds seen that day and final packing preparations for the first day of trekking in the morning.



Above -Fig. 3 Bhimakali Temple, Sarahan
Below - Fig. 4 Ponies grazing around the campsite at Sangla

6th July – The Trek to Sangla Khunda, altitude 3350m

It was a leisurely 7 o'clock start to the first trek, after a filling breakfast on a misty, damp morning we donned our gaiters and boots for the first time as the luggage was packed into waterproof bags and loaded onto the ponies. Walking through the winding streets and alleys of Sangla, the tightly packed buildings looming above us, we descended toward the river past the billowing white plumes of *Sorbaria tomentosa*. Coming up to the last stretch of road we passed under an archway, the underside of which depicting a colourful mandala of the five Buddha Families (Fig. 5). The central deity in this painting is Akshobya 'The Unshakeable One' signifying the purification of anger into primordial awareness (Thrangou, K. & Schefczyk, S., 2002).

Pleased at this auspicious sign I packed my camera away and hurried to catch up with the rest of the group as they crossed the bridge decked in prayer flags over the roaring river. Once all had assembled safely on the other side, we began a steep ascent into forest characterised by *Cedrus deodara*, *Pinus wallichiana* and *Picea smithiana*. From here the differences in fitness and age of the group soon became apparent but everyone meandered along at a suitable pace and we all happily waited for people to catch up at different stops along the way.

The road gradually became a muddy track flanked by fruit trees and small vegetable plots. Over retaining walls the quaint yellow flowers of *Salvia nubicola* and airy umbels of *Bupleurum falcatum* contributed to this rural idyll until I noted fine houses equipped with satellite dishes reminding me that this was still the 21st century.

Light rainfall resulted in the unleashing of newly acquired umbrellas and unpacking of waterproof jackets but this was in all honesty a great relief from the heat of previous days. A hawk-eyed Tim Lever spotted a meadow flushed with the candy pink flowers of *Pedicularis siphonantha* and like schoolboys on hearing the dinnertime bell we scaled the stonewall, including a rather surprising 6ft drop on the other side, and waded into the dripping wet foliage for a closer look. A most peculiar flower, hot pink in colour with a white eye, the three main perianth segments are arranged in a manner resembling an elephants' head whilst the upper perianth forms a twisted tube, described by Mr Lever as a squiffy nose.

The upward hike resumed presently and we passed through phases of forest, small-scale agriculture and the construction of a new road. The roar of diesel fuelled diggers and split bags of cement and stone soon came into view, this was progress. No matter how our fanciful notions of untouched mountain ranges may occupy the imagination, the practical fact of the situation is that people live in these hills. The locals have a right to modern day conveniences such as reliable roads, running water, electricity and the internet, in addition to the work and money these construction projects bring to the community. Amongst the odd grumble about "habitat destruction", we pressed on past the diggers to the path ahead. Nearing the edge of open forest, the puffy yellow flowers of *Pedicularis bicornuta* came into view (Fig. X). Intriguing plants, *Pedicularis* species are noted for hemi-parasitic relationships, often proving exceedingly difficult in cultivation.

Further along the track species of interest included *Orobanche alba* and two old friends; the cerise flowered *Potentilla nepalensis* and several proud stands of the whorl flower, *Morina longifolia*. Once we were clear of the tree line, artificially altered at this point to due agricultural clearing, there was an abrupt change in building materials, the modern mix of timber and concrete giving way to low, stone built cottages and dry stone walls.

A damp meadow area beyond a stonewall proved itself the find of the day studded with gems such as the purple *Phlomis bracteosa*, *Dactylorhiza hatageria*, *Anemone rivularis*, *Aquilegia pubiflora*, *Herminium monorchis*, *Caltha palustris* var. *himalensis* and *Pedicularis siphonantha*

Beyond the meadow our path crossed a boggy field overflowing with water from the snowmelt above, enabling the delicate and sweetly scented white flowered *Primula monroi* to flourish. It was at this point I decided to pick up the pace as and quickly strode on to the campsite ahead. Our horsemen and guides had long passed us and camp was a cosy cluster of tents with water already on the boil.

Awaiting the arrival of the rest of the group a small party including Tim Lever, Susan Read, Odd Kletteli, Nicola Starkey and myself decided to explore an area just beyond the camp where a stream had cut its way through the mountain side. Hidden among the rocks was the mound forming, white flowered *Areneria festucoides* and our first *Meconopsis aculeata*, a spikey diminutive blue flowered species belonging to the Horridula group. Close by *Bistorta affinis* (syn. *Persicaria affinis*) and *Arisaema jacquemontii* grew in profusion whilst *Sibbaldia parviflora* and *Thymus linearis* carpeted the drier banks and paths.

We were welcomed with biscuits and tea on our return and as the sun was yet to set Tim, Nicola and I sat back and took in the majestic mountain range that now encompassed us. The ethereal quality of the clouds and jagged peaks piercing the sky was a truly awesome sight and one I will always remember. As custom now dictated we washed, ate and reviewed the plant list before heading to bed for a good nights rest, filled with anticipation of what the morning would bring.



Above – Fig. 5 Mandala depicting the Five Buddha Families
Below – Fig. 6 Coniferous forest, Sangla



Above - Fig. 7 Traditional stone dwellings on the road to Sangla Khunda
Below – Fig.8 *Dactylorhiza hatagirea*



Above – Fig. 9 The author against the backdrop of the Himalaya

Below left – Fig. 10 *Primula monroi*

Below right – Fig. 11 Streamside adjacent to the campsite at Sangla Khunda

7th July – A short walk and a meeting with the Gaddi

I awoke pleasantly to a hot cup of tea and a fine morning, but others had not fared so well through the night. The German couple, Dirk and Gotje Hunke had to descend at first light due to illness. As Gotje had a severely upset stomach and was showing signs of altitude sickness, it was decided that the head guide Tenzin would accompany them back to Sangla town from where further arrangements could be made to provide them with medical treatment in Shimla.

The day's walk was intended primarily as an aide to acclimatisation with a gentle rise in altitude to some 3700m at Ranglati. Prior to leaving the campsite, a report came in to trek leader Margaret Thorne that someone had spotted an unusual plant in the vicinity. A group of us followed Margaret to investigate a small patch of ground by a dilapidated stonewall to discover flowering specimens of *Typhonium diversifolium* (Fig. 12). This aroid occurs across the Himalayan range from Himachal Pradesh in the west to S.E. Tibet in the east, the slender spathe is coloured green on the outside with a dark red/purple inner, the purple appendage, protrudes upwards lacking the thread often found in *Arisaema* species. As the name suggests, the leaf is variable ranging from cordate to saggitate or divided with 3-7 leaflets, the central leaflet often far exceeding that of its counterparts (Polunin & Stainton, 1987). I suspect that the age and health of the tuber determines leaf development and flowering size, as is the case with many seasonally dormant members of the Araceae. As we began to take notice of our immediate surroundings we realised that we were standing in the middle of a field of *Arisaema jacquemontii*, growing like a weed in the grass in full sun. I had to laugh at this point as I remembered the prime woodland conditions reserved for it in British gardens. At the foot of the wall a clump of *Pododphyllum hexandrum* was also happily putting paid to my notions of woodland perennials.

With the hiking easy going, this day was a chance to take in the surroundings and note the characteristics of the landscape. The tree line was below us now, and the vegetation a mixture of alpine meadow with only vestiges of scrub, due to heavy grazing in the area. Amongst the stunted and well browsed grasses, the plant communities sported large flowering mats of the fragrant *Thymus linearis*, conjuring fond memories of walking the Scottish hills. Much dwarfed by growing conditions and competition, species such as *Geranium donianum* and *G. wallichianum* looked positively well behaved, their respective pink and blue saucers nodding in the wind.

Other species present included *Primula monroi*, *Androsace studiosorum* and *A. muscoidea* in sprawling mats, *Pedicularis siphonantha*, *Pedicularis rhinanthoides*, *Iris kemaoensis*, *Lomatagonium carinthiacum* and *Potentilla atosanguinea* in red and yellow and orange forms. Of the aforementioned, *Iris kemaoensis* was a pleasant find with blotchy purple markings on stands and falls (Fig. 13). The puffy bubblegum pink flowers of *Pedicularis rhinanthoides* were a similar delight.

As we drew nearer to our campsite the group began to disperse, as individuals took a variety of routes across the steep valley side. Tim Lever came bounding enthusiastically up to me with news that he had happened upon the yellow flowered *Morina coulteriana*. Unfortunately, we were a considerable distance away from his discovery, so we opted to hike up the steep slope above the campsite in search of more plants. Checking behind rocks on the steep hillside proved fruitless, although we found handsome examples of *Androsace sarmentosa* occupying rock crevices. Whilst resting atop a crag we had the fortune to make some new friends. The quiet of the mountains was interrupted by the faint yet unmistakable sound of Hindi pop music. Tim and I both acknowledged the peculiar nature of the situation with quizzical expressions as we greeted the radio and two accompanying shepherds with a firm handshake and the ubiquitous “Namaste”. It transpired that the Gaddi shepherds were the owners of sizeable flocks of sheep and goats in the vicinity, including a large white mass that could be seen across the valley. With a proud “Mine, yes all mine.” the elder of the two gentlemen grinned from ear to ear, gesturing with his hand toward the animals. The presence of such large flocks would explain the heavy grazing in and the evidence of scrub burning in the area. As our linguistic skills began to fail us, my Hindi restricted to “Hello” and asking for a cup of tea, we said a polite goodbye and carefully descended to the campsite below.



Above – Fig. 12 *Typhonium diversifolium*
Below – Fig. 13 *Iris kemaensis*



Above – Fig. 14 *Pedicularis rhinanthoides*

Below – Fig. 15 *Androsace sarmentosa* growing in a rock crevice



Fig. 16 Valley view from above the campsite at Ranglati

8th July - Watch your step!

Morning mists heralded a cooler start to the day's trek, in which we would cover some distance, gaining height to just over 4000m, as we headed up the valley before crossing over to explore the other side, prior to returning to camp.

The initial hike along well-worn paths provided decent examples of *Meconopsis aculeata* and *Pododphyllum hexandrum* in plain and mottled leaved forms. Still intent on finding the yellow *Morina coulteriana*, I resolved to put more effort into scouting around near rocks and scrambling slopes. Together with Tim Lever and Nicola Starkey efforts were made in exploring all manner of nooks and crannies. High up on a steep hillside walking became a rather lopsided affair as I struggled to gain traction in the undergrowth. With a modest height gain, the vegetation seemed less grazed and we found several examples of the pink flowered *Lilium nanum*, *Pedicularis* aff. *bicornuta* showing red flecks on the calyx, the chocolate coloured legume *Thermopsis barbata*, *Geranium himalayense* white form, the pink spikes of *Gymnadenia orchidis*, *Potentilla cuneata* and *Anaphalis nepalensis* in abundance.

After carefully mobilising ourselves back down to the path, we were greeted by David Thorne who encouraged us to catch up with the others as they neared our lunch stop ahead. According to GPS readings taken in the group, we ate at 4067m and with the rain beginning to show itself in earnest. Waterproofs were donned and our guides headed by Bir Singh, a hardworking man with a jolly disposition, lead us down through scrub of *Rhododendron anthopogon* and *Cassiope fastigiata* before shuffling swiftly across a rather slippery snow-bridge. David and Margaret stressed the importance of moving at a good pace once we were on the other side of the valley, and indeed there were sounds of rock fall once we had crossed the bridge. Although some members of the group dawdled taking pictures of *Primula elliptica*, I pressed on, making sure to be well into established scrub and clear of both the river and scree above before unpacking my camera.

In the midst of substantial *Rhododendron* scrub, herbs such as the white, multi-headed *Anemone polyanthes* and *Cremanthodium arnicoides* pushed through with determination. With the rain at our backs several members of the group struggled through the knee-high thicket to the foot of the cliff faces above. Much to our delight excellent examples of the primuloid *Cortusa brotheri*, *Primula obtusifolia*, *Primula minutissima*, *Trollius acaulis* and the yellow, sweetly scented *Primula stuartii* brightened the mists. *Primula obtusifolia* was particularly fine, covered in dense farina with tall stems of pink-purple flowers finished by dark purple eyes (Fig. X). These choice plants seemed to prefer the protection of rock ledges and boulders, where a combination of moisture and drainage caters to their tastes.

Getting back down was another case entirely as we tumbled through thick scrub whilst endeavouring not to practice our diving skills on the mountainside. On several occasions I lost my footing and slid to an abrupt halt, thrusting my umbrella into the ground to lessen the fall. By the time our sorry party made it to the path below, I had managed to tear the elastic from the top of my left gaiter and put a rather impressive kink in my umbrella.

Forging on through the mist we clambered over jumbled boulders covered in dripping wet *Bergenia ciliata*. Another slip resulted in an unhappy plunge between rocks, but I emerged unscathed if slightly embarrassed. The vegetation in the valley basin included a number of new additions; *Rhodiola cretinii*, *Corydalis govaniana*, *Doronicum falconeri* and handsome groups of the broad leaved *Rheum moorcroftianum*.

The river crossing started well and despite the bridge's rickety nature, being constructed of a number of loose flat stones laid across a tree trunk and steel pole, many of the group crossed without incident, kindly aided by our ever attentive guides. However, a certain Mr Lever chose precisely the wrong stone to entrust with his weight and plunged straight into the icy water. Thankfully, the stream had yet to swell significantly and he emerged with a mere knee chill. At once, the guides set to work selecting new stones and heaving them into place and soon our route was restored and the rest of our number made their tentative crossing.

A steep but mercifully short climb through the nodding heads of *Anemone polyanthes* and *Geum elatum* lead us home for the night. Tired but invigorated, washing, eating and a thorough plant review were enjoyed by all, for tomorrow we were due to head up to the Rupin La.



Above – Fig. 17 Habitat shot including *Lilium nanum*, *Lotus corniculatus*, *Morina longifolia*, *Anaphalis nepalensis*, *Potentilla cuneata*, *Geum elatm*, *Thymus linearis* and *Geranium wallichianum*



Above – Fig. 18 & 19 Variation of leaf markings in *Podophyllum hexandrum*

Below – Fig 20 Snow-bridge across the valley floor





Above – Fig. 21 *Primula obtusiloba*
Below – Fig. 22 Gaddi bridge

9th July – Goretex is a wonderful thing

This day was supposed to be a glorious adventure from Ranglati to the Rupin pass and for all intents and purposes a sunnier start could not have been wished for. In order to best utilise the group's abilities, David and Margaret suggested creating a quick team, who would forge on ahead, whilst the remaining stalwart team members would pursue a more leisurely pace. The quick team comprised Tim Lever, Margaret Thorne, Nicola Starkey, Jean-Francois Gambin, Piet Meijer, Odd Klettel and myself. Accompanied by Tenzin the head-guide and Bir Singh his right hand man, we decided head straight for the pass and return casually, as the camp would move up the valley to the snow-bridge in the interim.

Old ground was covered quickly and in what seemed like no time at all we were at the snow bridge. Thanks to acclimatisation, going beyond 4000m was surprisingly easy. Around small streams, swathes of *Primula monroi* perfumed the air with their heady scent, Tenzin guiding the less sure footed of the group as we stone hopped our way onwards and upwards.

It happened fast. One minute a slight mist, then a drizzle became sideways rain and my umbrella fell prey to a sudden gust of wind, popping clean inside out. "Gortex is a wonderful thing." I thought, whilst tweaking the battered implement back into shape from the dry interior of my jacket. Despite it all everyone pressed on until we finally took shelter behind a large rock. Much to our delight Margaret pointed out several clumps of *Primula macrophylla* var. *moorcroftiana*. Described as "relying on the melt of winter snow" (Richards, 2002, p.199) this was a textbook habitat, if only the mist hadn't been so thick we would surely have found more plants in the vicinity. In its typical form *Primula macrophylla* has lanceolate leaves, crenulate margins, the stem carrying an umbel of many pendulous purple-blue flowers. Var. *moorcroftiana* is a somewhat dwarfed form, often bluer with a white eye, notched corolla lobes and long bracts (Richards, 2002).

As the rain showed little intention of easing up, Margaret raised the option of turning back, tales between our legs like dogs. Unsurprisingly, we all capitulated and trudged our way back toward Ranglati. As the pace slowed the rain returned to the common or garden vertical form and we found solace in some rather jolly forms of *Pedicularis rhinanthoides* and *Primula minutissima*.

Just beyond the halfway point the teams were reunited to eat a sparse lunch, huddled once more under a rock for shelter. The remaining vegetation added little to the species list with our primary concerns being a hot cup of tea and a dry(ish) tent.



Above – Fig. 23 Mist forms around the campsite between Ranglati and the Rupin Pass



Fig. 24 *Primula macrophylla* var. *moorcroftiana*

10th July – Woolly Candles

The next part of our journey was into an adjacent valley, at the top of which lay the Nalgan Pass. This involved returning to the Gaddi bridge and hiking over ridges above a fork in the river. The first leg was pleasant enough, with no bridge incidents due to a thorough restoration job carried out by our skilled and dedicated guides. Although few new species were seen on the Rupin side of the valley, there were many exquisite plant associations, including a vibrant composition of red *Potentilla atrosanguinea* and the pink spikes of *Bistorta affinis*.

From the banks of the stream Tim, Odd and I decided to leave the path and head straight through the undergrowth, skirting rock faces up and over the ridge. A large gnarled stand of *Rhododendron* and *Betula utilis* var. *jacquemontii* hinted at remnants of the climax vegetation at lower altitudes in the area. Above the thigh high mats of *Rhododendron anthopogon* var. *hypenanthum*, the faded remnants of white/pink flowers and large ovate to broadly elliptic leaves, covered in a thick woolly indumentum beneath, indicated the larger plants to be *Rhododendron campanulatum* (Cullen, 2005). A number of *Meconopsis aculeata* were scattered through the thick leaf litter, whilst the bright pink blooms of *Rhododendron lepidotum* smiled at us from the inaccessible ledges above.

As we neared the crest of the ridge, the vegetation turned to meadow that was being extensively grazed by flocks of sheep and goats. This did not instil great hope for the remainder of the day's walk and indeed our fears were confirmed as we passed over the newly mown sward. The morning's finds produced smatterings of *Lilium oxypetalum* and *Fritillaria roylei* amongst the grass, before we sat down to enjoy a picnic of potato, cheese and chocolate. In the hope of outmanoeuvring the flocks, I took the highroad in the direction of our next camp at Garwa. Although marvellous exercise leading to breathtaking views of the valley, there was little in the way of new plants.

Once all had assembled at camp, Tim, Nicola and I thought it only polite to wander just a little further. As we crossed the stillness of the valley, pink carpets of *Androsace muscoidea* lit our way (Fig. 25). According to Smith and Lowe (1997) the form occurring in in this region is more vigorous in both flower and spread, the tight, villous rosettes topped with an inflorescence of 3 or more pink flowers with a yellow eye. High amongst the crags above the camp we happened across an endangered member of the Boraginaceae, *Arnebia benthamii* (Fig. 28). With tentative steps we dug our heels into the steep slope, crouching close to the ground to steady ourselves whilst marvelling over the “shaggy-haired cylindrical spikes of red-purple flowers” complete with long bristly, protruding bracts adorning the woollen candles (Polunin & Stainton, 1987, p106). A circling Griffon Vulture reminded us that we precariously placed indeed and our descent was very measured enabling appreciation of the rock-laden ground beneath our feet.



Above – Fig. 25 Habitat of *Androsace muscoidea*

Below – Fig. 26 *Androsace muscoidea*



Above – Fig. 27 Stands of *Arnebia benthamii*
Below - Fig. 28 *Arnebia benthamii*,

11th July – Primula Ledge

After our first of three nights at Garwa camp, the troupe set out to explore the slopes leading to the Nalgan pass. Following the lead of Nawang, one of the guides, Tim Lever, Odd Kletteli, Nicola Starkey and I took a slightly different route, aiming to scale an exciting looking ridge. The lower slopes of the ridge were scattered with innumerable boulders separated only by drifts of snow, proving interesting crossing. In-between the rocks many forms of *Primula elliptica* and *Primula obtusifolia* resided and where the snow had melted, masses of *Trollis acaulis* poked their fresh yellow flowers and feathery foliage into the open once more. Populations of *Meconopsis aculeata*, *Corydalis govaniiana*, *Lilium nanum*, the umbelliferous *Pleurospermum candollei* and the diminutive *Neopicrorhiza kurrooa* occupied the screes that preceded the steep climb to the plateaus of high ground and stunning views of the valley. Investigation of the area enabled us to add the yellow flowered, mat forming *Potentilla microphylla*, *Pedicularis brevifolia* and *Saussurea obvallata* to the list.

After a short stop to eat and a careful trek down from the ridge, we joined the rest of the group on grassy terrain and headed for a crater in the mountainside. The slopes and crags above the crater were a great find and it was here that we found Primula Ledge. Five species of *Primula* had colonised the fissures and nooks of the crag, namely *Primula minutissima*, *P. elliptica*, *P. macrophylla* var. *moorcroftiana*, *P. obtusifolia* and *P. reptans*. I was particularly taken with the microscopic, moss-like foliage of *P. reptans*, above which disproportionately large single, purple flowers with a white eye hovered as if suspended in space (Richards, 2002). *Primula minutissima* had a similar charm, forming larger mats of mealy foliage crowned with pink, yellow-eyed flowers. According to Richards (2002) the latter is more scarce in the region this being the southern most extent of its range.

Sausurrea obvallata made another appearance, sporting well-extended flowering stems. A bizarre plant with swollen balloon like bracts, the purple composite flowerheads were only revealed when I inquisitively peeked inside the puffy, yellow spheres. According to our tour leaders travellers making offerings to the mountain deities, often leave the species on the tops of high passes throughout the region. Bearing eagle eyes and his trusty binoculars, David Thorne spotted a number of large clumps of *Paraquilegia anemonoides* adorning a cairn not more than 15 minutes hike from the ledge. Unfortunately, the snow and ice had yet to clear from the surrounding scree, it was decided to be foolhardy to attempt the journey with frequent rock fall in the vicinity

A number of the group had begun to feel the effects of altitude and not wanting anyone to suffer, we returned to camp along the lower slopes and at slow and steady pace. With a hearty meal and some pleasing additions to the plant list it was soon time for bed, for we needed to be well rested for the attempt on the Nalgan Pass in the morning.



Above – Fig. 29 Odd Kletтели and Nawang cross stony ground
Below – Fig. 30 *Meconopsis aculeata*



Above – Fig. 31 *Primula reptans*



Left – Fig. 32 *Primula minutissima*



Right – Fig. 33 *Saussurea obvalata*

12th July – Nalgan Pass, 4500m +

Once more under the auspices of a blazing sun, we set out on the long haul to the Nalgan Pass. With the intention of crossing the pass itself to botanise the slopes below, we again divided into groups. As before, Nawang, Tim, Nicola, Odd and I kept a swift pace, passing through damp streamsidings swollen with snow melt before scaling the steep rocky slopes leading up to the pass. The nodding, yellow heads of *Primula stuartii*, clearly appreciated the moisture, flourishing in full sun in the rich silt beside the stream. Taking the opportunity to learn some Hindi from Nawang, I added “Morsum saab hay”, or “the weather is good!” to my repertoire. Along with “Hello” and “I would like a cup of tea”, I was now proficient in three useful sayings.

Scaling the rocks above the streamside was good practice for what lay ahead. As the ground levelled out on the run up to the pass, a veritable boulder field broken only by sheets of melting snow became our next obstacle. Throwing caution into the wind and relying on our walking poles for support, we scaled the boulder field, heading for a slope to the right of the pass. From here it was clear that it was not possible to cross. The pass was still blocked with snow and lacking climbing gear or tools to cut a way through, we decided to rest beside a crag.

Tim and I botanised our immediate surroundings, discovering the bizarre and truly wonderful, spikey balls of fluff that are *Saussurea gossipiphora*. Crossing the snow and climbing higher to the top of the mountainside, we assessed the ridge. One side led down to the boulder field, and the other a stark drop onto rocky scree some 10m below. It was at this point that I began to feel somewhat uneasy, as each footstep became a measured placement on the rock. Given that we were probably at an altitude in excess of 4500m, I felt that my caution was well founded. In addition to *Saussurea* species of note included *Corydalis meifolia* var. *violacea*, large mats of *Potentilla microphylla*, *Rhodiola heterodonta*, *Cremanthodium reniforme*, *Androsace delavayi* white form and an unidentified species of saxifrage. As a mist or should I say cloud, descended upon us, filling the air with gothic foreboding, we decided to wait before joining our friends for a mountainside picnic on the slopes below.

By this time the other group had assembled across the foot of the pass, appearing to be indulging in an entertaining spot of snow sliding. Our return across the boulder field conjured images of lunar landscapes in my mind, and there was certainly a majestic and ethereal quality to it all.

The homeward journey was lightened with the rumour that a shower tent with hot water was being prepared at camp for our return. Sure enough, a tent was erected and hot buckets of smoky water provided for our indulgence. I cannot express the level of gratitude I felt for this pleasure, wood was very scarce, if not totally absent in the area and the guides must have collected it from back at the entrance to the valley by the Gaddi bridge. This typifies the effort constantly made by our friends to accommodate us and serves as a reminder of how far detached from nature we have become when access to hot water is as simple as turning a tap.



Above left - Fig. 34 *Primula stuartii*
Above right – Fig. 35 *Saussurea gossipiphora*
Below – Fig. 36 View from the Nalgan pass



Above left – Fig. 36 Habitat of *Androsace delavayi* white form

Above right – Fig. 37 *Androsace delavayi* white form

Below – Fig. 38 *Corydalis meifolia* var. *violacea*

13th July – Creative path-finding on the way to Sangla

With the mess tent dismantled we enjoyed an alfresco breakfast against the glorious backdrop of the mountains. This seemed a fitting ending to the first trek and the entire group assembled, guides, horsemen and all for group photos. I have to say that I found the horsemen friendly and reliable and their beasts well cared for.

When the camp was packed and ready to go, the party retraced its steps down to the Gaddi bridge for a final crossing and headed up toward Ranglati from whence we followed an irrigation channel down to Sangla Khunda before descending through the forest on the way to town. Although many plants were seen on the way, there were few notable new finds save a healthy population of *Codonopsis rotundifolia* scrambling through streamside scrub. As we wound our way along the new forest road, cool shade embraced us and the drop in altitude meant that we could pick up the pace.

The pines and cedars thinned as we neared the town, encountering a herd of goats enthusiastically grazing the copious quantities of cannabis that lined the road. Once over the bridge, decisions had to be made about which path to take and not one to dawdle, I suggested we cut straight through the winding streets aiming for the crest of the hill. Despite the doubts of Tim Lever, we did indeed find the main street from which it was easy to navigate back to the campsite. The sojourn was not exactly the route we had taken on our way up but we were the first back to camp, thanks to a little creative path-finding.

After the group appeared in dribs and drabs everyone gathered round to bid a fond farewell to the horsemen. David Thorne led the presentation and each person was thanked individually receiving their wages, a tip and a warm handshake. After a vigorous round of applause tea, fizzy pop and biscuits were enjoyed as a prelude to a fine evening meal of curry.



Above – Fig. 39 Horsemen

Below left – Fig. 40 Alfresco dining in the Himalaya, Garwa

Below right – Fig. 41 *Codonopsis rotundifolia*

14th July – Cloud Forest beckons

Leaving Sangla by road, the day was largely spent in vehicles, descending into the dusty, arid valley past the hydroelectric facility. Our route then took us northward into a lush landscape, past orchards and cultivated terraces of taro before a steep rise into cloud forest. The air thick with mist and the road a channel of mud, we emptied out of the vehicles and prepared camp. Not wanting the lads to porter the entire camp alone, many of us assisted in shifting luggage, chairs and tents into a clearing in the forest that would be our home for the night.

At an altitude of approximately 2600m, the enchanting *Picea* forest at Khanag had a primeval atmosphere, moss and lichen dripping from the trees and rocks were well sustained by the mist that swirled around us. *Arisaema tortuosum*, *A. propinquum*, *A. jaquemontii* and the delicate, purple *Roscoea alpina* littered the forest floor. Several stands of *Iris milesii* bore few flowers and I was surprised to see the spikes of *Epipactis helleborine*, also a member of the British flora (Stace, 1997), protruding through the moss.

Upon the arrival of roaming bovines, the peace was rudely broken. Grunting and pounding the ground with their hooves, two rival bulls had chosen our camp for the scene of a turf war, hell bent on settling old scores. Thankfully, the sight of Nawang shouting and brandishing a stick was enough to send the testosterone fuelled beasts scarpering away to find another location for their showdown. After the evening's entertainment, the group enjoyed dinner before falling into a deep slumber enveloped by the forest mists.

15th July – Jalori and showers

Proceeding onwards, we left the campsite and headed to the top of the mountain. A Hindu temple and row of teashops marked the Jalori Pass, where we crossed on foot enabling us to botanise the roadside vegetation. Through the mist and rain at 3223m, folk scrambled up and down the verges and into the forest edge in search of something new. The nodding, one-sided purple flower spikes of *Wulfenia amherstiana*, were a pleasant addition and it was interesting to see the garden stalwarts *Aruncus dioicus* and *Primula denticulata* in their natural environment.

A return to the vehicles heralded a long drive to Manali, broken by several rest stops including lunch under the shelter of a stand of *Pinus roxburghii* overlooking the banks of a river. Civilisation began to make a marked return as the cars passed through a number of small towns, run down huts with tin roves and half finished concrete boxes being the buildings of necessity rather than choice. The volume of potholes, rubble and general detritus strewn about the place gradually increased as we neared our destination. This being India, so did the number of plush hotels and shiny new 4x4s containing impeccably turned out families of the growing middleclass that holiday in Manali to experience the mountains and escape the humid heat of the plains. Our hotel was a welcome refuge featuring highly polished wooden floors, hot showers, television, a laundry service and good food. I opted for a traditional vegetable curry with dhal, rice and japatis, whilst everyone else feasted on trout and chips. Prior to eating, Nicola, Tim and I took the opportunity to explore the town containing tourist shops, market, bus-stand and the usual furore of diesel-fuelled rickshaws carving up the streets.



Above – Fig. 42 *Roscoea alpina*
Below left- Fig. 43 *Epipactis helleborine*
Below right – Fig. 44 Jalori in the rain



Above – Fig. 45 *Wulfenia amherstiana*

Below – Fig. 46 Autorickshaw wheel arch, Manali

16th July – Enter the Rohtang

A 5.30am start saw bleary-eyed wanderers congregate for breakfast in the Mayflower House Hotel, where we were reunited with our guides and drivers before setting off to botanise the lower slopes of the Rohtang La. La means mountain pass in Tibetan whilst Rhotang can be translated as “pile of corpses”, the name belies the influence of the culture in the region and the majority of our guides were of Tibetan descent.

Leaving Manali, the vehicles crossed the Beas River and followed the serpentine road upwards toward the foot of the pass. Shacks offering fur coats and “snow dresses” for hire catered to domestic tourists who were in the habit of dressing up and having their picture taken by the snow, providing them with bragging rights down on the plains.

Stopping along the way we found good examples of the large leaved, yellow flowered *Ligularia fischeri* and the delicate *Primula reidii* dwelling in the damp shade of boulders above the roadside. A fine species in the Soldanelloides section reaching approximately 15cm in height, the leaves are notably hairy and topped by a mealy stem bearing several white, bell-shaped flowers (Richards, 2002). Close by, *Gypsophila cerastioides* flourished in the rocks, and as we took pictures of the plantlife, a gang of young men on motorcycles roared past with a celebratory shout on their way to the snow.

On first sight the foot of the pass was a desolate place, a collection of makeshift tents supplied tourists with tea, cola and snacks amidst piles of rubbish bordered by people relieving themselves in public. The road wound its way upwards to the north but was far from passable. Bumper to bumper cars, trucks, coaches and motorbikes covered its surface as far as the eye could see. Even with the help of binoculars David Thorne failed to perceive a gap in the traffic ahead. Fortunately, we were due to attempt the crossing in the morning and we could only hope that the problem would be resolved by then.

The moist gullies and screes above proved good grounds for botanising and we found several new species. *Primula sessilis* and the candy pink flowers of *Primula rosea* occupied areas revealed by freshly melted snow and stony banks supported the electric blue flowered *Corydalis cashmeriana* and adorable sprawling mats of the succulent-like *Androsace sempervivoides*. *Cortusa brotheri* and the typical form of *Primula macrophylla*, with deep purple flowers and a near black eye were prolific, as was *Meconopsis aculeata* in colour forms ranging from baby blue to pinkish-purple.

It was some time before the rain arrived with aplomb. Boulder hopping became treacherous and stone free ground soon turned into a boggy mess. The group returned to sun-bathed Manali for further exploration and acquisition of tourist tat. From roadside vendors I gorged on puri and dhal, a typical Indian snack food consisting of puffy deep fried japatris and a helping of lentil and chickpea stew. Bedtime was an early affair as we prepared for a 3.30am start and the beginning of our second trek.



Above – Fig. 47 *Primula reidii*

Below – Fig. 48 *Corydalis cashmeriana*

Trek 2

17th July – Over the top, crossing the Rohtang La

On our return to the Rohtang little had changed. Jeeps and trucks vied for traction in the mud and any semblance of proper road had long since disappeared into the quagmire. After firmly embedding ourselves in the traffic, we bade farewell to the drivers who received an appreciative sending off before we set out to cover the rest of the pass on foot. On clearing the main site of devastation, where a small landslide had dispatched the road surface leaving only a shelf of swamp behind, asphalt and hardcore appeared once more. As motorists took turns in attempting the precarious run, carpets of the blue flowered *Lagotis cashmeriana* adorned grassy patches scattered along the rocky verges, although snow was still very much in evidence with a 3m wall cladding the cliff face on a precarious bend.

Between the rocks nearing the top of the pass, the yellow composite *Cremanthodium ellisii* was in full flower, accompanied by the purple labiate *Dracocephalum wallichii*. The plant communities were similar in character to the lower reaches of the Rohtang at this point and it was only when we scaled the slopes well above the pass that notable additions became prevalent. Tim Lever and I were fortunate to find *Saxifraga lychnitis*, *Swertia* aff. *petiolata*, *Androsace delavayi*, *Saussurea gossipiphora* and a *Draba* sp. amongst swathes of *Primula elliptica* and *Primula macrophylla* var. *moorcroftiana*, showing considerable colour variation. The presence of the *Androsace* and *Sausurrea* indicated the altitude of the pass as some 4000m, but in comparison with the previous trek I felt as energised and alert as if it were sea level.

When all had assembled at a makeshift roadside café for some fizzy pop, a convoy of three rickety Indian minibuses carrying the guides and all our gear screeched to a halt. The beaming faces of Tenzin, Nawang et al. beckoned us toward the chariots that would take us onward to camp. It transpired that the lads had been able to transfer the gear onto vehicles that had already passed the obstruction below, enabling for a swifter turn around than had been expected.

Once over the pass the landscape became notably arid as we gazed northwards to the Central Lahul Massif, riding the potholed route toward the banks of the Chandra River, where we settled just outside of Chattru. Here the scenery was truly awesome, cliff faces rising on either side to create a cathedral of mountains under a limitless sky. Far from the chaos of the Rohtang I felt embraced by the stillness of the mountains as the roar of the river below filled the air, cutting its path through the mighty rock.



Above – Fig. 49 Does anybody need a push?

Below – Fig. 50 Traffic on the Rohtang La



Above – Fig. 51 *Saxifraga lychnitis*, Rhotang La
Left – Fig. 52 Habitat of *Primula elliptica*, Rhotang La
Right – Fig. 53 *Swertia* aff. *petiolata*, Rhotang La
18th July – Into the sunshine

At Chattru, the campsite was situated on flat, rocky ground adjacent to the river, where nestled among the rocks *Jovibarba*, pink and white forms of *Thymus linearis* and *Dianthus angulatus* grew in profusion. On leaving, we passed several piles of stones carved with Buddhist mantras that are left by the faithful as a way of accruing merit. It is believed that anyone who sees or touches the mantras will gain benefit, and here the carvings included the mantras of Chenrezig the Buddha of Compassion, and Guru Rinpoche, the powerful adept who is credited with establishing Vajrayana Buddhism in Tibet during the 8th Century.

Crossing the river and heading south, we began a steep climb, skirting remnants of snow. Our hike took us through alpine meadows in full flower creating a wondrous sight. In particular, the combination of pink *Bistorta affinis*, the orange form of *Potentilla atrosanguinea*, blue saucers of *Geranium wallichianum* and pink and white flowers of *Pedicularis siphonantha* was delightful. Similarly, the mixture of pink *Androsace sempervivoides* and yellow *Potentilla atrosanguinea* var. *argyrophylla* were an unexpected partnership. Although the colour combinations sound ghastly on paper, the vibrant, contrasting hues were beautiful and something I would love to recreate in a garden setting.

As meadow gave way to boulders and scree, a number of the group reported *Paraquilegia* high up on inaccessible cliff faces. Further along the valley floor we reached the proposed campsite, covered in the newly finished flower spikes of *Primula rosea* that must have been a vision of beauty only a week before. At this juncture, the realisation dawned that a number of the crew and the ponies carrying all the gear had crossed the freezing cold river ahead, setting up camp further along the valley disregarding David's instructions. Unsurprisingly, our tour leaders were none too pleased and after much animated discussion with Tenzin, considering several options including forging across on horseback, wading or crossing along a single metal pole laid across the river, it was decreed that the entire camp was to be moved to the originally designated site on which we now stood.

This operation would take several hours, but unperturbed we botanised the area to discover the woolly leaves and daisy-like flowers of the peculiar *Waldheimia tomentosa* under the watchful gaze of the two immense peaks that dominated the valley. As the light drew in we huddled for shelter behind various rocks creating wind-blocking barriers, interlocking extended umbrellas in a manner resembling a Roman defensive manoeuvre.

When the people and ponies finally arrived, all hands were on deck as we pitched the tents by torchlight. After a somewhat hurried meal, I did not wait long before heading to bed, wanting to preserve my energy for crossing the Hampta Pass in the morning.



Above – Fig. 54 Stone carving depicting the mantra of Guru Rinpoche, reading
“Om Ah Hung Benza Guru Pema Siddhi Hung”

Below – Fig. 55 Alpine meadow habitat featuring *Potentilla atrosanguinea* orange form, *Bistorta affinis* and *Pedicularis siphonantha*



Above – Fig. 56 The peaks of Indrasun and Deotibba both in excess of 6000m
Below – Fig. 57 *Waldheimia tomentosa*

19th July – Hampta Pass

With camp packed and no reliable method of crossing the river at this point, we set out tracing our steps back along the valley floor, crossing a deteriorating snow bridge before heading up to the Hampta Pass. The boulders at the foot of our route upwards, across sheets of snow leading to a goat track, were home to good examples of *Corydalis meifolia* in its yellow form. As we crossed the pass at approximately 4270m, David, Margaret and Tenzin erected Prayer Flags to mark the occasion in respect for local custom and in accordance with a now established tradition on their AGS trips.

The slopes of the pass provided Tim and I with more opportunities for boulder hopping, scaling up and down several ridges and losing my umbrella along the way. Although the only new discovery was an un-identified yellow flowered, cushion forming *Saxifraga* sp., we encountered decent forms of species seen previously including, *Saussurea gossipiphora*, *Meconopsis aculeata* in blue and purple forms, *Cremanthodium ellisii*, *Primula repens*, *P. macrophylla*, *Corydalis govaniana* and *Rhodiola cretinii*.

As we lost altitude, an opportunity to get up close and personal with *Paraquilegia anemonoides* finally presented itself. Separated only by a sheet of snow and a 10m climb over scree, round a rock face and two ledges, the plant was not going to get away with it this time. Spurred on by David and Margaret, Tim, Nicola, Nawang and I deployed our scrambling skills with finesse and were richly rewarded with a number of fine hanging clumps of feathery foliage measuring some 50cm across, peppered with lilac cup-shaped flowers. Healthy clumps of *Primula macrophylla* and var. *moorcroftiana*, *Meconopsis*, *Pedicularis oederi* pink form and *Pedicularis bicornuta* were an added bonus, pleased with our efforts we hurried to catch-up with the rest of the group. Much to our dismay, further down the valley two small clumps of *Paraquilegia*, protruded from the cliff at just above head height! Safe in the knowledge that “our” plants were much better we assessed them closely before swiftly moving on.

There was still a good deal of snow and boulders to be overcome, before the valley floor levelled out as we crossed a fast flowing stream. Meadow returned as we neared the streamside campsite, where we were greeted with cups of warm lemon squash. In and around the campsite *Primula monroi* and *Pedicularis bicornuta* were well established, as was the blue form of *Anemone obtusiloba*. A thorough wash and a hearty meal prepared us all for sleep, and the beginning of the closing stages of our mountain journey in the morning.



Above – Fig. 58 Crossing the snow

Below – Fig. 59 Tour Leaders David and Margaret Thorne with our guides Tenzin and Bir Singh below prayer flags on the Hampta Pass



Above left – Fig. 60 *Primula macrophylla*

Above right – Fig. 61 *Cremanthodium ellisii*

Below – Fig. 62 *Meconopsis aculeata* showing variable colour forms



Above – Fig. 63 View from the Hampta Pass

Below – Fig. 64 *Paraquilegia anemonoides*

20th July – A little river crossing does you the world of good

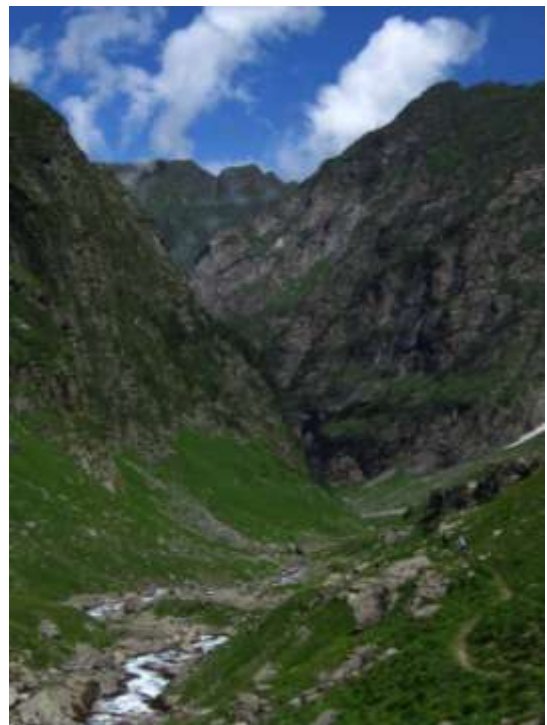
The day began with a formal farewell to the five horsemen and twenty-five ponies and mules that had accompanied us on our second trek. Leaving the might of the mountains behind we began our two-day descent into the valley. The vegetation returned to meadow and species such as *Potentilla atosanguinea*, *Phlomis bracteosa* and the arisaemas were soon with us again. As the tree lined reappeared, twisted specimens of *Betula utilis* var. *jacquemontii* and rhododendron scrub lined the cliff tops, as we waded through fields of the intolerable pest, Himalayan Balsam.

Upon reaching a river we found a group of British teenagers on a rather extravagant “outward bound” excursion. Clearly not impressed with the prospect of sodden nether regions, some of the elder members of our party, looked aghast as the youths waded across, up to their waists in water, holding rucksacks over their heads. Once more, Bir Singh came to the rescue leading us further along the watercourse he carefully placed steppingstones along a ridge enabling us to cross. For the light-footed the voyage was swift, suffering only wet feet but others required a little more exertion.

After a light lunch we continued until our attention was caught by water dripping through fissures and nooks in the cliff face not far from the path. Providing shade, ample water, and an accumulation of humus a deep horizontal fissure was home to fifty or so plants of *Primula reidii*. An interesting species, *Silene septisperma* showing net like, black, linear markings on its swollen calyx, flourished in the drier crevices.

Taking the goat track above the pounding river beneath, we kept close to the cliffs in hope of further discoveries. As we drew level with open woodland on the other side of the valley, the hooded purple blooms of the diminutive *Roscoea alpina* were fond in the cliff’s cool shade. In the open the scrub had been largely cleared, leaving vestiges of the coarse and odorous *Viburnum foetens* amidst a sea of *Rumex*. In full sun, boulder crevices were home to spreading mats of *Thymus linearis* and *Gypsophilla cerastioides*, the delicate single white flowers of which are far removed from its sprawling garden cousins.

Our last camp was situated at the top of the forest and we arrived in good time providing time for reflection as well as washing and eating. It was here that I felt great gratitude for the opportunity to experience these mountain ranges and their wonderful flora. With the knowledge that only forest lay between us and the enchanting chaos that is India, I felt that it was here we left the mountains behind.



Above left - Fig. 65 *Pedicularis bicornuta*

Above right - Fig. 66 *Gypsophila cerastioides* growing with *Thymus linearis*

Below left - Fig. 67 Riverside community; *Pedicularis bicornuta*, *P. siphonantha*, *P. rhinanthoides*, *Bistorta affinis*, *Epilobium latifolium*

Below right - Fig. 68 Lower reaches of the Hampta valley



Above left – Fig. 69 A beast of burden

Above right – Fig. 70 An orange flowered intermediary between *Potentilla atrosanguinea* and *P. atrosanguinea* var. *argyrophylla*

Below – Fig. 71 Bir Singh laying steppingstones

21st July – Fond Farewells

As is customary, a formal presentation was made to our guides at the start of the day, as we would not have the opportunity to do so later. I cannot express my gratitude enough for the support, patience, kindness and excellent service that the crew provided. In particular I would like to mention the head guide Tenzin, the cook Tashi, whose culinary skills were exceptional given that food was prepared in tents on the side of a mountain and the good natured Bir Singh and Nawang who often accompanied a small group of us on our fanciful diversions.

A final rummage through the undergrowth rewarded us with sightings of the green flowered orchids, *Herminium monorchis* and *Malaxis muscifera*, occupying wet slopes adjacent to a waterfall. We crossed over our last river via a makeshift log bridge and it wasn't long before we approached the forest canopy, primarily composed of *Acer sterculiaceum* and *Quercus semecarpifolia*. In the open woodland the trifoliate, stripy spathed *Arisaema propinquum* and proud stands of *Morina longifolia* were in full flower.

At the forest edge we were reunited with the drivers that had faithfully trawled us about earlier in our journey and with baggage checked and loaded, began the journey down dusty roads back to Manali. Back in the town people were left to explore at their own leisure making much appreciated use of hot showers in the hotel. In the early evening we were invited for tea and refreshments at the home of Tenzin where we enjoyed butter tea and glasses of cool beer. Katas were given once more and I felt privileged to be welcomed with such hospitality.



Fig. 72 Ponies and mules river-crossing



Fig. 73 *Morina longifolia*, *Arisaema jacquemontii*, *A. propinquum*, *Pteris cretica* and *Anemone rivularis* thrive together in open woodland.

21st – 23rd July –Delhi madness and a day trip to the Taj Mahal

The remainder of the trip was spent on the coach. A full day's drive saw us enter the over populated, pollution filled, hellhole that is New Delhi. All and every manner of transport is utilised in the city where buses, rickshaws, cars, lorries, carts and cows vie for passage on the bustling streets. Darkness had fallen by the time we entered the city and with a convoluted diversion involving several missed junctions the bus finally arrived at the Ashok Country Resort, a clean and modern hotel a few miles from the airport. The evening meal was a buffet affair and I opted for, you guessed it, curry and puri to satiate my appetite.

On the morning of the 22nd July we gathered for a day trip to one of the New Seven Wonders of the World, the Taj Mahal. Located in Agra, Uttar Pradesh some 60km to the south, the journey took a full day. After negotiating the obstacle course of young lads and touts flogging tourist mementos at outlandish prices on the street leading up to the Taj, we entered the historic site. Completed in 1653, the complex was built to house a mausoleum for Mumtaz Mahal, the wife of the Mughal Emperor Shah Jahan. The iconic marble domed tomb is surrounded by pleasure gardens and a variety of other buildings, including a mosque and what is now a museum backing on to the River Yamuna below. Many of the buildings are covered in fine examples of Islamic carving ranging from stylised scripture, flowers and interlocking geometric patterns. The opportunity to visit the Taj was an added bonus to a most enjoyable trip and I am again grateful for the opportunity.

I awoke on the final day with a heavy heart. We had had many adventures and travelled some considerable distance in our three weeks. At the airport, we checked in and made our way through to Duty Free where I spent my remaining rupees on hardback copies of the Indian Classics the Mahabarata and the Bhagavad Gita. I slept for a good deal of the flight and when we had finally obtained our luggage from the ever efficient Heathrow carousels, bade farewell to my fellow travellers with promises of staying in touch. After a mercifully brief bus and taxi journey home I made myself a cup of tea and considered what an amazing experience it had been, in my mind's eye I could still see the snow-capped mountains of the Himalaya.



Above – Fig. 74 The Taj Mahal, Agra
Below – Fig. 75 Auto repair, New Delhi

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