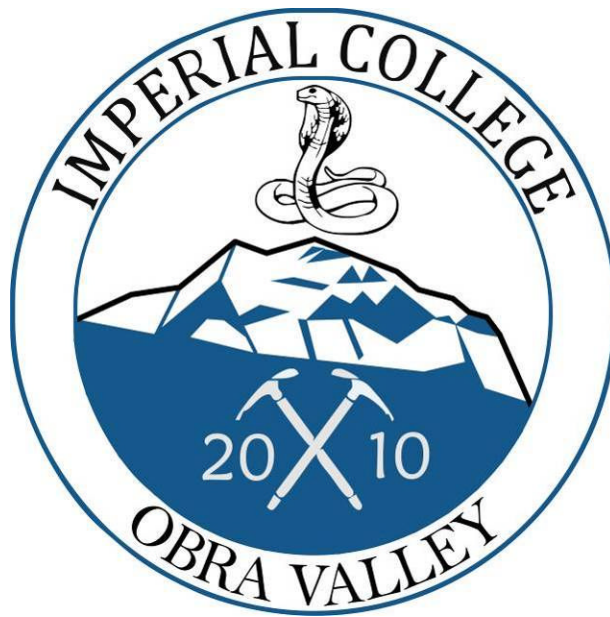


IMPERIAL COLLEGE LONDON

OBRA VALLEY 2010

GARHWAL HIMALAYA, INDIA



EXPEDITION REPORT

EDITED BY
JONATHAN PHILLIPS

jonathan.phillips04@imperial.ac.uk

Approved by the Imperial College Exploration Board

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Imperial College
London



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SUMMARY

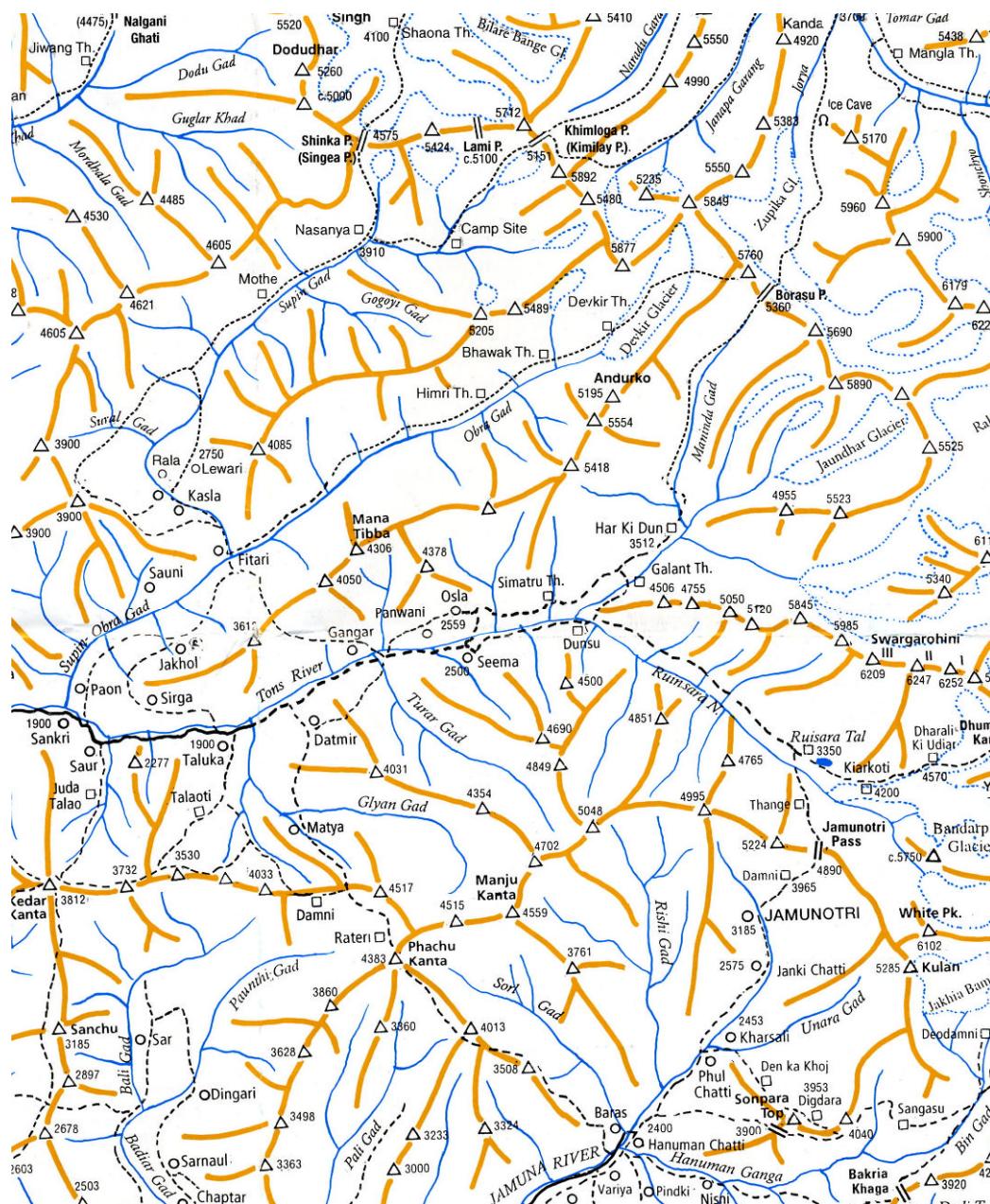
The Imperial College Obra Valley 2010 Expedition consisted of five students; Boris Korzh, Philip Leadbeater, Andrew McLellan, Kunal Masania and was led by Jonathan Phillips. The team explored the Obra Valley to the west of the Bandarpunch-Swargarohini Group in India's far Western Garhwal. All members of the expedition reached the summits of three peaks, Pt 5480 via the SW ridge at Alpine AD-, Pt 5877 (Dauru) via the North West ridge at AD, and Pt 5554 (Ranglana) via the South ridge at D- during a period of stable weather. Due to the composition of the team these ascents were the first Welsh, Scottish and English ascents of these peaks. During these ascents the team crossed cols into the Supin and Maninda valleys. On approach to the region the effect of the delayed monsoon rain of 2010 was evident as it was causing many landslides, blocking the road, which delayed the approach by several days.

INTRODUCTION

DESCRIPTION OF AREA

The Obra Valley is to the north of Delhi, located in India's Western Garhwal lying to the west of the Bandarpunch-Swargarohini Group. Access can be made on road from Dehradun following the Yamuna River north along the N-123. The valley is situated in the Govind Pashu National Park for which a park fee is applicable for foreign visitors. Approach to the objectives is made from the roadhead at Jakhol. From here, a 3-day trek next to the Supin-Obra Gad and then the Obra Gad led to a large grassy plateau at the head of the valley below the main Devkir glacier. This is the ideal location for a base camp to access the peaks. Flowing streams (glacial and snow melt) were present in this area for the duration of our visit.

MAPS & AERIAL PHOTOGRAPHS



Extract from 1:200,000 map of the Garhwal Himalaya

AIMS & OBJECTIVES

The expedition successfully achieved its primary aim and subsidiary objectives.

AIM

- To make first ascents of unclimbed peaks from 5,400m to 5,900m in the Obra Valley, Garhwal Himalaya, India.

OBJECTIVES

- Take three members on their first expedition.
- Take five members on their first Himalayan expedition.
- Return home safely having enjoyed the challenges and unique environment of the Himalaya.
- Identify other potential objectives in the area for future expeditions.
- Inspire other members of Imperial College, as well as the wider climbing community to explore the Himalaya.
- Extend the climbing and expedition experience of all members.



Left to right, Phil, Boris, Kunal, Andrew and Jonny

EXPEDITION TEAM

The team all knew one another from being members of the Imperial College Outdoor Club and have regularly climbed together in the UK and Europe. Jonny had previously been a member of the Imperial College East Greenland expedition in 2009 and Kunal of the Imperial College Taghia Gorge Expedition in 2008. This was the first expedition for Phil, Andrew and Boris.

JONATHAN PHILLIPS - LEADER

23, PhD Student, Department of Materials.

Jonathan (Jonny) Phillips, 23, is a PhD student in the Royal School of Mines, Imperial College London and was the leader for the Imperial College Obra Expedition. Jonny is a keen trad (E1), sport (7a) and winter climber (IV,6). He has alpine experience including summiting Mont Blanc (4,807 m) by the Gouter Route, Mont Maudit via Frontier Ridge and the Rebuffat route E1/TD. In 2009, he was part of an Imperial College expedition to the Renland area of East Greenland which completed 3 first ascents of unclimbed mountains in the Arctic Circle. In 2003 he was a member of a World Challenge Expedition to Australia.

PHILIP LEADBEATER

25, PhD Student, Faculty of Medicine.

Phil has vast experience of hill walking and climbing in the UK mountains and abroad and particularly enjoys white-water kayaking (IV), ice climbing (WI4), Scottish winter climbing (IV, 4), cross country skiing and snowshoeing. He has climbed Alpine TD with notable summits including Aiguille du Midi, Mont Maudit and Mont Blanc and climbed multi-pitch 6a sport. In 2009, Phil was placed 1st in the University Champs with Andrew McLellan in the Lowe Alpine Mountain Marathon, Scotland. Phil is also qualified in first aid and has plenty of experience in dealing with trauma and medical emergencies at major events and expertise of mountain first aid.

KUNAL MASANIA

27, Research Associate, Department of Mechanical Engineering.

Kunal has previously trekked up Kilimanjaro (5,985m) before taking up climbing and currently climbs E1/E2 trad and 7b on sport. Notable winter ascents include routes up Ben Nevis and Cairngorms (Savage Slit, Pot of Gold) up to grade V/VI Scottish and ice climbing WI5+/6 multi-pitch. He has experience of alpine routes up to TD+ including the Cosmique Arête solo, Grepon and Frendo Spur (20 routes in the D-TD+ range). In 2008, Kunal was part of an expedition from Imperial College to go big walling in Morocco where a 600m 7a+ ob. new route (Storm o'clock) was established.

ANDREW MCLELLAN

22, Graduate, Department of Civil Engineering.

Andrew (Andy) McLellan, 22, is a graduate of the Department of Civil Engineering, Imperial College London. He is an active climber, mountaineer and Acting Pilot Officer in the Royal Air Force Volunteer Reserves. He has led a cross-country skiing expedition to the Hardangervidda plateau, Norway. In 2009, Andy was watch leader for a sailing expedition from Lanzarote to Rio de Janeiro with the RAF. He has climbed in Scottish grade III and alpine routes including; Mont Maudit (4468m, Frontier Ridge D) and Mont Blanc (4,808m, traverse Col Brenva-Dome du Gouter) and multi-pitch sport up to F6a.

BORIS KORZH

20, Undergraduate (3rd Year), Department of Physics.

Boris actively pursues his interests in many outdoor sports including mountain biking, touring and cross country skiing, mountain marathons (top 10 finish in the 2010 LAMM Cat A), rock climbing and mountaineering. Boris is comfortable leading E1 trad and 7a sport, and spends most weekends visiting the Peak District, Lake District, North and West Yorkshire, Snowdonia, Clwyd and Llangollen. He has climbed up to Scottish V, 6 in Wales, WI5 in Norway and completed multiple Jonathon Conville training courses. This summer he visited the Alps climbing routes up to TD+ with notable ascents of the Frendo Spur and the Traverse of the Chamonix Aiguilles.

PRE EXPEDITION TIMELINE

The planning of this expedition took 12 months, starting in September 2009 and culminating in a very busy month before departure. The team faced several setbacks in terms of injuries, however in general the planning was straightforward due in part to the excellent reports written by previous teams that had visited the area.

SEPTEMBER

Initial plans to visit the Obra Valley were developed by Jonathan Phillips and Dominic Southgate (Imperial College East Greenland Expedition 2009); inspired by a lecture presented by Derek Buckle and Martin Scott at the Alpine Club.

OCTOBER

Jonathan assembled a team consisting of Boris, Philip and Andrew. Much research was conducted into possible objectives in the Obra Valley. The team were fortunate enough to have personal communication with Derek Buckle and obtain his report on the 2008 expedition, which proved invaluable.

NOVEMBER

Further information was gathered and an expedition proposal was completed for the Imperial College Exploration Board, consisting of proposed objectives and a provisional budget. Philip also consulted with several medical experts to determine which medical supplies would be required for the expedition.

DECEMBER

The expedition received approval from the Imperial College Expedition Board with the recommendation that Dominic Southgate should also join the expedition team. Applications were submitted to the Lyon Equipment Award, British Mountaineering Council and the Mount Everest Foundation for sponsorship.

JANUARY

Boris, Philip, Andrew and Jonathan attended the Imperial College Union Outdoor Club winter tour practising their winter climbing, avalanche awareness and skiing skills. Dominic agrees to join the expedition.

FEBRUARY

Rimo Expeditions was contacted for an initial quotation for the provision of base camp support. Boris and Philip attended the Imperial College Union Exploration Society winter tour to Rjukan, practising ice climbing skills. A further meeting was held with the Imperial College Exploration Board to discuss progress with our planning.

MARCH

Jonathan was invited to interview with the MEF panel at the Royal Geographical Society in London at the start of the month and then traveled to Cardiff for an interview with the Welsh Sports Association at the end.

APRIL

Flights were booked with British Airways to Delhi, from Heathrow, finalising the dates we would be spending in India.

MAY

Dominic Southgate broke his ankle, whilst bouldering in Fontainebleau, France. After seeking medical advice it was agreed he would be unable to participate in the expedition.

JUNE

Boris and Kunal (separate trips) travelled to the Mont Blanc Massif to practise mountaineering skills. Boris and his climbing partner were injured by rock fall during a storm. Boris sustained several broken ribs and shoulder as well as a ruptured spleen. Jonathan attended the final meeting with the Imperial College Exploration Board. Equipment was received from the Lyon Equipment Award.

JULY

Kunal was invited to replace Dominic in the expedition team. Boris returned to the UK from France and was discharged from hospital.

AUGUST

Indian Visas were obtained by expedition members individually through VFS services. Andrew spent time in Saas Fe, Swiss Alps practising mountaineering skills. Expedition insurance was obtained by individuals from the British Mountaineering Council. A satellite phone was borrowed from Imperial College and a new SIM card and credit was purchased. Down equipment was purchased from Peter Hutchinson Designs, including sleeping bags and jackets. Flight details were changed to reflect Kunal replacing Dominic in the original expedition team.

SEPTEMBER

Extra bags were booked onto the flight to allow all of the mountaineering equipment to be carried with us, without having to rely on freight. Final items and the prescriptions for the medical kit were obtained by Phil. The team met at Heathrow airport on the 10th September to fly out to Delhi, after much last minute preparation the night before



The start of our journey at South Kensington station

PLANNING & PREPARATION

AREA HISTORY

Several expeditions have previously visited the Obra valley, adjacent to the valley containing Har Ki Dun which is a very popular trekking route. The majority of peaks in the Obra and surrounding valleys do not have reported first ascents, with most of the attempts being thwarted by bad weather or bad snow conditions. Further details of previous expeditions and the summits achieved are detailed below:

PREVIOUS EXPEDITIONS TO THE OBRA VALLEY

2006

From May to June a team of Alpine Club and Himalayan Club members explored the Obra Valley; Gerry and Louise Wilson, Harish Kapadia, Suman Dubey, Suki Seth, Radha Upadhyaya and, Ashish Shah. With them were three climbers; Rajesh Gadgil, Rajal Upadhyaya and Vinay Hegde. Conditions were not favourable during this visit and only Dhodu Ka Gunchha (5130m) was climbed. [1-3].

2008

From the 27th September – 26th October a team from the Alpine Club:- Derek Buckle, Toto Gronlund, Martin Scott and Bill Thurston, formed the Obra Valley 5,000m Peaks Expedition. They visited the upper reaches of the Devkir Glacier with the intention of climbing peaks at the head of the valley. Poor snow conditions, and regular afternoon snow and hail showers meant that the team reached three cols (Zupika, Maninda, Supin), and climbed peak 5,165m (naming it Lammergeyer peak) [4-6].

It is believed that a Japanese team visited in November of that year, however currently there are no published reports of their visit. According to local knowledge from the Porter Association and villagers, the team had attempted Ranglana but not reached the summit. It has not been possible to trace this team or any record of them or their activities.

2009

Visits by a team including Vinay Hegde were unsuccessful due to poor snow conditions, not reported directly but alluded to in subsequent reports [7].

2010

From the 25th May 2010 a team including Sanjay Khatau, Prakash Samant, Vinay Hegde and led by Cyrus Shroff attempted to climb Ranglana (5,554m). It is reported that this was their third attempt in two years with the previous two attempts failing due to poor snow conditions. In total this was Hegde's 5th visit. The team decided that Ranglana was not possible from the Eastern or Western Cols, so attempted Dhodu but failed 40-50m from the summit [7, 8].

References

1. Wilson, G. Wilson, L., Obra Gad in The Himalayan Journal, 2006, 62, pg199.
2. Upadhyaya, R., Exploring the Obra Valley, The Himalayan Club eLetter Volume 5 July 2006 Edited by Jasmine Hagde and Maninder Kohli.
3. Dubey, S., Paradise Found, Harmony Magazine 2006
http://www.harmonyindia.org/hportal/VirtualPageView.jsp?page_id=3335
4. Buckle, D., Obra Valley 5000m Peak Expedition 2008 report.
5. Scott, M., Western Garhwal, The American Alpine Journal, 2009, pg307.
6. Buckle, D., The Alpine Club Journal 2009 pg 12.
7. Hegde, V., *Sometimes some things are simply not to be*, The Himalayan Club eLetter Volume 19 July 2010 Edited by Sukeshi Seth
8. Khatau, S., The untamed mountain defeats man again URL:<http://getahead.rediff.com/slide-show/2010/jun/25/slide-show-1-travel-trek-to-unexplored-obragad.htm> Accessed 13/10/2010.

LOGISTICS & ADMINISTRATION

RIMO EXPEDITIONS

This was our first expedition using a commercial organisation to supply in-country logistics and manage the base camp. We chose to use Rimo Expeditions as they had supplied the same services to Mr Buckle's 2008 trip to the Odra Valley. We primarily were in contact with Yangdu and Alkal from Rimo before heading out to India. Things did not start smoothly for the team; there was a misunderstanding in our arrival date and we were in India a day earlier than they had expected. Nevertheless, Rimo were quick to fix the problem and arrange our airport pick-up and hotel. This left us with an extra day in Delhi that we did not entirely need or want but on the bright side we did get to see some of the 'sights' and further our cultural experiences.

The base camp team, led by Dawa and Norbu, were extremely welcoming and friendly and we realised very early in the expedition that any successes on the mountains would be in part due to the excellent environment that we enjoyed at base camp. Norbu, our cook, and the rest of the team ensured that we were well fed and watered, producing varied meals despite many of the ingredients (and therefore meal options) being spoiled by the heavy monsoon rain during the approach trek. It was certainly a pleasant surprise to be presented with both pizzas and cakes that had been made on a single gas burner. It certainly made us think we should try a bit harder than mashed potato or pasta the next time we're in the Alps! By eating so well at base we were able to survive on lower rations higher on the mountain, with little discomfort or hunger, and thus able to travel lighter and faster.

On departure from the mountains the Rimo team were very much on the ball. After a prolonged journey into Jakhol we were under no illusions that we might have similar problems on the way back to Dehradun. Dawa and Norbu made sure that they kept abreast of the situation with the roads and we were able to plan our return journey accordingly, not leaving too early but giving ourselves a realistic amount of time to deal with possible delays. Due to the nature of the roads, Dawa accompanied us on the way back out to ensure that we made our train safely in Dehradun.

Contact details for Rimo Expeditions can be found on their website www.rimoexpeditions.com

PORTERS

The recruiting and payment of porters was administered, by Rimo, through the Harkidun Protection and Mountaineering Association (HPMA), P.O and Village, Sankari, Uttarkashi, PIN 249185 Mobile 919410134589 www.harkidun.com. Anyone wishing to arrange their own portage is recommended to contact the association's very amiable Chairman, Mr. Chain Singh Rawat who will be able to assist with this. This organisation is also able to provide more up to date information about recent activity in the local valleys.

PERMISSIONS & PERMITS

GOVIND PASHU NATIONAL PARK

Foreign nationals are required to pay a daily park fee on entry to the Govind Pashu National Park. At the time of our visit the cost of this fee was Rs. 200 for the first 3 days, increasing to Rs. 250 for every further day. For our 23 day stay the park fees cost Rs. 5600 per person. The daily rate had increased substantially from 2008 so we would recommend that future visitors take sufficient hard currency to allow for further price increases.

When entering the park our driver, Dev, liaised with the Park officials and assured us that we should pay only 3 days park fee and pay the balance when leaving. After speaking with the Rimo team it became apparent that failure to pay for the entirety of the stay up front is likely to cause problems on exiting the park and they made arrangements for the outstanding fees to be paid. We would recommend that future visitors pay the full fee cost up front before heading into the mountains.

INSURANCE

All members of the expedition were covered by Imperial College's insurance policy and a specific expedition level policy was obtained from the BMC. In addition each member of the team was insured by Rothwell and Towler for any claims relating to Boris's pre-existing injuries, which were not covered by the BMC.

COMMUNICATIONS

Even in the 21st century it is sometimes surprising to find mobile phone masts in seemingly unlikely places. However, the villages within these mountainous regions lack landline telephones and so recently many villages, including Jakhol, have been equipped with cellular telephone masts. Network coverage in this area is provided by BSNL, although it should be noted that it seems the mast isn't switched on 24 hours a day.

Compatibility with UK network providers varied. O2 and Vodafone customers were not able to connect to the BSNL service. Andy was able to connect to send text messages via an Orange network SIM card, although not to call using a T Mobile SIM card. It is possible to purchase local SIM cards at New Delhi airport and in the large towns/cities (the last being Mussoorie).

The tourist guest house at Sankari has a solar powered (satellite) telephone. Most villages we passed through before the National Park had telephone services available. The expedition's emergency phone was charged with a Motorola solar panel designed for that model of satellite phone (9505).

PHOTOGRAPHY

All members of the expedition took cameras. Jonny used a Fujifilm Finepix S1500 and small Fujifilm A170 which were used to record some 1200 images and 15 videos of the region. Both models ran off AA batteries and the 12x optical zoom of the S1500 was extremely useful for capturing shots of distant objectives and possible routes. Kunal's images were captured with an Olympus Mui 1030 compact camera, as were Phil's. Andy took a 6 Megapixel Canon Powershot A540, which he found to be an excellent camera. It had a 4x optical zoom, which was adequate for most occasions. The only drawbacks were that unfortunately the 512MB memory card taken was not quite large enough for the volume of photos taken, and in order to extend battery life, the camera was used with the display turned off.



Jonny taking some summit shots with the S1500; Calling the UK on the satellite phone.

DAY 1

FRIDAY, 10TH SEPTEMBER

The team caught the tube to Heathrow airport before catching the 1010 flight to Delhi, arriving at 2310 local time. After some phone calls at the airport we were collected by Rimo and taken to the Hotel Broadway.

DAY 2

SATURDAY, 11TH SEPTEMBER

The day was spent in Delhi exploring the sites in the city and buying some extra mountain food. The night was spent at the hotel before an early departure for the train the following morning.

DAY 3

SUNDAY, 12TH SEPTEMBER

We boarded the Mussoorie express at 0635 and mostly slept during the train ride to Dehradun. Upon arrival we were met by Dev, our driver, and we set off on the drive to Mussoorie arriving in the evening. A short rickshaw ride took us to the Green Castle Hotel.

DAY 4

MONDAY, 13TH SEPTEMBER

An early start from the hotel enabled us to make good progress on the 6-7 hour journey to the road head. Not long out of Mussoorie we were stopped by a fallen tree which had landed on a man riding a scooter. Phil checked the man over and we set about moving the tree and scooter from the road. We were later stopped by a landslide for several hours, before making it to the small town of Kuwa to spend the night.



A very lucky escape for this driver; The team in front of landslide number one

DAY 5

TUESDAY, 14TH SEPTEMBER

Another early start saw us drive and pass several landslides before becoming stuck at a major landslide; we spent a night in the town of Naugaoan.

DAY 6**WEDNESDAY, 15TH SEPTEMBER**

Made it to the road head, Jakhol, but had to hire another jeep to get us there as a large landslide and river flowing over the road blocked the way. Upon arrival in Jakhol however, there was no sign of any Rimo Expeditions staff. After a few calls we learnt they were about 14km back down the valley we had just come up, but were on their way where we set up Camp A¹.

DAY 7**THURSDAY, 16TH SEPTEMBER**

An early start saw us begin the trek into the Supin-Obra Valley, through thick forest and nettles in the early sections. Due to the recent flooding a detour took us directly over a large ridge at Phetari to regain the path next to the Obra Gad. Camped (Camp B) near a small shrine, and several huts owned by the local village.



The beginning of the trek into the Obra Valley; A photo of Camp C

DAY 8**FRIDAY, 17TH SEPTEMBER**

We continued our trek through the valley and saw a troop of monkeys in the trees on the other bank, before arriving at Camp C for the night. Light rain persisted throughout the day.

DAY 9**SATURDAY, 18TH SEPTEMBER**

Arrived at the site of base camp in the rain and set up the tents. The porters departed for Jakhol and we could get our first glimpses of the peaks around us through the cloud.



Base camp below Pt 5760 in the distance with Pt 5877 on left; view of Ranglana from our tent

¹ See Appendices A and B for further details.

Climbing Phase as detailed further in the climbing report.

DAY 24

SUNDAY, 3RD OCTOBER

Day spent packing and resting in base camp. The porters arrived in the evening in preparation for departure the following morning. Hail storm in the afternoon.



Our base camp staff and the team below Ranglana; The porters around a camp fire

DAY 25

MONDAY, 4TH OCTOBER

We had a very early start to allow us to pack up camp and perform a litter sweep before departure. Completed the trek from base camp to Camp A in good time and had confirmation that we had to walk out to Sankari to reach a road navigable by jeep.

DAY 26

TUESDAY, 5TH OCTOBER

We followed the road for 14km to Sankari passing about 4 or 5 landslides which were impassable by jeep, before completing the final ascent up the steep hill below the village. We set up Camp D outside the telephone exchange.

DAY 27

WEDNESDAY, 6TH OCTOBER

A short jeep ride led us to the waterfall and landslide which had stopped us on the way in to the valley, on the other side of this was Dev, our driver, waiting with the 4x4. From here we drove directly to the Hotel Sangam in Dehradun.

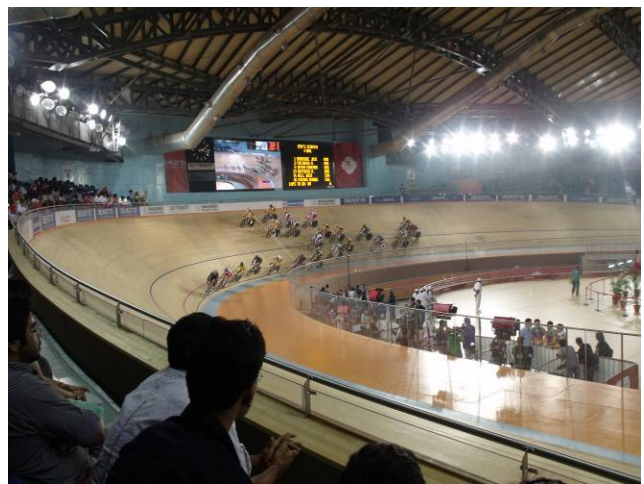


The start of jeep journey; The team at the campsite in Sankari

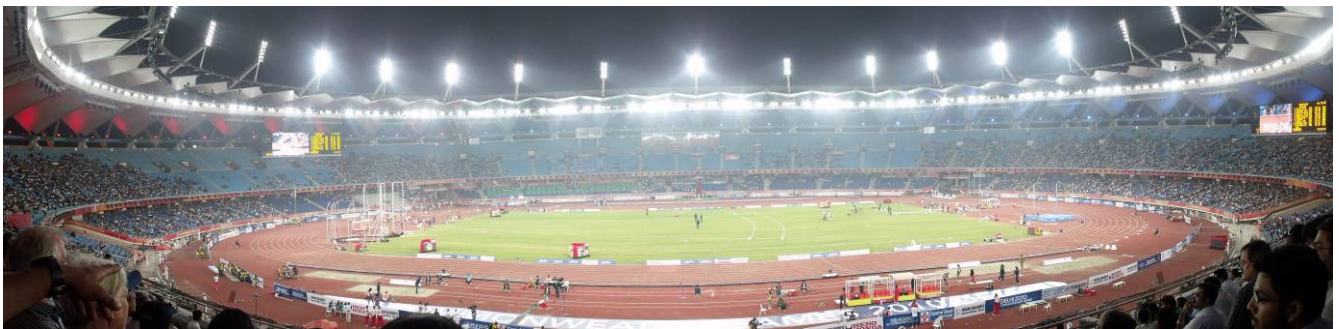
We spent the day exploring the markets in Dehradun and trying things like sugar cane and coconut drinks before catching the overnight train to Delhi in the evening.

Upon arrival in Delhi we were met by Rajib of Rimo Expeditions and were driven to the Hotel Broadway again. We spent the day in Delhi watching the track cycling and athletics at the XIXth Commonwealth Games and buying souvenirs.

A final very early start got us to the airport on time, however due to increased security a paper copy of travel ticket was required to be allowed entry to the terminal. As we had an electronic booking code we had to get Rajib to go in and pick up copies of our reservation in order for us to be allowed access. We eventually landed back in the UK at 1400 and took the tube back to central London.



Andy, Phil and Kunal drinking very expensive coconuts; Watching the track cycling



Our view of the new athletics stadium

CLIMBING REPORT

Prior to the expedition we had access to a report and photographs taken by a team led by Derek Buckle, who visited the area in 2008. From these we set our aims on attempting Pt 5,877m (Dauru) followed by Pt 5,554m, (Ranglana), which we believed to be a more challenging undertaking due to a number of previous attempts. We were also planning on turning our attention to Pt 5,418, afterwards; however upon arrival and consultation with Dawa Sherpa, we were advised that it had been ascended by an Indian team in 2009. We decided to make our attempt on Dauru via the glacier to its West, which had previously been accessed by Derek's team during their ascent of Peak 5,165m. The glacier has a lot of fairly flat sections between altitudes of 4,900m and 5,200m, which provided a perfect location for advanced camps to make a push for the summit. Approach to the glacier was made via an easy angled spur in the moraine starting at about 4,200m, which also provided an ideal route for initial acclimatization.



The team at the Cache 1; the team on the lower section of the spur up to Cache 2

During the course of 3 days we ferried equipment and food up the spur to an advanced camp at the base of the glacier (4,900m), using an intermediate camp at 4,100m. At the time of our initial trips up to the glacier, the snow line was as low as 3,900m making progress in the upper sections of the spur and on the glacier very difficult. Prior to a summit attempt we broke through a trail to near the head of the glacier to aid route finding in the early hours of the morning and make the descend trip easier in the soft snow of the afternoon. The glacier was heavily crevassed throughout; however the snow cover was secure enough to allow us to make a relatively direct route to its head even in the middle of the day when we were post-holing all the way. Whilst carrying out the reconnaissance of our route to the head of the glacier, we got our first cloud-free view of Dauru from this position. We realised that the picture we had of the peak prior to the expedition, was in fact of a pair of peaks around 5,640m located about 1km to the South-West of the actual summit.



Breaking trail to below the headwall would've looked like this without cloud; Camping at Cache 2

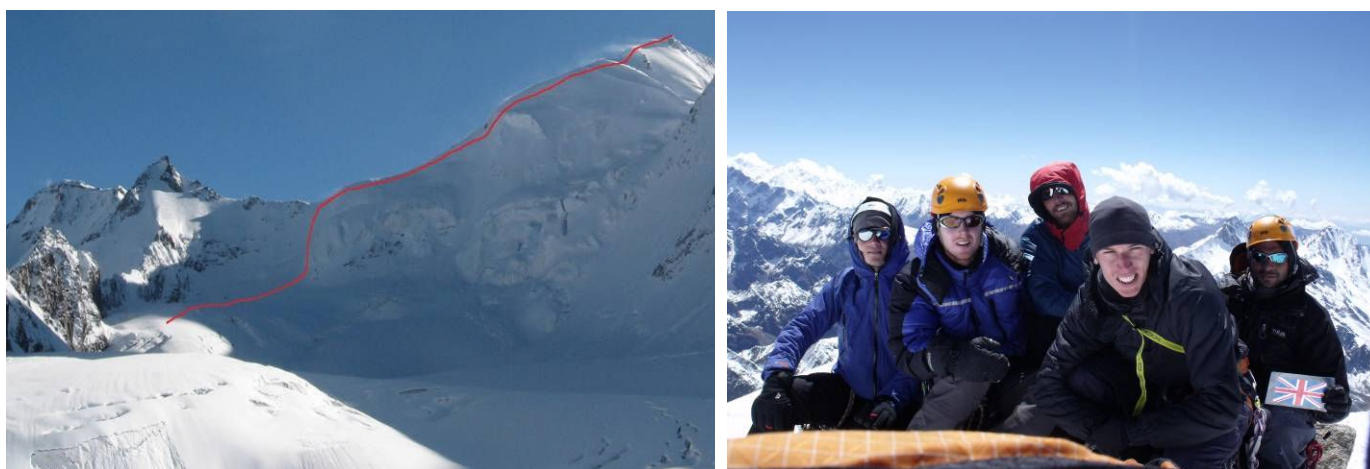
On 24th September we set off from our advanced camp at 6am in an attempt to reach the summit of Dauru in a single push. The snow was in great solid condition at this time, making our progress to the head of the glacier easier, however due to the altitude we were moving slowly as soon as we got onto the steeper terrain, so decided to change our objective for the day to Pt 5480m directly at the head of the glacier. We accessed its SW Ridge (500m AD-) via a short headwall on the west side of the glacier and then followed this to the summit. We opted to move together as a single roped team of five, with Jonathan leading all the way. The crux of the route was a short mixed section of Scottish Grade III about 20m below the summit. We descended back to advanced base camp via the same route.



The South West Ridge of Pt 5,480; The team on the summit in cloud

It was obvious that in order to be successful on Dauru, we would need to move our advanced camp closer to the headwall at the top of the glacier, to reduce the height gain on the summit day and give us an earlier start on the steeper sections of the climb. Leaving our advanced base camp where it was for the time being we headed back to base camp for some rest.

Fully rested and with the weather improving with each day, we headed back up with the help of two porters up until 4100m. By now the snowline had risen to around 4300m and the going got much easier all the way up the glacier due to much firmer snow throughout the day. Collecting everything from our high cache we pushed our high camp up to 5175m. An early start on 27th September saw Phil lead a route to the col at 5400m between Pt 5,480 and Pt 5877, after which alternate leads along the NW Ridge got us to the summit of Dauru at 5877m (700m, AD). The ridge had large seracs on its north side and we made a point of staying well over to the south side after a large section of ridge came away next to us upon our arrival at the col. After a descent back down the same route we arrived at our tents and packed everything up. Opting for a comfortable night at base camp meant a long descent with all of our equipment and an arrival well after dark.



Spindrift blowing off the North West ridge of Pt 5,877, Dauru; The team on the summit of Pt 5877

Now fully acclimatised and rested our attention turned to Pt 5,554m (Ranglana). Prior inspection of the maps showed that Ranglana had a lower gradient of slope on the south side in the neighbouring Maninda Valley, however we had not see any pictures taken of that side of the mountain. Due to numerous failed attempts on Ranglana from the Obra Valley and all of the routes from this side appearing to be of significant technical difficulty, we decided to explore the south face. We performed a carry, with the assistance of 3 porters up to the snowline (4,300m), to a high camp at 4,687m on the glacier descending from the western col. The following morning with a 5.30am start, we crossed the col at 4,950m and descended approximately 100m into the Maninda Valley. From here a slight traverse gave us access to the South Ridge of Ranglana, which was led to the summit by Jonathan (900m, D-). The Bottom section of the route consisted of a sustained snow slope of approximately 50-55 degrees, with the upper section becoming more technical and steep with a crux just below the summit of Scottish IV. For the last 100m of the route, regular rock protection was placed, however we still moved together. Descent was made via the same route with one initial abseil from the summit.



The South Ridge of Pt 5,554m, Ranglana; The team on the summit of Ranglana



360° Panorama from the summit of Pt 5877

GENERAL TERRAIN

The majority of the climbing was on relatively solid, well consolidated neve. Although at times we encountered a windblown snow crust, with some soft, loose snow below. This was particularly the case on large sections of Dauru; however this did not impede the progress significantly. An early start on the routes, similar to tactics used in the European Alps, provided the best snow conditions for the ascent.

Most of the mixed sections encountered were relatively solid, with a good quality of granite. Some good rock protection could be placed on the upper section of Ranglana.

During the start of the stay in the Obra Valley, we witnessed a large number of small avalanches, which usefully marked out suspect areas, allowing us to stay well clear, however no other major avalanches occurred once the regular snowfall ceased.

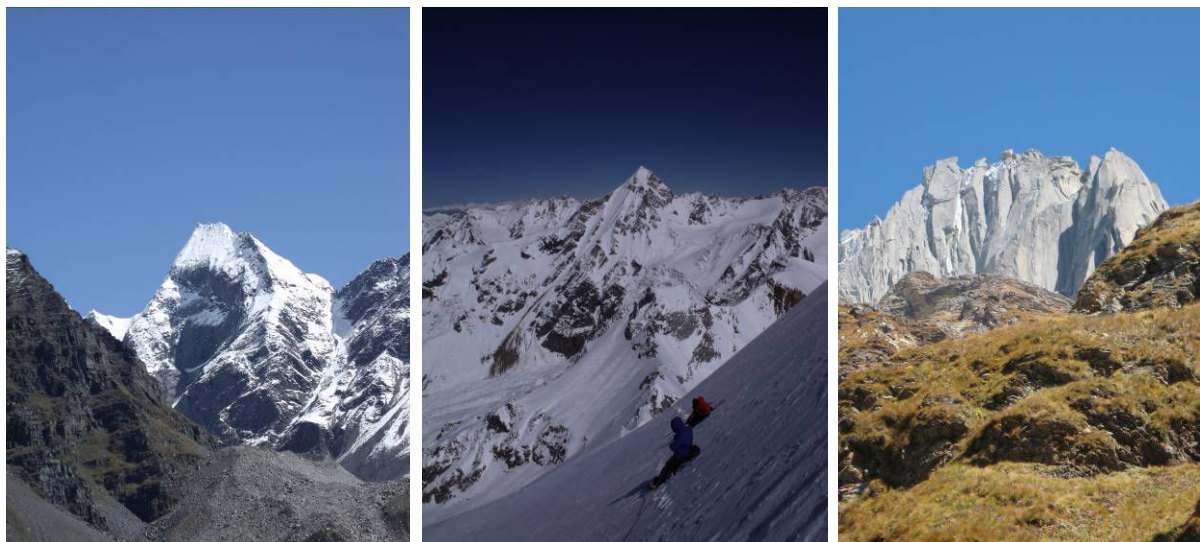
FUTURE POTENTIAL IN THE AREA

The Obra Valley offers a great deal for exploratory mountaineers, with a large number of peaks still remaining unclimbed and the potential for new routes being very promising.

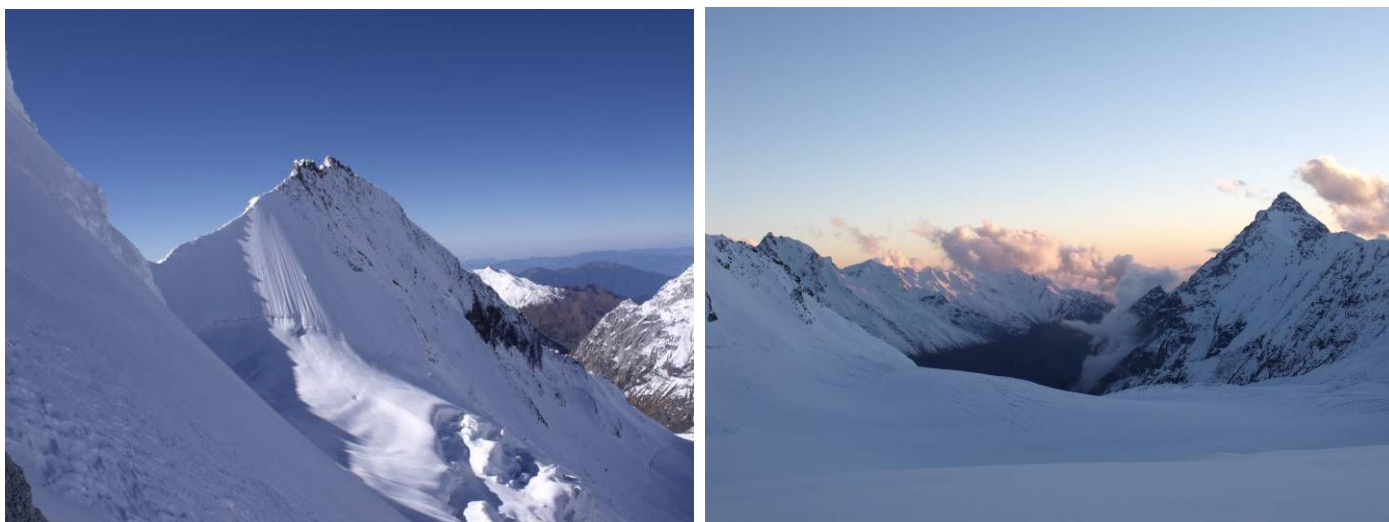
Dauru's neighbouring peaks rising above 5,640m to its south west were of interest to us, however due to shortage of time and the desire to climb Ranglana instead meant we did not make an attempt. These peaks could be accessible from the NW Ridge of Dauru or alternatively from their South Ridge starting from the glacier. Peak 5,489m looked like an attractive objective, with an easy access via its NE Ridge, however with what looked like a somewhat more technical mixed upper section. To the east of Ranglana is the unclimbed peak Andurko (5,195m). Ranglana itself presents a number of attractive potential new routes, including its East, West and North Ridges, and a potential line spotted on its SW Face. All of these routes would provide a significant challenge with large sections of technical rock or steep snow/ice climbing.

None of the peaks in the upper Devkir Glacier, at the head of the valley have been climbed. Two of the highest peaks are situated here, Peak 5,849m and Peak 5,760m. Also the Swargarohini Peaks to the east of the glacier, rising up to 5,300m, would be worthwhile with a potential for a long traverse along the ridge and relatively easy access from the glacier.

The Jarai Rocks, which are situated near Bhawāk Thāch could offer some interesting high grade rock climbing.



Peak South of Devkir Glacier; Pt 5892 in Supin Valley; The Jarai Rocks



Pt 5640m and Pt 5489m.

It is clear that the Obra Valley possesses some great future potential and will hopefully receive further attention.

WEATHER

During the start of our visit the Uttarakhand State had an abnormally large amount of rainfall for that time of year. Our transit to the Obra Valley from Delhi was affected greatly due to the persistent heavy rain each day. Whilst making the 150km transfer in a car from Mussoorie to the road head at Jakhol, we encountered numerous landslides, which got worse the closer we got to Jakhol. Due to this it took us 3 days to make this part of the journey as we had to wait for great periods of time whilst mobile diggers would clear large sections of the road. About 14km before Jakhol, the road was so severely damaged that we had to use the services of a local jeep on the other side of the landslide to finish the last part of the journey. On the way back out of the area, we decided leave a few days earlier as a precaution. We were also forced to have our equipment portered to the other side of the heavily damaged road, which had still not been repaired by this time. However after this point we did not have any more problems, as there had not been any heavy rain for a period of about 2 weeks prior to our departure.

For the 3 days whilst we were walking into the Obra Valley from Jakhol, the rain persisted most of the time, with the last day being the worst. This caused our porters to become very cold and disheartened, being forced to drop their loads much lower down the valley than we intended (3,867m). The next two days at base camp saw non-stop rain throughout, making a lot of our base camp food and equipment very wet. Due to the damage to some of the food and the extra fuel used to stay warm and dry for these couple of days, a few porters from base camp had to walk out for extra supplies near the end of the expedition whilst also obtaining vital information about the condition of the road.

However, just when we started thinking that this would be the weather trend for the rest of our time in the valley, the weather started to clear on 20th September. For about 4 or 5 days the weather still remained variable with cloud coming in during the afternoon and sometimes bringing a large dump of snow. Thereafter the weather again took a turn for the better providing clear skies for the main part of the day, with a little cloud coming in around two o'clock, but bringing no precipitation.

The temperatures during the day stayed above freezing, however even the slightest wind near the summits or a small amount of cloud made it 'feel' much colder, with members of the team opting to wear some extra insulation for these times. The solar radiation whilst at higher altitudes had a significant effect, on occasion making it very hot even at 5,000m. During the night, the temperatures would drop significantly, typically being as low as -10 °C at the high camps. The snow line at the start of the trip was at around 3,900m and then rose during the first week and stayed at about 4,300m.

NAVIGATION

Primary navigation was conducted by orientating oneself to the environment, and was typically quite easy given the nature of the terrain. To pinpoint the location of summits and camps etc, GPS units were carried. Jonny used an iFinder Go2 device, which ran on AA batteries and could typically provide a location within 25 seconds however upon plotting these points in Google Earth it is apparent that the device struggled to gain a truly accurate position despite reporting very small positional errors in use. Altitude readings generally took longer to obtain and were the primary method of identifying our position on the map. The calculation of altitude appears to have been very accurate.

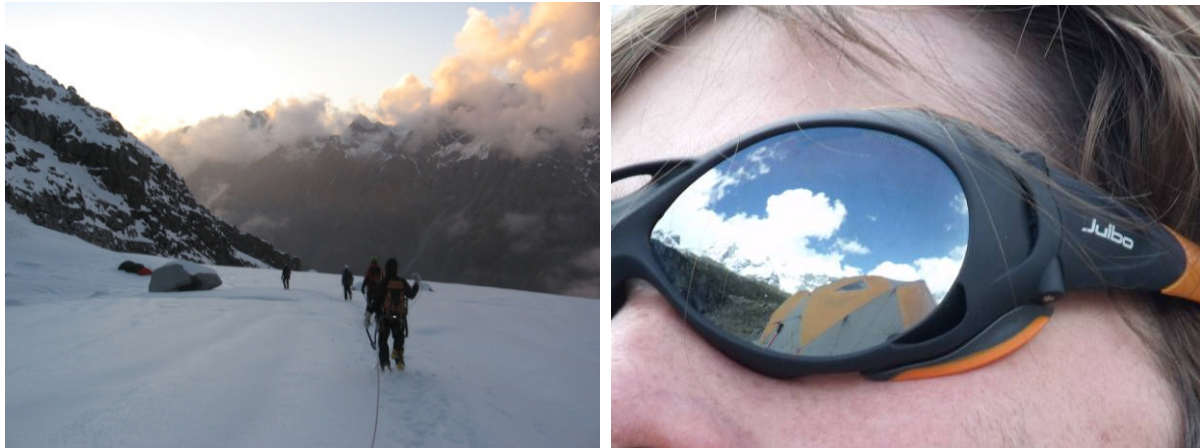
A 1:200,000 scale map of the region is available, Indian Himalaya Map Sheet 7, Garhwal (Uttaranchal), Leomann Map. In addition a 1:150,000 scale exists, Garhwal Himalaya West, Schweizerische Stiftung für Alpine Forschung, however this was less useful and lacked topographic detail for the Obra Valley. Both maps are available from Stanfords, 12-14 Long Acre, Covent Garden, London, WC2E 9LP, www.stanfords.co.uk

EQUIPMENT & CAMPCRAFT

GLACIAL TRAVEL

Due to the glaciated nature of much of the terrain, the team were roped up with a single half. Each member carried ice screws and some basic crevasse rescue equipment (including a Petzl mini -traxion hauling pulley, Lyon Award), although thankfully, these were never needed. Much of the ground required post-holing in the day, however, with alpine starts, the snow was hard for the first part of the day. Finding crevasses was relatively undramatic, with perhaps a leg going through the snow at worst.

Two members of the team were awarded Julbo sunglasses as part of the Lyon Award. They found the glasses to be an ergonomic and comfortable fit with supreme UV protection. So much so, that they continued to wear the glasses in Delhi after de-modularising them.



Decent of Ranglana; Looking up towards 5,877m

CLIMBING

The routes we took were predominantly snow lines. Hence, pro was limited to using snow stakes or dead men. However, due to the alpine style of ascent, moving fast, we decided to rope up and move together as a party of five climbers (with one half rope). For the more technical sections, we simul-climbed with rock protection and pitched the summits of 5,480m and Ranglana (5,554m). With many of the team having used double boots for the first time, we were apprehensive about comfort levels when walking. However, the La Sportiva Spantik boots (Lyon Award) were found to be excellent and flexible, with no real problems (apart from the loss of a little shin hair). Once on steep ground, the boots really excelled. They were agile to climb with whilst maintaining excellent warmth in the nights. It is noted that one of the members had compatibility problems with G12 wrap round heel bindings (solved by duct-taping the spring clip closed).



Crux of Pt 5,480; Team Spantik

Two of the team were awarded Petzl helmets which were comfortable, well ventilated and could easily be adjusted to accommodate hats for additional warmth.

One of the team was climbing with Petzl Nomic axes (Lyon Award), which worked remarkably well in the alpine environment. Although the climbing was never ultra-tenuous, the axes were really useful in the technical sections, allowing the team to breeze through the mixed sections.

CAMPING AT ALTITUDE

Four members were awarded an Exped DownMat 7 Pump as part of the Lyon Award. The mats were comfortable, warm and durable. The small pack size and low weight meant we could use them high on the route, and carry lighter sleeping bags. Separation from the ground provided excellent insulation and the necessary elevation to prevent our sleeping bags picking up moisture from the ground.

The PhD Hispar 500s were very warm, light and packed with relative ease. Even with condensation and freezing on the outer surface of the bag (-20°C), very comfortable sleeping temperatures were maintained in the bag.



High camp at 4,900m; Exped mats drying out

Two of the team were using PhD Rondoy belay jackets. The jackets were incredibly warm and light, equally suited to ensure we were warm when climbing and even when static, melting snow, in the advance camps.



Andy, toasty in his PHD Rondoy

FOOD AND COOKING

Meals, on the approach to and from Jakhol, were taken in a variety of small local restaurants in towns along the road. Once in the valley, all meals were provided by Rimo expeditions, and as described earlier were of excellent quality and variety.

Please see Appendix C for details of which high altitude rations were taken from the UK.

Once out of base camp the team members moved on to dehydrated meals, sourced from BeWell Expedition Foods in the UK, the team found these meals to be very filling, providing much needed sustenance at dinners. During the day, the team survived on a combination of locally sourced “Tiger” glucose biscuits, Cadbury Twirls and also GO Bars (SIS (Science in Sport) Ltd). These proved to be a favourite snack option, and were often a much needed boost of energy for the climbing team. In addition extra calories were obtained from isotonic drinks also from SIS, which were excellent and come highly recommended.



Food for five people for two days up high

MEDICAL REPORT

Medical advice for the expedition was kindly given by Dr Mark Daniels of the Imperial College Health Centre, who also provided prescriptions for the medication required in case of emergency in such a remote region. In addition, Dr Christopher Imray agreed to be our medical contact in the UK that we could speak to via satellite phone for expert medical advice in such a situation. A base camp first aid kit was assembled containing items that would allow a casualty with reasonably serious trauma to be looked after for a few days whilst evacuation was arranged, including antibiotics and strong painkillers (full contents given in Appendix D). In addition, each member of the group had their own personal first aid kit containing items for treating small wounds and minor ailments.

In the event, the base camp first aid kit was not used and no major injuries or illnesses were experienced by the team. Minor wounds were sustained, including cuts and abrasions, blisters and the occasional twisted ankle or knee whilst moving over scree, but no more than would normally be expected when venturing outdoors.

DENGUE FEVER

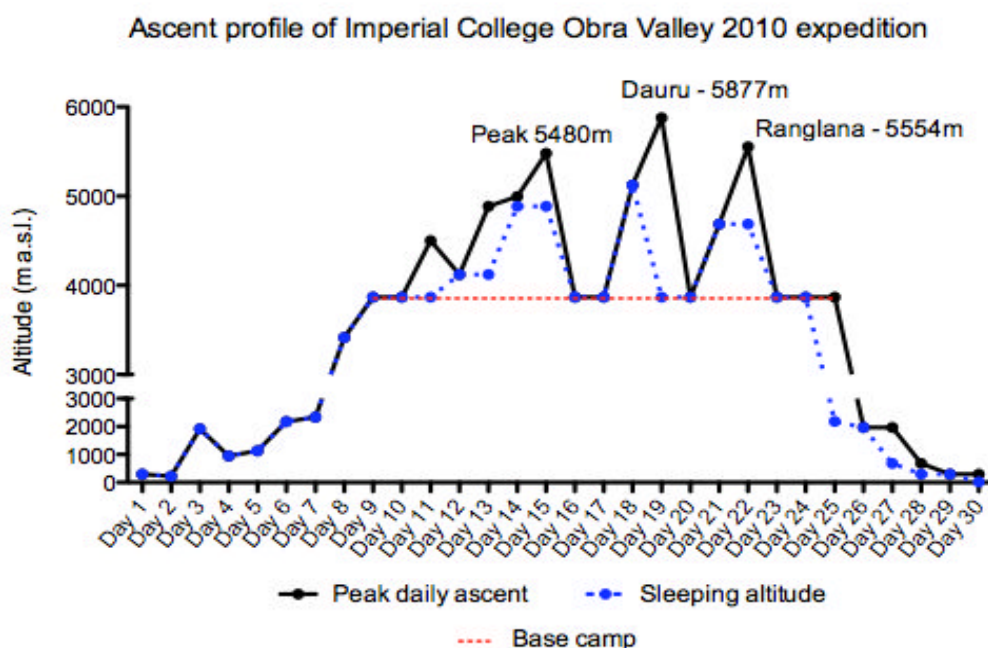
It became apparent shortly before our departure that seasonal cases of Dengue fever were much higher than normal in Delhi - at the time of preparing this report there has been a greater than 4-fold increase in confirmed cases during 2010 compared to 2009. As a result, we were particularly vigilant against mosquitoes whilst in the city - avoiding stagnant/standing water, covering arms and legs and use of powerful insect repellents. On the evening before departure to the mountains we were also fortunate enough to be fumigated by a government street patrol aiming to slow the spread of this virus.

DIARRHOEAL ILLNESS

All members of the team experienced some diarrhoeal illness during the trip; with predominant illness effecting the team on the return leg of the trip through Delhi. Standard hydration packs were used and generally, illness lasted for 24 hours.

HIGH ALTITUDE PRECAUTIONS

A gradual ascent profile was adopted to minimise the risks of altitude illness. The team attempted to manage their altitude gain such that a maximum of 1,000m height gain was accomplished in 3 days. More importantly, the team monitored their condition to avoid serious bouts of acute mountain sickness.



FLORA AND FAUNA



Goat, Monkey, Elephant

Deer (Honestly)

Caterpillar, Dragonfly, Cow

Raven, Wagtail

We also saw wrens, lizards, scorpions, a snake and lammergeyers amongst others during the expedition.



A selection of the flora from the valley

(Clockwise from top left: Sea Buckthorn (*Hippophae rhamnoides*), Phen Kamel (*Saussurea simpsoniana*), Blue Himalayan Anemone (*Anemone obtusiloba*), Unidentified, Himalayan Fleece Flower (*Persicaria affinis* 'Dimity'), Unidentified, Unidentified, Don's Geranium (*Geranium donianum*), and Unidentified)

ENVIRONMENTAL REPORT

In order to minimize the environmental impact of the expedition a small team size has been chosen, to minimize local and wider impact. The following environmental policy was adhered to throughout the expedition, with the minor exception that gas cylinders were used; however these were destined to be refilled and reused by Rimo for future expeditions.

CARBON EMISSIONS

Due to the nature the expedition, it is necessary to take commercial flights from the UK to India, significant CO₂ emission will result from these flights, however alternative means such as travel by ship is impractical due to the limited duration of the expedition.

The use of public transport for internal travel from Delhi to Mussoorie will ensure further CO₂ emission is kept to a minimum. Additional emission will result during cooking either on fires or on stoves; this impact will be minimized by ensuring the stoves are clean and operating as efficiently as possible.

PATH EROSION AND VISUAL IMPACT

Access to the Obra valley will be made in foot on paths alongside the Obra Gad, the footfall of the 5 team members and porters will cause some short term, local damage. During the walk in and walk out the team will keep to existing paths and make every effort to minimize their impact. The number of loads, and hence number of porters will also be minimized. Visual impact of camp locations will be minimized by removal of all rubbish

RUBBISH

Prior to departure from the UK, the volume of packaging materials will be reduced to a minimum. Whilst in country foods with minimum packaging will be sought locally. All non combustible waste will be removed from base camp and disposed of at the nearest appropriate facility. Combustible waste will be disposed of under controlled conditions either at base camp if appropriate, or carried out if not.

SEWAGE

Sewage will be disposed of away from water sources, buried in the active layer of soil if near base camp. Toilet paper will be burnt and disposed of in the same manner. At higher camps, sewage will be buried in snow.

HAZARDOUS MATERIALS

BATTERIES

All batteries taken into the country will be returned to the United Kingdom for proper disposal.

CHEMICALS

To minimize waste, pressurized liquid fuels stoves will be used rather than gas stoves to prevent the necessity to source and dispose of gas cylinders in country. Refuelling of stoves will be carried out away from water sources to prevent contamination resulting from spillage. Any fuel remaining at the end of the expedition will be disposed of at the first suitable location or in Delhi.

Furthermore during the walk out the team conducted a litter sweep to remove sweet packets and rubbish present throughout India, discarded by previous visitors, in order to preserve the wild, unspoilt nature of the valley

FINANCE

This section provides a summary of the finances for the expedition.

INCOME

The expedition was supported by grants from the following bodies:

Imperial College Exploration Board:	£3,750
Mount Everest Foundation:	£1,450
Welsh Sports Council:	£700
British Mountaineering Council:	£600
Lyon Award (Equipment Donation)	£3,080
Total:	£9,580

EXPENDITURE

The following is a summary of the expedition expenditure:

In Country Costs:	£4,920
Flights:	£2,657
Equipment (Inc Lyon Equipment Award):	£5,820
Mountain Food:	£530
Satellite Phone:	£217
First Aid Provisions:	£70
Gratuities	£170
Park Fee	£400
Miscellaneous:	£300
Total:	£15,084

Insurance was paid for by Imperial College Exploration Board, to provide cover to expedition level.

PERSONAL CONTRIBUTIONS

Personal contributions were calculated on an individual basis, depending on equipment purchased, but were not less than £500 each and totalled the difference between income and expenditure as follows:

Total expenditure – Total income =	£5,504
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CONTACTS

- PHD PO Box 278, Dacre Banks, Harrogate, North Yorkshire, HG3 4WA:- <http://www.phdesigns.co.uk>
- SIS (Science in Sport) Ashwood Laboratories Brockhall Village Blackburn Lancashire: <http://www.scienceinsport.com>
- Be-Well Expedition Foods: <http://www.be-well.co.uk>
- The Outdoor Shop, Stony Stratford: <http://www.theoutdoorshop.com>
- Rimo Expeditions Hotel Kanglhachen Complex, Leh, Ladakh– 194101, J&K, India:- <http://www.rimoexpeditions.com>

HOTELS

We stayed at a number of hotels and guesthouses on our way into and out of the mountains. Some brief details of these are provided.

HOTEL BROADWAY, DELHI

Our residence in Delhi situated on the boundaries of New and Old Delhi this made access to New Delhi rail station fairly quick. About a 15 minute walk from the nearest metro station (Chandi Chowk). The surrounding area is great if you want to get to grips with the real Delhi.

For reservations contact,

Pratik Sinha, General Manager Operations, Hotel Broadway, 4/15A Asaf Ali Road, New Delhi 110002, India

Tel: +91 11 43663600 Email: broadway@oldworldhospitality.com www.hotelbroadwaydelhi.com/

GREEN CASTLE HOTEL, MUSSOORIE

The Mall, Mussoorie, Uttaranchal. Ph:0135-2632657,2630987,09319325190

E Mail: greencastle@vsnl.com www.hotelgreencastle.com

HOTEL SANGAM, DEHRADUN

3, Tyagi Road Dehradun Dist. Uttaranchal, Dehradun 248001

Tel: 91-135-2728281

INSURANCE

BMC Insurance: <http://www.thebmc.co.uk/modules/insurance/Landing.aspx>

Rothwell and Towler: 66 High Street, Honiton, Devon, EX14 1RT Tel: + 44 (0)845 90 80 171 Fax: + 44 (0)845 90 80 181 Email: info@rothwellandtowler.co.uk

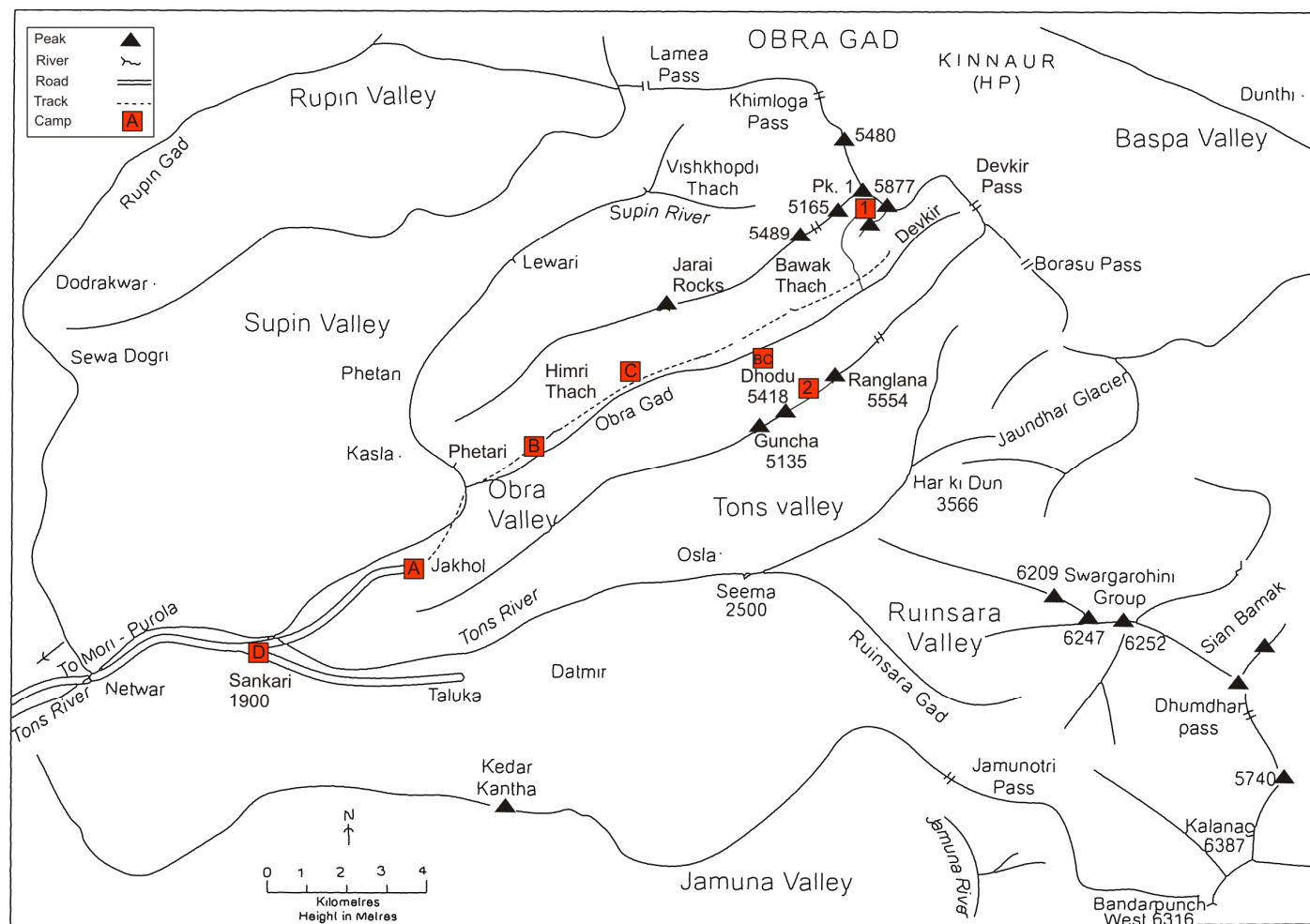
ACKNOWLEDGEMENTS

The team would like to thank the following individuals/organisations for their support;

- Imperial College Exploration Board, in particular Dr Lorraine Craig, Christopher Green and Nigel Wheatley for their assistance and support.
- Mount Everest Foundation
- British Mountaineering Council
- Welsh Sports Association
- The Lyon Equipment Award
- SIS (Science in Sport) Ltd
- Peter Hutchinson Designs
- Dr Mark Daniels, Imperial College Health Centre
- Dr Chris Imray
- Rimo Expeditions, including Norbu (our cook), Tensing (our assistant cook), Dawa (our head Sherpa)
- Dev (our jeep driver)
- Derek Buckle and Martin Scott, Alpine Club
- Harish Kapadia and Gerry Wilson
- The Alpine Club Library
- Robert McLellan
- British Airways
- Imperial College Union Outdoor Club
- Imperial College Union Mountaineering Club
- Imperial College Union Exploration Society
- Dominic Southgate

In addition all the friends and families of the expedition members, who have supported us throughout, thank you.

APPENDIX A - MAP



(Map based on original sketch by Harish Kapadia in the Himalayan Journal 199-2006, 62, 2006 (Reproduced and amended with permission))

APPENDIX B - IMPORTANT LOCATIONS

Date	Activity	Location	Height (m)
10/09/2010	Depart London Heathrow 0915, Arrived Delhi 2245	Flight	
11/09/2010	Met Rimo 0100 travel to hotel in Delhi, spent day buying mountain food and seeing sites.	Delhi - Hotel Broadway	218
12/09/2010	Took Musoorie Express to Dehradun and then a 4x4 to Musoorie	Overnight stay in Green Castle hotel	2014
13/09/2010	Drove in 4x4 until landslide blocked road	Overnight in Kuwa	951
14/09/2010	Drove in 4x4 until landslide blocked road	Overnight stay in Naugaon	1135
15/09/2010	Drove in 4x4 until the roadhead, Jakhol	Camp A: 31° 06.741'N 78° 14.183'E	2175
16/09/2010	Started trek into Obra-Supin Valley	Camp B: 31° 08.815'N 78° 16.264'E	2332
17/09/2010	Continued trek into Obra Valley	Camp C: 31° 10.990'N 78° 19.409'E	3416
18/09/2010	Completed trek in Obra Valley to Base Camp, porters departed	Base Camp: 31° 11.242'N 78° 21.408'E	3867
19/09/2010	Day of rain, Planned rest day in ascent profile	Base Camp: 31° 11.242'N 78° 21.408'E	3867
20/09/2010	Load Ferry to Cache + Ascent to high point at 4500m return to base camp	Cache 1: 31° 12.734'N 78° 22.886'E	4121
21/09/2010	Ferried remaining gear to cache 1 and slept here.	Cache 1: 31° 12.734'N 78° 22.886'E	4121
22/09/2010	Load ferried equipment and food to cache 2 slept at low cache 1.	Cache 2: 31° 13.903'N 78° 22.872'E	4887
23/09/2010	Load ferried equipment and food to cache 2 slept at cache 2, explored to 4995m on glacier.	Cache 2: 31° 13.903'N 78° 22.872'E	4887
24/09/2010	Climbed Pk. 5480m	Pk 5480m 31° 14.887'N 78° 24.186'E	5480
25/09/2010	Cache 2 to Base Camp	Base Camp: 31° 11.242'N 78° 21.408'E	3867
26/09/2010	Rest day at base camp	Base Camp: 31° 11.242'N 78° 21.408'E	3867
27/09/2010	Base Camp to Camp 1	High Camp: 31° 14.554'N 78° 23.980'E	5125
28/09/2010	High Camp to the summit of Pk. 5877m returning to base camp afterwards	Pk. 5877m: 31° 14.420'N 78° 24.648'E	5877
29/09/2010	Rest day at base camp	Base Camp: 31° 11.242'N 78° 21.408'E	3867
30/09/2010	Base Camp to Camp 2	Camp 2 31° 10.743'N 78° 22.958'E	4687
01/10/2010	Camp 2 to Pk. 5554 (Ranglana) to Camp 2	Pk 5554m 31° 11.003'N 78° 23.551'E	5554
02/10/2010	Camp2 to Base Camp	Base Camp: 31° 11.242'N 78° 21.408'E	3867
03/10/2010	Rest day at Base Camp	Base Camp: 31° 11.242'N 78° 21.408'E	3867
04/10/2010	Base Camp to Camp A in Jakhol	Camp A: 31° 06.741'N 78° 14.183'E	2175
05/10/2010	Walk from Jakhol to Sankari to pass landslides	Camp D: 31° 4.644'N 78° 11.066'E	1972
06/10/2010	4x4 to Dehradun	Overnight stay at Hotel Sangam	653
07/10/2010	Dehradun markets during the day, overnight train to Delhi	Train	653
08/10/2010	Day in Delhi shopping and watching the Commonwealth Games	Delhi - Hotel Broadway	218
09/10/2010	Flight 0815 Delhi to London Heathrow	Flight	

APPENDIX C - FOOD

Food for base camp was primarily sourced locally by Rimo Expeditions with several luxuries brought in from further afield. The food prepared by their cooks was varied and excellent. High altitude rations were brought with team from the UK and supplemented with items bought in Delhi.

SIS (SCIENCE IN SPORT) LTD

5 tubs of Go Electrolyte (1.6kg).

2x Blackcurrant, 1x Lemon & Lime, Watermelon, Tropical

5 boxes of Go bars, containing 24 bars, in the following flavours:

Apple & Blackcurrant, Cherry & Vanilla, Chewy Banana, Chocolate & Orange, Tropical

Rego: Recovery Powder (1.6kg), Banana flavour.

Nocte: Night Time drink, (1.1kg), Vanilla flavour.

BEWELL EXPEDITION FOODS

MAINS MEALS

(180g) (60 in total)

8x Thai Veg and Rice, 17xLamb Pilaf, 13xChilli con Carne, 10xThai Chicken with Rice, 10xShepherds Pie, 2xChicken vegetable pasta

PUDDINGS

(180g) (30 in total, 10 of each flavour)

Peach and pineapple, Choc chip cream, Custard with mixed fruit

OTHER

48 Cadbury Twirl bars, assorted own brand chocolate bars, 10 packets of oatcakes, peanuts

IN COUNTRY SUPPLEMENT

Tiger 'Glucose' Biscuits, Perk Chocolate Bars

Haldiram's Nuts and Dried fruit

APPENDIX D - MEDICAL KIT LIST

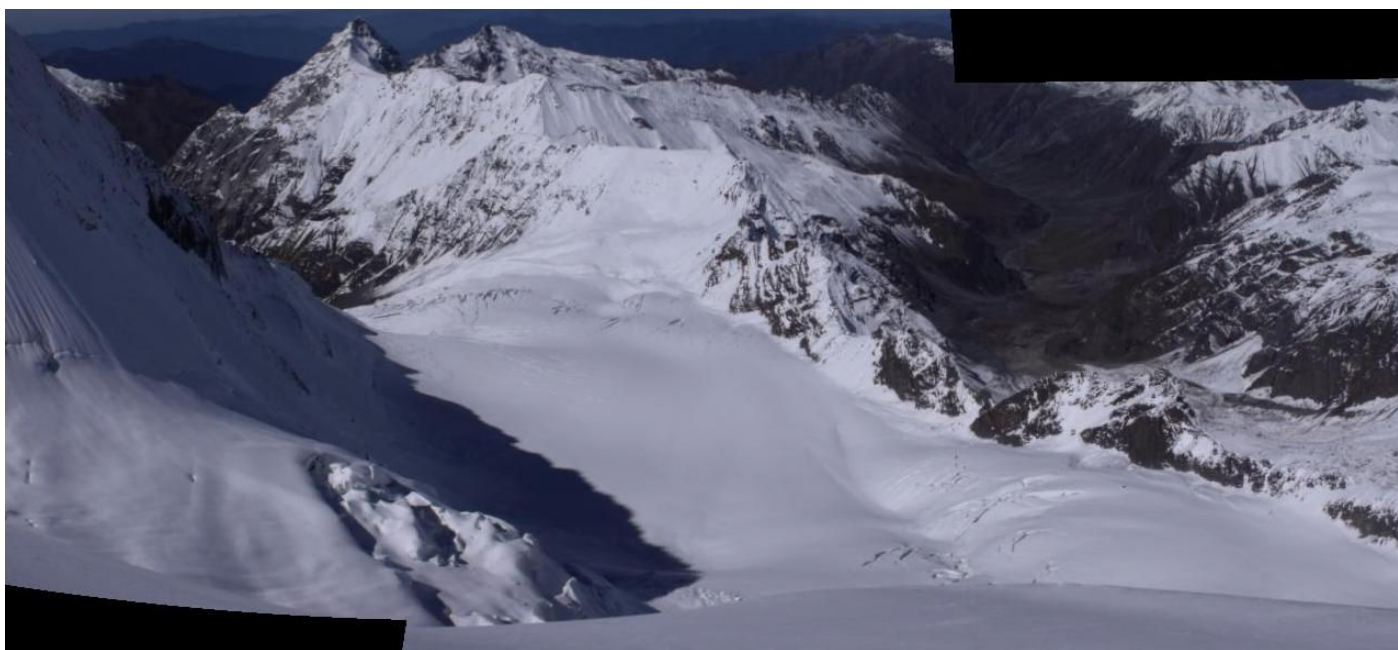
The list below details the main items of the medical kit taken on the expedition. Each member carried a small individual first aid kit for minor injuries, and either the leader or the medical officer carried the high altitude drugs and additional first aid supplies whilst on the mountain.

Item	Quantity	Use
Ambulance dressing no.2	2	Wounds and general trauma
Conforming bandage 5cm	1	Wounds and general trauma
Adhesive bandage 5cm	1	Wounds and general trauma
Triangular bandage	1	Wounds and general trauma
Small low-adherent dressing	1	Wounds and general trauma
Medium low-adherent dressing	2	Wounds and general trauma
Large low adherent dressing	2	Wounds and general trauma
Gauss swab 5 pack	1	Wounds and general trauma
Steri strips 3 pack	2	Wounds and general trauma
Latex gloves	2pr	Wounds and general trauma
Antiseptic wipes	2	Wounds and general trauma
Safety pins	2	Wounds and general trauma
Betadine bottle	1	Wounds and general trauma
Surgical tape roll	1	Wounds and general trauma
Germolene	1 tube	Wounds and general trauma
Plaster lenglths 10cm	10	Wounds and general trauma
Assorted plasters	9	Wounds and general trauma
Tuffcut scissors	1	Wounds and general trauma
SAM splint	1	Wounds and general trauma
Steripod saline	5	Wounds and general trauma
Stethoscope	1	Diagnosis/monitoring
Sphygmanomometer	1	Diagnosis/monitoring
Thermometer	1	Diagnosis/monitoring
Paracetamol	32	Pain relief
Co-codamol	40	Pain relief
Ibuprofen	32	Pain relief
Aspirin	16	Pain relief
Acetazolamide 250mg	24	Altitude illness
Dexamethasone (oral) 4mg	20	Altitude illness
Dexamethasone (for injection) 4mg	12	Altitude illness
Nifedipene 20mg	10	Altitude illness
Syringes/Needles	12	Altitude illness
Dioralyte sachets	12	Rehydration
Loperamide caps	60	Diarrhoea
Co-Amoxiclav 375mg	42	Chest, urinary, skin and wound infections
Ciprofloxacin 250mg	40	Diarrhoea
Metronidazole 400mg	42	Amoebic dysentery
Prochlorperazine 5mg	56	Nausea
Chloramphenicol tube	1	Eye infections

APPENDIX E - GLACIER PHOTOS

DEVKIR GLACIER





APPENDIX F - DISTRIBUTION LIST

Copies of this report have been provided to the following organisations.

SPONSORS

Imperial College Exploration Board (www.imperial.ac.uk/expeditions)

The Mount Everest Foundation

British Mountaineering Council

Welsh Sports Association

Lyon Equipment

SIS (Science in Sport)

PHD Peter Hutchinson Designs

OTHER

Royal Geographical Society

Alpine Club Library

PRESENTATIONS

16th November 2010, Imperial College Union Exploration Society, Imperial College London, SW7 2AZ

11th January 2011, Alpine Club, Charlotte Road, London, EC2A 3QF

MEDIA COVERAGE

ONLINE

BMC Website: <http://www.thebmc.co.uk/News.aspx?id=4001>

Felix Online: <http://www.felixonline.co.uk/?article=408>

American Alpine Journal <http://aaj.americanalpineclub.org/climbs-and-expeditions/asia/india/uttaranchal/2010-obra-valley-peak-5480m-dauru-ranglana-by-j-phillips/>

PRINTED MEDIA

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