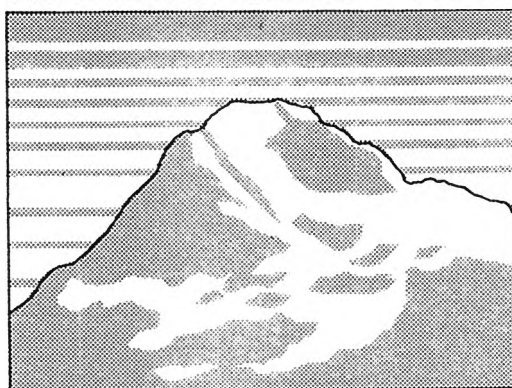


NINETEEN EIGHTY NINE



LONDON
NILKANTHA · EXPEDITION

Final Report

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628

C O N T E N T S

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1. HISTORY

Nilkantha may not be a Himalayan giant, but its spectacular form and position overlooking the pilgrim town of Badrinath at the head of the Alaknanda River ensured its attention from the early Himalayan Pioneers. C.F. Mead commented on its beauty on his reconnaissance of Kamet in 1911. Smythe too was inspired by the mountain during his approach march on the successful 1931 expedition to that mountain.

The first serious attempt was made by Smythe, who returned on his way back from the Valley of Flowers in 1937 to attempt the south-east ridge. His choice of route was made on the advice of Holdsworth, who had explored the region, crossing a col at the foot of this ridge. (Since named Holdsworth's Col, c. 5,000 m.). He found the ridge to be technically difficult, with many rock gendarmes to be crossed. He was stopped at 5,500 m. due to heavy snowfall, attributed to the early arrival of the Monsoon. The exact position of his high point is not clear, but it is obvious that the crux of the south-east ridge, the great rock buttress below the summit, was still above his high point. It is not clear whether he made progress along the long snow ridge below this buttress.

Two attempts were made in 1947, the first by Wylie, who made a pre-Monsoon attempt on the south-east ridge. His party failed to make any indent on the first rock section and they retreated from below 18,500 ft. He moved his attempt to the west ridge and succeeded in reaching the west Col (c. 5,200 m.) but again was defeated by bad weather.

The second attempt in that year was led by the Swiss guide, Andre Roche, but he left little record of his efforts.

Four years later Riddeford's New Zealand party, which included Edmund Hillary, made attempts on both the west ridge and the then untried north-east ridge/"Shelf" route. The outcome of this expedition was that the west ridge became accepted as the most feasible line. Further progress on this ridge was made the following season in 1952 when a Fell and Rock team led by Tilly succeeded in climbing the early pinnacles. They were stopped, once more by bad weather, but confirmed the route a "reasonable proposition."

This was the end of Western climbers' interest in the mountain. However, exploration of the area did not halt and was carried on with enthusiasm by Indian climbers. In 1959, Goyal made an unsuccessful attempt, and in 1961, Kumar claimed an ascent via the north face. They were forced to attempt this avalanche-prone face due to icy conditions on the west ridge. Their "ascent" was made in poor conditions and a confused account of the ascent was given.

Despite the acceptance of the ascent by the I.M.F., it seems highly likely that they only reached a false summit on the snowy upper section of the west ridge. Whether or not the summit was reached, it was a fine effort considering the nature of the mountain and the poor conditions encountered by the climbers.

The area was closed due to border troubles with China from 1962, and the next expedition was not until 1974, when A.P. Chamoli's India Tibet Border Police team succeeded in climbing the north face by the same route as the 1962 "ascent." Like earlier expeditions, they had attempted the west ridge but were unable to overcome the technical difficulties. Due to the controversy over the earlier "ascent", a detailed account of their climb has never been published.

The 1989 London expedition was the first attempt on the mountain since 1974.

2. PERSONNEL

- Duncan Tunstall (Leader). British, age 27. 8 years climbing experience throughout the world, including expeditions to Siberia and the Karakoram. Has opened several new routes in Britain.
- Andrew Bond (Deputy Leader). British, age 30. 12 years climbing experience, including an expedition to the Karakoram. Has climbed extensively in Britain and Europe.
- Paul Allison British, age 24. 10 years climbing experience, including many Alpine classics and new routes in the Karakoram and Siberia.
- Jim Nonnemaker American, age 26. 4 years climbing experience in Europe and the U.S.A. Many hard climbs in the Alps and American Rockies. A regular activist in Pennsylvania, opening many important new rock and ice routes at a very high standard.
- Chris Tauber British, age 36. 20 years experience of climbing in Britain and the Alps.
- Chris Pateur British, age 24. 5 years climbing experience in Britain and the Alps.
- Jacquie Sread British, age 24. Keen rock climber with wide experience in Britain (e.g. Old Man of Hoy, Moonraker etc.) and Europe. Finale, Montserrat, Padriza etc.
- Joan Tunstall British, age 54. Over 35 years of hill walking experience all over the world.

3. DIARY

- 8th September P.A. and J.N. arrive Delhi.
- 10th September D.T., A.B., C.P., J.S., C.T. and J.T. arrive Delhi.
- 11th September Minibus to Joshimath.
- 12th September Minibus to Hanuman Chatti. Hire porters in Badrinath.
- 13th September D.T., J.N., J.S. and J.T. walk to Lockmara with 70% of the equipment.
- 14th September Establish base camp at 3,800 m.
- 16th September P.A., A.B., C.P. and C.T. arrive base camp with remainder of equipment. J.S., J.T. and D.T. leave for Badrinath.
- 17th September J.N. and C.T. reconnaissance of south face. D.T. to base camp over Holdsworth's Col (c. 5,000 m.).
- 18th September P.A. and J.N. reconnaissance of south-east ridge. D.T. and A.B. attempt to reach west Col via west Col glacier. Both efforts stopped by bad weather (visibility 10 m.).
- 19th - 22nd September Bad weather restricts team to base camp.
- 23rd - 24th September The south-east ridge was chosen as our intended route as it offered the safest line on the mountain. The approaches to the south face, south-west face and west ridge are threatened by seracs. As a further reconnaissance and acclimatisation, P.A., A.B., J.N. and D.T. to snow saddle (c. 4,900 m.) below the south-east ridge which is chosen as site for advanced base. Tents and climbing equipment are left on the the saddle.
- C.P. and C.T. to Badrinath over Holdsworth's Col to collect more fuel.
- 25th September Bad weather.
- 26th - 28th September P.A. and A.B. to advance base camp where they dig a snow hole. The south-east ridge is climbed to 5,400 m. (a pinnacle tentatively named Pointe Allison). They report that, although not difficult, the rock is very shattered on this section of the ridge and would give a slow and serious approach. The alternative is a lower traverse line across avalanche-prone slopes threatened by stone fall.
- J.N., C.P., D.T. and C.T. explore Panpatia Bamak Glacier and reach col at head of glacier (c. 5,000 m.). Ascent to Col is via long and serious ice fall. Descent via scree/rock slopes on left bank of glacier. Col gives access to the Gondharpongi Gnaga Valley, Shipton's legendary "bamboo forest".

29th September	All return to base camp and prepare for an Alpine style attempt on the south-east ridge.
30th September	P.A., A.B., J.N. and D.T. to advance base. Arrival greeted by heavy snow.
1st October	Day spent in snow hole/tent at advance base. More snow.
2nd October	J.N. to base camp due to mild altitude sickness. Storm.
3rd October	Morning clears but heavy afternoon snow.
4th October	Storm. A.B. descends to base camp. P.A. and D.T. stay in snow hole.
5th October	Again heavy afternoon snow.
6th October	Weather clears. P.A. and D.T. dry equipment and climb to summit of Pointe Allison. Camp in deteriorating conditions. Snows most of the night.
7th October	Morning is fine. P.A. and D.T. await weather. By 11.00 a.m. storm clouds are gathering. To continue would require a committing abseil, followed by the ascent of steep mixed ground on unstable snow with poor rock. Considering prevailing conditions, decision was made to retreat. High point c. 5,400 m. Descent was in poor conditions and the snow saddle was reached at 4.00 p.m. and base camp at 8.00 p.m.
	During the period 1st to 7th October, C.P. and C.T. had established an advance base at shepherd's hut above the Panpatia Bamak Glacier (c. 4,200 m.) From here they fully explored the upper reaches of the left hand bank of the glacier and reached a height of 5,500 m. on Parvati Parbat (6,257 m.). Their route was the south-east ridge, which gave enjoyable rock climbing at an easy standard to their highpoint. They were stopped by unstable snow slopes above. They saw no technical difficulty between there and the summit.
8th October	Close base camp and walk to Badrinath.
9th October	Day in Badrinath visiting Mana village.
10th October	Public bus to Delhi.
12th October	Fly to London.

4. CLIMBING REPORT

The team finally arrived at base camp on 18th September 1989, after what can only be described as a troublesome week. We had been forced to split the team twice, once in Delhi due to no sign of our freight, and the second time at Hanuman Chati waiting for porters. The journey had been complicated by difficulties in buying petrol and Kerosene in Joshimath and the walk-in was plagued with porter troubles. All this was exasperated in the eyes of the impatient climbers by the attitude of the L.O., which seemed to deteriorate with every mile we walked from the road. And on top of all this, a constant heavy drizzle 24 hours a day, giving only fleeting glimpses of the mountains we knew to be so close.

That was not to say it was without its moments. Bathing in the Upper Ganges after 12 hours in a hot sweaty bus, dawn over the Alaknanda Gorge, the first sight of the east face of Nilkantha from Badrinath, and for me the wild, solitary walk over Holdsworth's Col.

Our base camp was forced on us by the weather and our inability to coax our porters any further. The ground beneath the snout of the Panpatia Glacier was uniformly inhospitable. Anywhere flat enough to pitch a tent was flooded and we could see no sign of the promised lake we were heading for. The only exception to this was a small rocky meadow situated above the river from which, with considerable effort, we could extract a suitable base camp.

It was only later we learnt the full magnitude of this error as our site did not receive the morning (only!) sun and gave very poor and uninspiring views of our surroundings. It was also less than two hours to Nan ali Tahl, a beautiful lake and meadow with mythical stature. However, in our state of ignorance, we slaved away digging tent platforms, cooking shelters and other western comforts for our intended stay.

Fortunately, one of our problems soon disappeared when our L.O. decided we were not sufficiently well equipped to enable him to live comfortably at base camp, and he opted to leave for Joshimath for a "well earned" holiday.

With, at last, the six climbers in the same place, we would be able to start work. Our first objective was acclimatisation, which we hoped to obtain by making a thorough reconnaissance of the southern approaches to the hill. We split into three teams, Paul and Jim investigating the south-east ridge, Andy and myself attempting to reach the West Col Glacier and the "Strathdon Free Trekkers" attempting to obtain a general overview by climbing the ridge south of our camp.

All three attempts ended in dismal failure as the continued bad weather (zero visibility and persistent drizzle) ensured little of value was gained. The only real benefit of these early trips was from our free trekkers, who had the chance to practise their unscheduled bivouac technique 200 m. from our camp !!. They had miss-timed their descent and in the darkness traversed onto a wrong spur which lead to a large cliff.

The bad weather continued and our few fleeting glimpses showed the approaches to the south face and west col glacier were both unpleasant and threatened by seracs. We thus chose to concentrate our initial efforts on the south-east ridge as we knew Smythe had made some impact on this route in 1937.

Thus, a few days later saw the climbing team struggling with full equipment up a steep grassy gully to the complicated terrain above our camp. Our objective was a snow col which we believed to be on the ridge. We were all surprised at how convoluted a valley system existed on the flanks of the south-east ridge. We camped at about 4,500 m. and on the following day reached the snow to discover it was a saddle some 300 m. below the rocky crest of the ridge.

The bad weather continued and, after two more days in base camp, further reduced the morale of the team. Finally, the weather improved and we were able to continue with our acclimatisation. Paul and Andy went back up to the snow saddle to establish advanced base and to investigate the first rock step on the ridge while the rest of us headed off for the unknown upper reaches of the Panpatia Bamak Glacier.

The weather for once was kind and both groups had successful expeditions. Paul and Andy, as well as making a useful carry to advanced base, excavated a snow hole at advanced base (8 hrs. hard work) and succeeded in climbing the ridge as far as the first rock pinnacle. They were surprised to find the ridge falling short of Smythe's descriptions. The rock was probably the worst they had ever seen and several gullies made the route more problematic than appeared from below. Indeed, the traverse lines we had hoped to follow were not feasible, being threatened by avalanche and rock fall, and the crest of the ridge had to be followed for most of the route. The climbing was not excessively difficult (Alpine II-IV), although the lack of protection and abundance of loose rock made it slow work. Inevitably, the day was marred by afternoon cloud so they were unable to see the continuation of the ridge.

The other team found the walk up the Panpatia Bamak Glacier, as always, took longer than expected, and the ice fall at its head was a mass of teetering seracs and wild crevasses. The sun hit the wall at 7.00 a.m. and quickly made conditions too difficult to climb. For this reason the objective of camping on the Col was abandoned and a 2.00 a.m. start was made to climb the ice fall.

Route finding was difficult and time consuming and the plateau was reached after 5 hours of precarious climbing. Once again, technical difficulty was not the problem (Scottish 2 in one section) but finding ones way around or over dubious snow bridges was always exciting.

The plateau itself was spectacular, surrounded on three sides by 6,000 m. peaks and to the north-west by the spectacular Chaukhumba Wall, which stretched up to over 7,000 m. It took about 1 hour of wading through deep snow to reach the far rim of the plateau and look into Shipton's legendary "Bamboo Forest" (ref. Nanda Devi by E. Shipton 1937). Shortage of time/bivouac equipment prevented an attempt on any of the surrounding peaks and descent was made down an unpleasant scree gully on the north side of the valley. This approach would be far safer, although much more unpleasant, than the ice fall and would be achievable in all conditions. The summit plateau would make an ideal base for attempting some of the peaks in the area.

Our return to base camp the following day found us discussing tactics for an attempt on Nilkantha. The weather was still unstable but as good as we had seen all trip and we chose to make an Alpine style attempt on the south-east ridge. The next day saw the four climbers struggling once again up the Grass Gully under enormous loads to advance base. Our arrival was greeted by heavy sleet and we joyfully headed for the shelter of the snow cave.

We hoped the weather would improve and looked forward to starting the climb either tomorrow or the next day. Unfortunately, this was not to be the case, and the weather deteriorated to continuous heavy snow. Jim, unfortunately, was suffering from both the altitude and a persistent virus, and braved the blizzard to return to base camp. We later learnt that the snow level had followed him down! A further two days of sleeping in the fridge was sufficient to allow Andy to make the sensible decision of taking an early retreat, leaving only myself and Paul to continue our misery.

The weather seemed to be improving in that the mornings were fine, with heavy snow only in the afternoon. We promised that if we had one snow free night we would give it a go. On the fifth night it only snowed a little and the next day dawned bright. After drying our gear we started out on the ridge. The new snow had not improved matters and, weighed down with five days food, we made very slow progress. Paul, with his knowledge of the route, led the way, although we moved together on all but one pitch. All things considered, I think it was one of the most impressive leads I have witnessed.

We found no bypass to the first gendarme, Pointe Allison, and were forced to traverse its summit. The other side we were faced with a committing 150 ft. abseil to continue the route, and as it had already started snowing heavily, we opted for caution and dug out a tent platform on a ledge just below the summit of Pointe Allison.

We felt very exposed on our tiny ledge battered by the wind and watching sheet lightning reverberate around the valleys. We awoke early to a starlit sky, but were put off from making an early move by the 50 cm. of new snow which had fallen. First light showed that the weather was not going to improve in the short term and, rather than risk the avalanche slopes ahead, we reluctantly opted for retreat. The weather turned earlier than expected and we were battered by heavy snow and high winds on the descent.

We chose not to stop at advance base and we greatly surprised the free trekkers at camp by our torchlight approach. Our disappointment at not making a bigger impression on the hill was tempered by our pleasure at returning to the comforts of the camp.

We were pleased to hear that the two Chrises had made a decent stab at the peak west of Nilkantha, gaining a height of 5,500 m. on an easy ridge before being stopped by deep snow. They had had a wonderful time, enjoying the experience of exploring unknown ground (to us) in remote surroundings.

In summary, we were very disappointed not to get a decent crack at Nilkantha, but in the five weeks we were there we only had one three day spell of settled weather. On all other days it snowed. Even on the clear days Nilkantha attracted cloud and the upper reaches of the hill were obscured by 2 p.m. at the latest. The mountain is undoubtedly one of the most beautiful and challenging of its altitude in the Himalaya, and offers many challenging lines to future expeditions. Of particular merit are the south-east ridge, the south-west spur and the east face. All will be long, difficult climbs, with very serious approaches. The area itself is relatively unexplored and many of the surrounding peaks would provide good objectives for small Alpine type ascents. The other great challenge in the area is the traverse of the Panpatia Bamak Col to reach the Gondharpongi Gnaga Glacier in order to follow one of Tilman and Shipton's more difficult and still unrepeated journeys.

Despite the weather, everybody on the expedition found the trip worthwhile, and we all owe our thanks to Dawa, our cook, who was magnificent throughout the trip.

5. MEDICAL REPORT

We are pleased to report that there were no serious medical problems on the trip. The expedition members did not include a doctor, but carried an extensive first aid kit. Below is listed a summary of medical problems and treatment.

Jim Nonnemaker. Jim endured a possible virus illness and (as a result?) had considerable difficulty in acclimatising and suffered continual severe headaches. These were treated with mild pain killers. Due to this problem, Jim never went above advance base and when suffering badly returned to base camp.

Andy Bond. Suffered mild stomach problems which were left to cure themselves.

Chris Pasteur, Chris Tauber and Paul Alison all suffered from excessive flatulence. At one stage this was feared to be Ghardia, but again cured itself.

Some used mild pain killers when necessary to assist with acclimatisation and stronger ones for long bus journeys.

Jim Nonnemaker fell in the river but suffered no serious after effects.

Dr. Ray Brew (Saunder Bank Health Centre, Burnley) acted as medical adviser to the expedition, and assisted by ordering medical supplies and advising on potential medical problems.

Expeditions without a Doctor are advised that at least one member should have or acquire knowledge of emergency, mountain and tropical medicine. It is no use having a great medical kit if no-one can use it competently.

6. EQUIPMENT REPORT

Due to the relatively lightweight nature of the trip, it was not necessary to purchase large amounts of expedition equipment and, to a large extent, members used their own existing equipment, or that acquired on recent trips. To supplement existing personal equipment, most of the main U.K. equipment manufacturers were approached to see if they would lend, or even give (!) equipment - particularly tents, to the expedition. Most responded by offering some form of discount on retail price, and two generously offered equipment at trade prices - Phoenix Mountaining Ltd. and Vango (Scotland) Ltd. (see acknowledgements).

Brief details of the main items of equipment used are as follows:-

Tents

The following tents were taken out by the expedition:-

1 Vango Force Ten Mk 3)	base camp use
1 North Face tent)	
1 Wild Country Gemini)	
1 Wild Country Mountain Gemini)	mountain use
1 Phoenix gortex mountain tent)	

In the persistent rain experienced at base camp at the beginning of the trip, the Vango and North Face tents performed well; however, the single skin gortex mountain tents all eventually leaked (one of these was already quite old). Both Wild Country Gemini tents were used on the mountain and performed fairly well, although did not have to endure particularly bad weather, apart from moderately heavy snowfalls at advance base camp.

Sleeping Bags

Sleeping bags used ranged from a refurbished Blacks Polar bag (circa. 1973 - original cost £18) to a state of the art gortex covered down bag suitable for temperatures down to -35°C. However, the sleeping bags were never really tested, since no very low temperatures were experienced. Even at advance base camp, temperatures did not fall much below -5°C. Gortex bivi-bags were used in addition to sleeping bags at advanced base camp.

Clothing

For shell clothing the expedition members were supplied with Phoenix Topaz gortex jackets and long zip overtrousers by Phoenix Mountaineering Ltd. These confirmed their manufacturer's reputation for producing well made, functional clothing. These shell garments performed well in the heavy and persistent rainfall experienced at base camp. At some stages, in what climbing occurred, blizzard conditions brought out the best in the Phoenix gear. Subsequent use of the Topaz jackets by members of the expedition in Scottish winter climbing conditions has shown that this garment is well designed, durable and suitable for "full Scottish" conditions.

For pile clothing, expedition members took their own personal fibre pile jackets and salopettes, spanning the usual range of manufacturers, including Javelin, Karrimor and Helly Hansen - the latter probably being the most functional and popular.

Boots

All members of the expedition used standard plastic double boots - Koflach, Asolo and Vango, without, for example, expedition inners, and all seemed to perform satisfactorily. Most of the climbing members of the team used Yeti-gaiters; Duncan Tunstall's spanish made gaiters fell apart after only relatively light use.

Ropes and Climbing Hardware

Assorted ice axes, crampons, harnesses, ice screws, rock hardware, snow shovels, snow stakes and 9 m.m. ropes were taken out. Some of it was actually used on the mountain; however, most of the time the climbing equipment lingered beneath a boulder at base camp. Andy's Mountain Technology ice axe performed well as an entrenching tool, and was particularly useful in the construction of the base camp loo.

Cooking Equipment

Locally purchased paraffin pressure stoves were used at base camp. On the mountain the team used both Epigas (Scorpion and Markhill Stormy stoves) and an MSR, running on petrol. The MSR was used nearly all the time at advance base camp (4,900 metres) and it proved to be both fast and economical, if slightly more difficult to light than the Epigas stove. Epigas generously supplied 250 g. cartridges at a discounted price.

The expedition also took sufficient personal equipment for the Liaison Officer, including climbing equipment. However, due to his relatively short stay at base camp, not all of this equipment was used.

7. FOOD

Base camp food consisted of both locally purchased items, and some extravagant 'luxury' items freighted out from the U.K. The locally purchased items comprised mainly staple foodstuffs, such as rice, potatoes, dahl, flour, onions, garlic, which our cook transformed with skill into an enterprising variety of gourmet meals. The 'luxury' items included chocolate, jam, marmite, peanut butter and some tinned foods; however, it turned out that most of these items could have been bought in Delhi, which would have saved on both the cost and aggravation of sending food out by air freight.

Hill food consisted mainly of ready break type cereal or muesli bars for breakfast; chocolate, sardines, peanuts, meusli bars etc. for lunch; and pasta noodles, with soup, for a typical evening meal. Also some 'luxury' items, for example tinned cheese, to supplement the diet; and mainly coffee to drink. Whilst keeping weight to a minimum is obviously an important factor with hill food, some members of the expedition considered the diet to be somewhat spartan, and lacking in nutrition.

8. BUDGET

<u>COSTS</u>	£
Flights London to Delhi 4 x £440	1,760.00
Flight Bombay to Delhi \$115 (for D.T.)	76.00
Return transport Delhi to Badrinath	275.00
Peak Fee \$900	600.00
Liaison Officer's Kit	30.00
Hotels (including IMF in Delhi)	160.00
Porters	104.00
T shirts 50 x £4.50	270.02
Cook	180.00
Food and Kitchen equipment	200.00
Gas (24 x .80p)	19.20
First Aid Kit	50.00
Insurance	360.00
Miscellaneous	100.00
Freight	107.50
Visas (£24.50 pp in UK + \$15 in US)	80.50
Administration	100.00
	<hr/>
TOTAL	4,472.22
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<u>INCOME</u>	
MEF	500.00
BMC	500.00
T shirts (28 x £6.50)	182.00
T shirt sales (30 @ £6.50 + 4 @ £4)	211.00
Income towards Minibus by Trekkers	120.00
	<hr/>
TOTAL	1,513.00
	<hr/>
	DEFICIT 2,959.22
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COST PER PERSON	739.81

Above based on 1 pound = 25 Indian Rupees

APPENDIX I

ACKNOWLEDGEMENTS

The expedition could not have taken place without the kind support of our sponsors. We would like to thank the following, who supported the expedition with financial assistance and advice:-

The Mount Everest Foundation

The British Mountaineering Council

Phoenix Mountaineering Ltd., Morpeth

Vango (Scotland) Ltd., Greenock

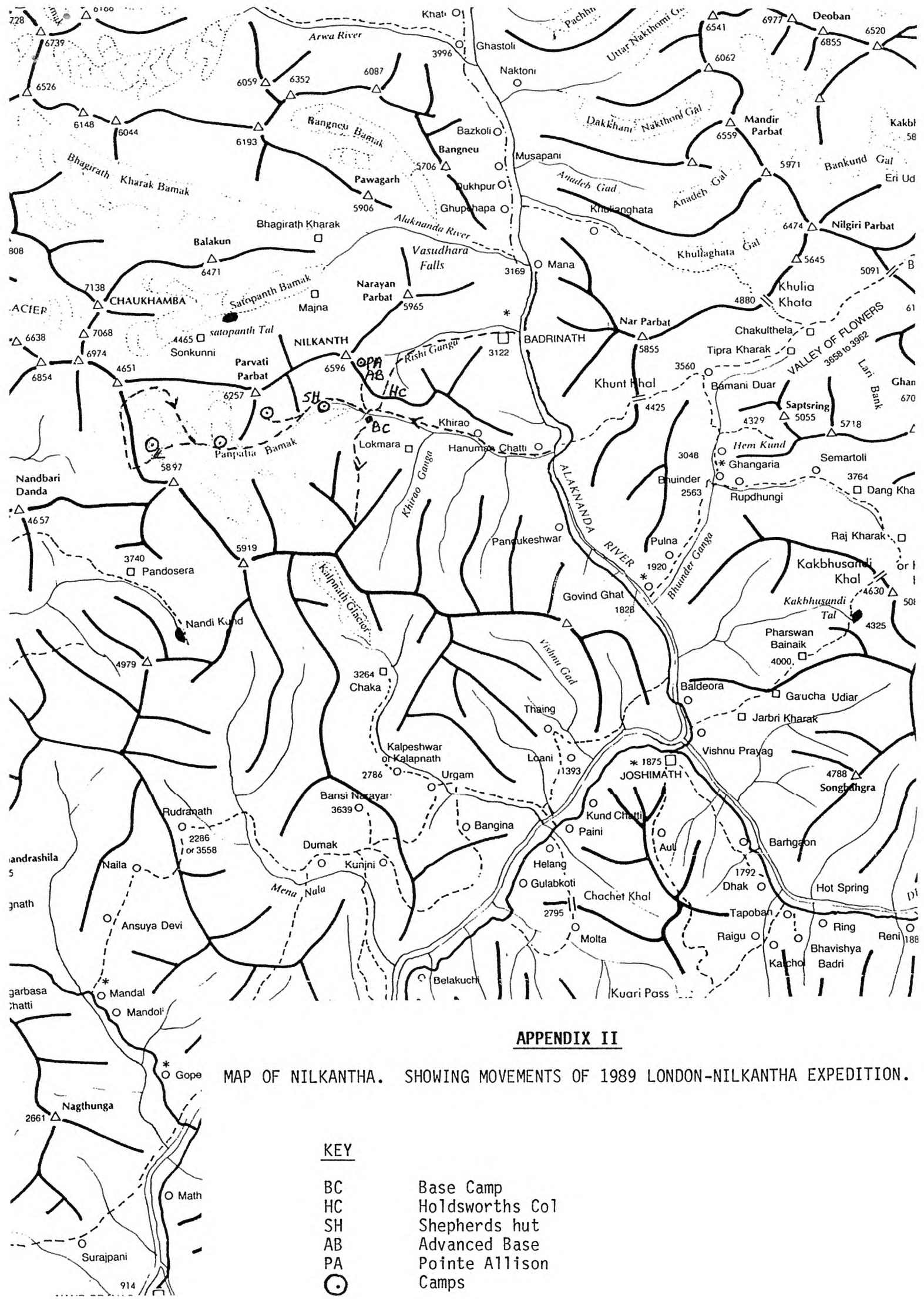
Epigas International Ltd., Stockport

Harish Kapadia

Roy Lyndsay

Burnley Borough Council

Dr. Ray Brew, Saunder Bank Health Centre, Burnley

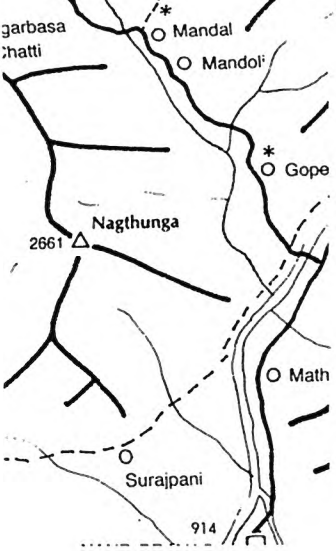


APPENDIX II

MAP OF NILKANTHA. SHOWING MOVEMENTS OF 1989 LONDON-NILKANTHA EXPEDITION.

KEY

- BC Base Camp
- HC Holdsworths Col
- SH Shepherds hut
- AB Advanced Base
- PA Pointe Allison
- Camps



APPENDIX III

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Boardman, P.	The Shining Mountain
Hillary, E.P.	From the Ocean to the Sky
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Heim, A.	The Throne of the Gods
Pallis, M.	Peaks and Lamas

Journals

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American Alpine Club Journal	- A.A.J.
Himalayan Journal	H.J.
Fell & Rock Climbing Club Journal	F.R.C.C.J.
Mountain World	

APPENDIX III (Continued)

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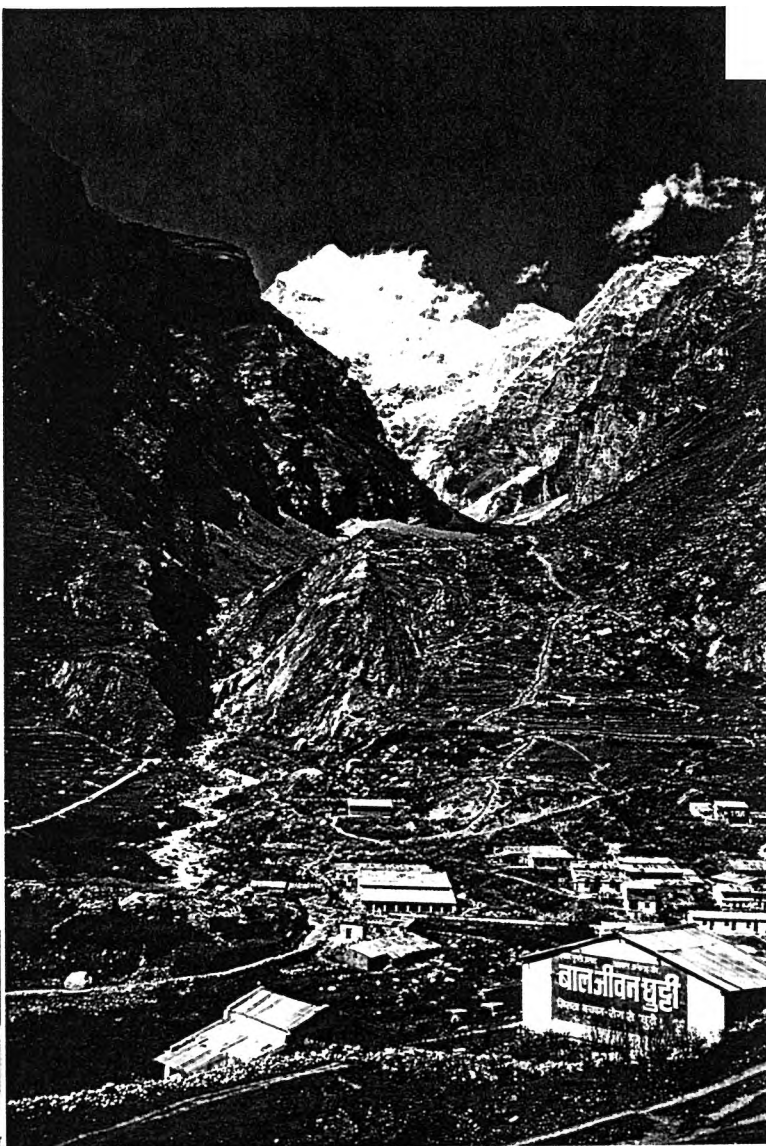
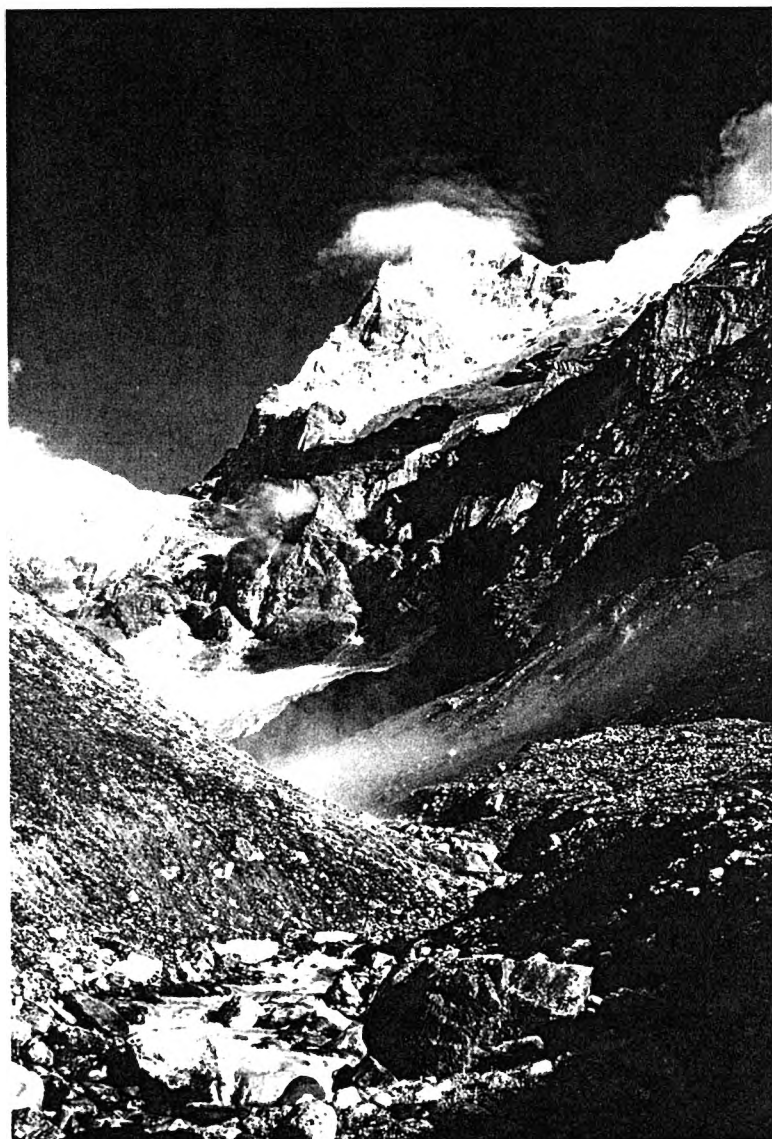
<u>Expedition</u>	<u>Leader</u>	<u>Reference</u>
Attempt 1937	Smythe (UK)	H.J., Vol. 10 (1938), pp 178-181 A.J., Vol. 62 (1957) A.J., Vol. 50 (1938), pp 66-81 (map and photographs)
Attempt 1947	Wylie (UK)	H.J., Vol. 14 (1947), pp 63-71 (map and 5 photographs)
Attempt 1947	Roch (Swiss)	H.J., Vol. 15 (1949), pp 18-45 (2 maps, 2 sketches, 5 photographs)
Attempt 1950	Berrill (UK)	H.J., Vol. 17 (1953), pp 80-96 (2 photographs)
Attempt 1951	Riddiford (NZ)	H.J., Vol. 17 (1953), pp 42-59 (4 photographs)
Attempt 1952	Tilly (UK)	H.J., Vol. 18 (1954), pp 103-109 F.R.C.C.J., Vol. 16 (1953) pp 242-252 (photographs)
Attempt 1959	Coyal (India)	H.J., Vol. 23 (1961), pp 100-109 (2 photographs and 1 map)
Disputed Ascent 1961	Kumer (India)	H.J., Vol. 24 (1963), pp 148-157 A.A.J., (1962), pp 272 A.J., Vol. 68 (1963), pp 139-141 A.J., Vol. 69 (1964), p 145 H.J., Vol. 23 (1961), p 193 Indian Govt., Pub. Div. (1965) (XVI) p 140
Ascent 1974	A.P. Chamoli (India)	H.J., Vol. 33 (1974), p 222 (brief reference only) A.A.J., Vol. 49 (1975)
Attempt on neighbouring peak using west col of Nilkantha 1980	Kulkarni (India)	H.J., Vol. 37 (1980) (map and photograph)

Note: The Garhwal Region was closed to other than Indian mountaineering expeditions from 1962 to 1976 due to the sensitivity of the border area with Tibet following the Chinese invasion of that country.

APPENDIX IV : PHOTOGRAPHS

Right: The east face of Nilkantha, view from Badrinath.

Below: The south face of Nilkantha, view from base camp. The south-east ridge is right of summit, partly obscured by mist.



APPENDIX IV : PHOTOGRAPHS (cont'd)

Right: Climbing on the loose rocky section of the south-east ridge.

Below: Paul Allison resting at advance base camp (snow hole). Nanda Devi in background.

