Botanical Exploration of Baglung, Rukum & Dolpa Districts of Mid-West Nepal (BRD), 2014

Report for the Scottish Rock Garden Club
& Alpine Garden Society

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The Flora of Nepal project

The Flora of Nepal project is an international collaborative project involving the University of Tokyo (Japan), the Government of Nepal’s Department of Plant Resources (DPR) and Tribhuvan University, Kathmandu and co-ordinated by the Royal Botanic Garden Edinburgh (RBGE). The project is working towards the first comprehensive taxonomic account of Nepal’s diverse flora; to build the capacity in Nepal’s institutions and botanists so they can participate fully and to explore the under-collected regions to increase the knowledge of the Nepalese flora.

Volume 3 of the Flora was published in 2011 and covered families Magnoliaceae to Rosaceae. At present three more volumes are being worked on in parallel covering Monocots, Leguminoseae and Labiatae. All data from the project including, field records, herbarium specimens, field images and the published taxonomic accounts are available for free as PDFs from www.floraofnepal.org.

Expedition Background

From the 15th of August to the 15th of September 2014 I was part of the Royal Botanic Garden Edinburgh expedition to Baglung, Rukum and Dolpa Districts of Mid-West Nepal. The trek was led by Dr. Colin Pendry from RBGE, and included Dr. Patrick Kuss from Zurich University’s Institute for Systematic Botany, Ganga Datt Bhatt and Subash Khatri who are two Nepalese members of staff from the Department of Plant Resources and me.

The expedition’s purpose was to explore the botanical diversity of these three under-collected districts in Nepal, collecting materials for the Flora of Nepal Project, allowing Patrick and I to make field observations of Pedicularis and Clematis respectively.

Collecting Procedure

The process of collecting in the field in Nepal has evolved over the decade of fieldwork that has been undertaken as part of the project. All collecting is done with permissions granted from Nepal’s Ministry of Forests and Soil Conservation. We are only able to collect plants to be dried and pressed for herbarium specimens and gather leaf material to be stored in silica gel. Current legislation in Nepal expressly prohibits the removal of all living plants and seed from the country for any purpose, scientific, commercial or personal.

In the field we collect plant material straight into a field press. Each collection is put into sheets of newspaper which are annotated with the collection number before being placed in a field press to ensure high quality specimens and minimise the risk of a mixed collection. At the time of collection plant portrait images are taken to aid later identification, and associated data such as character description that are lost during the pressing and drying are noted, as well as altitude, latitude and longitude, habitat etc. are written in our field-books.
Once we reach camp we transfer the material from the field press to a drying press. The material is checked, repositioned in the newspaper and any excess discarded before being put between blotting paper and aluminium corrugates. Some leaf material is ripped into small pieces put in a “teabag” annotated with the collecting number and put in a sealed plastic box with silica gel to dry out the sample for later DNA extraction.

In camp we transfer the material in the field press to drying presses which are put on an aluminium frame over kerosene stoves. The frame and presses are wrapped in space-blankets and is given as long as possible, usually overnight, to dry. We also download the day’s GPS waypoints, transfer our notes from the field-books into the copy of the Flora of Nepal database we bring on a laptop and download images too. This lets us back up all our data onto a computer and portable hard disk to minimise the risk of losing anything.

In the morning the previous day’s specimens are checked to make sure they are dry. Dry specimens are securely bundled and wrapped in plastic, then put in a metal trunk to keep them secure and dry. Damp specimens are kept together to be re-dried with whatever collections we gathered on that day.

Figure 1 Political map of Nepal showing districts visited
Figure 2 Expedition route (in red), camps & passes (in black), rivers (blue).
The Expedition

16th August - Kathmandu

Colin and I landed in Kathmandu at 8.30am after two easy flights from Edinburgh to Kathmandu via Doha. By 10am we were in our rooms at Tibet Guesthouse in the Chhetrapati district of the city. The early arrival gave us the opportunity to grab a couple of hours sleep before meeting two PhD students from Reading University doing projects in Nepal and who had returned after spending some time in Langtang. The rest of the afternoon was then spent sorting and collecting trek gear from the Flora of Nepal’s nearby storeroom.

17th - Kathmandu

We had a breakfast meeting with the Director General of the Department of Plant Resources who came to Tibet Guest House to discuss our plans and what permissions we would need. Straight after we had another trip to the store collect the drying equipment and camping gear to give this to Tenzing Sherpa who organised the logistics of trek. Tenzing broke the first bit of bad news while we were at the store. The airstrip at Juphal was to be resurfaced, actually it was to be given a surface, and would close three days earlier than we had initially planned to end the trek.

We then had a meeting with the transport company who would drive us from Kathmandu to Baglung District. The second bit of bad news was it would not be an easy drive. The road beyond Pokhara was in very poor condition because of the monsoon. There were at least three landslides along our preferred route, which would necessitate changing buses at each block in the road and it might take up to three days to drive the 350km. Our alternative route was completely shut due to the road being washed away so it was plan A or nothing at all.

18th - Kathmandu

We were joined by Dr Patrick Kuss who is a Pedicularis specialist based at Zurich University and was on a Sibbald Fellowship working on the Flora of Nepal and Pan-Himalayan accounts of the genus. We also joined at Tibet Guest House by the two members of DPR joining the expedition, Ganga Datt Bhatt and Subash Khatri, for a project briefing in which we discussed logistics and safety.

19th - On the road, Kathmandu to west of Pokhara

The day was spent doing last minute packing before we were picked up by Tenzing at 4.30pm and taken to his home where the bus was being loaded with our trek gear. By 6pm we were on the road and picked up our most of porters, and normal paying passengers, on the ring road at the south of Kathmandu.

We drove west along the Mid Hill Highway through the night and through some pretty appalling monsoon rain. We passed through a deserted and soaked Pokhara about 2 am and carried on until the exhausted driver pulled over to sleep at a roadside guesthouse. This is when everyone in the bus discovered that the roof leaked spectacularly and by dawn at 5am most people were damp and I was thoroughly soaked.
20th - On the road, Baglung to Bhimgthe

Not long after 6am the bus continued on along a gradually deteriorating road. The road immediately west of Baglung had recently been remade after what was clearly a substantial landslide. A few time we had to wait for the local road crew and their JCB to clear the way for us.

We hit our first big landslide in the early afternoon where we had to unload the bus and walk the gear over the block and find the next bus. A couple of hours on this bus took us to the next landslide and the same again. The next short journey took to a town where we walked our gear over the river to another waiting bus and it was starting to get dark.

By 7.30pm we arrived at Bhimgthe where the transport company had arranged jeeps to take us to Burtibang Bazar but we now had a porter revolt and they refused to go any further. Kumar, our cook, found us some basic accommodation in a guesthouse and we settled down for the night.

An odd incident with what we assumed to be the local funny man but turned out to be the guy who had organised the jeeps was being fairly cheeky towards us giving the porters a good laugh. It is a surreal moment when you realise that you are far from home, in unfamiliar surroundings and on the receiving end of some casual racism.

21st - Bhimgthe (1200m) to Suprang (2300m)

The porters and our gear were loaded into a tractor trailer to be taken to Burtibang Bazar but we decided to would walk the 8km from Bhimgthe so we could begin collecting. At this altitude we were in subtropical/warm temperate valley and the flora reflected that.

Our collections included Begonia picta, Didymocarpus pedicellata and Justica simplex.

We reached Burtibang (not on our trek maps!) a big thriving town at lunchtime. We ate and collected some more plants including Corallodiscus lanuginosa while waiting for our jeep to be fixed before it shuttled us up to Boabang and the road head. It was another less than pleasant road experience. The road was in shocking condition, so bad at one section the driver made us all get out while he negotiated once small bit of road because he was worried the vehicle would tip over.

From the road head we spent a few hours walking up to the village of Suprang through fields of maize and collecting more plants as we went including Corydalis, Dactylicapnos macrocapnos, a new record for Baglung district, and Pedicularis gracilis. That evening we camped in the school grounds using a classroom to process the specimens and another to set up the drying frame.

We also had a panic because our petrol generator fire up but there was no electricity getting to the light or chargers. Eventually we discovered it was the Nepalese adapter that was broken but not until we had dismantled and rebuilt the generator.
Figure 3 *Pedicularis gracilis* (BRD A025) showing morphological variation between stems of the same plant. Left stem parts in 4's, right stem parts in 3's.
The morning started with a good haul of plants just 100m away from the school where we spent nearly 3 hours collecting. We also provided entertainment for the children heading to the school we had just camped at and heading down the trail to Burtibang.

We had fun collecting *Girardinia diversifolia* (Himalayan Nettle) using the hook of an umbrella. We also watched the pollen explode from its anthers while we were putting the specimens into the field press.

This section of trail was the busiest we experienced in our time with a large number of people returning from Burtibang Bazar to Syalpake. Most were interested in what we were doing and where we were going. I few small boys broke away from their group and darted about collecting flowers hoping we’d press what they had brought us.

*Codonopsis purpurea* growing as an epiphyte on *Rhododendron arboretum* was a highlight of the day. We couldn’t get to it so Tenzing paid a boy to climb the tree and collect it for us. This was the only time we saw this species whereas *Codonopsis grey-wilsonii* was far more common and seen many times in Baglung and Rukum.

Figure 4 *Codonopsis purpurea* (BRD A045) an epiphytic plant growing on *Rhododendron arboreum*
We emerged from the forest to the deurali overlooking the floodplain of the Uttar Ganga Nadi. The floodplain of the river looks far too large for the existing river. This feature is an example of river capture, where the head of another river system has eroded back towards a river, intersected and diverted and therefore reduced the flow of the larger system, in this case the Uttar Ganga Nadi.

That evening we camped in grazed floodplain by the river near the village of Uttar Ganga. The fields of oats were pretty much ready to harvest. The turf around our tents had some interesting flowering plants including *Pedicularis hookeriana* and the beautiful *Parnassia wightiana*.
23rd - Uttarganga (2848m) to Phalgune Khola (3659m)

Promising start after leaving camp in the sunshine at 7.30am and started collecting in a clearing with regenerating *Pinus wallichiana* not far from the camp. Saxifraga, *Parnassia wightiana*, *Stobilanthes wallichiana*.

The *Stobilanthes wallichii* was growing in the forest clearing the plants were large and lush but the strays growing in the roadway were stunted, with much darker foliage and smaller flowers. At first glance we thought we had a different species.

In the village of Nabi one large house had an orchard which grabbed out attention because of the dense covering of *Impatiens glandulifera* below. This was the first time Colin has seen this species growing in Nepal. He mentioned that he is asked if he has seen it in Nepal and answer has always been no. From now on until we reached Dolpa we found it growing in the disturbed ground by the side of the trail, on rivers bed where there has been erosion and as a climax vegetation type with *Rumex nepalensis* where grazing is excessively heavy. The plant has a questionable status as a native of Nepal and to us it seemed like it was behaving as it does in the UK and Europe as an invasive weed.

![Figure 6 Impatiens glandulifera growing as understory in an Orchard at Nabi.](image)

When back in Kathmandu we brought this information to the attention of the DPR and the Botany department of Tribhvan University during the seminar at the end of the trek and everyone seemed genuinely surprised that they had a looming invasive weed problem.
We crossed the Uttar Ganga Nadi and stopped to collect in some Juniperus scrub with some locals watching, including one man in a Maoist uniform who asking if we were in the army, presumably because of our kit included our secateurs holsters hanging from our belts. We collected a number of plants in the damp and heavily grazed pasture, including a pink *Primula munroi* in very shallow running water.

Remainder of the day was spent walking through *Abies*, *Betula* and *Rhododendron* forest collecting as we went: *Koenigia delicatula*, *Nepeta laevigata*, *Delphinium vestitum* and *Cremanthodium ellisi*

Also throughout the day Colin started to get progressively more ill. To the point where I took some of his kit to lighten his load, then within 30min the rest of his gear was taken by one of the Sherpa field assistants. I stopped to collect a *Swertia kingii* in a clearing as Colin just walked on hoping to get to camp which we were assured was “just round the corner”.

Walking on it became apparent that our camp was much further up the valley than we and Tenzing had been led to believe. We walked up through the *Abies* forest which was a struggle as we had reached 3000m so early in the trek. Along the trail there were plenty of interesting plants including *Clematis buchananiana* in fruit and flower but catching Colin and getting to camp was now a priority. At the artificial treeline at 3500m as the trail contoured and levelled there was a Northwest facing gully was a large colony of *Meconopsis paniculata*.

I started to catch up with exhausted porters complaining about the distance and length of the day. I caught up with Colin who was also spent. The Phalguni Khola, when in spate had caused a number of landslides which had covered the path and changed the course of the river over the path so we ended up crossing several times in a short distance.

I arrived at camp and dumped my gear and went back down to buddy Colin the rest of the way. When we got back up to camp I got him a seat and asked the kitchen guys for some hot juice for him while a couple of us got his tent up. Once Colin was on his back, and with it only an hour until it got dark I headed back down to find out how far away Patrick, Ganga and Subash were. I met Patrick and his Sherpa assistant not too far down but then carried on a bit further to meet Tenzing who assured me Ganga and Subash were just 10min behind him. Knowing they would make camp before it got dark and headed back to catch up with Patrick to take one of his bags off and lighten his load.

Once in camp Patrick and I started on the day’s specimens. Less than half way through processing these it had become dark and I realised our Nepalese counterparts had not yet appeared. I grabbed my head torch and went out to find out what was happening. It turned out they were 50m below the camp exhausted. The kitchen crew had taken them down tea and biscuits to give them some energy so they could make it up the rest of the way. When they got to camp they got stuck in with the processing with Patrick and I went off to set up the drying tent with Tenzing and a couple of the field assistants by torchlight. None of us had built the drying frame yet and it took us a while to work out how it was done. By 9.30pm we had finished processing the specimens and got the drying process going; I was exhausted and could barely speak let alone think but at least dinner was ready and waiting.

This for me was the hardest day of the trek; the length of day, the fairly hard pull up of 1000m from 2800m to 3800m camp so early in the trek, the stress of an ill boss, late arriving colleagues, being
looked to for answers (most of which I didn’t have and made as I went along!) from the trek crew about getting the camp up and trying to get on top of processing our collections.

Figure 7 Top Left: Bistorta amplexicaulis. Top right: Meconopsis paniculata (BRD A068) [what Grey-Wilson calls subsp. pseudoregia]. Bottom: Primula munroi (BRD A058)
Today was an enforced rest day at Phalgune to let Colin recover before we went over the pass. It turned out to be a blessing because it allowed us to catch up on data entry and specimen drying.

We also intensively botanised around camp collecting a good number of interesting species. *Silene helleboriflora* being my favourite of the site because it was hard won. Initially going up a steep gully and failing, then going up the trail and then down the gully ridge to get at it, and failing before eventually going up a parallel gully and then contouring round.

With the stress of the previous day I had not collected the *Meconopsis paniculata* in favour of getting to camp with Colin with the daylight running out. I went back down the trail with Dawa Sherpa to collect some specimens.

With Dawa, one of our field assistants, we retraced our steps from the day before zigzagging back and forth over the river and dropping about 200m. As well as the good sized colony in the gully there were individuals growing in the disturbed rocky river bed but those plants were stunted and in poor condition. We dug out three plants, roots and all, which would be more than enough material for the 5 specimens. The roots were dried and left in Nepal for DPR to do biochemical analysis on to see what compounds it contains as it is used in traditional medicine. One lady porter who passed us on the trail stopped to tell us it was a powerful plant but didn’t elaborate.

Patrick had a productive day collecting on the slopes and gullies around camp collecting a number of *Juncus* species, *Neottianthe calcicola*, *Pedicularis pennelliana* and *P. mollis*. *P. anserantha*

We ran the stoves all day initially to re-dry the overnight specimens that were still damp and getting today’s collections on early to give them as long as possible to dry.

We took stock of our newspaper we realised we might not have enough for the full expedition at the rate we were collecting. If we didn’t find any newspaper in the towns and villages we came to in the next few days, and we didn’t, we considered phoning Kathmandu and getting Tenzing’s wife to send us newspaper from Kathmandu on a flight to Juphal and we would collect it once we reached Dolpa.

There was also the dawning realisation that it might not be possible to make it to the Phoksumdo Tal before our time ran out with losing a day because of the journey from Kathmandu, today’s static camp and having to fly out early.
25th - Phalgune Khola (3659m) to Phalguni Dhuri (4100m) to Thankur (3308m)

The day started with heading up to Phalgune Dhuri which on the map was a mere 3900m, but once at the pass our GPS's were telling us different. The pass was fairly heavily grazed but there were still a good number of flowering herbs in the short turf. Pedicularis hoffmeisterii and P. klotzschii subsp. lutescens and Pedicularis hookeriana. Cyananthus lobatus and C. microphyllus. Bistorta vivipara, Cremanthodium arnicoides. Parnassia nubicola and Parnassia trinervis.

It almost felt like a scene from the Alps with cattle lazing about, their bells chiming away, the Leontopodium growing around us in the alpine turf and having a happy man of the Alps with us.

Most of the rest of the day was spent walking across sub-alpine meadows and grassland before we dropped back initially into the forest of Betula and Rhododendron which changed to Abies forest. Despite generally losing altitude it did feel like a lot of up and down.

Coming down through a particularly steep section of the Abies forest we start hearing whooping and yee-hawing from Patrick. When we eventually caught up with him he was verging on ecstatic. He’d found some epiphytic Pedicularis scullyana growing alongside ferns and orchids on Abies. This was one of his taxonomic mysteries that he had hoped to answer and now had.

We could see the camp looking down through the Abies near the small village of Thankur which was in a beautiful valley surrounded by steep sided slopes covered in Abies forest and with the wooden shingled farmsteads, small fields and grazing horses; it felt more like a scene from the Rockies than the Himalaya.

Figure 8 Herb rich sub-alpine pasture at Phalgune.
Next morning we continued through the Abies forest descending nearly 500m to the Ghasdung Khola. The dense forest was predominantly *Abies grandis* but there were also *Acer pectinatum*, *Sorbus* and *Pinus wallichiana*. On our way down to the river we collected, a few species of *Ribes* and *Rubus* that we also ate, as well as collecting *Triosteum himalayanum*, *Rosa serica* in fruit, *Ligularia fischeri*, *Allium wallichiana* and *Leycesteria formosa*.

As soon as we crossed the Ghasdung Khola Colin spotted a *Clematis* and I was quickly able to tell him whatever it was it was new from Nepal and was very likely to be a new taxon. The forest changed immediately and dramatically once we had gained a little altitude. This south facing slope was hot and dry and was predominantly *Quercus semecarpifolia*, with acorns and dry brown leaves from the oaks across the trail.

The rest of the afternoon was a hot slog of a walk up through the open *Quercus* forest to Kayam at 3100m, collecting a number of plants that we hadn’t seen in the cool damp north facing *Abies* forest: *Pedicularis bifida*, *Satyrium nepalense*, and *Phlomis setigera*.

The view of the ridge at Kayam was more how I picture the Himalaya; the steep southwest facing slope dropping 700m back down to the Ghasdung Khola and the gentle sloping pasture on the northeast slope surrounded by forest.

![Figure 9](image-url) Left: *Pedicularis bifida* (BRD B063). Right: *Satyrium nepalense* (BRD B064)
27th - Kayam (3152m) to Guibang (2895m)

The day started walking along the ridge through the autumnal feeling *Quercus* forest. On reaching a meadow we began to drop steadily down through pasture and patches of remnant *Pinus wallichiana* forest and then into fields of maize until we reached Pelma. On the edges of the remnant forest which were mostly field and pasture boundaries we collected *Clematis buchanania* and *Clematis connata* growing side by side.

We dropped down further to the Pani Dal Khola through dense bamboo forest. We crossed the river over an alarmingly rotten bridge surrounded by huge cliffs. The cook staff that I was with signed themselves then ran across the bridge. There was then a steep walk up a gully to regain the altitude we’d lost to cross the river. The gully had an interesting flora untouched by the burning that is probably because it’s too damp for fire to take hold.

Once we had regained some of the altitude we contoured round the hillside above the Pani Dal Khola. We walked mostly through grassy slopes but as we gained some altitude we headed back into forest for a while. This section of the trial was atrocious, bits where the path had fallen away and a section of a huge landslide with entire sections of the path just gone.

We walked on through the village of Him through the heaviest monsoon rain so far and eventually reaching the school at Guibang and our campsite for the evening.

![Figure 10 Spathoglottis ixioides (BRD B082) most attractive plant of the day growing above the Pani Dal Khola](image-url)
28th - Guibang (2895m) to Sen Khola Camp (3641m)

Today was supposed to be a short walk from Guibang up to the head of the valley 400m above to reach Duli, where we’d have a rest day and catch up on drying plants and data entry. However on reaching the village we found a debate raging amongst our trek staff over the merits of moving on and not staying. It turned out that the major contentious issues were animal dung in the water supply and the village house of ‘ill repute’. We didn’t stay.

As we were not meant to be walking particularly far we didn’t have food for a day’s walking so we stopped with the cook staff at a recently vacated camp in the forest. The fires were still smouldering so we got them going again and had a pleasant couple of hours sitting on the ridge just waiting for lunch of dal bhatt and curry. As we were on a ridge the forest when looking NW was Betula and Rhododendron and looking SE the Forest was Tsuga and Picea within 10m of each other. There was an amazing colony of Primula reidii on a shaded wet mossy rock face.

The rest of the afternoon was spent walking along the ridge through Betula forest. We collected Codonopsis grey-wilsonii and the curious Rhodiola prainii. The monsoon hit like clockwork about 2pm when the ridge was engulfed in cloud. The trail continued along open slopes until we came to a deurali with imposing drystone pillars. The area around the deurali was very heavily grazed and there was nothing to see as the vegetation was Rumex nepalensis and Impatiens glandulifera.

From here it was downhill, through pasture until we met the Sen Khola and our camp on the banks. It had been another long day.

Figure 11 Left: Primula reidii (BRD A141). Right: Rhodiola prainii (BRD A145)
29th - Rest day at Sen Khola (3641m)

Today was a rest day before we got up and over 4000m. It was the only slow start to the day as we left the stoves to run dry before we did the specimen check so had a more relaxed breakfast.

Most of the day was spent collecting in the herb rich pasture and cliffs around camp which were spectacular. *Silene helleborifolia* grew abundantly on damp rock faces directly above the river, presumably ungrazeable. Three species of *Ranunculus* were growing in a wet flush; *Primula glomerata*, *Codonopsis viridis*, *Pedicularis megalantha Nepeta lamiopsis* and several species of *Corydalis* in the pasture; *Cremanthodium nepalense* and an *Ephedera* sp. on the cliffs.

We also had the spectacle of the porters wading across the river and up the hillside to a patch of *Betula* woodland where they scavenged dead wood including an entire fallen tree which they dragged down the hill and across the river.

![Image of Silene helleboriflora](image)

**Figure 12 Silene helleboriflora**
30th - Sen Khola camp (3641m) to Upper Pani Dhal Khola (4510m) - High Camp (4300m)

We left camp at 7.15am and head along the trail following the Sen Khola. The trail then abruptly turns NW and we start going up. It was slow going as we were all feeling the lack of air, frequently stopping to collect the odd plant just to catch our breath. One of our Nepalese colleagues, Ganga Dhutt, seemed to be the only one with energy and went bounding off finding *Meconopsis horridula* and *Saussurea graminifolia*.

The vegetation changed from subalpine pasture to a true alpine flora at about 4200m. We began to see more *Meconopsis horridula*, *Saussurea gossipifera* and *Saussurea* and *Corydalis macrocaylx*. We also walked through a 20 minute hail storm with booming thunder which heading up to the watershed at 4500m.

We stopped for camp at 4300m, the air was cold and the vegetation was sparse because of late snowbeds on the North facing slopes. The only really interesting plants to be found around camp were the fragrant *Rhododendron lepidotum* and *Aconitum hookeri*.

![Figure 13](image13.jpg)

Figure 13 Left: *Saussurea gossypiphora*. Right: *Meconopsis horridula* (BRD A163) at c.4500m
Next morning we headed down to the valley between the watershed and the Jangla Bhanjang. As a few members of the team are feeling the effects of altitude we decide to camp here. Colin, myself and Lall one of the Sherpa field assistants went for a recce to the pass to see how long it would take and check the altitude the map said was correct.

It took us two hours to get to the pass, which was marked by a concrete pillar. The area is heavily grazed and there wasn’t much in the way of flowering herbs, although we did stop to make a few collections when we headed back down to camp.

Our Nepali colleagues told us that Jangla Bhanjang means the jungle pass, and from the altitude it should be forested. However there are no trees on the Rukum side of the pass as the vegetation is heavily grazed.

1st September - Upper Pani Dhal Khola (4017m) - Jangla Bhanjang (4534m) - Beluwa (2334m)

We set off to get up and over the pass early and were at the pass by 9.30am. The only plant we collected on the way up to the pass was *Sibbaldia purpureum*. We felt obliged to collect the species as it is related to the RBGE’s logo *Sibbaldia procumbens*. As we dug up the *Sibbaldia* I was surprised to find that just below the surface there was a layer of frost.

We reached the deurali about just before 9.30am and it was bitterly cold in the wind. The concrete pillar that had been standing 18 hours earlier was now on its side blown over in the night. We took some photographs and shook hands, being remarkably British about it, before heading into Dolpa.

Within 100m of the pass on the Dolpa side the vegetation began to change and we found a host of different species we hadn’t seen on the southern side of the pass. ‘New’ alpines like *Delphinium brunonianum*, two *Gentiana* species, a white *Bistorta* and a number of different *Pedicularis* species.

As we headed north the vegetation and views changed substantially in only a few short hours as we were now in the trans-Himalaya and heading to the dry inner valleys of Dolpa. The vegetation of the valleys in the distance appeared sparser, the forests less dense with more rock visible on the slopes. The crops changes too with large conspicuous patches of pink flowering Buckwheat dotted across the hillsides. The architecture changed as well. The houses began to look more “Tibetan” with flat roofs, white washed walls and prayer flags. It is a generalisation to say it is Tibetan as the architecture and the culture in Dolpa is specific to there.

We also saw our first Chorten of the trek. Like everywhere religion no longer plays such a significant part of daily life and the art work within was crumbling. Not far below we also found our first *Clematis grata* in fruit covering a large *Berberis*.

By the time we got to Beluwa 11 hours after leaving camp we had done more than 2600m (6500ft) of up but mostly down. We started the day feeling the lack of air to reach the Jangla Bhanjang with its frozen ground and ending up at the bottom of hot dry valley. Despite the exhaustion we still had the day’s collections to process which took a few more hours before we could eat and sleep.
2nd - Beluwa (2334m) - Dunai (2063m)

Today was a long hot walk along the banks of the Thuli Bheri Nadi. It was at times spectacular but very hot in the bottom of the steep side valley gorge.

The valley sides were telling of how land is managed. Southern slopes are open dry grasslands whereas the northern slopes are open *Pinus roxburghii* forest with an understorey of grass all maintained by regular burning. The flora along the trail was also less than inspiring being dominated by *Artemisia* and *Cannabis*. The most interesting find was probably *Incarvillea arguta*.

We arrived in Dunai to find camp being set up at the end of a football pitch with heavily armed guards from the overlooking prison bellowing at our crew not to put the tents too close to the pitch because there was practice on.

As we processed specimens before dinner some kids stuck their heads into the mess tent being nosey. One of them said in accented but perfect English “Hello. What are you doing?”

“Working, what are you doing?” replies Patrick.

“I am looking at you” was the response. This set his followers and us off in to fits of laughter.

Subashs one of our Nepali colleagues decided to give up here in Dunai and wait for us to come back down from Poksumdo Tal. He had been suffering with a swollen knee and generally not managing the pace of the trek.
3rd - Dunai (2063m) to Shyanta (2403m)

There was another hot long walk along valley floor initially following the Bheri then the Suli Gad. The day started with more *Clematis grata* then *Clematis graveolens* and *Clematis tibetana* subsp. *brevipes*.

Once in the National park it became apparent the vegetation was wrecked because of the burning to maintain the grassland where the population was heaviest. We passed through empty winter villages overgrown with *Artemesia* and *Datura*.

![Winter Village in Phoksumdo National Park](image)

Figure 15 Winter Village in Phoksumdo National Park

However further up the valley there was an abrupt shift to forest; initially a mix of species, then predominantly Bamboo before becoming *Cupressus* forest with some impressively large old trees.

We camped in the grounds of what felt like someone’s garden which had a brand new helipad.

4th - Shyangta (2403m) to Phkosumdo Khola (3066m)

The route up the valley was full of ups and downs. The route on map bore no resemblance to the actual path. It was hot whenever the shade of the forest was broken. There was a stand some fantastically large *Cupressus tortulosa*, with a spray painted GHT (Great Himalayan Trail) and a Maoist Hammer and Sickle.
Some of the most interesting collections included *Xanthoxylum floribundum*, *Platystemma violoides*, *Silene moorcroftiana* and a number of woody shrubs, *Berberis*, *Cotoneaster*, *Deutzia* and *Philadelphus* that have yet to be identified.

Out of the forest higher up there were great views of the mountain to the Southeast of Phoksumdo Tal and the geology that was formed the loch when the side of the mountain fell away. We stayed at a camp ground between Sanduwa and Chunuwar. The owner was very curious about what we were up to and spent a good while watching us process specimens. He even appeared at one point with a bunch of flowers for us to press.

Figure 16 *Platystemma violoides* (BRD A238)
5th - Phoksumdo Khola (3066m) to (3803m) to Phoksumdo Tal (3619m) to Phoksumdo Khola (3066m)

We set off early and planned not collect until we are heading back down to spend as much time as possible at the loch. We were told by the camp ground owner that it would take at most two and a half hours to reach Phoksumdo. Colin and I headed off up the trail following the most obvious well-trodden path. Thirty minutes later we had realised that we were heading up and away from the river we knew we had to cross. Looking across the valley we saw Patrick, Ganga and Lall. So we turned round to head back and were met by some of our trek crew who want to see the loch.

They convinced us to keep going, so we did. We met a horseman coming the other way. He was asked if you can get to the loch this way. His answer was yes but nobody asked the key questions about how long it would take.

We carried on up to a deurali collecting Clematis roylei along the way. We reached to the village of Maduwa and were told that there was bridge to cross the Maduwa Khola and to just head straight up the hillside, it should take two hours. The vegetation was Caragena and Ephedera scrub on the open hot dry hillside. Higher up there were a few Pinus wallichiana with their needles bunched together and small stunted cones, a result of drought stress. We decide to start collecting to make the most of the fact we were on a probably on a botanically unexplored route to Phoksumdo.

Highlights were a beautiful wee Campanula cashmeriana and the sun-bleached stems of Clematis phlebantha which was in fruit. We reached the plateau and walked down through Pinus wallichiana forest collecting a few more things: a cream-flowered Gentiana, Orobancaceae and a parasitic Orchid and Gerbera nivea, until we reached Ringmo and then on to Poksumdo Tal. It has taken us 5 hours to reach the shores. We met up with the various groups of our party that had split up and we then spent a couple of hours just sitting by the water’s edge. It was the only bit of the 3 weeks that felt like a holiday.

We then started to collect again, finding Origanum, Salvia, Thymus and a number of Dicranostigma lactucoides, of which only a single plant was in flower with the rest being in fruit.
Figure 17 Top: Chorten at Ringmo. Bottom *Clematis tibetana* subsp. *brevipes* in fruit and flower
6th - Phoksumdo Khola (3066m) to Kageni (2250m)

Before setting off in the morning we collected some *Hypecoum leptocarpum*, a less than impressive member of the Poppy family growing around camp. Today could be best described a power walk down the Suli Gad, only stopping to collect a few plants we had missed on the way up and retrieving a bit of Colin’s camera kit that had been left at the side of the trail.

It was very pleasant walking back down through the forest watching it change from *Pinus* to *Picea* and then to *Cupressus*. We collected two trees in the Anacardiaceae that we had missed on the way up not having the long reach loppers, *Anemone vitifolia*, and a *Clematis connata* that was still in bud when we passed a few days earlier but was now open.

Once out of the forest there was hot march into the sun through the trashed, fire-degraded hillsides, through the abandoned villages swamped in *Artemesia*, *Cannabis* and *Datura* until we reached Kageni where we camped in the garden of a house.

The stupidest thing I did on the whole trek was today. I was too busy watching five goats in tight formation munching their way through a field of beans and being preoccupied with them I brushed past a *Girardinia diversifolia* (Himalayan nettle) hanging over a wall and stung my ear and my scalp. Despite taking anti-histamines and paracetamol the throbbing and burning lasted an annoying 12 hours and even a couple of days later rolling onto that side in the night would wake me up.

7th - Kageni (2250m) to Juphal (2480m)

We had an early start to beat the heat of the valley floor. Within an hour we had reached the Suli-Thuli Bheri confluence and crossed the bridge over the Bheri, still heavily guarded despite the end of the civil war. We then had a two and a half hour walk along the hot valley floor and then following the trail up to Juphal.

This area was the most impacted by tourism with a near relentless “Hello pen” “Give me pen” as we walked up through Motipur on the way to Juphal. The funniest bit was when we didn’t respond and they assumed we hadn’t understood so changed too “Hola pen”!

I enjoyed our sedate afternoon in Juphal sitting on an open roof terrace sorting silica specimens and splitting the gear up to what was coming back on the plane and what would be carried out by the trek crew. All this was done looking across the rooftops of Juphal, terraced fields, the Thuli Bheri Nadi and the southern slopes of the Palihalna Danda beyond. Colin reckoned I was only enjoying it because my expectations had been lowered to almost nothing from being in the field for three weeks.

8th - Juphal to Kathmandu

We were all awake well before it was light with all the noise in and around the camp and hotel. The flight out was due at 7am but the cloud base was too low for the incoming plane to from Nepalganj to land so all we had to do was wait. We were all watching the clock because the last safe time for a plane to leave is 11am before the wind picks up. We heard that the airline decided to use the plane to do the next scheduled flight, Nepalganj to Simikot, to give the clouds at Juphal a chance to clear.
By about 9am we were standing on the runway watching the twin prop come into land, turn at the end of the runways and then taxi over to where we were all standing. The take-off from Juphal is amazing. The pilot ramps the engines up to full power then released the break and the plane rattled along the unsealed dusty runway and at the end of the runway the mountain just drops away down to the Thuli Bheri Nadi.

The next and what seemed to be impossible hurdle was arriving at Nepalgunj at 9.50am with our flight to Kathmandu due to leave at 10am. Tenzing ran out from arrival hall and into the terminal when we arrived while we waited for the bags and a by some small miracle he convinced Yeti to hold the flight for us. There was a crazy rush through the usual airport necessities but 30min later we were sitting on the Kathmandu flight with all our luggage and specimens!

Once back in Kathmandu we had a chilled afternoon in Tibet Guesthouse before going for a traditional post-trek steak and beer at K-too.

8th to 15th - Post Trek Kathmandu

Things did not ease off once back in Kathmandu. We spent two days sorting the 454 collections into the 5 duplicate sets. One set each for the 4 main collaborating institutions RBGE (E), Tokyo University Herbarium (TI), the National Herbarium of Nepal in Godovari (KATH) and Tribhuvan University Herbarium (TU). The additional set is so experts on particular genera to get material to work on for their particular herbaria.

There were also multiple meetings with DPR about the trek, securing export permits. There was a Flora of Nepal seminar held at the Thapatali offices of DPR where Colin presented what was achieved on the trek as well as the logistics and processes of a collection trip in Nepal to staff from DPR and TU. Afterwards there was a meeting about the progress towards Volume 10 of the Flora, the Nepalese-led volume, which deals with monocots.

I spent a day and a half working through the Clematis collections in KATH that I had seen and photographed during the Darchula expedition in 2012. These were re-identified and annotated with the taxonomic name that they correspond to in my draft account for the Flora which has been compiled as part of my PhD. I was also presented with a bundle of un-mounted, undetermined specimens from previous DPR fieldwork mostly from the 1970s and 80s which I identified and annotated.

We had a glorious afternoon off that I spent in the garden of Tibet Guesthouse eating chips covered in chilli sauce, drinking cold Everest beer and reading Bill Tilman’s Nepal Himalaya.

While we were doing this the rest of the trek crew had a three day walkout from Juphal to Jomsom to get a 24hour bus back to Kathmandu. So the last of our trek gear did not appear until Saturday at 7am when we went straight to the store to pack it away by headtorch light as the power was off due to scheduled load shedding. It definitely counts as one of those unexpected trek events sitting in darkness counting sheets of blotting paper and aluminium corrugates.

For our final evening in Kathmandu we went to Tenzing’s home and had dinner with this family and some of the trek staff who were around Kathmandu; a great way to round of our successful trip.
Since getting back to Edinburgh we’ve been working through the collections trying to identify the material and I’ve been doing molecular work in the laboratories on the *Clematis* collections.

Figure 18 Top: Sorting specimens in the hotel room. Bottom Left: *Clematis phlebantha* (BRD A262) Bottom Right: *Clematis roylei* (BRD A259)
**BRD Collection inventory**

Current determination and full data can be found at [www.floraofnepal.org](http://www.floraofnepal.org)

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Umbelliferae  Bupleurum Wall. ex DC.  A091
Umbelliferae  Umbelliferae  A005
Umbelliferae  Umbelliferae  A039
Umbelliferae  Umbelliferae  A050
Umbelliferae  Umbelliferae  A139
Urticaceae  Girardinia diversifolia (Link) Friis  A040
Urticaceae  Pilea Lindl.  A037
Urticaceae  Urticaceae  A035
Urticaceae  Urticaceae  A113
Valerianaceae  Valeriana L.  A293
Vitaceae  Ampelocissus rugosa (Wall.) Planch.  B81
Vitaceae  Parthenocissus himalayana (Royle) Planch.  B138
Vitaceae  Parthenocissus Planch. nom cons.  B014
Vitaceae  Vitaceae  A026
Vitaceae  Vitaceae  B82
Zingiberaceae  Hedychium spicatum Sm.  B72
Zingiberaceae  Roscoea purpurea Sm.  B71
Fern  A187
Fern  A188
Orobanche aff. Caryophyllea  B142
unknown  A267
Unknown  A237
Unknown  A235
Unknown  A248
unknown  A247