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Mount Everest Foundation Expedition Report of the British-New Zealand 2004 Expedition to Janhkuth in the Garhwal Himalaya, India, Sept-Oct 2004 (Expedition Reference 04/35).

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Mount Everest Foundation

British-New Zealand Expedition to Janhkuth in the Garhwal Himalaya, India, September - October 2004

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1. Overall Aim

The overall aim of the expedition was to climb Janhkuth by its 1,600 metre West Face. Janhkuth is a 6,805 m. peak that is situated near the head of the Gangotri Glacier in the Garhwal Himalaya, India.

2. Summary

The British-New Zealand expedition spent four weeks in the Gangotri Glacier between mid-September and mid-October 2004. The expedition made two attempts on the West Face of Janhkuth, with both attempts unsuccessful.

The expedition was a multi-national effort, with three climbing members from England, two climbers from New Zealand, plus the Indian contingent of liaison officer, cook, and cook's helper. The English trio formed one climbing team, with the two New Zealanders comprising the other. Each climbing team made one attempt on the West Face of Janhkuth, with both teams employing "alpine style" tactics. The English attempt reached 5,750 m., and the New Zealander's turned back at a height of 6500 m. The expedition departed Base Camp on 17th October.

Climbing conditions were compromised by the late ending of the monsoon season, followed by the early arrival of winter snowfalls. The consequent unstable weather pattern restricted the climbing opportunities and made for arduous travel between Base Camp and the foot of Janhkuth.

This expedition established that the West Face of Janhkuth offers a number of climbing lines of varying difficulty and hazard, with the two attempted routes remaining the obvious lines of weakness.

3. Introduction

3.1 Purpose

The aim of the expedition was to attempt to climb the West Face of Janhkuth.

The <u>initial</u> objective was to complete a reconnaissance of the West Face, and establish the viability of possible routes on the Face.

The primary objective was to attempt to climb two lines on the West Face.

3.2 Location.

Janhkuth is situated at the junction of the Gangotri Glacier and a smaller tributary glacier called the Maiandi Bamak. The Gangotri Glacier is a major geographical feature in the Garhwal Himalaya, and is situated in the Uttarkashi district of the Indian State of Uttarancha. At the head of the Gangotri Glacier lies the northern aspects of the Chaukhamba Massif (highest peak 7,068 m.). Twenty-eight kilometres to the north the glacier comes to an abrupt end shortly before the small tea-house settlement of Gaumukh (4000 m..). From Gaumukh the Bhagirathi River flows 17 kilometres down-valley to the town of Gangotri (3,140 m.). The Gangotri valley forms an epsilon shape, with Gangotri township situated to the northwest and the head of the valley extending southeast. (See Appendix C for a map and a diagram of the Gangotri Valley.) Janhkuth is situated near the head of the Gangotri Glacier. For reference, the approach to Janhkuth involves a 20-kilometre hike beyond the southern slopes of the well-known peak of Shivling.

3.3 Character and Access

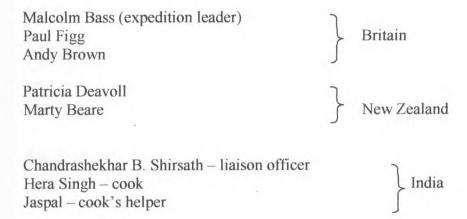
The Gangotri valley has a gentle but sustained elevation gain from the town of Gangotri to the lower slopes of the Chaukhambas. The lower reaches of the valley are narrow and gorge-like, in contrast to the placid character of the glacial-filled upper valley. Steep-sided peaks line both sides of the valley. Well-known peaks that border the eastern side of the Gangotri Glacier include Bhagirathi Parbat I (6,856 m.), II (6,512 m.), III (6,454 m.), and Satopanth (7,075 m.). Peaks that line the western side of the Glacier include Shivling (6,543 m.), Kedarnath (6,940 m.), and Karchakund (6,612 m.). The surface of the lower half of the Gangotri Glacier is completely covered by moraine. Up-glacier of Kedarnath the moraine tails into ribbons of medial and lateral moraine. Numerous side-glaciers flow into the Gangotri throughout its length. The furthest up-valley tributary-glacier on the true right of the Gangotri valley is the Maiandi Bamak. Janhkuth (6,805 m.) lies at the junction of the Maiandi Bamak and the Gangotri Glacier. The West Face of Janhkuth rises steeply up from the true-left (eastern) side of the north-south aligned Maiandi Bamak.

The town of Gangotri is accessible by two-wheel drive vehicle, with the 450-kilometre road journey from Delhi generally taking one and a half days. One full day of driving is required to reach the town of Uttarkashi. Beyond Uttarkashi there is a further 100 kilometres of road travel to Gangotri. After Gangotri a bridle-path for the use of walkers and ponies follows up the true-right bank of the Bhagirathi River. It is standard for trekkers to spend their first night on the trail at Bhujbas (3,800 m.), 16 kilometres beyond Gangotri. From here a further four kilometres of easy trail-walking leads to the final teahouse of Gaumukh. One kilometre above Gaumukh the trail follows cairns onto and across the snout of the moraine-covered Gangotri Glacier and ascends 100 metres of lateral moraine to the campsite known as Tapovan (4,300 m.), approximately eight kilometres beyond Bhujbas. A foot-trail traverses two kilometres of grassy slopes to a nearby campsite named Karapatta (4,370 m.), and continues a further two kilometres to descend to the Kirti Bamak. On the opposite side of this tributary glacier, sited on grass-covered moraine under the north-eastern aspect of Kedernath, is Sudenbam (4,535 m.), the Base Camp for this expedition. Beyond Sudenbam the trail continues up-valley on the

true-left before descending to the moraine-covered Gangotri Glacier. A deliberate move to the centre of the Gangotri Glacier allows straightforward travel up an increasingly clean glacial surface until the junction with the Maiandi Bamak (5,000 m.) is reached 17 kilometres beyond Sudenban. The lower slopes of the Maiandi Bamak are criss-crossed by numerous small crevasses, but a narrow channel of crevasse-free travel winds up through medial moraine and leads to the flat section of glacier immediately under the 1,600 m. West Face of Janhkuth. The opposite flank of the Maiandi Bamak is bounded by the precipitous eastern face of the ridge leading north to Swachand (6,721 m.).

4. Personnel

The expedition members comprised of three English residents and two New Zealand residents, plus the Indian contingent of one Liaison Officer, one cook, and one cook's helper. The personnel are listed below:



5. Research and Preparation

5.1 Introduction.

This section describes the expedition's preparation prior to leaving England and New Zealand.

5.2 Research

The objectives of research were to find unclimbed routes within the Garhwal Himalaya of technical difficulty that matched the abilities and aspirations of the climbing members of the expedition, and then to select one route from this selection.

Research information was garnered from three sources:

1. local knowledge of team members

- 2. guide-book information
- 3. Indian Mountaineering Foundation

One map of the region was obtained.

5.3. Climbing Objectives

Malcolm Bass, leader of the British-NewZealand expedition to Janhkuth, had been on three climbing expeditions to the Garhwal Himalaya in the previous decade. This included expeditions to Chaukhamba 1 North Ridge and to Swachwand West Face. These peaks are either side of the Maiandi Bamak, and consequently Malcolm had viewed the summit slopes of Janhkuth from various angles.

Jan Babicz (1990) is the author of the only guide-book to the Garhwal Himalaya. Babicz refers to Janhkuth as "an elegant rock pyramid" that "dominates the surrounding area". He continues: "This peak is the most interesting objective in the lateral valley of Maiandi, above which rises the 1600 m. high West Wall" (1990: p.150). Babicz infers that the mountain was unclimbed by date of publication

Further communication with the Indian Mountaineering Federation confirmed that Janhkuth remained an unclimbed mountain. They reported that there had been only one attempt on the mountain. This attempt, by Austrian climbers Jochler and Zenz in 2002, was unsuccessful.

5.4. Formalities.

An application for a permit for climbing Janhkuth was lodged with the Indian Mountaineering Foundation, and approval granted.

5.5. Provisions, Fuel, and Equipment.

Provisions and fuel for this expedition were prepared according to whether they were to be consumed during the period spent at Base Camp (including the walk-in and walk-out) or for the period above Base Camp. The expedition employed the trekking agency "Himalayan Run and Trek" to organise provisions and fuel for the walk-in and out, plus nine days at Base Camp. The expedition members provided provisions for 21 days to be used beyond Base Camp. Himalayan Run and Trek obtained thirty-five gas canisters for our use beyond Base Camp.

Food consumed beyond Base Camp involved a combination of specialist items that the expedition shipped into India plus other "dry" food items that were purchased from a supermarket in Delhi. Specialist food items included freeze-dried meal, foil-packaged tuna, energy bars and gels, and carbohydrate/isotonic 'sports' drinks.

A satellite phone was rented from Iridium.

Snow shoes (MSR) were used by four of the five expedition members.

Each team climbed with two 60 metre 8 mm. ropes and a medium-sized rack of rock, ice, and snow protection. All expedition members used standard alpine climbing hardware.

Each team took two tents beyond Base Camp, one for ABC and another single-skin tent for the mountain.

Gas canisters and stoves were used for cooking once beyond Base Camp. A total of approximately 30 small gas canisters were used by the expedition climbing members during 17-18 days. A small pool of melt-water at ABC meant that there was no need to melt snow while at this camp.

5.6 Finance.

The total cost of the expedition per member including airfares to and from New Zealand was estimated at US\$23,550.00. The total actual cost was US\$19,471.00. An outline of financial details of the expedition is presented below.

Income:

Financial grants were received as follows:

Donor	Amount	US\$ equivalent (approx)
The Mount Everest Foundation	£650.00	1,200.00
The British Mountaineering Council	£1,900.00	3,400.00
The New Zealand Alpine Club	NZ\$2,000.00	1,300.00
The Canterbury Mountaineering Club	NZ\$1,000.00	650.00
		US\$6,550.00

Equipment grants and support included:

- 'Clif' energy bars and gels foc
- Heinz-Watties NZ foil-packaged tuna foc
- DMM climbing gear to English team at cost
- Back Country Foods (New Zealand) freeze-dried meals at wholesale price
- Icebreaker (NZ) woollen underwear at wholesale price to NZ team
- Southern Approach/Black Diamond Arthur Ellis (NZ), Mountain Hardware, W.L. Gore (Australia) clothing and equipment to Pat Deavoll

Expenses:

Item	US\$
Peak fee	2000.00
Environmental levy	400.00
Liaison Officer equipment hire charge	500.00
Satellite phone	710.00
Climbing insurance	3,150.00
Agent fee (logistics/accommodation/provisioning/cooks/porters)	6,911.00
Air fares	6,500.00
Air freight	500.00
Medical kit	500.00
Dried food and 'power' drinks	300.00
	US\$19,471.00

5.7 Insurance

Members arranged insurance through the BMC (English team) and the American Alpine Club (New Zealand team).

5.8 Medical arrangements

All expedition members made personal arrangements to be inoculated against tetanus prior to arriving in Gangotri. Most members also received inoculation against typhoid.

One member used anti-malarial medication.

Both the English and New Zealand teams had extensive personal first-aid and medication kits. These proved adequate for the minor ailments suffered (coughs and flu, muscle strain, headache, etc.).

Four climbers used acetazolamide as a prophylactic medication at some stage during the expedition. Dexamethasone was used by one member for a 24 hour period to alleviate preliminary symptoms of cerebral oedema.

5.9 Travel arrangements

The two New Zealand expedition members flew to Delhi via Lufthansa Airlines, arriving in the early morning of 12th September. The English team flew with Lufthansa Airways, and arrived 24 hours later. A representative from our trekking agency Himalayan Run and Trek met all members at the airport. The English climbers also freighted 90 kg of luggage to and from India with Lufthansa Airways

The New Zealanders were travelling on a round-the-world ticket via USA. All their equipment was brought to India as flight luggage courtesy of a baggage allowance of two 32 kg pieces each plus hand baggage. The English team flew with 20 kg per person plus hand baggage, and freight-forwarded 270 kg of cargo. The freight-forward cargo was cleared the day after arrival in Delhi with the assistance of a Himalayan Run and Trek representative. On departure from Delhi, 270 kg of cargo was freight-forwarded to England. Our Liaison Officer provided invaluable assistance with this operation.

Himalayan Run and Trek provided transport and drivers for the road trip to and from Gangotri, as well as organising all accommodation arrangements. On our initial stop-over in Delhi we stayed at the YWCA International Guest House, and on our return at the YMCA International Guest House (for address details, see Appendix D). Hotel accommodation was used in Uttarkashi on both up and down journeys, and on the upward leg through Gangotri. On the walk-in and walk-out we stopped overnight in wooden barracks-style accommodation in Bhujbas. All accommodation was pre-arranged by Himalayan Run and Trek.

6. Activity/ Trip Log

13th – 14th September

By the 13th Sept 2004 all expedition members had arrived in Dehli, where we stayed at the YWCA. A representative of our agent 'Himalayan Run and Trek' (HR&T) met us on the 13th September, and confirmed our schedule and arrangements for the expedition. On the 14th September Malcolm Bass led our expedition in a meeting with Colonel Bhimwal of the Indian Mountaineering Federation. Colonel Bhimwal confirmed that our expedition had completed all administrative requirements and therefore had IMF approval for an attempt on Janhkuth. At the IMF we were introduced to our liaison officer Chandrashekhar B. Shirsath. That afternoon we were introduced to our cook Hera Singh. HR&T then organised a vehicle and driver to enable us to visit a supermarket in order to buy food and provisions for our time beyond Base Camp.

15th - 16th September

At 06.00 hrs on the 15th September our expedition (including Chandra and Hera) departed Delhi in a 13-seater van. Our agent had miscalculated the amount of available space in the van, meaning that another vehicle was needed in order to carry some of the expedition equipment to Gangotri. (At a later stage we discovered that HR&T had over-catered for us.) That night we stayed at a hotel in Uttarkashi. On the morning of the 16th September we bought fresh vegetables in Uttarkashi market and visited the Nehru Institute of Mountaineering. That afternoon we drove to Gangotri (3,140 m.).

17th - 18th September

Personal loads were organised and the provisions supplied by Himalayan Run and Trek for our time at Base Camp were rationalised. It transpired that HR&T had catered for our expedition for the duration of the trip, and had neglected to follow our instructions that we would self-cater for fourteen days. On the 18th September we took a short ½ day walk up-valley towards Thelay Sagar.

19th - 21st September

The expedition begn the move up the Gangotri Valley. A total of 37 porters plus one sirdar were needed to transport the expedition's equipment. Our first night on the trail was spent in the guest-house accommodation at Bhujbas. On the 20th September we trekked via Gaumukh and Tapovan to the campsite at Karapatta (4,370 m.). On the 21st September we arrived at Sudenbam (4,535 m.) where we erected Base Camp in the form of a cook's tent, a dining tent, a toilet tent, and personal tents. That night 5 cm snow plus rain fell.

22nd September

The majority of the porters set off for their return to Gangotri. All five climbers plus Chandra and five "high-altitude" porters made a carry up the Gangotri Glacier. The loads were left at a site 5.5 km beyond Base Camp at 4,750 m. in the middle of the glacier at the first continuous section of clean white ice. This site was named "Dump Camp". The carrying party returned to Base Camp that afternoon. The high-altitude porters continued down-valley, leaving we five climbers and Chandra, Hera, and Jaspal at Sudenbam. From mid-afternoon onwards the weather turned inclement, with rain and 50 cm of snow falling overnight.

23rd September

That morning the Cooks' tent (used for sleeping and food preparation) collapsed due to the weight of snow. The weather cleared, and the cooking facilities were re-organised.

24th September

The climbing members of the expedition (Malcolm, Paul and Andy – English team, known hereafter as M/P/A; Pat and Marty – New Zealand team, known hereafter as P/M) began the trek to the upper Gangotri Glacier. Dump Camp was reached by early afternoon, just before the onset of sleet, snow, and driving wind. M/P/A discovered that their Mountain Hardware EV2 tent left in situ at Dump Camp two days prior had collapsed from the weight of snow, with two poles broken in two places each. Repairs were made, and the tent re-erected and used without further problems for the rest of the trip. Both teams stayed overnight at Dump Camp.

25th - 30th September

Over the next few days an advanced Base Camp (ABC) was established 11 km up-valley from Dump Camp (16.5 km beyond Base Camp). The campsite was situated 800 m. below the junction of the Gangotri Glacier and the Maiandi Bamak at 5000 m. elevation. M/P/A moved up to the ABC site in one day, and continued to shuttle food from Dump Camp up to ABC over the next week. P/M took two days to reach ABC from Dump Camp, utilising an intermediary camp at the base of the Swachand Bamak (4,800 m.). P/M carried all food and equipment for three weeks in the one trip.

The weather remained mostly fine during this week, with clear mornings, regular afternoon cloud, and some snow. In the latter half of the week both teams made a reconnaissance of the Maiandi Bamak and observed the West Face of Janhkuth at close quarters. Each team selected a likely climbing route. M/P/A chose a mixed line to the right of the West Face that linked snow couloirs and shorter steep gullies to eventually gain a major spur that ran up to the South Ridge and on to the summit. P/M chose a large couloir that intersected with M/P/A's line at the point where the spur joined the South Ridge. On the 30th and 31st September both parties deposited their technical gear in the Maiandi Bamak, stashing it in the valley floor opposite the West Face of Janhkuth at 5,230 m.

$1^{st} - 3^{rd}$ October

On the 1st October both parties moved up to the Maiandi Bamak, hoping to leave that night for an attempt on the mountain. By the afternoon it was snowing heavily, and by late afternoon M/P/A moved back to ABC. P/M stayed put for the night, but moved down to ABC on the 2nd October when it became obvious that the mountain was out of condition. Snow continued to fall the following day, with accompanying strong winds at higher elevations.

4th – 9th October

The 4th October dawned fine after three days of sustained snowfall. M/P/A made a one-day-return trip to Dump Camp for more supplies. P/M moved up to the Maiandi Bamak. Both teams rested on the 5th October, M/P/A at ABC, and P/A at the Maiandi Bamak camp. At midnight on the 6th October P/M began climbing un-roped on 45°-angled snow-slopes, with arduous travel due to the deep surface snow conditions. After 12 hours a campsite was reached on a small spur to climber's right of the couloir at 5,700 m. This spur formed the only feasible tent site in the initial 600 metres of the climb. The weather was clear and calm but the face was shaded until 1 pm because of its westerly aspect.

M/P/A moved up from ABC to the Maiandi Bamak camp that afternoon in preparation for their ascent that evening.

On the morning of 7th October P/M re-entered the couloir and climbed steepening ground. Two pitches of ice angled around 80° were encountered. Three more 60 metre pitches led to the junction with the South Ridge of Janhkuth at 6,400 m., where a camp was made in a slight widening in the ridge ("Ridge Camp"). The day's climbing took 12 hours, with much time being used up in the latter

120 m. of the climb digging for decent ice anchors. An evening thunderstorm surrounded Janhkuth, with the bulk of the snowfall occurring below Ridge Camp.

Meanwhile, 10 pm on the 6th October, M/P/A had left the Maiandi Bamak and climbed for 12 hours to establish their camp on mixed ground on the right-hand-side of the face at approximately the same level as P/M's initial camp. Their ascent to here involved entering the couloir for 200 metres, and then following right-trending snow ramps with occasional mixed steps. The team used solo, moving together, and pitch-climbing tactics to get to their camp. During the thunderstorm that evening they received much more snow than P/M 600 metres above them. At 6 pm on the 7th they made the decision to descend before the snow collapsed their tent, and before retreat became impossible due to the imminent avalanche danger. The descent involved abseils and soloing. M/P/A returned to ABC that afternoon.

On the morning of 8th October Marty reconnoitred more steep ground above Ridge Camp to gain the horizontal section of the South Ridge at 6,500 m. From here the South Ridge led north for 700 metres to the mixed ground beneath the summit. P/M decided to stay at Ridge Camp for the day as Pat was experiencing headache and nausea. On the morning of the 9th October P/M woke to clear skies but very cold and strong winds. Pat was clearly oedemic by this stage, so P/M decided to descend. Eight rappels off V-threads gave a rapid descent down the upper throat of the ice-gully. From here P/M descended all the way to ABC.

10th/11th October:

By early morning of the 10th a storm had moved in. M/P/A packed up their ABC, and descended to Base Camp, leaving some equipment en route at Dump Camp. P/M spent a rest day at ABC. By next morning 75 cm new snow had fallen. P/M descended to Base Camp, leaving a cache of equipment four kilometres below ABC.

12th – 16th October:

The weather from the 12th to 14th October remained inclement, with continual snow-fall and very cold temperatures at Base Camp. During this period both teams retrieved the remainder of food and equipment from up the Gangotri Glacier. Also, a foot-trail was stamped through the snow-covered glacier from Sudenbam to Karapatta. Hera and Jaspal continued on down to Gangotri to encourage the porters to return.

On the evening of the 16th October Hera and six porters arrived at Sudenbam Base Camp. The rest of the porters were stranded on the Kirti Bamak in the dark with no torches and insufficient clothing, and required our assistance to make Base Camp and be re-warmed.

17th – 19th October:

All porters and members of the expedition departed Base Camp by 10 am of 17th October. At Tapovan the ground was still covered in deep snow. The expedition stopped overnight in Bhujbas where we used the same quarters as on the walk-in. We arrived back in Gangotri at midday on the 18th October. That afternoon we drove to Uttarkashi where we stayed overnight. The next day we drove to Delhi where our agents Himalayan Run and Trek had organised our accommodation at the YMCA Guest House.

20th – 23rd October:

The 20th October was spent re-acquainting ourselves with civilisation. On the 21st October we met with Colonel Bhimwal at the Indian Mountaineering Foundation for our end-of-trip de-brief. We were notified that we had completed all requirements.

M/P/A spent one day organising the forwarding of their freighted luggage through Indian customs. This was achieved with the valuable assistance of Chandra, our liaison officer.

Over the next 48 hours all members had departed India from Delhi International Airport.

7. Conclusion

To conclude:

- The expedition was unsuccessful in its main aim of ascending the West Face of Janhkuth.
- The expedition did succeed in making a reconnaissance of the West Face of Janhkuth.
- The expedition did attempt to climb two of the identified potential routes. In doing so, the following was established:
 - The large couloir situated to the right of centre of the West Face joins up with the South Ridge from where it was observed that moderate climbing leads to the summit of Janhkuth.
 - o The couloir route is graded "Difficile", mostly 45°-55° snow and ice with one passage of 80°, 1,170 m.
 - O The right-trending ramp and gully system attempted by the English team provides a steeper and more sustained challenge. The climbing that was achieved is graded "Difficile", 45°-55° mixed snow and rock, 600 m. The terrain becomes steeper and the climbing more difficult beyond the high point that was attained.
 - O Both attempted routes would be problematical to descend in storm conditions owing to the high avalanche hazard on the upper slopes of the West Face, and the fact that both routes follow obvious avalanche paths. The initial 600 metres of the couloir climbed by the New Zealanders is always subject to ice cliff hazard, although this was not felt to be significant.
 - O An obvious variation to the route attempted by the New Zealanders is to exit via the left-hand exit of the couloir rather than the right-hand branch that was climbed. Doing so would enable a fast team (in good snow conditions) to access the upper slopes of the West Face of Janhkuth and position their second camp below the summit pyramid. This would obviate the need to traverse the upper South Ridge from the Deavoll/Beare South Ridge campsite.

- Further potential climbing lines exist on the central and left-hand side of the West Face of Janhkuth, although some objective hazard is evident on these lines.
- The climbing tactics selected by our expedition were appropriate for the challenges that we encountered. In particular, the following is worth noting:
 - The creation of 'dump camps' and temporary sleeping camps up the Gangotri Glacier enabled us to remain self-sufficient of Base Camp for almost three weeks.
 - Our decision to bring and use snow-shoes proved to be correct for access and egress in the Gangotri Glacier/Maiandi Bamak regions. Perhaps in other years of lesser (more normal?) snowfall this may not be so critical a factor. Skitouring equipment would also have been appropriate for the conditions that we encountered, and would have given faster travel up and down the upper portion of the Gangotri Glacier (but would have been heavier and more cumbersome to carry over the moraine).
 - Route selection on the West Face was influenced by our choice to make use of alpine-style tactics while climbing. We believe that a summit-return ascent of Janhkuth is achievable using our routes and climbing tactics given good health and a period of 5 days of fine weather.
- One aspect that future parties may want to re-consider is that of our minimal use of high-altitude porters. We expended a great deal of effort in establishing ABC, mainly carrying our own loads except for 5 porter-loads to DC. A (considerably) bigger budget allocation to allow for well-equipped high-altitude porters carrying to ABC would make this stage of the journey significantly less demanding.

8. Acknowledgments

The expedition gratefully acknowledges assistance from the following organizations:

- The Mount Everest Foundation for financial assistance.
- The British Mountaineering Council for financial assistance.
- The New Zealand Alpine Club for financial assistance.
- The Canterbury Mountaineering Club for financial assistance.
- The following companies for providing equipment and provisions: Clif, Heinz Watties Ltd, Back Country Foods, Southern Approach NZ, Black Diamond, W. L. Gore Australia, Zone NZ, DMM.

9. Copyright

The compiler of this report and the members of this expedition agree that all or part of it may be copied for the purpose of private research.

Appendix A Bibliography

• Babicz, J. (1990) *Peaks and passes of the Garhwal Himalaya*. Sopot: Alpinistyczny Klub Eksploracjny

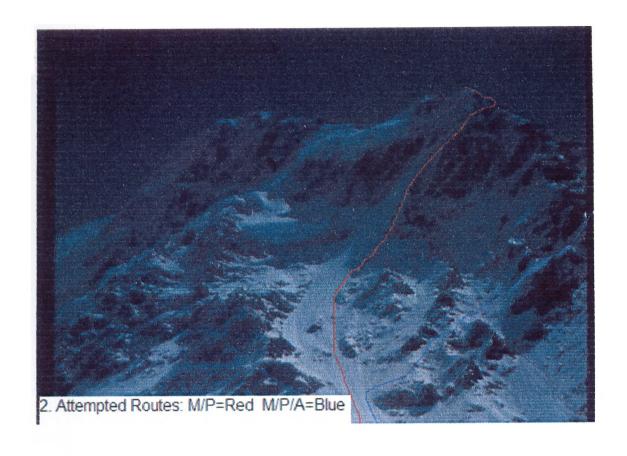
Appendix B Photograph

Attempted Routes

Appendix C Maps and Diagrams

- 1. Topographic Map
- 2. General Maps
- 3. Diagram

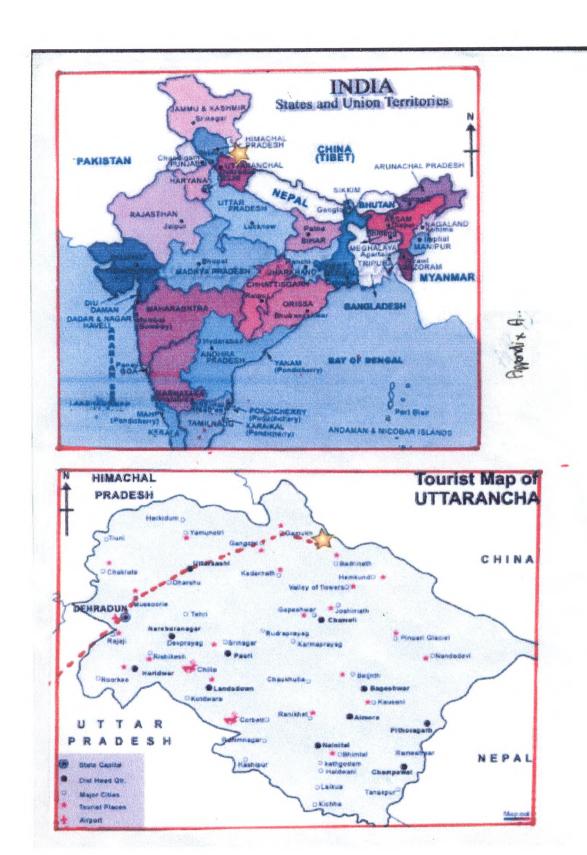
Appendix D Address Information



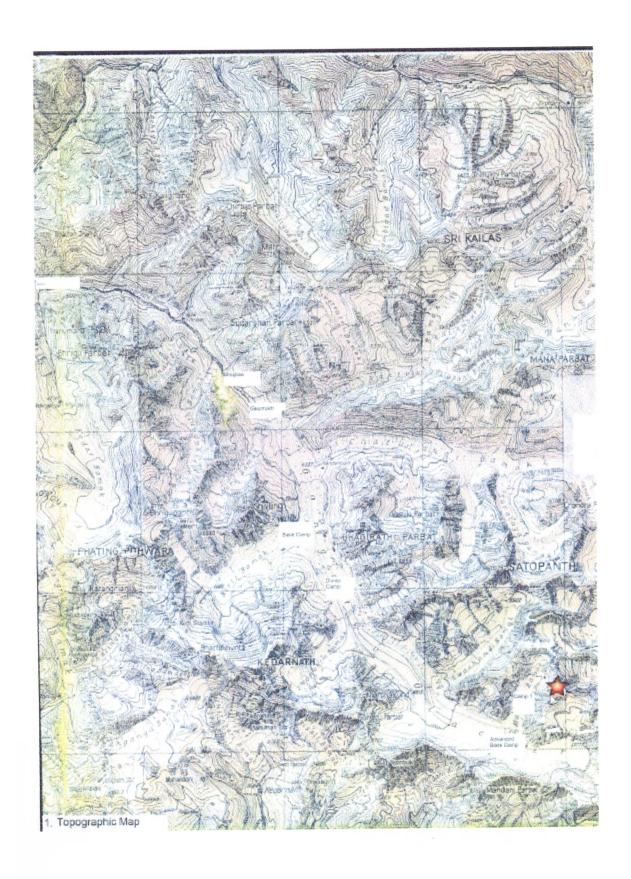
Appendix C Maps and Diagrams

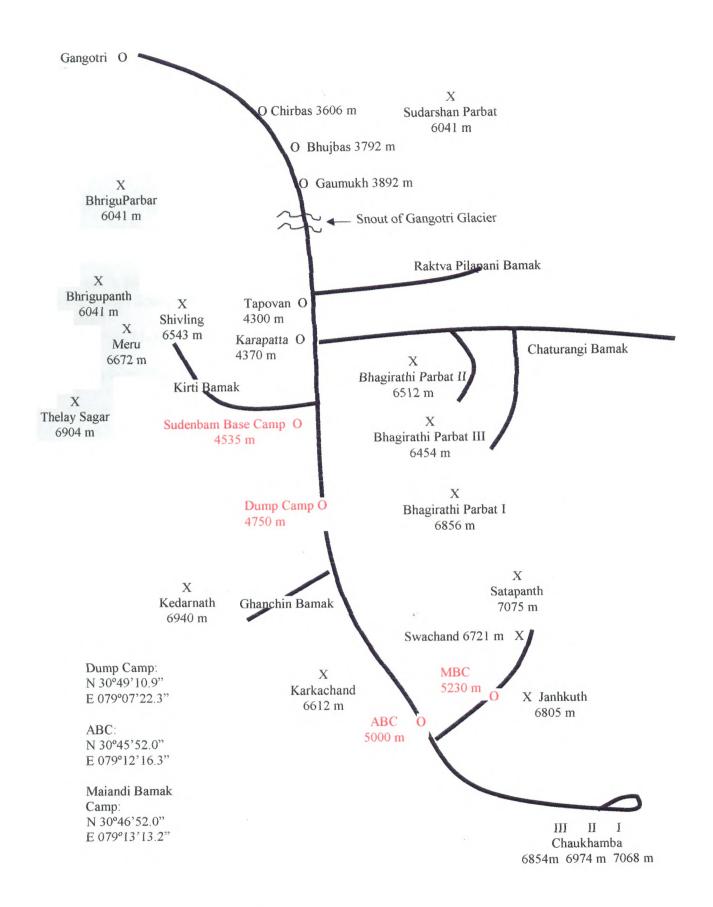
Key

- a) Maps of India and the state of Uttarancha.
- b) Map of Uttarkashi district
- c) Topographical map (1988) of the Gangotri Valley
- d) Diagram of the Gangotri Valley showing camps used by the British-New Zealand 2004 Expedition.









Appendix D Address Details

Indian Mountaineering Federation

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YWCA International Guest House

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