778.

joint services expedition Himachal Pradesh 1978

For Air Chief Marshal Sir John Stacey KCB CBE FRAeS RAF
in grateful thanks for his contribution
to the
success of the expedition.

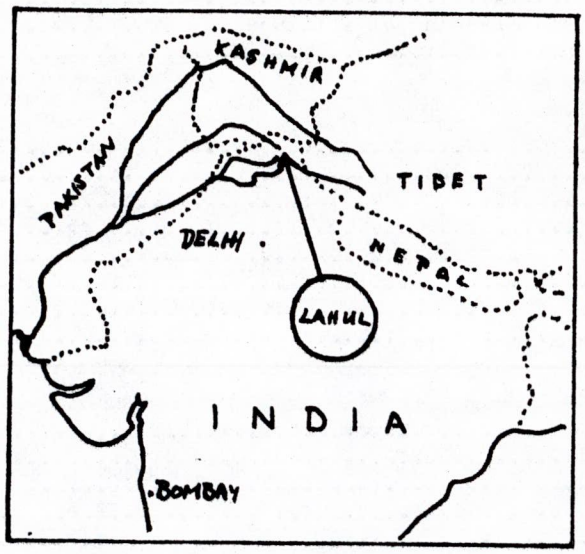
778

JOINT SERVICE EXPEDITION TO HIMACHAL PRADESH
1978

INDEX

INTRODUCTION

1978 was the 60th anniversary of the RAF School of Physical Training and the 30th anniversary of the RAF Mountaineering Association. In 1955 the first ever Himalayan expedition by RAFMA or indeed any of the Services made the first ascent of Taragiri (20,800 ft) in the Lahaul area. It was therefore most appropriate, with 3 physical education officers in the group, that the 1978 expedition should return to Lahaul.



THE AIMS OF THE EXPEDITION

1. The expedition took place in the Lahoul area of Himachal Pradesh (NW India) and had the following aims:

a. The ascent of 2 unclimbed peaks:

(1) Minar, CB 33, (20,250 ft).

(2) M6 (20,600 ft).

b. To undertake a scientific study of Fascioliasis (liver fluke disease) in grazing flocks in the Chandra Valley.

c. To study the birds and flowers of the area.

d. To study the way that expedition members worked and lived together.

NOTE

Despite the information given to us by the Indian Department of Mountaineering and Allied Sports we were surprised to learn from the Himalayan Journal that M6 had been climbed previously. An American expedition led by Lou Jerstadt climbed the peak in 1975 and found the height to be 20,283 ft. We did not know however which route they took up the peak.

THE EXPEDITION AREA

1. The Lahoul area of Himachal Pradesh is an area of remote mountain ranges and valleys which may only be entered from the South by crossing the high Rohtang pass (13,050 ft). To enter Lahoul from India it is necessary to travel through the Kulu valley of the Beas river. Traditionally known as Kulantapith, the end of the habitable world, the valley is one of the most fertile agricultural areas in India and has a large labour intensive fruit industry. Because of its remoteness the area has developed a distinctive culture but now with better transport and plenty of work, English, Hindi, Punjabi and local dialects are spoken and there is also a large resident population of Tibetans.

2. Travelling the 80 Km length of the valley one arrives at Manali (6,300 ft) which is the starting point of the ancient trade routes across the Rohtang pass and Baralacha La. The routes lead through Lahoul to Kashmir or through the remote Spiti valley to Tibet. A modern road now connects Manali with Lahoul, the Rohtang pass being open to traffic from late May to September.

3. The Rohtang pass 51 Km from Manali was said to be formed by a Ladakhi chief named Gyafo Kasar lashing the mountain with his whip as he rode from Ladakhi to Bhuntar in a single day. The pass gives fine views of the Lahoul area and in particular the Sonepani glacier opposite and to the West the jagged twin peaks of Gyephang (19,200 ft).

4. The Lahoul area lies between 77° 47'E/76° 48'E and 32° 59'N/32° 8'N and covers an area of 2,225 sq miles with an average height of around 15,000 ft. The area is sparsely populated although the roads and tracks are reasonably busy during the Summer months. Flocks of sheep and goats travel the area during the Summer months looking for grazing, many of them travelling over 1000 Km during the year.

5. Apart from the reason previously mentioned (see introduction page 2) for choosing the area for the expedition there were others, namely:

a. Despite the area being popular for trekking most of the peaks are still unclimbed.

b. The peaks, many of them in excess of 20,000 ft but not on the scale of the 'Himalayan giants' are most suitable for a small expedition of only limited experience and resources.

c. The area is not affected by the monsoon.

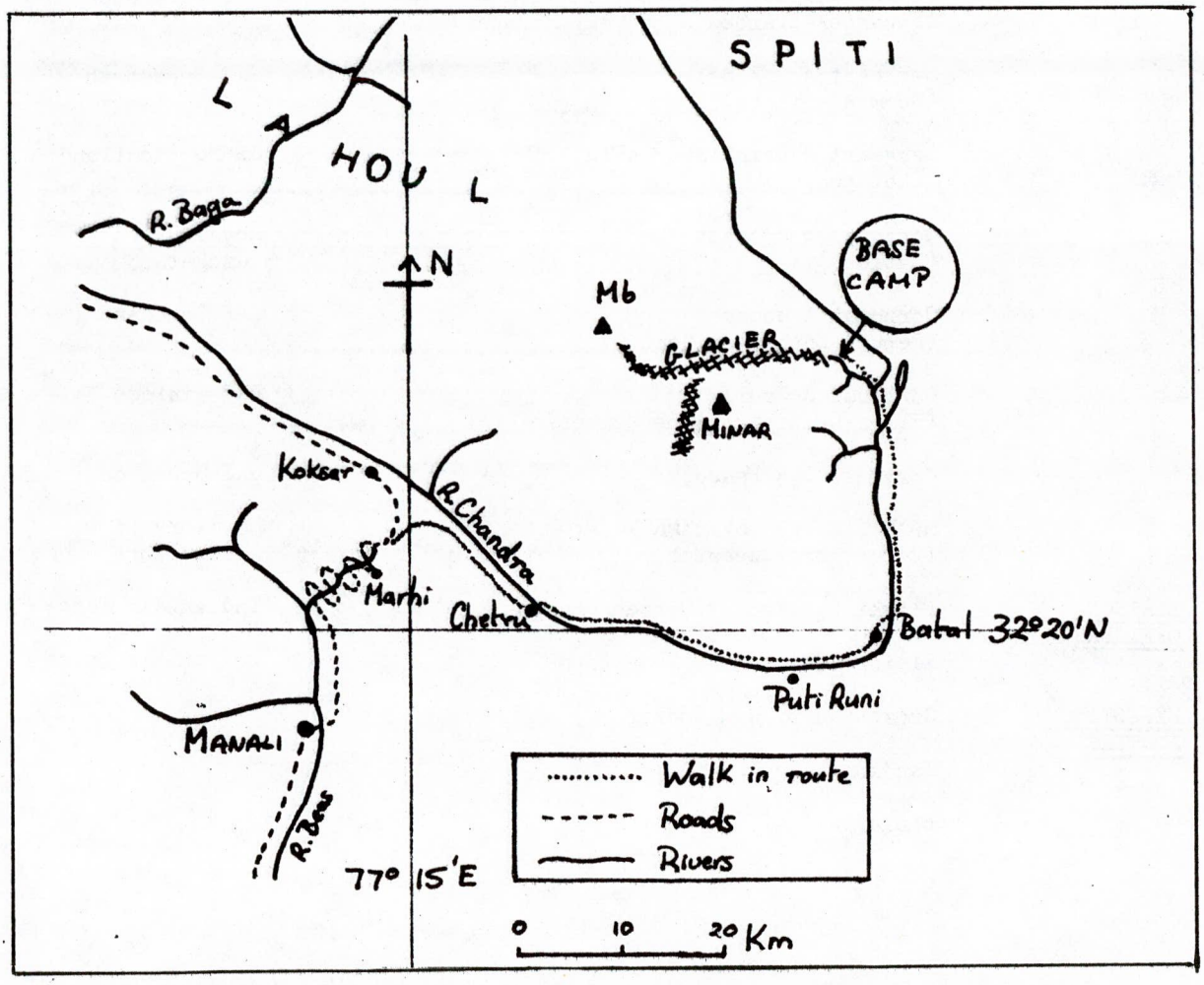
d. Access to the area is good and later during the Summer the roads into the area are open to vehicles.

MAPS OF THE AREA

6. Two maps of the area were obtained. For general use the India and Pakistan 1:250,000 sheet Palampur (Reference NI 43-16, series U502, edition 2 - AMS) was found to be adequate. The main Chandra Valley and area to the south was reasonably accurate but the mountain areas which were drawn from a medium scale topographic survey

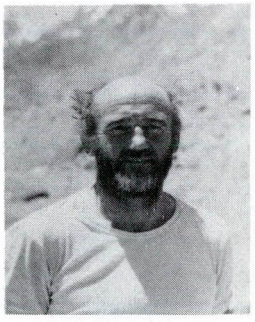
(1942-48) were hopelessly inaccurate. Some of the glaciers of 5 miles in length were not even shown. The maps were of no value for the mountaineering.

7. The map which we found to be the most use was drawn by the 1956 expedition led by Hamish McArthur. This was compiled from their own observations and maps drawn by 2 other expeditions, the NUS expedition and the 1955 RAF expedition. The map was found to be very accurate and we only found one major error (there is no ridge between CB50 and CB51). A copy of part of the map is attached (back cover) and the full map may be obtained from the 1956 report at the Royal Geographical Society.

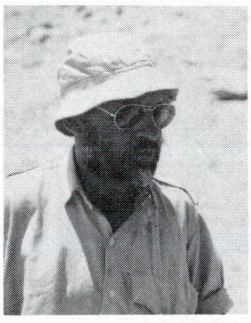


EXPEDITION MEMBERS

PATRON	Air Marshal Sir John Stacey KCB CBE FRAES RAF	
EXPEDITION LEADER	Squadron Leader E J M Thomas D Phys Ed RAF	HQ RAFSC
DEPUTY LEADER	Flying Officer I R Jones RAF (Also equipment member)	RAF Wittering
EXPEDITION MEMBERS	Wing Commander P F Hogg MB BS(Lond) MRCP DMRD (Expedition Doctor)	RAF St Athan
	Major J A Campbell BSc(Eng) MIEE CEng (Transport/Base Camp Manager)	REME
	Flight Lieutenant M Parsons D Phys Ed RAF (Ornithology/Meteorology/Expedition Reports)	JSMTC (Scotland)
	Flying Officer J N Scholefield RAF (Finance/Advanced Base Camp Manager)	RAF Turnhouse
	Sergeant A G F Selmes (Communications)	RAF Innsworth
	Sergeant G Drinkwater APTC (Photography)	JSMTC (Scotland)
	Corporal E J Smith (Rations)	Royal Green Jackets
	Corporal T Moore (Deputy Equipment Member)	RAF Leuchars
	Corporal J Coull (Flora/Deputy Rations Member)	RAF Kinloss
	Corporal S R Peacock	RAF Scampton
	Mr H T Morris BVSc MRCVS DVSM (Veterinary Research)	Ministry of Agriculture
LIAISON OFFICERS	Flight Lieutenant Suresh Bhasin	Indian Air Force
	Flying Officer Y S Yadev	Indian Air Force
EXPEDITION PORTERS	Cupat (Gupt) Ram Thakur	
	Tanjin Thakaur	
	Bholaram	

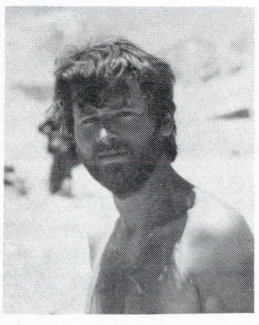


Em Thomas

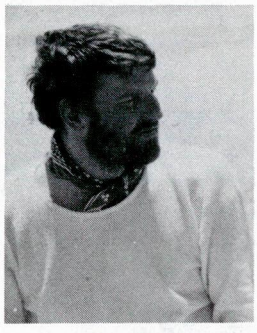


Peter Hogg

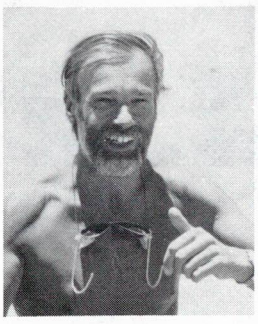
Ian Jones



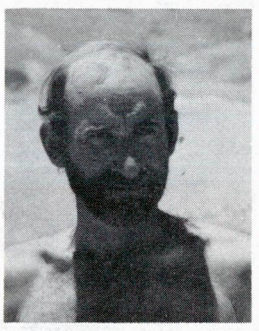
John Campbell



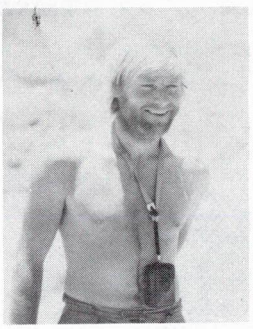
Jeff Scholefield



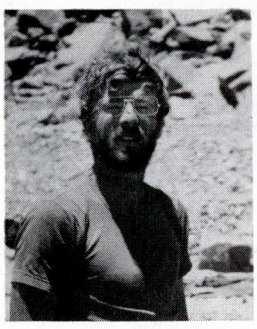
Tony Selmes



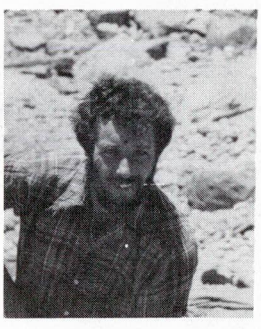
Mike Parsons



Graham Drinkwater

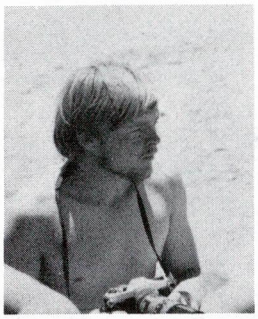


Terry Moore



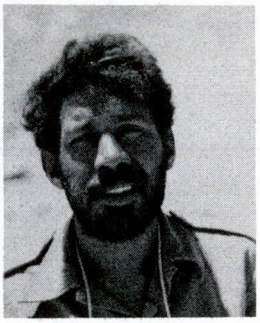
Ernie Smith

John Coull



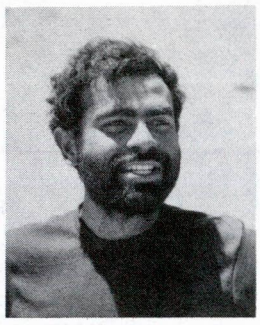
Steve Peacock

Huw Morris



Yogi Yadev

Gupatram



Suresh Bhasin

Tanjin

Bholaram

LIST OF PHOTOGRAPHS

EXPEDITION DIARY - SUMMARY

4/5 Feb 78	Training weekend RAFOAC Llanrwst
18/19 Feb 78	Training weekend RAFOAC Grantown on Spey
10/12 Mar 78	Training weekend JSMTC Ballachulish
5-7 Apr 78	Training weekend JSMTC Ballachulish
3-7 May 78	Training weekend RAFOAC Llanrwst
18 May 78	Advance party left for Delhi
25 May 78	Main party depart Lyneham
27 May 78	Main party arrive Manali (6300ft)
6 Jun 78	March in to Base Camp commenced
13 Jun 78	Arrived Base Camp (13,600ft)
17 Jun 78	Advanced Base Camp established (15,300ft)
22 Jun 78	Minar high camp established (18,200ft)
24 Jun 78	Minar climbed (20,250ft)
30 Jun 78	M6 Camp 2 established (18,400ft)
1 Jul 78	Intermediate M6 (camp 1) established (15,900ft)
5 Jul 78	M6 climbed (20,600ft)
15 Jul 78	Advance party left for Manali
20 Jul 78	Expedition main party left base camp
24 Jul 78	Expedition arrived in Manali
29 Jul 78	Expedition arrived in Delhi
12 Aug 78	Expedition arrived in UK and dispersed
Dec 78	Final Dinner (London)

CLIMBING LOGISTICS AND SLEEPING AT ALTITUDE

HEIGHTS AND LOCATIONS

Manali	6,300ft
Marhi	11,000ft
Batal	12,800ft
Base Camp	13,600ft
Advanced Base Camp	15,300ft
Camp 1 (Minar)	18,200ft
Camp 1 (M6)	15,900ft
Camp 2 (M6)	18,400ft

Sleeping at Altitude (in man/nights)

ABC	121 (porters 2)
Camp 1 (Minar)	26
Camp 1 (M6)	18
Camp 2 (M6)	21

Daily Movements

BC to ABC	128 (includes 42 by the porters)
ABC to Camp 1 (Minar)	25(1)
BC/ABC to Camp 1 (M6)	25
ABC to Camp 2 (M6)	3
Camp 1 (M6) to Camp 2 (M6)	9

CLIMBING ACTIVITIES

Listed below are ascents made by the expedition. Heights shown are those given on the map and heights given by altimeters are in brackets.

BASE CAMP PEAK (NORTH TOP) (18,100ft)

19 June 78 - Parsons, Selmes (No evidence of previous ascent) - Named 'Horned Lark'

MINAR - CB33 - 20,250ft (20,100ft)

24 June 78 - Moore, Smith (First ascent)

26 June 78 - Parsons, Jones

12 July 78 - Thomas, Morris, Coull, Drinkwater

ADVANCED BASE CAMP PEAK - (17,100ft) CB35a

20 June 78 - Thomas, Jones - small summit cairn found

CB36a - (17,800ft) Named - 'Piton'

2 July 78 - Thomas, Peacock, Bhasin (No evidence of previous ascent)

3 July 78 - Parsons, Morris

5 July 78 - Hogg, Selmes

M6 - 20,600ft - (19,800ft) (20,283ft US exped 1975)

5 July 78 - Thomas, Parsons Morris (second ascent) previously US Exped

7 July 78 - Coull, Jones, Drinkwater

15 July 78 - Moore, Smith

TAPUGIRI - CB 57 - c 19,000ft (18,400ft)

5 July 78 - Moore, Smith (First Ascent) (East top climbed in 1956)

11 July 78 - Parsons, Campbell, Jones, Peacock, Bhasin

PEAKS CLIMBED FROM MANALI (6300ft)

1/2 June AHAN DHAR (14,096ft) - Smith, Moore

1/2 June KHANPARI TIBBA (13,207ft) - Drinkwater, Selmes, Parsons

1 June Galu Dhar (11,073ft) - Thomas, Hogg, Coull, Peacock

EXPEDITION DIARY

The section gives full day to day details of the expeditions activities including the climbing on Minar and M6. It also includes brief details of the climbing on the other peaks, full details of this may be found in the 'Other Climbing Activities' Section (pages 62-69).

CONTENTS

TO INDIA

The Air Adviser at the British High Commission had suggested that an advance party take advantage of a VC 10 calling at Delhi on 15 May, and so Em Thomas and John Campbell found themselves in the early morning heat of Palam Airport ready to cope with Customs clearance and other problems. But first they had to meet the Indian Mountaineering Foundation Secretary, Mr Munshi Ram. This gentleman is the main contact that every expedition makes in Delhi. He is completely calm and diplomatic even when faced with frustrated climbers whose only aim is to leave Delhi as quickly as possible.

The advance party had the optimistic hopes that they would be able to clear such things as importing our equipment and getting government clearance so that the main party would be able to move through Delhi with the minimum delay.

Mountaineering expeditions, and especially foreign ones, must necessarily have only a low priority in the government of a country with 10 times the population of Britain. But fortunately the beaurocratic machine is about the same, more personal even, than that of Britain. Imagine an expedition of 13 Indians trying to get some action out of Whitehall. Put into that perspective the advance party, ably assisted by Group Captain Toon, WO Oliver and Sgt Bird, cleared a lot of the way for the main team. So successful was this work that the main party spent only 3 days in Delhi, and all our equipment was cleared in an almost record time of 6 days.

Em Thomas and John Campbell also established a most useful link with the Indian Air Force Trekking Mountaineering and Skiing Association and met many of its officers and members at a reception for their successful Kedar Dome expedition. Air Marshal G D Sharma, Air Vice Marshal Kapur and Wing Commander S M Mayor were extremely helpful and welcoming to us, and even the Chief of the Air Staff wished us well and promised us every possible assistance. Mr Harish Sarin is the Chairman of the Indian Mountaineering Foundation, and this reception gave us an opportunity to meet him and arrange an interview. Without doubt it was Mr Sarin's and Air Marshal Sharma's interest that really facilitated our easy movement through Delhi, and they were well advised and assisted by Wing Commander Mayor and the omnipresent Munshi Ram. We also met our 2 liaison officers; Flight Lieutenant Suresh Bhasin and Flying Officer Yogi Yadav. Both young men were very keen to join with us although they had little previous mountaineering experience. They seemed to find the idea of an expedition with only 3 porters novel as their only previous mountaineering experience had been very well supported by porters and coolies. They would obviously learn a lot from our expedition which was why Air Vice Marshal Kapur had asked us to agree to take 2 liaison officers instead of the obligatory one. Both spoke excellent English and were impressively well motivated and full of helpful ideas. Suresh Bhasin was about to fly by helicopter to Manali with Air Marshal Sharma, and would be able to check on the state of the Rohtang Pass and make some preliminary arrangements for us.

We arranged accommodation for the main party at the Indian International Centre where the Director, Dr John Lall, was another fine example of the best of Indian hospitality and helpfulness. We would recommend the Indian International Centre to anyone seeking comfortable accommodation at a reasonable price in Delhi.

Huw Morris was keen to start his veterinary work in Kulu, and had got clearance from the necessary government departments so Em Thomas and he left for Manali. John Campbell stayed in Delhi to meet the main party. The government departments had promised to issue the necessary documents the following day, and we believed that everything was set for a smooth transit through Delhi.

Manali was cool, green and beautiful. We got on with arrangements there and awaited the imminent arrival of the team. Meanwhile back in Britain the main party met at RAF Lyneham on 24 May. Ian Jones and Terry Moor had been there for a couple of days sorting out the equipment. At 0400 hrs the next day we left for Cyprus arriving there at 1230 hrs. We were despatched to the messes but met up again that evening in Akrotiri village for a kebab.

The following day we flew to Seeb (Oman) in the Persian Gulf. The flight was over Turkey and Iran and we had excellent views of the mountains thanks to the crew who allowed us plenty of time on the flight deck. Arriving in Seeb in a dust storm with the temperature at 102°F and 90% humidity was a shock to the system but we were quickly driven to the Gulf hotel in the air conditioned buses.

On 27 May we flew from Seeb to Delhi with an enforced stop for immigration at Bombay where we were refused permission to enter the airport terminal because we had no tickets. We spent one and a half hours standing on the tarmac under the aircraft wings. We arrived in Delhi at 1700 hrs and to our surprise were quickly cleared through customs with our personal baggage. We were met by John Campbell and taken to the Indian International Centre where we were to stay. The British High Commission had offered their facilities for eating and recreation and this was where we were to spend most of our spare time. An informal party was held during the evening.

We spent Sunday resting but the following morning renewed our efforts to get the necessary clearances and documents. Of particular concern was the cargo and it was not too reassuring to note that many of the boxes in the customs store seemed to have been there for months. We also heard of a Japanese expedition which spent a month in Delhi without getting clearance and ultimately gave up and went home.

It rapidly became clear that things were not going to happen quickly so it was decided that Ian Jones, Jeff Scholefield and John Campbell should stay in Delhi to continue work and the remainder should go up to Manali where at least it would be cooler. The 2 RAF liaison officers would be in Delhi to assist.

In the early evening of 30 May the main party travelled to Delhi bus station by taxi and scooter cab and boarded a bus for Manali. The seats on the bus barely gave room for knees and in addition most seats had more than the intended number of occupants. The roof was loaded with all manner of gear, and sometimes people. The noise and bustle of the bus station and the traders crowding around and sometimes on to the buses gave the place a tremendous atmosphere. It was very hot and dirty and we were glad to get going. The bus drove through the night stopping about every 2 hours, and it was probably the most uncomfortable journey any of the team had ever made. After 12 grim hours we arrived in Mandi where there was a break for an hour and a change to the local bus. That was even more uncomfortable, and more and more people crushed on at every stop. But now the road clung to the steep sides of the Kulu valley above a hugh reservoir. The dirt road was narrow and insecure and all the oncoming traffic consisted of coloured lorries (public carriers). Everytime the bus met a lorry one or other had to pull right over to the edge whilst they inched past. The bus and every lorry had at least 3 high pitched horns for use according to the urgency and mood of the driver. Every bend merited a blast on the horn, and overtaking, yes overtaking was preceded by at least a 10 minutes sonata for bus horn. At least everyone kept awake and alert to the possibility of the bus rolling down the 500 or so feet to the reservoir, and to the gradually opening mountain scenery. Kulu was a valley of Alpine proportions; steep sided pine clad sides mounted from a swift flowing glacial river with snow-clad peaks glimpsed occasionally in the background.

The people changed too. Now the passengers were high cheekbones, and many had the typical Tibetan features of Ladakhis. Their dress was woollen and seemed Celtic in origin, and the people were friendly. The impression was of friendly smiling faces under Kulu hats, faces which somehow devoted self confidence and an assurance with their way of life. There was quite a different atmosphere amongst these people who seemed happy and willing to help strangers without assessing what they could get out of it. They were typical mountain dwellers who live hardily and can afford to discard the plainsman's reserve. At 1230 hrs the bus arrived in Manali to be met by Em and Hugh. After fighting off the hoards of coolies wishing to carry our gear we walked breathlessly up to John Banons Guest House for lunch.

John Banon is the local secretary of the Himalayn Club and a gentleman who has all the necessary contacts to assist expeditions. The porters and mulemen he hired for us were reliable and the price we paid reasonable. John Banon made a considerable contribution to the success of the expedition.

Manali is now the main town of the Kulu valley. In the Alps it would be a bustling ski resort for it has continuous good snow and superb ski slopes for 5 months. One could imagine the sort of investments that France has made to exploit her 'white gold', and how Manali could become a Mecca for skiers. But India is a poor country with many other priorities, so Manali must thrive on its summer tourism. When we arrived the tourist season was at its height for it was the summer holiday in the Punjab, and the main street of Manali and the bazaar were crowded with turban clad Sikhs. Almost every hotel room was full, and we occupied John Banon's verandahs.

Manali is surrounded by satellite villages and very fertile land which supports the population and even provides enough food to export to the plains. We arrived when cherry picking was at its height, and John Banon grows most of the cherries in Manali. His fresh fruit salads are superb with fresh cherries, mangoes, bananas and apples with loads of fresh cream. Six weeks later we dreamed of them and mango flavoured ice cream. Although the main image of Manali is of a prosperous town there are many poor people there, and the standard of living of most is very low. Agriculture is the way of life for most, and that seems to maintain them at only a subsistence level.

Shortly after our arrival in Manali Huw Morris was recalled to Delhi to deal with some new problems which had been found with his veterinary research. He now holds the Expedition record for bus journeys between Manali and Delhi.

The remaining problems for the Delhi team to sort out were:

a. Authorisation of veterinary research.

b. Provision of customs exemption certificate and cargo clearance through customs.

c. Recovery of the expedition's cash which had been misdirected by the Indian Bank.

d. Authorisation of radio licence.

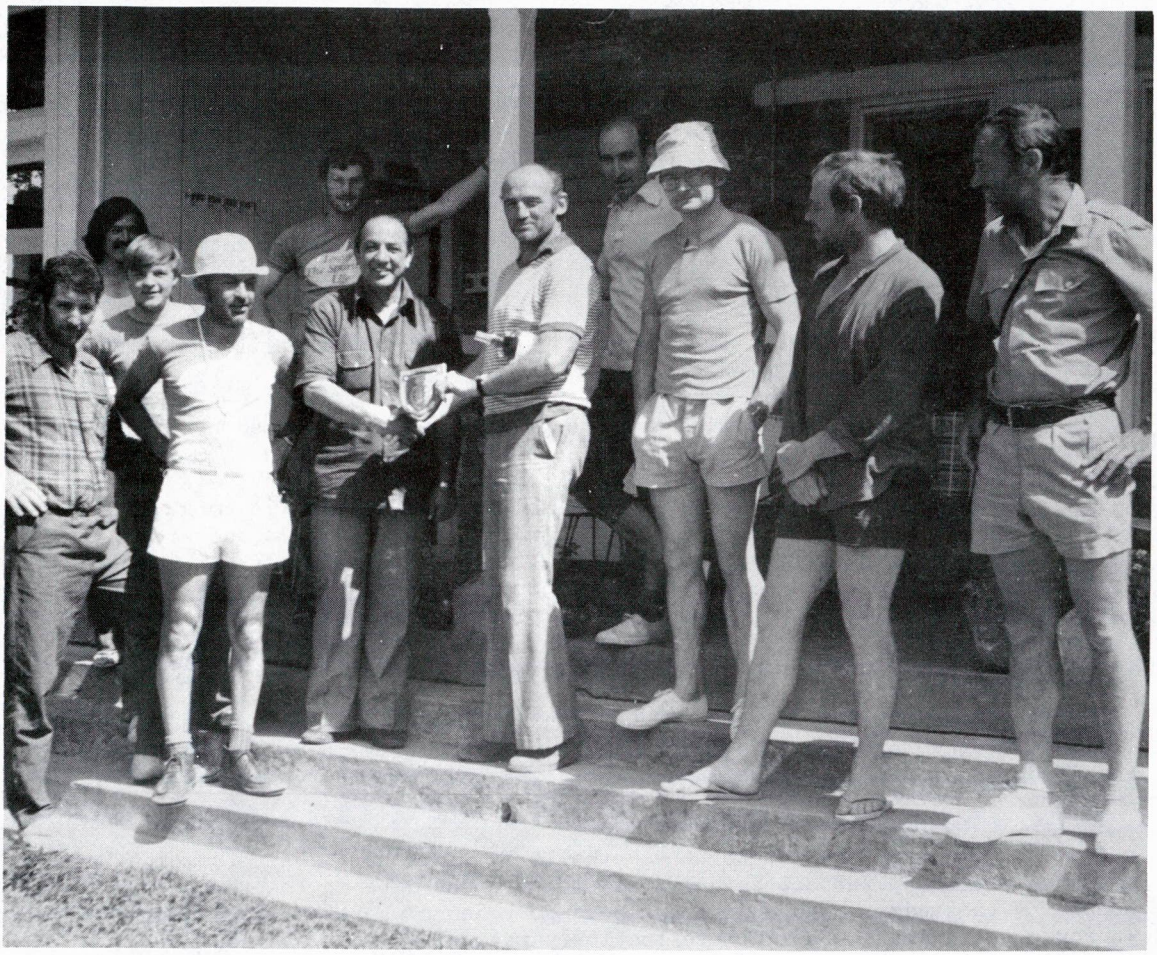
The expedition members in Manali had been taking advantage of the free time to get up into hills and take the first steps towards acclimatisation. Even walking around the forrested tracks in the area was of value and it was quite easy to get up to 8000 ft without leaving the paths. Expedition members managed to climb 3 of the surrounding peaks 2 of the groups sleeping out at 11,000 ft. Full details are given on page 63.

On 3 Jun Ian Jones and John Campbell got the equipment from Customs and Huw Morris and Jeff Scholefield saw them off from Delhi. We had encountered some problems renting transport for 6000 lbs of gear from Delhi; most firms seemed to think that we were American millionaires on safari. Finally Mike Breen allowed us to rent PSA's truck and driver for the trip. This was ideal for it was a closed truck and the driver was used to mountain roads as he drives regularly to and from places like Katmandu and Kabul. Once again the BHC staff had turned up trumps.

Ian and John had a hot journey and arrived dustily in Manali on the evening of 4 Jun. With the arrival of the equipment things seemed to be moving at last and on 5 Jun firm arrangements were made for the hire of mules from the village of Marhi for 6 Jun. The expedition porters started work and immediately went down town with Ernie, Terry and Steve to buy cookers, pots and pans and great quantities of rice, onions, ginger and other 'essentials'.

The main essential was rice but its place was almost ousted by a huge quantity of garlic. Bola Ram, Gupat Ram, and Tanjin insisted, however, that 30 kilos would hardly be enough for us wheras a clove would last most British households a couple of months. The 3 porters seemed to be very keen and helpful and willing to work. Their reputations and future work often depends on their being associated with a successful expedition, and this was a good chance for all of them. Gupat Ram and Bola Ram had both worked on many expeditions and had an air of quiet confidence, Tanjin was not so experienced but seemed keen. They were pleased to receive an issue of clothing, boots and sleeping bags, and walked proudly through Manali. The high altitude porters of Manali have formed an Association, and the Manali Climbers' Association now handles all arrangements for porters and bookings. Most of the better porters have completed training courses and love to be called Sherpas. They think of themselves as such, and it is interesting to see how the name has spread from one small community to become a generic for high altitude Himalayan porters with ambition. The name certainly gave status to our 'Sherpas'.

The main task now was to unpack the lorry and take the kit from the transit boxes and to make it up into 60 Kg mule loads. This was done in the shade of the wood opposite the guest house and after about four hours when the loads had been marked and checked they were re-packed into the lorry ready for the 47 Km journey up to Marhi the next day. The only lingering doubt was the non-arrival of the liaison officers and without them we were not permitted to leave.



Em Thomas presents an expedition plaque to John Banon
who had done so much to assist the venture.
6 June

THE WALK IN

Flight Lieutenant Suresh Bhasin and Flying Officer Yogi Yadar arrived at Manali at 12.30 on 6 June. Suresh's favourite expression seemed to be "Oh! My God" over the next few weeks, and it was his immediate response to being told that we would be leaving for Marhi that same afternoon. But fortunately both these Officers are outstanding people who are extremely intelligent and flexible, and impressed us all by their efficiency and obvious goodwill. They both fitted in as members of our group, and were soon working towards our objectives with as much determination as the rest of us. Suresh had been to Manali a week before and had made some arrangements for support and possible rescue facilities. So there were no reasons why we could not move to Marhi.

Although we were going to be in the mountains for some weeks we still felt some urgency to get started. Hugh Morris and Jeff Scholefield were still in Delhi sorting out financial arrangements and enjoying the experience of carrying many thousands of rupees through the teeming crowds of Old Delhi. Hugh had been in Agra railway station just after the first class coach of the Taj Express was robbed and the guard killed so he knew something of the banditry that can happen in the cities. Jeff carried the money; Hugh carried an open pocket knife. They had also to reclaim Steve Peacock's kit which had been left on the Hercules and sent back from Singapore. We left some camping gear at John Banon's and instructions for Hugh and Jeff to hire a mule and follow us to Base Camp. John Banon was happy to wait for any payment until they arrived at Manali, and even offered to act as banker and lend us money until our funds arrived. We worked out a system for paying for mules which gave the muleman an advance but left his main payment to John Banon's discretion and negotiation when the muleman returned with a letter from Em Thomas giving details of the exact number of days worked.

At 1400 hrs on 6 June the PSA truck accompanied by Mike Parsons and John Coull left Manali for Marhi a village at 11000ft just below the Rohtang Pass. The road followed the Beas river for about 20 Km and then in the next 27 Km snaked its way 3500 ft up the mountainside. It soon became clear that the truck did not like mountains and it came to a halt at about 9000 ft with the clutch uselessly burning itself away. Various local remedies were tried but the truck would not move. The two passengers and three porters unloaded half the equipment and with the reduced load the truck crept away only to stop just round a corner where the gradient increased. The remainder of the load was removed and the truck, accompanied by John Coull, rolled down the mountainside towards Manali. John soon met the remainder of the group coming up in local jeeps and John Campbell returned to Manali to hire another truck.

The new truck, a local 'Public Carrier' arrived within a couple of hours. As it was now dusk the two jeeps were sent on ahead with the tents to try to find somewhere to camp. The truck was soon loaded to its limit and the expedition members placed on top, it then blasted up the mountainside, the driver obviously taking much pleasure in domonstrating his abilities to handle the seemingly endless selection of gears, and in proving the superiority of Kulu transport over the inferior intruders from Delhi.

We arrived in Marhi in the dark to be quickly surrounded by locals very keen to 'help' with the unloading, they were politely told to go away with no results; Em Thomas used some special Welsh technique and his considerable advantage in size with some measure of success. A defensive fort of compo boxes was constructed with

A local public carrier comes to the rescue of the expedition after the PSA truck had broken down on the way to Marhi.
6 June.

the other kit inside and the whole affair covered by one of the tents. The three porters were instructed to sleep in the structure to guard equipment and were promised a meal at some stage during the evening. We were beginning to settle into some sort of team, and starting the expedition had helped even though we were now camped in the dark beside a road makers encampment and uncertain of how safe our gear would be. At least we found that we never had any worries on the score of pilfering. It never happened, and even the poorest people were absolutely honest. We were even asked when someone wanted an empty compo tin to use as a cup. But everything was so strange we can be forgiven for suspecting the motives of our would be helpers.

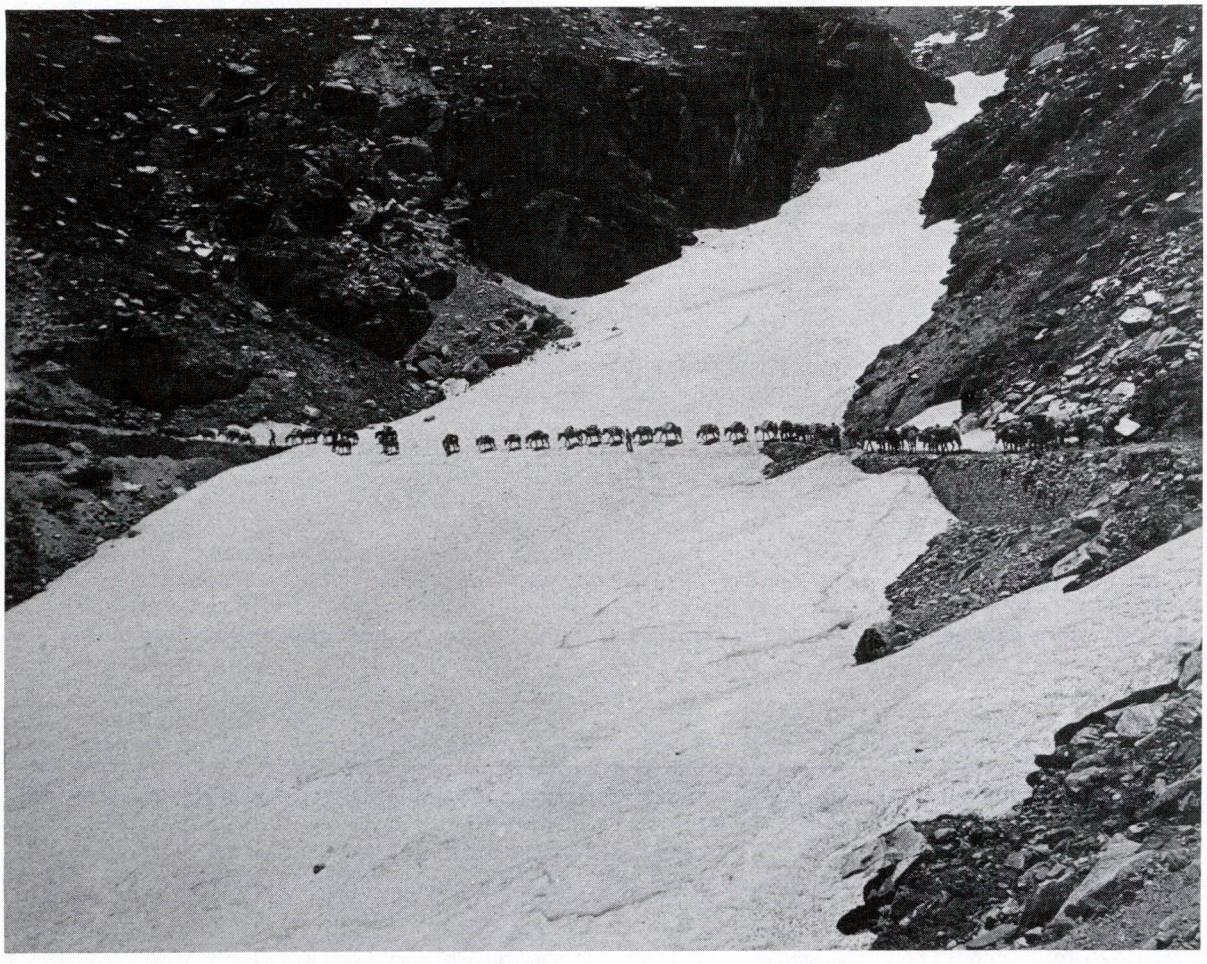
We walked down the road to the local Chamba Hotel for a meal. It was a single storey building of dry stone construction the roof covered in corrugated iron and canvas. One tilly lamp lit the entire place but the smoke from the open fire made it almost impossible to see even when your eyes weren't watering. We groped our way through the smoke to the stone benches and then through a meal of rice, dall and curried goat followed by local tea for about 50p a head. We returned to the tents wondering how and when our stomachs would react.

The next moring was bright and clear; the village of Marhi was a collection of ramshackled huts and the 'Hotel' which the previous night had seemed indescribably primitive appeared to be the best building in the place. There were numerous tea shops to serve the tourists and travellers using the pass and also huts and tents accommodating the families of roadworkers, many of whom were women and children. As the road progresses these families move forward, and gradually the Chandra valley gets populated.

There was no sign of any mules and when the chief mule man, who was also the Hotel owner, turned up he said we had not arrived at the arranged time the previous day so he had sent his mules across the Rohtang pass to Koksar (Khoksar) but that they would be back at 0900 hrs. We made the equipment up into the mule loads adding a few extra identification markings here and there and then waited. By 1030 hrs Em Thomas was becoming rather edgy and talking to the mule man in aggressive terms but eventually the animals appeared, coming down the pass.

Mike Parsons had been put in charge of the mules and loads but it soon became clear that he was not going to be able to exercise any control over the animals or their owners, short of doing a head count at the beginning and end of each day and pretending to check the loads against the list, in the hope that the mule men would be deterred from 'losing' anything. To confuse matters further many of our loads had been put in sacks by the muleteers which were exactly the same as the sacks carrying their personal effects and animal fodder. Being a small expedition we did not have much in the way of reserve equipment and the loss of even one mule load could have been crucial. But we lost nothing on the whole trip, in or out.

The loading of the mules which took about an hour and a half seemed to be chaotic and was watched by most expedition members with a mixture of amusement and concern. Many of the mules took an instant dislike to our effects, dashing away only to trip and fall, some in spectacular fashion, scattering their load over the ground. However, the loading of the mules was to become a routine event and we were soon to learn that the mule men were honest, hardworking and nearly always cheerful.



Mules crossing a snow filled gully during the walk in.
7 June

The mules were hired at a daily rate and it became clear that the chief muleman was in no rush to get to base camp and his estimate of 10 days (one way) was almost as ridiculous as ours of 4 to 5 days. As it turned out progress was to be governed by events as little within his control as they were in ours and our discussions about distances to be covered each day added spice to the approach march.

At 12.45 hrs we were ready to move and the 50 mules straggled their way up towards the pass. Expedition members carried all their own gear except 30 lbs (each) which was loaded on the mules but most managed the climb up to the Rohtang pass (13,050 ft) without too much difficulty. The tea shop at the pass was given a thorough testing and then we began the descent down the snow into the Chandra Valley. It was our first view of the Lahaul peaks and glaciers gleaming in the sun and at long last the expedition seemed to have started. We descended to Gramphoo (11,200 ft) where the road split going North-west to Koksar then down the valley, or South-east to Chandra Tal the route we intended to use. Gramphoo consisted of just two buildings and as the roads were still closed there was no-one living there.

The chief muleman decided that Gramphoo was far enough for the day and despite only having done 5 hours work said the mules could go no further. A considerable argument followed and he was threatened with no pay for the day, then the sack, but it was all to no avail and his men dropped the loads (literally) and took the mules down to Koksar where there was better grazing. Mike Parsons, soon realised that 3 mules were missing but a check of the kit revealed that it was all their. It was later discovered that three mules had carried fodder up to the pass and had returned to Marhi with mules coming the other way. We erected the tents and the porters cooked the first expedition meal which we all enjoyed. As the sun sank behind the mountains it became very cold and we turned in.

The mules were due to return at 0830 hrs on 8 June but they were half an hour late and a further hour elapsed before they were ready to move. The chief muleman had decided not to accompany us and said farewell leaving the handling to his seven companions. It was a hot, cloudless day with no breeze and the single track road which was littered with boulders, and occasionally covered in snow, seemed to be endless as it wound its way 1,500 ft up the southern side of the valley. After 8 Km we passed a Tibetan family with their wide-eyed children living in a small hut. From there on the road descended to the bridge leading to the Northern side of the Chandra River. We had covered 17 Km and were all pleased to camp on the pleasant grass covered flood plain at Chhetiru (Chatiru) 11,400 ft. Opposite the camp on the other side of the valley were enormous granite slabs very reminiscent of Etive slabs in Scotland, many of them were still holding winter snow. We could also see the steep path down from the Hamtah La an alternative route to Manali. On either side were splendid inviting peaks of over 17,000 ft with rock towers and steep ice.

The morning of 9 June was cloudy and cool and while the mules were being loaded it began to rain. We sheltered against the wall of a derelict building, most of which promptly collapsed. The clouds were to remain all day and the occasional slight showers almost seemed welcome as they kept us cool. The mulemen didn't seem too keen to move and claimed that the loads would rub skin off the wet mules. We laughed. Their brief protest was soon over, and we were on our way.

The valley became much narrower and the mountains reverberating with thunder, seemed to be on top of us, the grey water of the Chandra river soared and frothed its way down between enormous boulders as we began to climb steadily. After 19 Km we arrived at Chotodara. Here was a dark and smokey tea shop half the size of a

Loading up the mules during the walk in

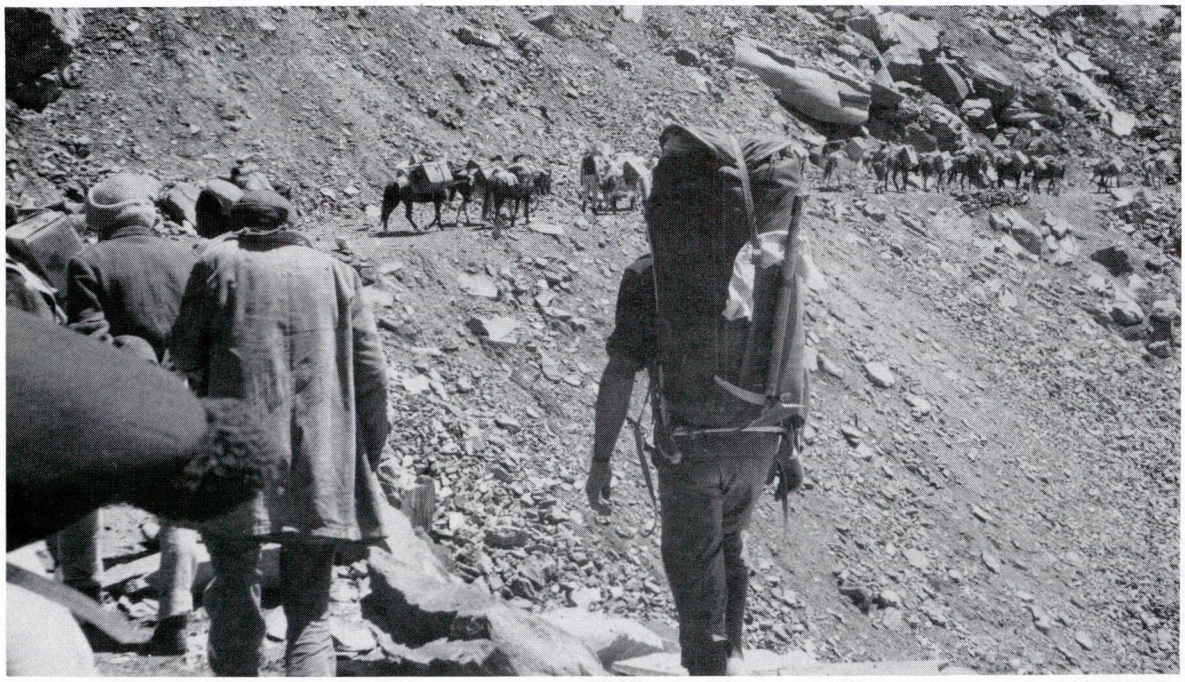
normal domestic garage which was both home and business premises for a Tibetan family of four. After the tea we continued up the valley which became wider; the road was littered with boulders which had fallen from towers of conglomerate during the winter and any prospect of clearing it during the next six weeks seemed remote. After 4 Km we stopped to camp on a grassy patch at 12,700 ft which was separated from the river by a wide tongue of moraine. The mulemen erect their 'tent', which was a canvas construction tied down with rope and sticks. They cooked under the canvas on a fire of wood and dung and added to the smoke with their bubble pipe. Despite having a makeshift tent and only blankets to sleep in they seemed so suffer no discomfort. The site near Puti Rumi was our highest camp so far and with Karrimats, Down bags and Gore Tex outers we were somewhat better equipped than the mulemen.

About 0300 one tent group was awoken when the alloy tent pole snapped and the tilly lamp fell to the ground. It had been snowing heavily and the weight had broken the top section of the four piece telescopic central pole. The top poles of the other two tents were also badly bent and about to break so the snow was shaken from the tents and the light top sections removed; the more sturdy bottom three sections were fully extended to compensate for some of the loss in headroom. In the morning we assessed the damage to the tents and lacking a handsaw improvised the repairs using the other equipment in the tool kit. The snow had covered what little grass there was for the mules to eat so they were taken back down the valley to Chotodara and we sat the day out in the tents. We noted with interest that the 1956 expedition only had one day of bad weather and by coincidence that too was at Puti Runi. We hoped their weather pattern would follow us. At 1400 hrs the weather began to break and the snow rapidly melted. We had fine views of the glacier and peaks with their fresh coat of snow. Most epedition members had a walk round, some visited a derelict Tibetan settlement on the old top road.

The day off had refreshed us and when the mules arrived early next day we were soon on our way. The road worked its way up the hillside until we were about 500 ft above the river then it continued along below cliffs and rocks. There was a small shrine to the god Shiva offering us protection at a particularly difficult place. The valley turned to the north and we were soon walking alongside the river across patches of avalanche debris. There was now no sign of the road, and after 13 Km we arrived at Batal where a bridge crosses the Chandra. We noted a large Omani wall and also, across the bridge, a white shrine to the god Durga. Batal is the highest bridge across the Chandra, and there is only one crossing place above it.

Just after crossing the bridge we passed a sign showing the height to be 4000 m, many of us had only been to that altitude once or twice and we were now commencing a period of five to six weeks, when we would not go below the 4000 m contour. We followed the road up to 13,300 ft at which point it headed east over the Kunzum La (15,500 ft), then down into the remote Spiti valley. We left the road and followed a faint sheep track down to the Chandra river and camped at 13,200 ft on a grassy patch. There were four yaks in the river keeping cool and on our arrival they slowly moved away up the hillside. Opposite the campsite were the spectacular peaks CB14 and CB16 with corniced ridges and fine summits 6000 ft above, but seeming deceptively near and accessible.

During the four days we had been walking along the Chandra river we had not seen one place where it was possible to cross and it was with some apprehension that we set out the next day knowing we had to locate the river crossing place used by the 1956 expedition. Ernie Smith and Terry Moore had left early to find the crossing and also to find a fording place across the smaller river leading from the lake (Chandra Tal).



The walk in.

The narrow path continuing across the scree slopes and needed care but we still managed a steady pace. Radio contact was established with the advance party, and we learned they had found the crossing place and that there was easier ground ahead. The advance party had also found a route down to the crossing place and within four hours we were opposite the wide valley leading to the Samundar Tapu Shigri.

The Chandra river was too high to cross so we camped and decided to wait until the morning when the river would be lower. Opposite we could see the 'green island' where the 1956 expedition had established their base camp.

During the afternoon most expedition members walked up the hill behind the camp (14,250 ft) to try to see the Chandra Tal but the intervening hummocks prevented all but the most determined from succeeding. We did, however, get excellent views of the mountains we had come to climb but it was hard to say at this stage which was which. They were all big and impressive. The main impression we all had was of a huge area of mountains resembling the Chamouix Mont Blanc massive but much bigger. At the head of the Samundar Tapu Shigri (Shigri - glacier) was an impressive group like the Grandes Jorasses surmounted by a long ridge which must have been 8 to 10 Km in length. Then to the west huge chiselled peaks. Nearer us we could make out a big mountain. It had a rock summit, and its west face was a long sweep of steepsnow, completely blank for thousands of feet but for a crescent shaped avalanche scar about 1,000 ft from the summit. In front of that mountain was another rock spire shaped vaguely like a pagoda. McArthur had described and named this mountain in 1956. He had also named the mountain behind it. They were Pagoda, and Minar. Yes, it was. We had seen our objective at last, and it looked like a magnificent challenge with its truly gigantic north face and long, high, alpine ridges.

It was Graham Drinkwater's birthday and we had a large sticky cake of chapattis and jam and a wee dram to celebrate.

The following morning an advance party of Ian Jones and Mike Parsons left at 0530 hrs to cross the Chandra river and to locate a suitable site for the base camp. We watched them with interest as they forded the river, it was 70 m wide. The water was fast flowing but no more than 1 m deep and they both crossed in about 15 minutes. The main party had considerable difficulty with the water as some members were experiencing their first serious river crossing. That night there were conflicting stories of who was supporting whom.

The advance party had kept to the North of the river flowing from the glacier and soon realised that it was not going to be possible to site a base camp on the moraine as had been intended. The terminal moraine was a complicated area of moving debris and quite unsuitable for loaded mules. Just below the moraine were a number of pools some with clear water that had been forced up from beneath and filtered through the gravel and there was also a large glacial lake. We chose a site on the raised beach of the old lake close to the north ridge.

The advance party radioed back and instructed the main group to follow their route, but somehow the radio had got to the back of the mule train and the front end, a mile or so ahead, had crossed the glacier river and could not be contacted. The result was that the advance party was on the northern side of the lake and the main party on a grass area on the southern side. Some radio discussion followed as to who had the better site and if it was possible to go up the morain, but eventually the main party decided to go to the northern site and made their third and most

dangerous river crossing of the day. Tony Selmes attempted his RAF Swimming Proficiency Test.(Glacier River Section) complete with rucksack. As he didn't drown he was given a partial pass.

The mules were unloaded for the last time and the tents erected. John Campbell was nominated as base camp manager and he, with Pete Hogg marked out sites for drinking water, washing water, and the toilets. The mule men were asked if they would like to improve their earnings by taking loads up the moraine towards Advanced Base Camp but they declined because of the difficult terrain and consequent risks to the animals which were their livelihood. Em Thomas wrote a note to John Banon which was authority for payment to the mulemen for their work. Assured that this document would arrive safely we took advantage of the situation to enclose mail in the envelope.

BASE CAMP

We were relieved to be at base camp and pleased that the nomadic existence of the walk in was over. The kit had all arrived safely and it was now possible to unpack things properly and get organised. The three tents were erected. One was for the porters, cooking gear, and all the stores. The remaining two were for the expedition members. A camp routine, mostly based on drinking tea and eating was soon established and within three days the camp boasted stormproof tents protected by walls, tables made of rocks, a meteorological station (box), rows of trench toilets and the 'piece de resistance' a refuse hole excavated by Ernie Smith which was big enough to hold six weeks rubbish, and probably the odd marauding elephant.

The next morning (14 June) Steve Peacock and Ernie Smith stayed at BC to continue with the task of organising the site, and sorting out the rations. John Coull and Tony Selmes attempted one of the peaks on the opposite side of the valley but having started too late in the day gave up at 16,500 ft because of the poor snow conditions.

John Campbell, Peter Hogg, Terry Moore and Yogi Yadev walked to over 16,000 ft on the north ridge getting good views of the glacier and of Minar with Terry Moore making some excellent drawings of the peak.

The main glacier (Samundar Tapu Shigri) taken from the North ridge above base camp. The Minar group is on the left with the prominent Pagoda in the foreground. The summit of Minar can be seen just to right and further right CB33a. 14 June.

ADVANCED BASE CAMP

The principal event of the day was the location of a site for Advanced Base Camp (ABC). A party of 5 (Thomas, Jones, Parsons, Drinkwater and Bhasin) set out to investigate the Samunder Tapu Shigri. Leaving the camp they walked on the steepsided northern lateral morain until it was possible to reach the ice.

The main glacier was found to be dry (not snow covered) and therefore provided a rapid and safe route into the mountains without resorting to using crampons. By walking up the centre of the glacier it was possible to avoid all but a handful of crevasses. At 14,600 ft there was a ridge of moraine formed by the meeting of the main and snow covered Silver glaciers (Candi Ki Shigri) which came in from the south. A site for ABC was selected at the south east corner where the glaciers met at 15,300 ft. It was sheltered from the wind as it nestled in the lateral moraine just below the small peak CB35a and the humps of moraine protected the camp from stonefall off the peak. There was still plenty of snow at the site but this was soon to melt and recede up the Silver glacier as the days passed.

On the descent the group followed the main glacier down to the snout and found a route through the terminal moraine back to BC. Ian Jones cairned the route which involved crossing mounds of loose slate and granite with a foundation of ice. The moraine always provided unpleasant walking but was the quickest route and was subsequently used throughout the expedition. Access to the moraine from BC was possible because the river formed at the glacier snout flowed under the ground.

We decided that Minar should be our first objective, and that before any detailed exploration of the peak was made ABC would be provided with a good basic stock of equipment and rations. The carrying of supplies up the glacier would help our acclimatisation even more. During the next 3 days we supplied the camp, each expedition member making 2 carries. Subsequently 2 of the 3 porters were to go up each day to re-supply and carry messages. The walk to ABC took between 3-5 hours and during 13-17 June 900 lbs of equipment was ferried up to the camp. The 2-man tents were tucked between the moraine humps, the undersides suitably packed with cardboard boxes to provide extra insulation and comfort.

Apart from the completion of the carrying to ABC the 17 June provided other reasons for celebration, namely John Campbell's birthday and the arrival of Huw Morris and Jeff Scholefield. The new arrivals were both the worse for wear, Huw had lost a lot of weight because of 'Delhi Belly' and Jeff had injured a muscle in his back which was to cause him trouble throughout the expedition. Jeff had also had a swim when crossing the river and was fortunate to be washed up where it was possible to climb out. It was decided that 8 expedition members should occupy ABC the next day, (18 June), and carry out a thorough investigation of Minar.

The 19th June was a busy day both at BC and ABC. At 0520 hrs Huw Morris, Tony Selmes, Yogi Yadev and Mike Parsons set out to attempt the nearest minor peak on the southern side of the main valley. Tony Selmes and Mike Parsons reached the 18,100 ft summit and named the peak Horned Lark because of the shape of the summit and the large numbers of Eremophila alpestris seen en route (full details on page 65).

The Minar group taken from 16500ft on the Tapugiri Ridge.

The Samundar Tapu Shigri runs left to right and the Silver glacier away. Advance Base Camp was situated on the moraine on the inside of the bend in the Silver glacier. On the right of the Silver glacier is the CB 36 group with the North East ridge of Piton (CB36a) clearly visible opposite ABC. 5 July.

M I N A R

At ABC the group had split into 3 parties to investigate Minar. Terry Moore and Ernie Smith walked up the Silver glacier and turned east into the large west facing corrie formed by CB 33a Minar and Tara Pahar. They climbed a grade I gully to the left of the icefall and entered the corrie at 17,000 ft then continued up to 17,500 ft and looked to the north into the southern corrie of Minar.

It was possible to get to the Minar ridge from the upper corrie but the route seemed long and the immediate difficulties at the entrance to the upper corrie could not be seen from the present position. The icefall also looked difficult. Ian Jones and John Coull skied up the silver glacier to 16,500 ft and were able to get a good look at the peak and its southern side from a distance.

Em Thomas and Graham Drinkwater investigated the northern corrie by climbing the grade I/II entrance gully. A route up to the summit of CB 33a and then down to the west ridge of Minar seemed a possibility and it was decided to give it a go.

On 20 June a group of 4 (Moore, Smith, Coull and Drinkwater) started work on the CB 33a route and after some long leads up the steep snow established a camp at 17,800 ft leaving a tent and 4 fixed ropes. Em Thomas and Ian Jones fixed ropes at the top of the access fully and then to get a better view of the climbing scrambled up the small peak behind ABC finding a cairn on the 17,200 ft summit. In the evening Pete Hogg, Suresh Bhasin, Terry Moore, Ernie Smith and Em Thomas returned to BC and Mike Parsons and Huw Morris moved up.

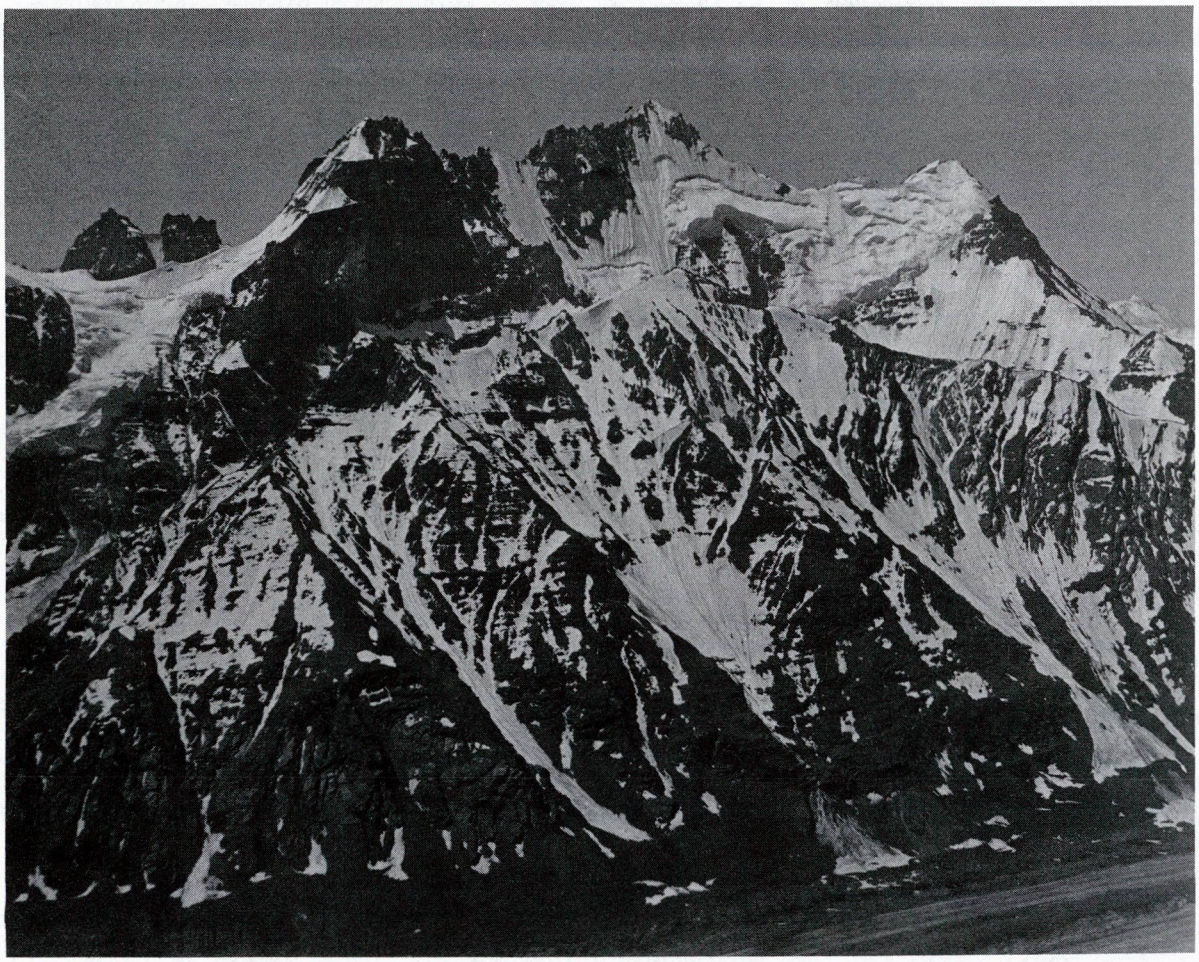
On 21 June Ian Jones and Mike Parsons made a further investigation of the southern aspect of Minar following the same route as the previous party (19 June). They continued from the main corrie by a Grade I gully on the right of the higher icefall and after 4 hours reached 18,200 ft on the lip of upper southern corrie. There were obvious routes to the west ridge and they decided to leave the tent they were carrying.

Being short of time and too tired to investigate the corrie they decided to leave the tent at the top of the gully and allow the first residents to select their own 'resting place'.

The expedition leader decided to use the southern route for the attempt on Minar and to abandon the CB33a route, the 5-star routiers being somewhat disappointed. It was decided to put a second tent at camp 1 and to ferry up a supply of climbing and camping gear. Climbers would then be sent up in pairs with a further pair coming up each day to back up those attempting the peak and have their attempt the following day.

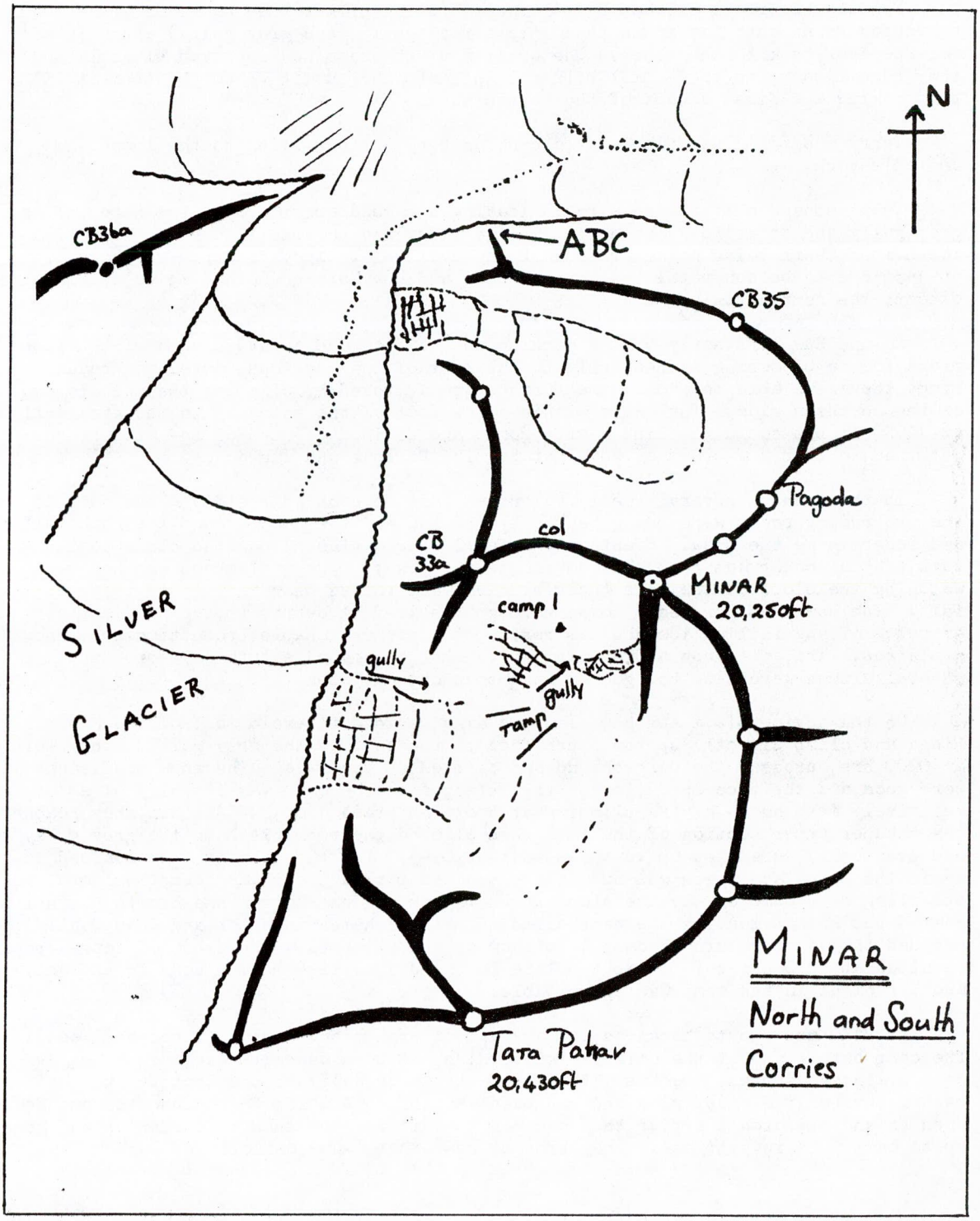
The arduous task of supplying camp 1 with 300 lbs of gear was carried out during 22-24 June by Bholaram, John Campbell, Mike Parsons, Ian Jones, Peter Hogg, Suresh Bhasin, Steve Peacock and Tony Selmes who made 3 carries on successive days. On 23 June Em Thomas, Huw Morris and John Campbell recovered the equipment from CB 33a route and with Terry Moore and Ernie Smith moving up to camp 1; the attack on Minar was prepared.

Terry and Ernie left camp 1 at 0130 and climbed the easy gully leading to the col between Minar and CB 33a. They arrived on the col after an hour and a half and waited for dawn. They scrambled up the ridge which was composed of loose slate for 200 ft avoiding some pillars on the right, then climbed a rock corner on the right of the first main pillar and continued up the loose rock and occasional patches of good snow.



The north face of Minar. Pagoda(left) and CB33a(right)

The origional route followed the ridge leading to the summit of CB33a. This was abandoned and a route to the col found from the southern side.



Finding the route blocked by a large crumbling pillar they cautiously traversed round onto the south face into a rock gully (the grey gully) and climbed this for 200 feet back to the ridge. The quality of the rock now improved slightly and they scrambled up to the summit both pulling onto the summit block together at 0930 hrs, thus making the first ascent of the mountain.

Terry and Ernie described the ascent as very serious owing to the loose and unstable rock.

They descended by the same route leaving a jammed abseil rope at the top of the grey gully and to avoid a loose step in the ridge had to abseil down the ice off an ice hammer there being no secure rock belay available. They returned to camp 1 at 1430 hrs to be congratulated by Em Thomas and Huw Morris who had moved up for their attempt the next day.

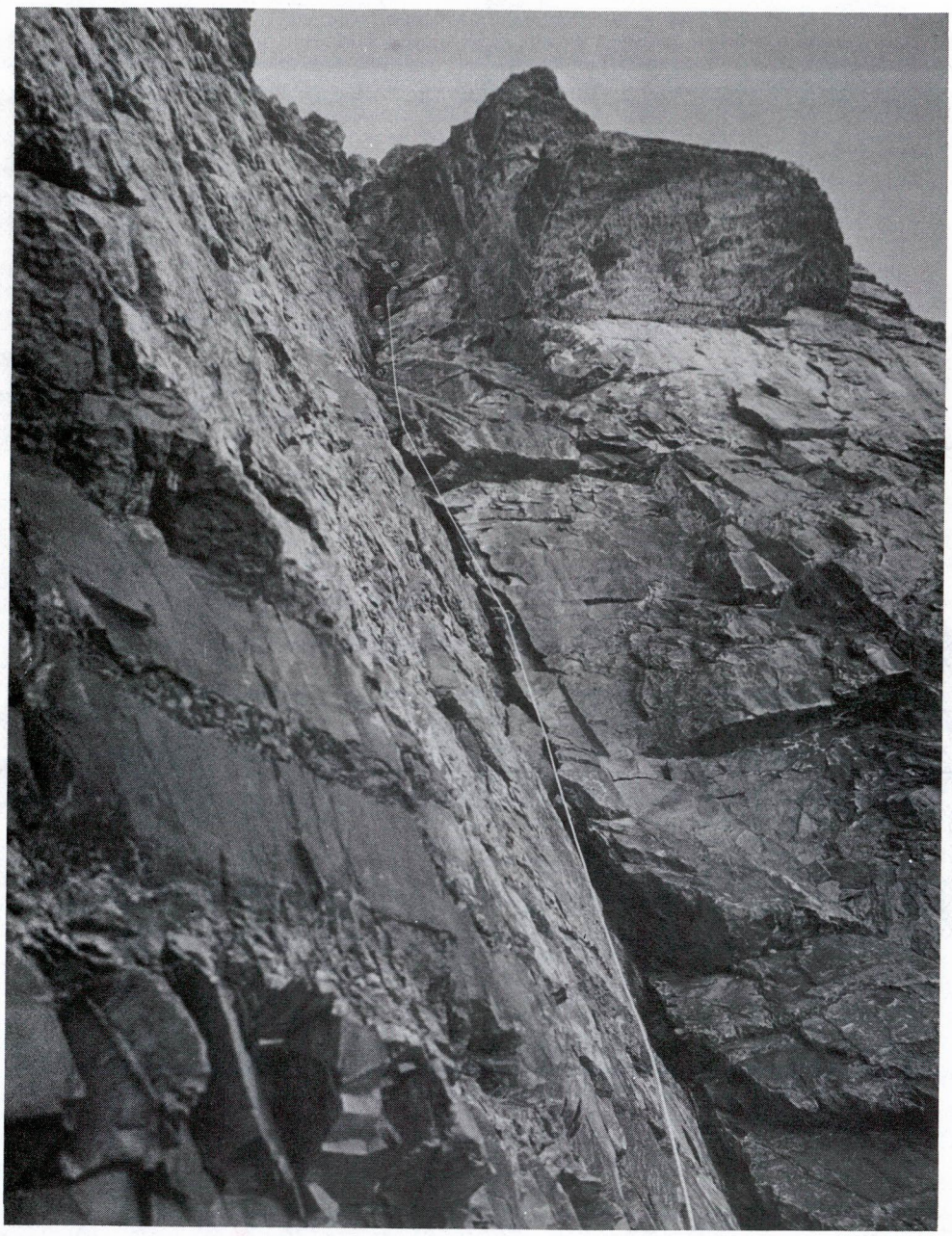
Em and Huw left early on the morning on the 25th and to avoid some of the loose ridge took a boomerang shaped gully to the East of the previous route. On reaching the ridge they were able to avoid some further loose ground by climbing the ice slopes on the northern side. They were within a few feet of the entrance to the grey gully at 19600 ft but could not find a safe route and decided to abandon the attempt and returned to camp 1 where they were met by Mike Parsons and Ian Jones.

In the evening several small avalanches came down off the slope above camp 1, the protruding rocks were being heated by the sun and the snow around the rock melting and undermining the snow. Eventually a fairly big avalanche came so close to the camp that a cooker was removed from the tent doorway. The 4 climbers who had been watching the slope as they ate their evening meal ran as best they could to avoid the fall. The camp was hurriedly moved through the icefall debris to the corrie floor out of range of any falling ice and was resited to give reasonable protection from snow avalances. The afternoon and evening avalanches became a feature of Camp 1 and several slopes were seen to 'go' on more than one occasion.

On the advice of Em and Huw Ian and Mike decided to avoid most of the Minar Ridge and climb directly up the south face to the foot of the grey gully. They left at 0200 hrs, crossed the bergschrund and climbed up the face. The snow conditions were good and the face which looked very steep from the camp was actually at a relatively easy angle giving climbing at Scottish grade 1 or 2. At dawn they reached the steeper upper section of the face then climbed the rock pitch in the grey gully and eventually scrambled up to the summit at 0945. For the descent they decided to avoid the main face which was now in the sun and picked their way down the loose ridge, abseiling down some of the ice slopes. Em Thomas and Huw Morris had started down from camp 1 but on not meeting the next climbing pair Graham Drinkwater and John Coull decided they must return to camp 1 to back up the climbers. The group of four were reunited at 1230 hrs but it was too late in the day to risk moving down to ABC and another night in the camp was unavoidable.

At 2130 hrs shouts heralded the arrival of Graham and John, neither had been to the camp before and at the original site which had been described to them there was only avalanche debris. Because it was dark they couldn't see the tents. They had been unsure of the exact plan and had been waiting at ABC for Em and Huw to come down. When Em and Huw didn't arrive they decided to wait for the snow to harden up and come up to camp 1 to investigate. They brought news that John Campbell and Suresh Bhasin

Huw Morris at Camp 1 (Minar) 18,200 ft.
The Silver glacier leading right to ABC with the CB36 group behind



The rock pitch in the grey gully leading to the Minar ridge.

Ernie Smith leading. 24 June 19700ft.

had not returned from skiing up the glacier and could not be seen anywhere on the Silver glacier.

Because the climbing plan would now need to be delayed to reorganize support we decided to postpone further climbing on Minar. Huw and Em had by now been above 18,500 feet for 4 days, Ian and Mike were ready for a rest after their climb, and Graham and John had had an exhausting night journey. We really felt the lack of good radio communications. We planned to withdraw to ABC and BC to start assessing M6, but we would return to Minar later in the expedition.

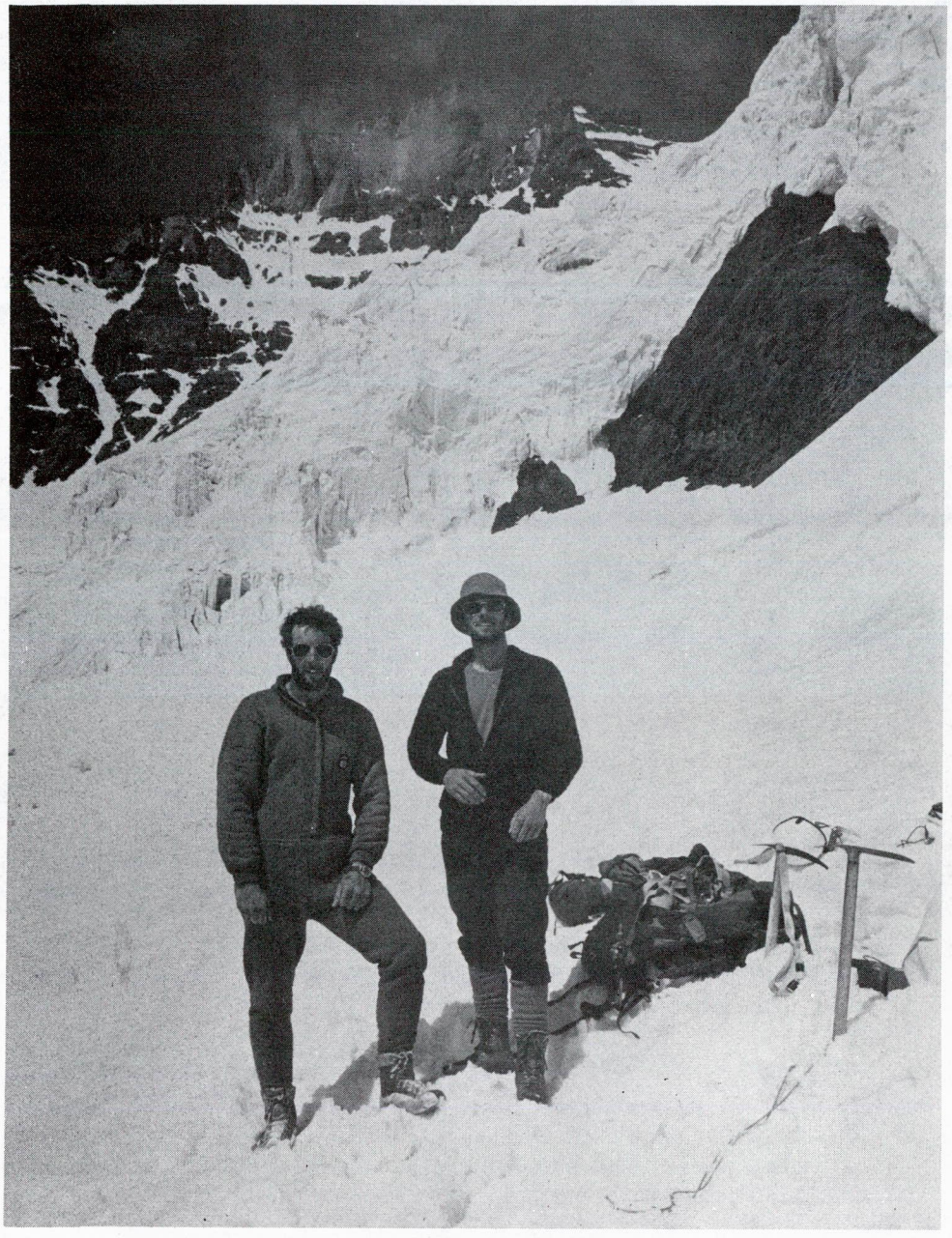
Down at ABC Peter Hogg and Tony Selmes made an attempt on CB 36a the peak opposite ABC but were not successful because of the snow conditions. They christened it Piton (Pete-Ton)!

The 26th June had been a busy day for the expedition but it was by no means over. Late in the evening a porter arrived at ABC with a message that Ernie Smith who had gone to BC to rest was suffering from severe chest pains. Peter Hogg had to make a difficult descent of the glacier and moraine in the dark to examine the patient who was worried that he might have a heart complaint. The journey down must be one of the most unusual night calls made by an RAF Doctor and it was no doubt comforting for Ernie to learn that whereas his intercostal muscles might be sore his heart would probably keep going for a while yet (see medical annex).

On 27th June everyone returned to BC for a couple of days rest; a good meal and bottle of whisky were consumed to celebrate the success on Minar. The expedition seemed to be going well after a slow and frustrating start; the weather was excellent and within 2 weeks of arriving at base camp we had succeeded in putting 4 climbers on the summit of our major objective.

On 28th June the official expedition group photograph was taken and work also commenced on a shower and the construction of a cairn and engraved stone to mark the site of the expedition base camp. Ernie Smith carved, or chipped is probably a better description the words: UK JOINT SERVICES EXPEDITION 1978, he then added MINAR and in anticipation of our future success M6.

The first ascent of Minar 20250ft 24th June 1978
Ernie Smith



Ernie Smith and Terry Moore after the first ascent of Minar.

The South Face of the peak and the route used by subsequent parties is behind the climbers. 24 June

M6 (20600ft) which was climbed by the ridge see left of picture.

M6

The climbing of M6 seemed to be a considerably more difficult task than Minar. The peak was much further away and at first it was thought that is may be necessary to move ABC. No-one was very keen to do that. The glacier up to the mountain was snow covered and this in itself would make travel much more difficult and dangerous and would restrict the times when access was feasible. It was decided that reconnaissance of M6 would be done on skis as the skiers could operate in the soft snow during the day. Early on the morning of 29 June, Graham Drinkwater, Ian Jones and John Coull set out for ABC on the first stage of the recce.

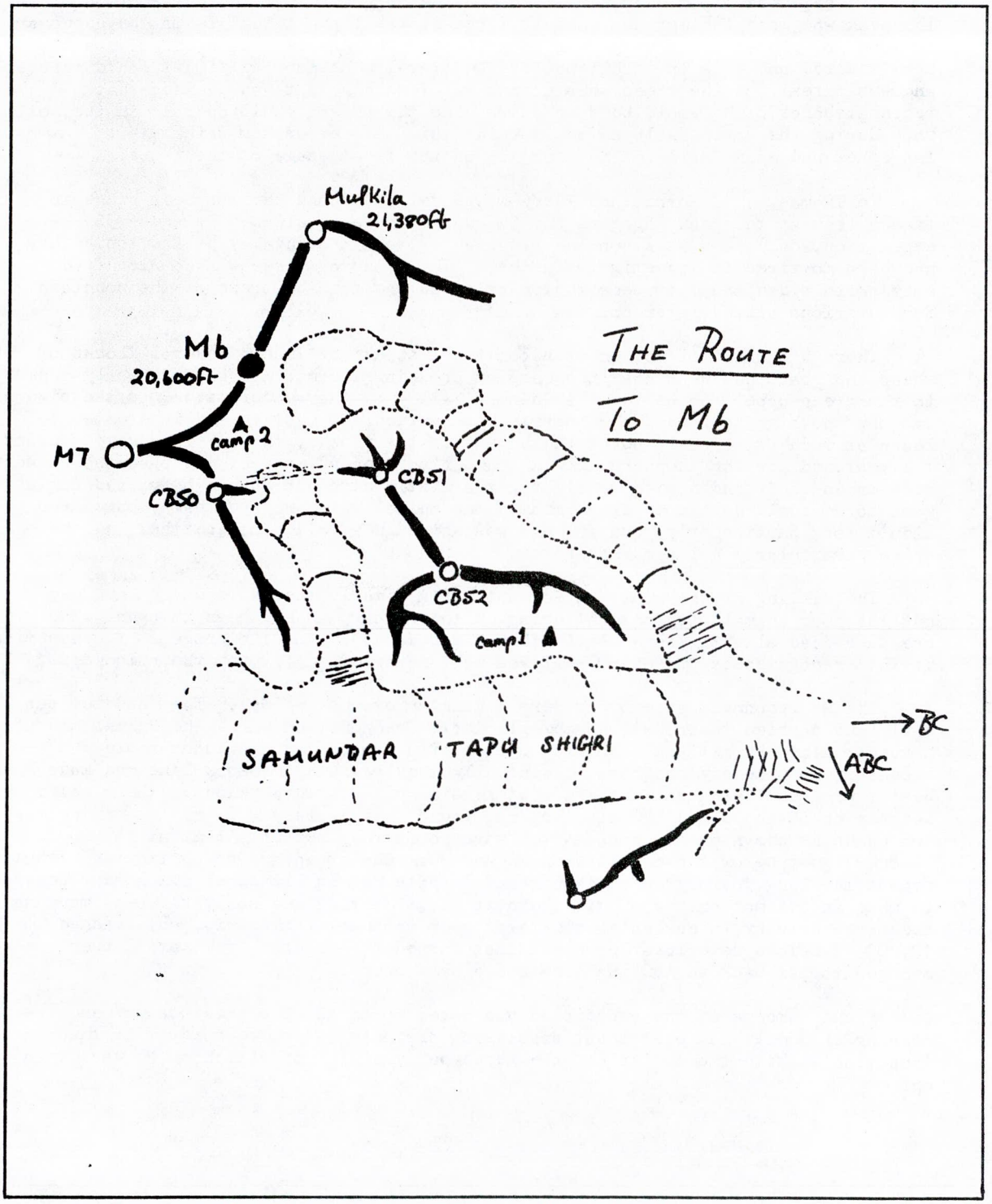
Em Thomas, Huw Morris and Terry Moore set out along the northern ridge to take a look at the peak Tapugiri (CB 57) which had been climbed by the 1956 expedition, only to a point on the ridge which they thought may be the top. They had been too tired to investigate further. The group of three walked along the easy north ridge and left some equipment below the main buttress of the mountain for a serious attack later on.

There was a lot of action at BC on the last day of June. Several flocks of sheep and goats had been near the camp as crossing the moraine gave the only access to the green upper reaches of the Chandra Valley on the western side, as the river was now too high to ford. Huw Morris was particularly active and interested to learn as much as he could about the habits of the flocks, the way they moved during the year and how the shepherds lived. Huw also treated many of the sheep which were sick or injured, and hoping we might get a little discount Suresh bargained for a goat so we could have some fresh meat. The animal which we eventually purchased didn't look particularly youthful and was as tough as old boot, neither was the price particularly below market rate.

The killing of the goat was somewhat of a ritual, the knife which was used to cut the poor animal's throat not being quite as sharp as had been thought. The creature died slightly more slowly than had been hoped and the process of converting it into recognisable pieces of meat was well recorded on film by the onlookers.

The M6 reconnaissance party were having an exhausting day. They had set out early and carried their skis up the glacier. The junction where the Silver and Samundar glaciers met was a complex system of crevasses and tortuous route was necessary to make any progress. Eventually they reached the snow line and made better progress being able to ski uphill using skins. They skied up the glacier between CB 50 and CB 51 (M6 glacier) and found that there was no ridge joining the two peaks as shown on the map. After nine hours they put up a tent at 18,400 ft (Camp 2) just below the col between M6 and M7. The group had no particular wish to repeat the long journey up to camp 2 and despite having little climbing gear decided to make an attempt on the summit the next day. Setting out early the next morning they were unlucky to encounter the first poor weather of the trip, but reached 19,100 ft before deteriorating conditions forced a retreat, From camp 2 they managed to ski back to ABC in three and a half hours.

Eight members of the expedition had moved up to ABC the previous day and the morning of 1 July had been spent practising crevasse rescue techniques at the 'junction'. With the arrival of the recce party a plan of attack on M6 was drawn up.



THE ROUTE TO M6

Ian Jones starting up through the crevasses on the first exploration of the M6 glacier 30 June. M6 is the peak in the centre of the picture.

Camp 1 (M6) 15900ft. The line of the original ridge route to Minar via CB33a can be see above the climbers.

It was decided that Terry Moore, Ernie Smith and Tony Selmes would make the first attempt on M6 on 8 July; to enable them and subsequent parties to get an early start on the snow covered M6 glacier a transit camp was to be established. The new camp (Camp 1) was placed on the northern side of Samundar Tapu Shigri to the SE of CB 52. The climbers moved up that evening and Em, Jeff and Peter assisted by carrying the tents to the site.

Camp 1 was placed on the ice at 15,900 ft between a series of crevasses just short of the snow line and although it was only a little higher than ABC it was 1½ hours away in distance. Water could be obtained during the day from one of the smaller crevasses near by. It was hardly the sort of place where one could go wandering around, the ice creaked and groaned and the water could be heard running beneath during the day. The camp gave excellent views of Minar and CB 36a but was so neatly tucked away that is was quite hard to see except from further up the glacier.

White setting up the camp wreckage of an aircraft was discovered and some pieces were used to support the tents. The wreckage was scattered and mostly buried in the ice. The aircraft was subsequently identified as an Indian Air Force Mystere which had crashed in Oct 1967. Neither the wreckage nor the pilot had been found previously and the identification plates recovered by our expedition were of considerable interest to the IAF.

The next morning while the M6 party were heading towards the high camp a group of 5 set out from ABC to attempt Piton by two different routes. Peter Hogg began to suffer from altitude sickness and was helped back to ABC by Mike Parsons but Em, Suresh and Steve suceeded in reaching the unclimbed 17,800 ft summit. (Full details page 66). The weather deteriorated rapidly during the early afternoon but we were all back at ABC, the M6 party would be tucked up in Camp 2.

A few days previously Ian Jones had pricked his thumb and this tiny wound had become infected and developed into an abcess which made his thumb very swollen and painful. On 3 July Peter Hogg decided that the abcess must be drained and set about making the necessary preparations to convert ABC into one of the highest operating theatres in the world. The small operation attracted as much attention as the killing of the goat but went off more smoothly. Because of the thin air at 15,300 ft it took Ian quite a while to recover from the anaesthetic. (See medical annex).

Whilst Ian was slipping into he pre-operative daze Terry, Ernie, and Tony were seen moving slowly over the glacier towards us. They should have climbed M6 today. Had they done so and got back this early? Surely not. No. They had miss heard the recconnaissance party's report on the approach to the mountain, and had gone straight on up Samundar Tapu Shigri in deteriorating weather. They missed the M6 glacier and came out on a col at over 19,000 ft, could find no tent, and returned to camp 1 for the night. They were quite upset when they got back to ABC, and Ernie wanted to go back for another try. They were obviously too tired to do so. Ian, Graham, and John Coull were keen to stay together as a team, and Graham and John were willing to wait for Ian to recover.

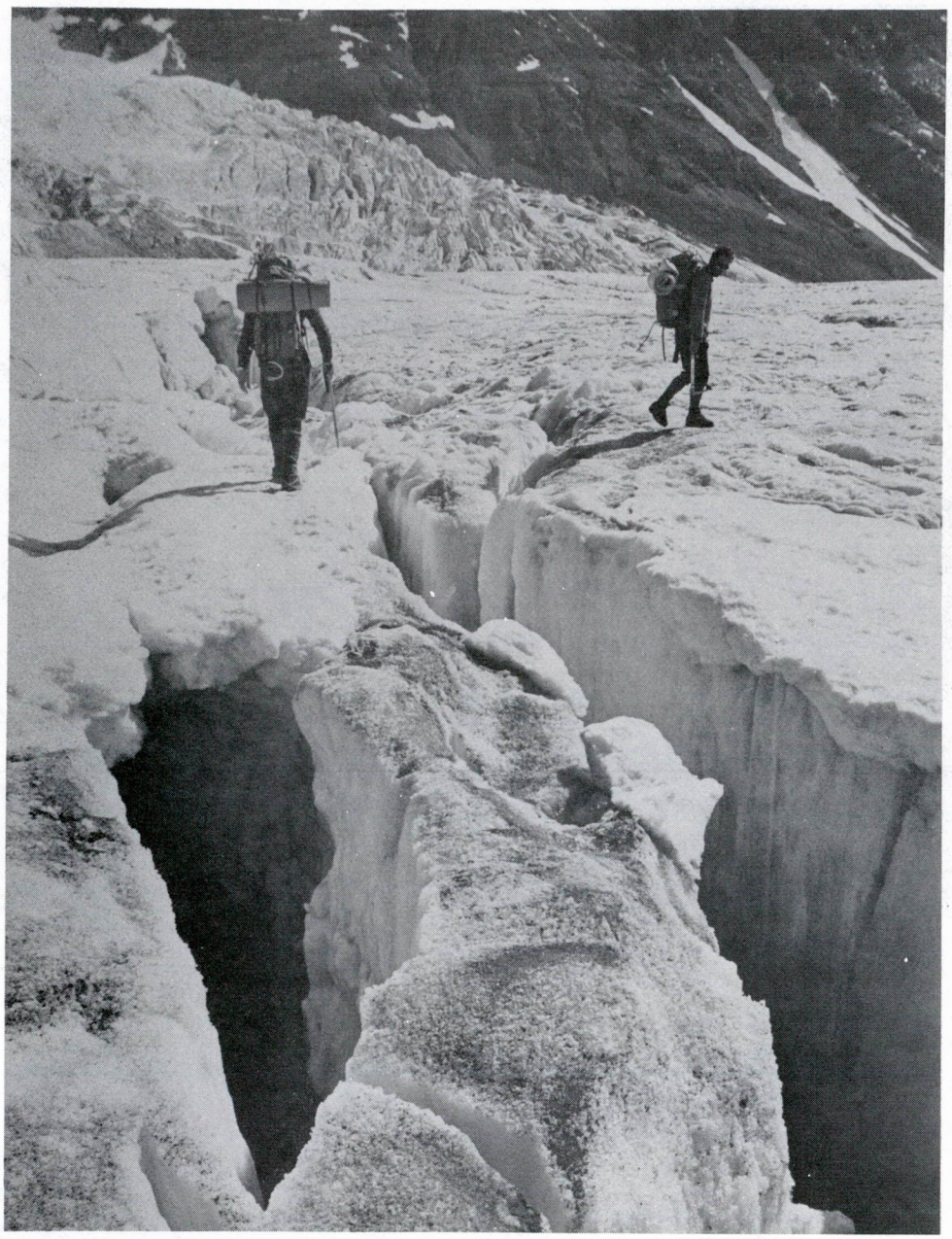
Em Thomas, Hew Morris, and Mike Parsons were the only fit climbers left so the group decided they should have the second go at M6. They got over the shock of being promoted to first team status quickly, had a good meal, sorted out their gear, and set off for Camp 1. Mike and Hew had made the second ascent of Piton earlier in the morning!

Ian Jones recovering from the anaesthetic after his thumb has been operated on by Peter Hogg. John Coull (left) and Peter Hogg.

Advanced Base Camp 3 July

The main glacier at 16300ft just above camp 1 (M6).

The peaks from left to right are Pagoda, Minar, CB33a, Tara Pahar, Piton (NE ridge)



Walking down the glacier from camp 1 (M6) to ABC.
The Mulkila icefall starts on the left.

The 4 July dawned fine, and first light found Em, Huw and Mike picking their way among the huge crevasses on the M6 glacier. These were generally snow covered and treacherously hidden. It needed a great deal of skill and care to find a safe route, but snow conditions stayed good and by 0915 hrs they had arrived at the camp at the col. The previous day's weather had demolished the tent but it was not damaged. After digging out a new platform they re-erected the tent and settled down to melt snow make brews and sweat out the heat of the day.

(From the Leaders Diary)

Wednesday 5 July. I am sure today must be the birthday or centenary of someone important, but hot chocolate at 2.30 am followed by hot porridge goes down the same way whatever the day. It could be anything. But for me this could be the greatest day of my life for I am going to climb M6. So I am keen to get going. I have no idea how 3 of us managed to sort out all our clothing and equipment in a small 2 man tent. Manage we did, and in a reasonably short time so that by 4 am we were away on our great adventure.

The 500 foot snow slope from our camp was a grind. I am usually a slow starter and always hate snow plods intensely because they are so boring. In the dark that early in the morning it is even worse. Eventually I caught up with Huw and Mike below a steep gulley where they were roping up. I was surprised that they were looking for belays because I felt we have moved together on such good ice. I knew both are quite capable of soloing to a very high standard on rock and ice. But they both seemed tense and nervous. A rock pitch followed the gulley. It was easy, then I led a traverse across snow into a slaty gulley and up it. The rock was now becoming very loose and dangerous but there was no other way up. The climbing was technically easy, and I was able to solo ahead on the loose rock for a rope length, bring up Mike, and then go ahead again whilst he brought up Huw This enabled us to move quite fast.

After 250 to 300 feet of this dreadful steep and loose rock I could see a small patch of sunlight shining on the red rock of the ridge. Till then we had been in shadow. I felt that patch of sunlight was a target to aim for because there the ridge levelled out and I would be out of that awful rock. But it tantalised, and never seemed to get any nearer. I squeezed up between 2 pillars, and wondered which one would give way if I pressed too hard. They were both so loose.

Eventually we reached the patch of sun, and continued up a loose ridge, easy angled now, for 400 feet or so. We left this when we came to a good snowfield, and it was good to crampon up beautiful crisp snow. It led to the summit, and we were there suddenly. There was the top ahead; I waited for the others feeling very fresh and untired, pleased, and suprised at my fitness. Huw and Mike insisted that I should go to the actual summit first. As I walked on a small crevasse seemed to open under my feet, and I was in up to my waist. The summit is a cornice, and the crevasse was the fracture line hidden under fresh snow. Just to be on the safe side we belayed each other to the top.

It felt good to reach the top of a Himalayan mountain of nearly 21,000 feet, the second to do so, and at 44 years of age.

The skiers arrive at the site of camp 2 (M6)
M6 behind.

It was so hot that before descending I needed to remove my long underpants. We made a few abseils in descent; all from very doubtful loose belays. The last one was down the first ice gulley we had climbed. I was annoyed that Huw and Mike should want to bother abseiling down this because I felt we could climb down it easily. As it was, the rope got stuck when we tried to pull it down after us, and I had to climb back up to get it and solo down. We were back at camp 1 by 1.30, and celebrated with a few brews of tea and coffee.

The following morning Em, Huw and Mike walked down from camp 2 and after 3 hours met the skiers Graham Drinkwater, John Coull and also Ian Jones who had recovered well. A chat for a few minutes and some photographs, and the groups went their separate ways. The M6 party skied up to camp 2 without incident and the successful trio returned to ABC and later that evening to BC.

Because of a snowfall during the night the departure of the second party to attempt M6 was delayed until 0615 hrs. They followed the same route as the previous group and found it to be just as loose, dangerous and unpleasant.

The weather remained unsettled and they were unable to see much even from the summit. After a twelve hour day they returned to camp 2. The following morning the skiers returned to BC and the third ascent team of Tony, Ernie and Terry moved up to camp 2.

The previous day at BC a shepherd had arrived to ask Huw if he could come and see his horse. The horse had been lying down for two days and was unable to get up. Huw paid 2 visits to the horse which was 1000ft higher up the mountain and diagnosed colic. The shepherds, who needed to watch their sheep and goats did not seem able to spare any time for the horse and though there was some chance of it surviving with their assistance, without it the horse would die. Ultimately the shepherd asked Huw to put the horse out of it's misery but he didn't have the proper equipment to kill the horse and after the 'goat' didn't fancy cutting it's throat. Eventually after considerable personal turmoil and a good deal of time rummaging through the doctors medical boxes he came up with something which might just work. A mammoth injection and the horse passed away peacefully.

The weather was poor on the 9 July and there was no activity apart from the bridge school at BC and the arrival of the shepherd with yet another horse for veterinary repairs. The weather prevented any activity by the M6 team at camp 2 and the following morning when things were no better they decided once again to abandon the attempt and return. On the descent Ernie fell into a cravasse and even though roped he landed on a ledge 20 ft down suffering slight head injuries. Becuase of the shape of the crevasse and the large icicles hanging overhead it took 45 minutes to get Ernie out of the crevasse which he described as being 200 ft deep.

The weather improved during the afternoon and two groups prepared for further climbing. Em, Huw, John and Graham left for ABC hoping to make an attempt on Minar and Ian, Mike, John (Cambell), Steve and Suresh walked up the north ridge to bivouac and attempt Tapugiri the next day.

The Tapugiri team slept out in the open at 16,400 ft and on the morning of 11th left at 0530 reaching the summit of Tapugiri (c19,000) five hours later. (See page 68). The Minar team was joined by Peter Hogg who wanted to go up to camp 1 to back up the climbers and they moved up together.

Looking back towards the Minar group from M6 camp 2 (18400ft)

The Minar team met with success on the 12 July. They followed the same route as the 2nd ascent team (page 36) but found the south face had lost quite a lot of its snow and towards the top was steep hard ice. They described the climb as pleasant but demanding. Em and Huw reached the summit at 0800 hrs and Graham and John arrived an hour later. In descent they followed the west ridge as previous parties had done arriving back at camp 1 at 1400 hrs to be greeted by Peter Hogg.

On the morning of 13th the Minar team took down camp 1 and struggled down to ABC leaving some of the gear there before carrying on down to BC. There were congratulations all round and a good meal and a bottle of whisky to celebrate. To conclude an excellent day a mail runner arrived in the evening with a load of letters, and most expedition members spent the remainder of the evening reading the news from home.

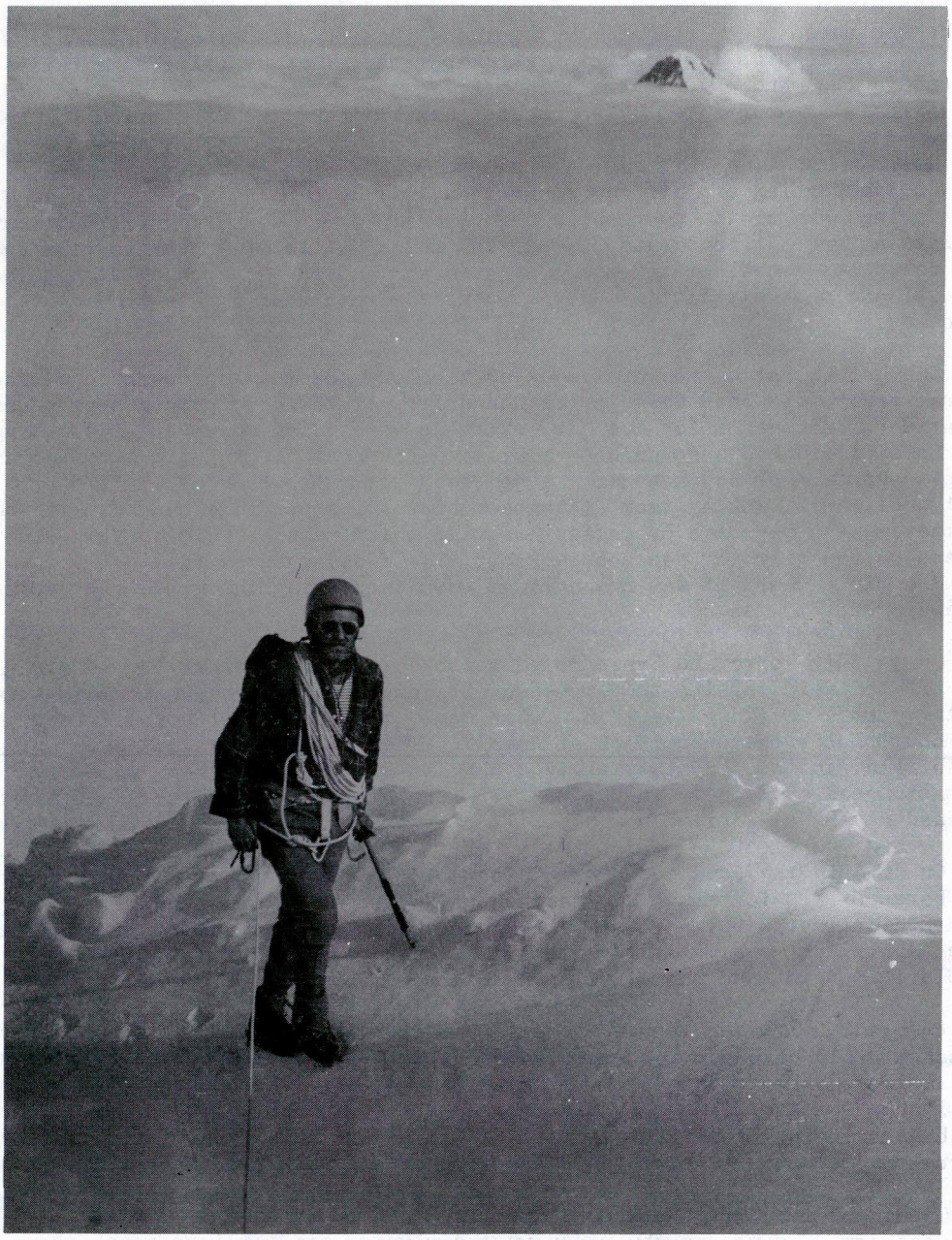
The general attention of the expedition was now turning towards getting home, several groups had been down to the Chandra river to look for crossing places and tentative arrangements for the hire of mules were being made with local shepherds. Jeff Scholefield had been unable to climb because of his injured shoulder and had occupied himself as ABC manager; he had been the instigator of early morning starts for the climbers, waking them at ungodly hours with porridge and drinking chocolate, and there was always tea or coffee awaiting their return. His contribution to the success of the climbing was considerable. Jeff had ensured that ABC was well stocked with the right gear but was now hard at work organizing the gradual recovery of the ABC equipment back to BC.

On 14 July Terry and Ernie moved up to camp 1 for another try at M6. At 0430 hrs the next morning they moved up to camp 2 and after a quick brew started for the summit arriving there in a remarkable two and a half hours. Four and a half hours later they were back at camp 1. They were met by Ian Jones and Jeff Scholefield, and at 1815 they arrived back in BC. Their success in such a short time astounded everyone. The climb was a tribute to their fitness and determination, they had covered 11½ miles and 4,500 ft of climbing above 16,000 ft in 13½ hours.

On 16 July the advance party of Ian Jones, Ernie Smith, Huw Morris and Mike Parsons left for Manali. Ian and Ernie were to return immediately to Delhi for a medical check up, and Huw and Mike were to arrange the return transport and continue with the veterinary research. They expected to be able to get a vehicle from Batal and therefore spent a strenuous day getting to the roadhead.

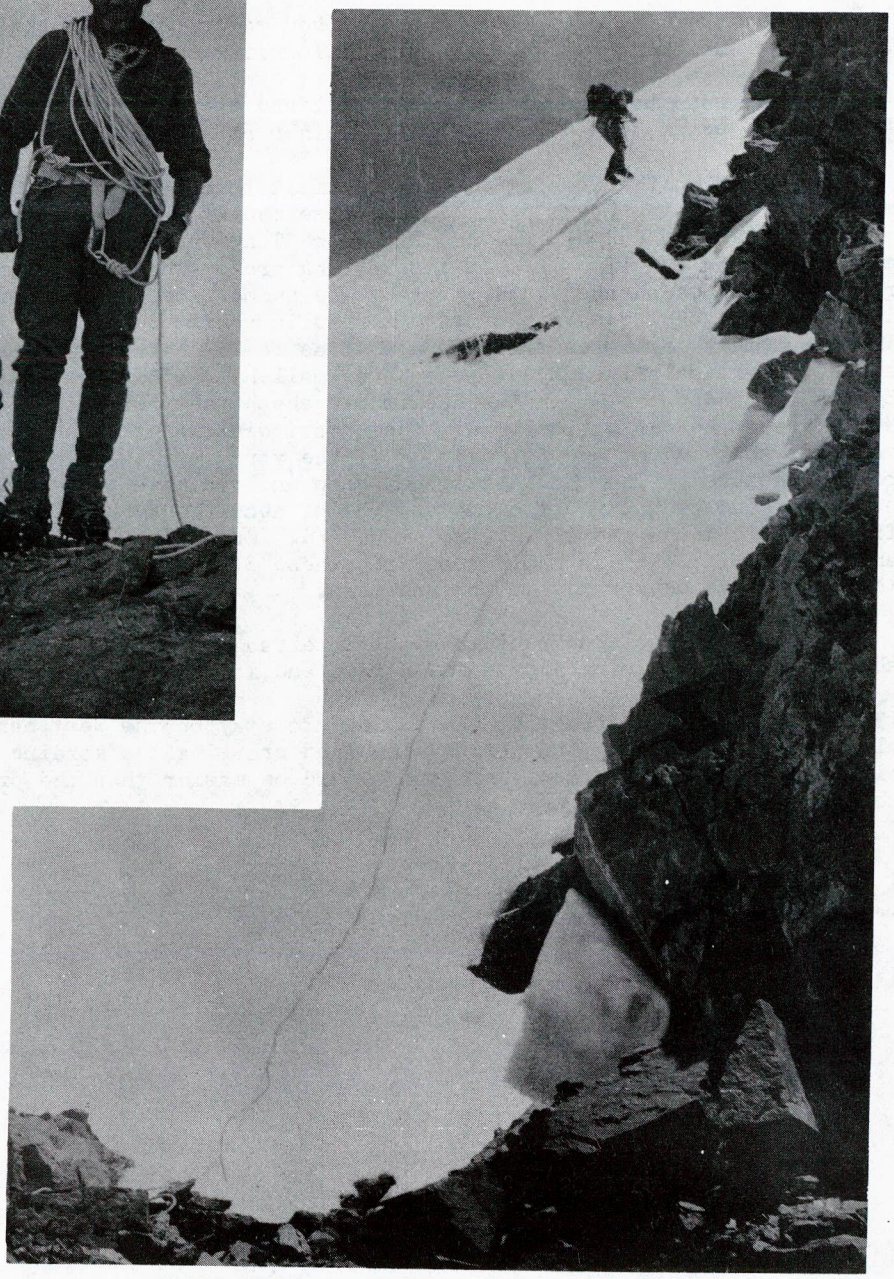
Unfortunately even though the road was open the engineers had not signed the necessary piece of paper and vehicles were still prohibited. The group of 4 had to walk from Batal to Gramphoo (55 km). Ian and Ernie headed immediately for Manali but Huw and Mike who had a couple of days to spare took a bus further down the Chandra valley eventually getting as far as Darcha. They even caught sight of M6 from the opposite side of the expedition area before heading back to Manali.

The final load of gear was removed from ABC on 16 July by Guptram. ABC had been used for 29 days and the route up the glacier had remained safe, the only difficult period being at the height of the melt when the glacier streams needed care. A total of 128 man/journeys had been made up the glacier and 121 man nights had been spent there.



Em Thomas on the final part of the Minar ridge.
Mulkila (21380ft) in the background. 12 July.

Huw Morris and Em Thomas in the cloud on the summit of Minar. 12 July 20250ft.



Abseiling down the steep ice on the Minar ridge

Though some preparation for the return journey was neccessary the job of organising the equipment did not provide a great deal of work. For most expedition members the final days at BC were a matter of keeping occupied to prevent boredom. Eating was a popular occupation but with dwindling reserves there was not even much variety there.

Graham and John (Coull) who at last had some flowers to collect were busy collecting whatever specimens the brief flowering season in the valley was able to provide. Em, Tony and Pete made a short expedition up the Chandra valley towards the Bara Lacha La and John Cambell and Steve made an attempt on Horned Lark before being turned back by poor weather at 17,200 ft.

The trip up the Chandra included a visit to a side glacier which led to more unclimbed mountains over 20,000 ft which seemed at least as attractive as Minar and the others in Lahoul, and Em, Pete, and Tony were left with a picture of yet more mountains to climb in this fascinating area. They also visited the most remote of the shepherds' huts. During the summer these hardy men and boys live in rude stone shelters with a rough tarpaulin roof. Because there are no trees in Lahoul they dry horse dung and use it as fuel. Naturally it smells, and the smoke is particularly pungent in such a small hut. The fire adds a unique flavour to tea and chappatis which the hospitable shepherds insist on giving all visitors. Nonetheless the tea was welcome. These most distant herdsmen were also the youngest that we met and it seems as if the youngest are always given the most remote pastures. They had about 500 sheep and goats to care for. The boss was about 22, and he had a boy of 16 and one of about 10 to help him. They enjoyed inspecting cameras and any equipment we had. On their way back to BC Em, Pete, and Tony left all their spare food with these 3. We haven't yet heard what they thought of the dehydrated mutton and peas.

Suresh and Bholeram went to Batal to arrange for some mules as the local shepherds could only provide a few horses and in any case had little time to spare.

For the return jouney it was decided to stay on the west bank of the Chandra all the way to Batal. The journey involved crossing the moraine and 3 rivers and climbing up to 15,500 ft but all this would be easier than the problem posed by the Chandra

THE WALK OUT

The Chandra river was now 100m across and much deeper than on the march in. There was no way that we could cross it safely. Suresh volunteered to swim across and take a rope, but the river was so fierce that Em would not allow it. Suresh had arranged mules from Batal to come up the north side of the river. They would have to cross two serious large tributaries to reach BC, and there was some doubt whether they could make it. So Suresh worked extremely hard to persuade the local shepherds to use their ponies to carry our gear out. They were reluctant because many were mares in foal or with foals at heel.

Eventually they agreed to bring 18 ponies at 0800 hours on 19 July. By 1400 hours we decided they would not be coming, and Suresh's face was red with embarrassment. He had learned many new basic English words, and used them all to give his opinion of the shepherds. Many of us failed to realise his difficulties, for most of the shepherds did not speak Hindi but used a language as different as Welsh is from English. Suresh had to learn that new language as he went along. Bolaram and Gupatram went along to help the shepherds round up their ponies early the next day. These two had a very low opinion of the shepherds and decided to take charge of them. So it was that by about 1000 hours on 20 July a cloud of dust approaching BC signalled the long awaited ponies.

Most of the local shepherds made our departure an excuse for a day out. There was also the attraction that our discarded bits and pieces held for them. They gathered everything including old compo tins and plastic bags. String seemed particularly valuable. We added to the festival atmosphere by distributing compo biscuits. They loved them.

Whilst this was going on Bolaram, Gupatram, and Tanjui loaded the ponies. They put more in the loads than those poor animals had ever carried before. The only things they could not pack were the skis, and the ponies simply refused to have them anywhere near. As it was 3 of the animals ran off and could not be loaded.

We set off home at 1200 on 20 July. By 1400 we had travelled nearly a mile. It was on difficult moraine, and the ponies had to climb 300 ft up the side of the glacier. Their hooves soon stripped the stones away from bare ice, and then they found it almost impossible to make any progress. Much heaving and shoving were needed. Added to the difficulties was the fact that the loads fell off with annoying regularity, and at some time every pony lost its load. The two big medical boxes fell off about every 100 metres. By 1700 we reached a major river. It was thigh deep and running very fast. On the other side was the mule man from Batal with his 10 mules. The three shepherds who had come to accompany the ponies decided they could cross the river and we loaded our big loads of personal gear and the skis onto his mules and set off on the next stage of the journey which the mule man said would take 3 hours.

We crossed a spur at about 16,000 ft. It began raining, and then the wind blew. It got dark and we had no torches because the mules with our personal gear had gone on much faster than the ponies. Every so often a pony would shed its load. It was a bit like crossing the Cairngorm plateau in July in the rain after dark with no compass, torch, or, of course, maps. Eventually we reached a shepherds hut where the muleman and Bolaram had instructed them to guide us to the river where a wire crossed. So we continued, nine intrepid mountaineers following the tiny figure of the little boy with the torch. When we looked back up the path in the morning we realised how lucky we had been to have our guide. We arrived at the crossing at midnight, and by 0100 the porters had cooked a hot meal whilst we had erected the

tents. By 0130 we were tucked up safe and sound on the dried bed of the river hoping that the rain had not been heavy enough to cause a flash flood during the night. We had lost a couple of loads, one of which was Steve's. He seemed fated to lose his gear somewhere along the way.

The next day dawned fine but the river was simply too fierce to take the mules across; even if John Campbell did wake everyone at 0600 to suggest pulling them across on a rope. So we spent all day ferrying loads over a roaring torrent on a single wire rope stretched taut between two big boulders. It seemed to be anchored merely to piles of rocks. But it held. That evening the river was low enough for the mules to cross. We had spent all day just moving 50 metres, and camped on the Batal side of the river. The next day the mules made two trips to carry our stuff to Batal and civilisation.

Batal is the highest bridge on the Chandra. It is the last stopping place for travellers negotiating the 3,000 ft climbing road over the Kunzum La and into Spiti. Its civilisation consists of a shack selling tea and biscuits, and a small Budhist monastery of 4 monks. The muleman owns the tea shack (hotel). We found that the road from Manali had been closed by a landslide for 4 days. It was quite a treat to see different people, women and babies. Early the next day John Campbell was sitting by the road packed ready to get on the first truck to come through towards Manali. Then wonders of wonders, a bus came up the valley; there were 2 Americans on it. It was the first transport in, past the landslide. Later a truck came the other way and John Campbell leaped on to arrange early transport from Manali to come and get us. When he got to John Banon's, however, he could do nothing about it because a landslide had blocked the road 3 Km outside the town and nothing was moving.

Whilst we waited the next day another truck came from Spiti. The driver was in less of a hurry and willing to earn 50 rupees. Once again Suresh's negotiations were successful. We certainly owed our liaison officers a great debt for their work on our behalf. We loaded up and drove off. The American couple were also on board, and it was good to hear that they had met Jack and Betty Marchant in Nepal and John Jackson in Seattle. It is a small world.

Six hours and 2 landslides later we completed an inward journey that had taken 6 days on the outward trip. It was good to enjoy hot showers, chairs, civilised cooking, a bottle of beer and bed.

JOURNEY HOME

On 29 July the expedition moved back to Delhi and were pleased to find that Ian and Ernie had arranged accommodation in the British High Commission. We were able to use all their facilities, including the swimming pool, tennis courts and the bar.

The next week was spent shopping, sightseeing and being confused by the signals informing us of the progress (or lack of it) of our flight going westabout round the world from UK. The only formal engagement was a press conference, the Indian press being especially interested to hear of the aircraft wreckage we had discovered. As a result of the conference reports appeared in 9 Indian newspapers. On the evening of 4 August the expedition held a party for the BHC staff thanking them for their assistance and it was somewhat fortunate for some of us that the flight was delayed by 24 hrs until 6 August.

On the morning of 6 August we went to the airport only to be told by the crew that there was yet another fault in the aircraft and we would be delayed a further 48 hours. This was a blow to everyone, the only compensation being that as we were now on the flight sub-imprest we could move into the plush Ashoka hotel.

On 8 August we finally left a hot and humid Delhi and arrived in an even hotter Bahrain. The following morning we went to the airport only to discover we had run out of political clearance to fly over Egypt and we were to be delayed yet again for 24 hours. On 10 August we flew from Bahrain to Cyprus and on 11 August having missed the French Air Traffic Control strike by a couple of hours we arrived at good old RAF Lyneham.

At Lyneham we were met by the acting Station Commander and Wing Commander Keith Bradley. (RAFMA Chairman). Air Marshal Stacey had kindly sent champagne and we held an impromptu press conference before dispersing.

OTHER CLIMBING ACTIVITIES

Though most of the efforts during the expedition were concentraged on Minar and M6, expedition members also attempted other small peaks. The eight who were fortunate enough to stay in Manali between 31 May and 5 June enhanced their chances of speedy acclimatisation in the local hills and once at base camp all expedition members tried other peaks in the area. Initially the climbing was to see and gain information on the major peaks but subsequently the minor peaks were attempted in their own right, some of them provided excellent mountaineering.

Contents

MANALI AREA

The deep and forested mountain valleys around Manali offer pleasant walking mostly on forest tracks. At the end of May one can easily penetrate the tree-line (12,000ft) and climb a snow covered peak of 15,000 ft or more by bivouacing overnight in the forest or using a woodcutters hut/shelter. In our case we were not acclimatised and unsure of how high we could go at this early stage, so tended to moderate our programme knowing that we would have plenty of opportunity to go to altitude later in the expedition.

AHAN DHAR (14,096 ft)

The long ridge of Rahan - i - Dhar runs NE from Manali culminating in the peak Krei - ra - Jot (15,419 ft), to the SE of the Rohtang pass. There are several 'tops' en route to the main peak. Ernie Smith and Terry Moore climbed up through the forest to the East of Manali and bivouaced in a cave above the trees at 11,800 ft. The next day they continued up the main ridge over two 13,000 ft summits and reached the Ahan Dhar summit (14,096 ft) before descending directly down to the road following the Beas river back to Manali.

KHANPARI TIBBA (13,207 ft)

Khanpari Tibba lies to the SW of Manali and the southern end of the summit ridge can be seen from the village. On the eastern side is a deep corrie which in May still holds a considerable amount of snow, this leads to a steep sided gorge following the stream east into the Beas river. Mike Parsons, Graham Drinkwater and Tony Selmes left Manali and climbed up through the forest bivouacing under the trees at 10,900 ft. During the night Graham Drinkwater saw a UFO which he described as being very large, bright and silent as it vanished into the trees nearby, but it was not seen by the others in the party. The next morning the group climbed to the summit (13,207 ft) though Mike Parsons and Graham Drinkwater found it hard going taking 4 hours for the final 2,400 ft of ascent; they both had altitude headaches. The peak gave good views of the snow covered Rohtang pass and the peaks to the NW. The northern slopes above the Manalgarh Reserve Forest in the Manalsu Nal valley held large quantities of snow. The group followed the ridge to the south and glissaded down to the gorge, then followed the winding path down along the stream. The 7000 ft of descent took $7\frac{1}{2}$ hours culminating with a ride on the roof of the overcrowded local bus into Manali village.

GALU DHAR (11,073 ft)

Galu Dhar is the closest peak to Manali and forms the first of a series on the long ridge leading the Meche Dhar. The Meche Dhar lies on the northern side of the Manalsu Nal and reaches a height of over 16,000 ft with four permanent glacial areas. Em Thomas, Pete Hogg, John Coull, and Steve Peacock climbed Galu Dhar in a day directly from Manali. The peak was forested to the summit.

Horned Lark (18100ft) from base camp.

CLIMBING IN THE EXPEDITION AREA

HORNED LARK (18,100 ft) No Survey Number

Opposite base camp on the southern side of the glacier was a large north-east facing corrie containing two distinct summits, the northern edge formed the southern face of the main glacial valley and was scarred by deep streams with intermediate moraine ridges. Between the two peaks the ridge divided and ran south west with a series of jagged pinnacles towards the peak Pagod. On the northern side was the deep corrie of Pagoda with its steep entrance and later in June a roaring glacial stream. Horned lark was the northern and nearer of the two peaks and there was a distinct ridge, an obvious route to the summit.

On 14 June John Coull and Tony Selmes made an attempt on the peak; leaving at 0800 hrs they crossed the moraine and climbed up to a small ridge leading up to the summit ridge. By 1230 hrs they realised they had misjudged the scale of the peak and at about 16,500 ft decided that the snow conditions had deteriorated to such an extent that to continue would be futile. They returned to Base Camp by their ascent route.

On 19 June a group of four Tony Selmes, Yogi Vadev, Huw Morris and Mike Parsons, set out at 0520 hrs with the intention of climbing directly up to the summit ridge. The gullies which looked steep from base camp turned out to be at a shallow angle and the party was able to climb unroped up to the summit ridge (16,400 ft). The snow conditions were excellent and made progress easy in comparison with the loose slate of the ridges. On alternating bands of rock and snow they followed the ridge towards the summit, but at 17,600 ft Huw Morris who had not had the benefit of any acclimatisation in Manali decided to turn back and he and Yogi descended. The ridge to the summit became steeper and as it had been in the sun for several hours and was 'sun balling' the remaining pair roped up and traversed three pitches to a rock rib. They climbed the mixed rock and ice to the summit (Grade 1/2) which was topped by a loose soft block split by a deep crack (the horns). The crack (V Diff) was climbed to the loose summit which dropped away in a spectacular manner into the Padoga Corrie. There was no evidence to suggest that the peaks had been climbed before and it was claimed as a first ascent; a cairn was built on the summit. The 4,500 ft of ascent had taken 7½ hours but the descent time was only 2 hours as the snow soft on the surface and firm beneath enabled the climbers to glissade 3,500 ft. No-one particularly liked the name 'Horned Lark' but as the summit resembled horns and we had seen many horned larks (Eremophila alpestris) en route it was retained, no better suggestion being forthcoming.

On 17 July John Campbell and Steve Peacock made an attempt on the peak. Much of the snow had now melted but they followed the same route as the successful group. They reached the summit ridge but at 17,200 ft the weather began to deteriorate and they decided to abandon the climb and return to base camp.

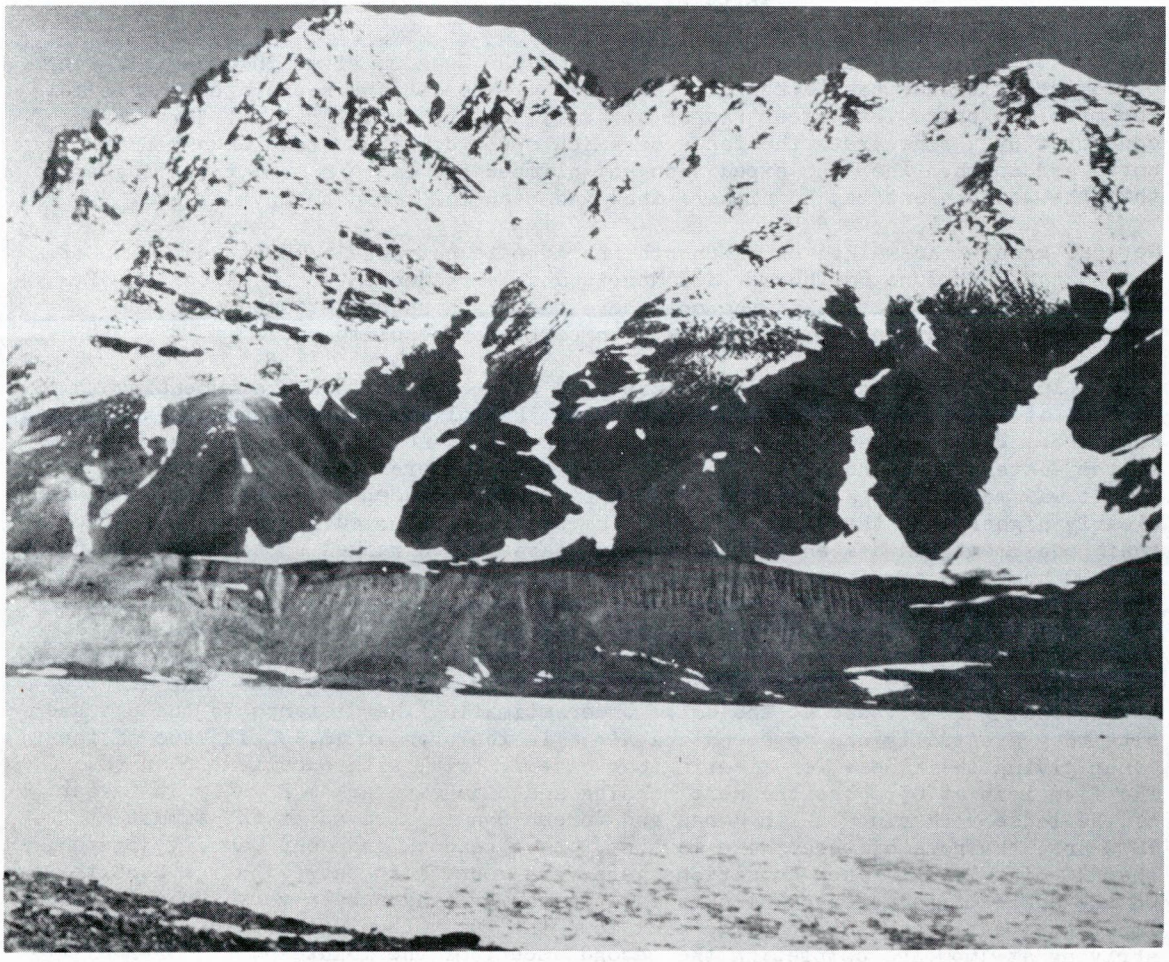
CB 36a (17,800 ft) - PITON

Opposite advanced base camp running south along the western side of the silver glacier was a spectacular snow ridge with pinnacles and corniced edges for 3½ miles. The ridge contained the unclimbed peaks CB 36 (c 19,000 ft), CB 37 and at the northern end the small rock peak CB 36a. The northern face of the peak fell away in slabs of rock and snow to the Samundar Tapu glacier and on the southern side was an attractive rock ridge. The obvious route to the summit lay along the edge of the north face, the NE ridge.

On 26 June Tony Selmes and Peter Hogg attempted the peak by the NE ridge but found that the slabs and snow made conditions difficult and dangerous; they had to rope up for most of the route. After 6 hours when only about 300 ft from the first summit they decided to descend and took advantage of a gully down the south face back to the Silver glacier.

On 2 July a group of five attempted the peak by the rock ridges on the Southern face. The ridge which could be seen from ABC turned out to be loose and broken lower down, with 'diff' scrambling high up, however, there was a small slabby gully to the right and then a second ridge which looked reasonable. Peter Hogg, Mike Parsons and Steve Peacock tried the left ridge and Em Thomas and Suresh Bhasin the right. At 16,400 ft Pete Hogg suddenly became ill, feeling listless and dizzy and had to be lowered down a couple of pitches into the gully, he was escorted back to ABC by Mike Parsons. Steve Peacock who was ahead of the others continued up and eventually reached the summit (17,800 ft) alone, the other climbing pair arriving an hour later. The obvious 'top' we could see from ABC was not the summit but this could be reached by walking 500m along the ridge to the SW. There was an intermediate pinnacle of loose blocks then a narrow arete and an awkward loose step up to the summit. The summit was made up of angular slabby blocks the highest point being the edge of a large block; a cairn was built with some difficulty.

On 3 July Huw Morris and Mike Parsons climbed the peak by the right hand rock ridge and on 5 July Tony Selmes and Pete Hogg who was making his third attempt also reached the summit.



Tapugiri (19000ft) taken from the main glacier
at about 14000ft.

TAPUGIRI CB 57 c 19,000 (18,400ft)

The northern ridge behind base camp rose from the Chandra river in a gentle sweep up to the splendid peak Tapugiri. The ridge was smooth and rounded but as it met the mountain broke into steep ridges and gullies, the three distinct tops being connected by a fine arete the faces of which swept down into two large corries, north and south. The 1956 expedition had climbed the eastern summit but suggested that the western one may be higher; they had been too tired to investigate.

Several groups had walked on the northern ridge to between 16,500ft and 17,500ft but on the 29th June Em Thomas, Huw Morris and Terry Moore took a selection of climbing gear and left it at the col where the northern ridge ended with the intention of returning at a later date to complete the climb.

On 5th July Ernie Smith and Terry Moore left base camp at 0600 hrs intending to bivouac at the equipment dump but arrived at the col at 1130 hrs and decided to continue. They climbed a rock ridge up to the first summit, followed the arete to the eastern peak and arrived at the unclimbed western summit at 1400 hrs. The summit was made up of a 40 ft rock block climbed by a deep crack (v.Diff) and was clearly higher than the eastern peak. The climbers returned to the col, collected their equipment and descended to the main glacier then walked up to ABC arriving at 1800 hrs thus completing a remarkable day of 8 miles and 5,500 ft of ascent. This was a considerable tribute to their fitness and determination at such an altitude.

On 10th July a party of five set out to climb Tapugiri leaving base camp at 1500 hrs intending to bivouac at the col. Underestimating the distance to the bivouac site they eventually had to spend the night in the open at 16,400 ft, two of the group giving their Gore Tex sleeping bag covers a trial with excellent results. The five left at 0530 hrs the next morning and climbed a grade 2 gully in favour of the loose rock ridge. Ian Jones and Suresh Bhasin arrived at the summit at 1000 hrs, the rope of three Mike Parsons, Steve Peacock and John Cambell joined them 40 mins later. Snow conditions were very poor, soft snow with ice beneath. On the descent Steve Peacock took a fall which would have been very serious but for the rope. The group abseiled back down the gully then walked back to BC arriving at 1630 hrs completing the second ascent of the mountain.

ADVANCED BASE CAMP PEAK CB 35a (17,200 ft)

CB 35a was a small rock peak similar to the pap of Glencoe. The peak was immediately behind ABC and well remembered for the clatter of stones which it showered down towards the camp. During the investigation of Minar on 20 June it was climbed by Em Thomas and Ian Jones. It was found to be loose and rather unpleasant but provided a good view point for looking at Minar. The height was 17,200 ft and there was evidence of a previous ascent in the form of a cairn.

It is presumed that the 1956 expedition who had their camp 1 nearby had climbed the peak.

The outline of ABC peak against the north face of Minar

ANNEXES

A - Finance

B - Equipment - Appendices I - Individual Kit & Clothing

II - Expedition Equipment

III - Notes on Equipment

C - Rations

D - Transport

E - Communications and Postal Arrangements

F - Medical - Appendix I - Medical Equipment & Drugs

G - Photography

H - Veterinary Research

J - Ornithology

K - Meteorology

L - Publicity

FINANCE

(Flight Lieutenant J N Scholefield)

1. A total of £6,455 was raised for the expedition from the following sources and sale of equipment raised £182:

	£
Joint Services Expedition Committee	300
RAF Expedition Training (Special Projects)	1000
RAF Mountaineering Association	260
Army Mountaineering Association	75
Army Adventurous Training Grant	160
Trenchard Memorial Fund	1000
Cash in lieu of Rations	330
Department of Overseas Development	630
John Gilpin Trust	100
First Day Covers	1000
Members Personal Contributions	1600
Sale of Equipment	182
TOTAL INCOME	£6,637

2. The final expenditure for the expedition is as follows:

Advance party travel	160
Hire of transport and travel costs	450
Hire of mules	550
Hire of porters	400
Food	520
Accommodation	510
Indian Mountaineering Foundation Fees	270
Indian Air Force Liaison Officer Fees	130
Radio Licence Fees	75
Insurance	655
NAAFI duty free	32
Equipment	1340
High Altitude Equipment (personal grant to members)	845
Customs handling and agents fees	144
Expedition plaques	123
Miscellaneous (postage, telegrams, taxis, tips etc)	240
Reception at British High Commission	60
Final Presentation	20
Final Dinner	90
Donation to RAFMA Himachal Pradesh Expedition 1979	23
TOTAL EXPENDITURE	£6,637

3. The task of finance member is fairly simple to define. It is the responsibility of raising sufficient funds to ensure the completion of the expedition aims and having those funds in the correct currency at the right time. With a lot of help and a bit of luck those aims were achieved.

4. The main problems were in India and mostly because the method of transferring funds through the bank transfer system was not successful. A sum of £2,500 was supposed to go to Manali or Kulu but ended up in Amritsar over 200 miles away and the sum of £1,000 should have gone to the State Bank of India (Head Office) in Delhi but ended up in a sub office in Delhi. The problems were solved after 12 days of telegrams, telephone calls and arguments with banking officials. This meant Hugh Morris, who had stayed with me, and I were 6 days behind the main party. We travelled across India and to Base camp carrying nearly 40,000 rupees in my rucksack in 50 rupee notes and less. Hugh kept a knife in his pocket and I carried an ice axe on my wrist until we started the walk in but by then we looked similar to the poor hippies in Manali and so unlikely to be attacked.

5. My advice to future expeditions is start the administration as early as possible and to take the money out to India in travellers cheques (sterling or travellers cheques are accepted throughout the areas of India we went through) using a banking Form T. The Form allows you to exceed the personal allowance restrictions. Obtaining receipts in India is not always easy as the further away from Delhi you get the more people use thumbs to sign on receipts, some of these went to the Auditors at Bath when accounting for the RAF Expedition Training (Special Projects) grant. The only other thing worth remembering - it is illegal to convert rupees to sterling unless the original exchange receipt is shown.

6. I am indebted to the following for the guidance, help and advice which made my task easier:

a. William & Glyn's Bank, Farnborough for handling the expedition accounts and advice on Indian banks especially Mike Adler and Jenny Henderson.

b. WOI Dave Oliver RAPC and Sgt Peter Bird RAF of the British High Commission who supplied time, advice, help and humour in solving my financial problems in Delhi.

c. John Banon, Manali who organised a very efficient system of paying porters and muleteers and also provided estimates before we left the UK.

d. My staff at RAF Turnhouse who put up with my preoccupation before the departure for India.

e. The members of the expedition for keeping a tight control on their spending and for paying up promptly when required.

f. My wife for her support, typing and checking my arithmetic.

EQUIPMENT REPORT

GENERAL

1. Having been asked by the Expedition Leader to act as Equipment Member my first reaction was to ask for some one to assist me in this task. Cpl Terry Moore being a supplier was an obvious choice and he quickly became Deputy Equipment Member. The next priority was to decide on a plan of action, the plan eventually took shape and can be summarised under the following headings:

a. Compile and circulate an individual kit list (Appendix 1).

b. Compile a general equipment list (Appendix II).

c. Obtain and store the equipment.

d. Arrange for purchase of equipment unobtainable through Service sources.

e. Account for all equipment.

f. Pack all equipment and arrange for transport to RAF Lyneham.

g. The safeguarding and control of the stores whilst in the field.

h. The return of the equipment on the expedition's return to the UK.

EQUIPMENT PROCUREMENT

2. Sophisticated climbing items excepted, the majority of equipment was obtained through Service sources. Equipment unobtainable through this manner was purchased from Karrimor through Marshalls of Aberdeen at generous discount prices.

3. Expedition members supplied all their own clothing and personal climbing gear. There was however a pool of personal clothing and equipment taken to cover the eventuality of losses and breakages.

4. From the outset I was worried that there would not be enough time to collect all the equipment and pack it ready for our departure on 25 May. My first demands to stores were dispatched on 21 February which gave us 3 months almost to the day. In the event I was proved right the last 2 weeks before our departure being hectic to say the least, it even entailed a mad dash to a local climbing shop a matter of hours before departing for Lyneham, to purchase last minute items that had not arrived in time.

PACKING AND ACCOUNTING

5. All equipment was collected at RAF Wittering and recorded on an inventory held by me. Various factors affected the packing of the equipment:

a. Robustness and weight bearing capability.

b. Security.

c. Ease of access.

d. Method of transportation.

6. All equipment was packed in polythene bags which in turn were packed in kit bags. The kit bags were then packed in Ti-wall boxes, my doubts over the robustness of the boxes proved completely unfounded and all the boxes stood up well to both the outward and return journey to the UK.

7. Each box was numbered and a master list of each box's contents was kept. Copies of this list had to be ready for the Expedition Leader to take to India on 15 May. This was to allow the Indian Customs to peruse the lists in the hope that when the equipment eventually arrived it would smooth the passage of the equipment through the considerable Customs formalities.

8. Two weeks before our departure date Cpls Terry Moore and Steve Peacock arrived at Wittering and set about the task of packing the equipment. It was decided not to pack all like items together, this was to overcome the eventuality of us losing all our ropes or some other equally important item if one box was lost. Each box was taped and banded, the reason for this was twofold. To stop over inquisitive porters from helping themselves, and I had hoped to deter the Indian Customs officials from inspecting all our equipment. On the first count we were completely successful; we had no reports of losing any item through theft. On the second count we failed completely. I'm sure the sealed boxes only served to encourage the Customs officials to delve into every single box we had.

9. It is important while packing to make sure all the procedures regarding Hazardous and Dangerous Air Cargo are followed: the help of the R & D Section at Wittering and the experience of Terry Moore were invaluable here.

10. Experience had taught me that the equipment lists must be thorough in every detail; each box was listed with its dimensions, total weight, full description of goods, and itemised values in Rupees and Sterling.

CUSOTMS PROCEDURES AND TRANSPORTATION

11. I have little doubt that the procedures for obtaining customs clearance would be different for each expedition so it is not possible to produce a 'fool's guide' for a smooth passage into India. The key to success seems to be personal involvement in escorting the various papers from office to office as this ensures that the right official sees and actions the forms promptly. Nevertheless it was 7 complete days before our equipment was ready for onward transportation to Manali. At Manali all the equipment was taken out of the Ti-wall boxes, and the empty boxes were stored there ready for use on the return journey. The kit bags proved ideal for use on mules, they seem about the right size to allow fair distribution of weight, and they stood up to the rigours of 50 miles on the back of mules remarkably well.

THE RETURN TO UK

12. On returning to Manali the equipment was repacked into the Ti-wall boxes, a new list was compiled, and this was broken down under 3 headings:

a. Non-consumable equipment not for re-export.

b. Consumable rations and equipment not for re-export.

c. Non-consumable equipment for re-export.

Once again it is worthwhile spending time in compiling these lists correctly and as accurately as possible.

CONCLUSION

13. A longer time scale than 3 months is needed for compiling and collecting all equipment in one location. The recording and documentation of the equipment for Customs clearance in India is of vital importance and can go a long way to smoothing the way through Customs formalities.

Appendices: A. Individual kit list. B. Equipment List. C. Notes on Equipment.

INDIVIDUAL KIT AND CLOTHING LIST

CLOTHING - See Note I

Cagoule
Overtrousers
Anorak
Gaiters
Balaclava
Sun hat
Boots (Alpine but double preferable)
Boots (Lightweight for walk in)
Dachstein mitts - 2 prs
Polar suit
Shirts - 2
Sweater
Breeches - 2
Long Johns
Stockings (At least 4 prs)
Underclothing (as required)
Duvet
Duvet boots (not essential)
Shorts

EQUIPMENT

Sleeping bag (good quality essential)
Karrimat - See Note 3
Water bottle
Snow goggles - 2 prs
Sun glasses
Glacier cream
Lip protection cream
Climbing sac
Kit bag
Camp shoes
Mess tins
KFS
Mug - See Note 2
Toilet requisites
Books
Writing material
Passport
Jab certificates
Camera
Film
Torch

CLIMBING EQUIPMENT

Harness
Ice axe
Ice hammer
Crampons
Helmet
A small assortment of 'hardware'.

NOTES ON INDIVIDUAL EQUIPMENT LIST

1. Most people took far too much clothing, the area has a much drier climate than normally encountered even in the Alps.

2. Although spares were taken, they are prized possessions amongst the porters and any mugs left about quickly vanished. Most members were reduced to drinking out of old 'Compo' tins at one stage during the expedition.

3. It is worth having more than one per person, so that they can be left with the tents, and so that a 'soft' bed can be enjoyed at base camp.

EXPEDITION EQUIPMENT

ITEM	QTY	COMMENTS
Kimwipe paper towels	18 rolls	
Avalanche detectors	14	Not used (fortunately)
Head torches	12	
Snow shovels	2	
Ski boots	4 prs	
Black tape	6 rolls	
9 mm Perlon rope 150'	10	
Karrimat	15	
Tilley lamp	2	
Water bottles	6	
Primus stove	12	10 x 1 pt 2 x 2 pt
Climbing helmet	3	
Knife	6	
Fork	6	
Spoon	18	
Mugs plastic	12	Double this number required
Batteries 1.5 v	144	
Blacks mountain tent	5	
Vango force 10 tent	1	
Parachute cord	3 rolls	Very handy
Hammer 2 lb	1	Not needed
Blacks Artic Guinnea Tent	2	
Jerrycans 5 gal	2	For water
Kit bags	50	
Deadmen	10	Used very little
Boot polish	24 tins	
11 mm Perlon rope 150'	5	Not as useful as 9 mm
Mitts wool	6 prs	
Millbank bags	6	Not used
Jersey wool	3	
Mitts dachstein	6	
Breeches	6	
Snow Gaiters	12	
Cagoules	5	
BiRope Braided Terylene 500 ft	1	Not used (Too heavy)
Slings nylon (ass)	1 plet	
Frames Carrying	12	
Karibiners snap link	50	
Karibiners screwgate	50	
Stools folding	2	More needed
Slings 1" tape	30	Taken in rolls & cut when required
Boots DMS	20	For porters
Plimsoles	20	For porters
Goggles snow	6	
Jumars	1 pr	
Water buckets	4	Handy
Hexamin blocks	1 box	
Sleeping bags arctic	6	
Pitons (assorted)	50	
Socks terriloop	20 prs	
Stationery	1 box	
Scales	1	Useful for checking mule loads
Thermometer max/min	2	Very fragile

ITEM	QTY	COMMENTS
Thermometer whirling	2	Very fragile
Tents arctic 10 men	3	
Skis mountaineering	4 prs	
Ski sticks	4 prs	
Tool bag	1	
Tents Medina	3	
Pans scourer	12	More needed
Mess tins (sets)	6	
Helmets balaclava	6	
Anorak	6	
Binoculars	1	
Altimeter	2	
Padlock 2"	2	
Candles	36	More needed
Pressure cooker	2	Essential, can be purchased in India.
Kerocene	60 gals	Purchased in Manali.
Jerricans 5 gal	12	Purchased in Manali for Kerocene
Plastic containers	12	Various sizes for Kerocene
Large pots & pans, kettles		For cooking at base camp purchased in Delhi.
Large primus stove	1	Purchased in Dehli for use at base camp.

The following items would come in useful if taken, plastic buckets, plastic bowls, more cleaning materials, groundsheets for 10 man tents, alarm clock for porters.

Items you can't have too many of: polybags all sizes, para cord, black tape, kit bags, Kimwipe paper towels.

NOTES ON EQUIPMENT

1. There follows comments on equipment used during the expedition. These comments are based on a consensus of opinion amongst the expedition members.

KARRIMOR RUCKSACKS

2. As mentioned earlier Karrimor International Ltd supplied us with rucksacks at greatly reduced prices. The 2 most popular models used were the Haston Vallot and Haston Alpiniste. Apart from its cost there was no criticism of the Alpiniste. It was felt that the Vallot could be improved by the inclusion of extension back straps to the lid of the sac. Without these, only a modest load could be carried, and crampons if carried on the lid had the annoying habit of sticking into the back of the neck of the unfortunate carrier. I have since been informed by Karrimor that the lid has now been modified.

GORETEX CLOTHING

3. The expedition was very lucky in obtaining an amount of goretex fabric completely free of charge from Goretex Ltd. The fabric was made up into Jackets, trousers and sleeping bag covers by Mountain Equipment. No true appraisal of the clothing was reached mainly because of the lack of wet weather during the expedition. One comment was that the jackets were not as warm as the conventional cagoule. The condensation problems normally associated with cagoules did not occur. The sleeping bag covers proved very popular and were used during a bivouac at 16,500 ft in the open. The sleeping bags were kept completely frost and condensation free.

TENTS ARCTIC 10 MEN

4. Three Arctic 10 man tents were used on the march in and at base camp. They are shaped like the old fashioned 'Bell Tent' with a single pole in the centre. They proved very light and easy to erect, the whole expedition could sleep in 2 quite comfortably, the third being used as a cook and store tent. The tents proved quite weatherproof and stood up to the strong winds encountered at base camp well. The tents did collapse however after a fall of snow, but this was as much due to inexperience in pitching the tents as to a design fault.

TENTS MEDINA

5. Medinas are 2 man mountain tents, and were used at both the high camps. They proved both lighter and roomier than the Blacks Mountain Tents used at advance base, they could accommodate 3 people quite comfortably, and proved quite weight saving when split between 3 climbers.

K2 EXPEDITION JACKET

6. Vista Thermal Products of York donated 2 of their expedition jackets to the expedition. These are deep pile jackets which proved very robust and warm. I opted to take the jacket instead of a duvet and a sweater which I think more than compensated for the rather bulky nature of the garment. As I wore the garment on 43 consecutive days without any appreciable signs of wear its robustness was proved beyond doubt. The jacket proved warm enough to wear just with a vest and shirt up to a height of 20,600 ft. This was not true on the windier days when a Goretex jacket was worn over the top.

RATIONS

INTRODUCTION

1. Provision of rations and cash in lieu of rations were arranged through MOD (GST(G & V)). What was readily available largely determined the rations taken, however the experiences of other expeditions were also taken into account. In selecting rations the following criteria were used:

a. To simplify provision rations should be based on standard Service ration packs.

b. Standard packing and boxes should be used throughout.

c. Calorie content should be a minimum of 5000 cals/day for base camp and 4000 cals/day above base camp.

d. Rations should be varied, filling and have a proper balance between carbohydrate, protein and fat.

THE RATIONS

2. Rations were provided as follows:

a. Cash in lieu - for direct purchase of food when travelling and both prior to and after the 'expedition' phase.

b. Standard Service 10 man Composite Ration Packs.

c. Arctic Marine Rations - boxes of 10 x 1 man/day packs.

d. Composite Ration Supplement - See Appendix 1.

e. Rations Purchased Locally - See Appendix 2.

f. Additional rations purchased directly or obtained free in UK - See Appendix 3.

BASE CAMP

3. Facilities for cooking at base camp were good and meals were based on the 10-man pack, the composite supplement and rations purchased in Manali by the expedition porters. The amazing quantity of rice bought by the porters was actually used, quite often instead of the compo potato mixture.

ABOVE BASE CAMP

4. The one man/day arctic marine ration packs proved to be very successful for use above base camp and in particular the drinks pack was excellent. The only real problem found was that above 18000 ft the dehydrated main meal and vegetable would not reconstitute properly as we did not take pressure cookers to the high camps.

5. Of the 4 menus available the curry and chicken supreme were most popular whereas the beef and mutton granules tasted rather wooden. Supplementary rations above base camp included: Complan, Glucodin, Mars Bars, cereals, butter, cheese and the odd tin of smuggled compo peas. The 24 hr packs proved to be very convenient and although the rations were not nearly as good as at base camp they were most adequate.

PACKAGING

6. The standard compo cartons were used throughout and all marked 'EX SOCIAL CLIMBER'; the weight in kg was added. The compo supplement was packed and marked in the same way but the contents of the box were also added.

7. The compo boxes could be easily loaded onto the mules, a mule load comprising:

a. 4 x 10 man packs (4 x 18 kg)

b. 4 x 10 x 1 man/day packs (4 x 17 kg)

8. The compo supplement mostly packed in 10 man boxes and lighter than the standard packs was made up into loads of 80 kg which was usually 6 boxes. The supplementary rations (Appendix 2) were packed in sacks and tied directly to the mules.

PROBLEMS AND SUGGESTIONS

9. Bread. The provision of fresh bread at base camp is much appreciated and future expeditions are recommended to consider how they are to bake bread before they arrive at base camp. Our improvised oven made from a biscuit (GS) tin, stones and sand was not too successful as it was difficult to get it to the correct temperature and to maintain the temperature. With a few pounds of cement we could have made an excellent oven. With the standard primus stoves we could not generate enough heat to get consistent bread and their was no wood available to make a large fire.

10. Shortage. To prevent shortages of items occurring towards the end of the expedition it is a good idea to divide the food up into units, each unit having to last a given number of days, the shortages are then felt throughout the expedition but to a lesser degree.

BULK SUPPLEMENT EX SOCIAL CLIMBER

Item	Qty Lbs	Vocab No	Remarks
Biscuits G S Plain	57½	14019	-
Bread Mix White	36 x 30 oz bags	NAAFI	McDougall Food Retail Pack
Butter Concentrate	24	14063	
Tea Bags	288 bags	NAAFI	
Milk Powder	34	NAAFI	Marvel 16 oz cans
Sugar	34	17661	39 x 14 oz (UT) cans
Breakfast Cereals	400 x 3 3/16 oz	NAAFI	Kellogg's Individual Packets
Cheese Processed	24 x 5¼ oz	NAAFI	Primula Cheese Spread 8 of each type
Lemon/Orange Powder	40	11301 & 11316	50% each variety
Refresh Drink	12 x 1 gall pkts	NAAFI	McDougalls Catering (Three Cooks Ltd) 2 cases
Rise n' Shine	360 x 2⅝ oz	NAAFI	-
Cooking Fat	50	14196	12 cases
Vegetables Cd	20 x A2½ cans	12829 & 12859	Green Beans, Garden Peas
Tomatoes Cd	24 x A2½ cans	12712	
Fruit Cd	30 x A2½ cans	12356, 12358 & 12362	
Pepper	4	16360	402 cans only to be supplied

APPENDIX 2
TO ANNEX C

RATIONS PURCHASED IN MANALI

Rice - 100 kg

Lentils

Local rough sugar

Spices and curries

Onions - 50 kg

Potatoes

Flour

Beans (dried)

APPENDIX 3
TO ANNEX C

ADDITIONAL RATIONS PURCHASED OR DONATED

Complan

Glucodin

Mars Bars

Mr Kipling Cakes - Lost - presumed eaten by ration member prior to departure.

TRANSPORT

(Major J A Campbell)

OUTBOUND

Personnel/Freight	Journey	Dates	Remarks
Advance Party	Lyneham - N Delhi	14/15 May 78	VC10
Veterinary	Heathrow - N Delhi	19/20 May 78	Indian airways 11 hrs late!
Main Party	Lyneham - N Delhi	25/27 May 78	Hercules via Cyprus & Seeb
Main Party	N Delhi - Manali	30/31 May 78	Public Transport 18hrs!
Equipment	N Delhi - Manali	3/4 Jun 78	PSA Truck
All	Manali - Marhi	6 Jun 78	PSI Truck - Local Public Carrier/Jeeps.
All	Marhi - Base Camp	7/13 Jun 78	Walk in 50 miles for equipment.

INBOUND

Advance Party	Base Camp - Manali	15/19 Jul	Walk/Truck
Main Party	"	20/24 Jul	Walk/Mule/Truck
All	Manali - Delhi	29 Jul	Hired coach
All	Dehli - Lyneham	9/12 Aug	C130 via Bahrain, Cyprus.

COMMUNICATIONS AND POSTAL ARRANGEMENTS

(Sergeant A G F Selmes)

Radio Communications. Communications internal and external by HF radio and UHF were planned for the expedition. The HF communications proved to be a political hotcake and was aborted rather than jeopardise the actual expedition. The UHF transceivers only had a range of 3-4 kilometres in line of sight. These were used for inter-base communications with relays on high points to overcome the short range. Generally this arrangement would work but often communications were poor. Originally the UHF was to provide inter-party to base communications only. Runners were employed as a last resort if necessary.

UHF Equipment. Four Pye 'Pocketphone 70' UHF radio telephones (PF2FNB) using 15 watts rechargeable nickel cadmium batteries with a 225 milliwatts consumption (on transmit) were employed. The three operating frequencies were 423.525 MHz, 423.545 MHz and 423.565 MHz. Eighteen batteries were available which proved adequate for the duration of the expedition. Operating temperatures were quoted as 10°C to 50°C by the manufacturers, the dimensions 194mm high x 85mm wide x 36mm deep, weight 27½ ozs fully complete.

Acquisition of Radio Equipment. Initially the Private Sector was approached for the loan of both HF and UHF radios, eventually SIGS 36 (Army), MOD, provided the equipment.

External Communications. This problem was solved by using runners between base camp and Manali. Mail and certain other items were transported, this facility took three to four days on a single outward/inward journey and proved adequate.

Postal Arrangements. The use of BFPO facilities was arranged with the Directorate of Postal and Courier Communications, who directed mail to Delhi and the Indian authorities redirected this to Manali. Some mail was delayed or did not arrive thus the private address of our contact in Manali was used and this proved to be better. Average times for an airmail letter to arrive varied between ten and fourteen days. Mail outwards to UK was similar.

Summary. The loss of HF facilities (external) although inconvenient did not prejudice the expedition. Safety standards were high thus no emergency communications problems arose. Battery charging of UHF equipment was not required and the temperatures did not create any operating problems.

MEDICAL REPORT

BY

Wg Cdr P F Hogg, M.B.B.S, M.R.C.P, RAF

1. As Medical Officer to the Expedition I was responsible for the total care of eighteen men living, working and climbing in a remote, mountainous and hazardous environment for a period of seven weeks. The absence of adequate provision for rapid evacuation and the ever present possibility of altitude sickness added to my problems and largely directed my planning, preparation and choice of drugs and medical equipment.

2. PREPARATION

All members had been required to have a medical examination before leaving the United Kingdom and had been advised to ensure that they were dentally fit. They were instructed to have immunisation against smallpox, typhoid, para typhoid, tetanus, cholera and poliomyelitis brought up to date. Gamma globulin was administered during the week of departure as a preventive measure against infectious hepatitis. Anti malarial prophylaxis with proguanil (paludrine), to cover the periods spent in Delhi, was enforced.

In retrospect our preparations could have been more elaborate. Although I don't approve of complicated "batteries" of tests, perhaps a full blood picture and grouping with antibody screening should have been carried out so that we could have, in an emergency, considered transfusion. I forgot to mention that I did insist on a careful medical history with particular reference to illnesses on previous expeditions and a chest x-ray. In addition to the already mentioned immunisation procedures BCG (against tuberculosis, which is common in Himachal Pradesh), should have been offered to those members who did not react to the appropriate skin test.

3. ACCLIMATISATION AND ALTITUDE SICKNESS

The leisure of our stay in Monali (6,300 ft) and the walk to Base Camp (13,600 ft) - about twelve days for most of us - undoubtedly contributed to the scarcity of serious symptoms of altitude sickness and the absence of pulmonary and cerebral oedema. Once again our experience has shown how fully justified the time and care spent earlier on acclimatisation is in expeditions such as ours.

We all experienced headaches, some severe, and nausea during the earlier acclimatisation climbs in Manali but we had no problems at all during the first day of the walk-in when the high Rohtang Pass (13,250 ft) was crossed. Without exception and irrespective of the degree of physical fitness we were all very conscious of hyperpnoea at work above Advanced Base Camp (15,300 ft). Periodic breathing was experienced by several of us during the nights spent at the assault camps; I was able to observe this disquieting phenomenon in my sleeping companion at Minar assault camp (18,200 ft) in which cycles of six-seven respirations were followed by apnoeic pauses of up to ten seconds. Insomnia at altitude (above 18,000 ft) was the rule and we all found 5mg of diazepam (valium) extremely effective in promoting sleep without producing a 'hang-over' the following morning.

4. HEALTH AND MORBIDITY

The insistence on high safety standards and the maintenance of morale throughout the period spent in the mountains undoubtedly contributed to our lack of serious illness and injury. My colleagues were skilled mountaineers and highly experienced in the arts of survival and emergency care. I had a lot to learn from them! A reasonable standard of medical hygiene was preached and practised in all our camps resulting in the absence of any attributable illness. Despite adequate acclimatisation and calorie intake we all lost weight, on average about a stone. Calorie expenditure during an average climbing day was probably in the region of 6,000 - 7,000 K. Cals, and even resting at Advanced Base Camp was probably accompanied by the expenditure of 3,000 - 3,500 K. Cals. Our one-man 24 hour arctic packs contained 4,500 K. Cals.

a. Gastro-Intestine Upsets. We had no cases of gastro-enteritis during the walk-in and at Base Camp and above, when we ate Service rations and drank melted snow and ice. Our problems occurred in Delhi and Manali! On the advice of Dr Dermot Grene, Medical Officer to the British High Commissioner in Delhi, whose local experience was considerable, eight of us took "streptotriad" (combination of sulphadiazine, sulphadimidine, sulphathiazole and streptomycin) in a dose of one tablet twice daily from the time we left Delhi to our arrival at Base Camp. Only one of us experienced mild diarrhoea in Manali. One member of this group developed a photo-sensitive rash after ten days and had to stop taking the tablets. Of the five remainder UK based members who did not take streptotriad, three developed gastro-enteritis with severe diarrhoea, two in Manali and one in Delhi. All three responded quickly to a "clear fluid/starvation" regime and loperamide hydrochloride (imodium) by mouth and did not require parenteral rehydration.

It would thus appear that the local practice of giving streptotriad as prophylaxis against gastro-enteritis is highly effective whatever its theoretical disadvantages. Although the numbers involved in our small group make the drawing of firm conclusions unwise this practice should be considered for future similar expeditions.

b. Respiratory Tract Infections. We had four cases of malaise associated with productive cough, muco-purulent sputum and negative clinical findings during the approach march to Base Camp. All four were treated with co-trimoxazole (septrin) in full dosage for 6 days and all four responded promptly and did not relapse.

I had one case of follicular tonsillitis at Base Camp. There were no accompanying features to suggest a diagnosis of infectious mononucleosis (glandular fever) and I treated him with a six days course of ampicillin (my only available oral preparation of penicillin) in full dosage. Thankfully he responded quickly to treatment, did not develop a rash and went on the first rece of M6 seven days later!

c. Soft Tissue Infection. Our deputy leader developed a pulp space abscess of the terminal segment of his left thumb at Advanced Base Camp which required incision and drainage. As there was considerable oedema extending to the base of the thumb I decided against local anaesthesia and performed the procedure using intravenous ketamine. I had several enthusiastic assistants and onlookers! Complete anaesthesia was induced within 30 seconds of the slow injection of 150 mg of ketamine with maintenance of normal respiration and a normal pharyngeal reflex. He had previously fasted for 4 hours. There was an expected short lived rise of B.P. (max 180/100 at 15 mins) falling to normal levels of 135/75 at 30 mins.

The recovery phase lasted for about 90 mins and was accompanied by vomiting and spontaneous upper limb and facial movements. There were no "emergence" phenomena (I had previously warned my audience and they were by now suitably quiet and sympathetic!). On regaining consciousness he complained of mild headache and reported being totally unaware of the procedure. He described rather vivid dreams (mountains in red!) which are often reported by patients after ketamine anaesthesia.

My patient continued with ampicillin by mouth (started the day before) in full dosage for a period of six days. Although small amounts of pus continued to drain from the incision he felt well and went on to climb M6 three days later. Twelve days following the operation he developed widespread tiny cutaneous pustules and began to feel mildly unwell. Fearing the possibility of a penicillin resistant staphylococcal infection with resulting septicaemia I decided to send him back to Delhi accompanied on foot initially to Manali. On arrival at the British High Commission Hospital in Delhi 4 days later he was feeling better and the clinical signs were unchanged. Swabs from several of the pustules grew staphylococcus aureus sensitive to penicillin. He was treated with erythromycin by mouth and the lesions resolved quickly and did not recur.

d. Cold Weather Injury, Sunburn and Snowblindness. We had no cases of cold weather injury and only one case of mild snowblindness, when one member failed to use eye protection on Minar for a period of six hours. He was treated with amethocaine eye drops and eye cover and recovered completely after 24 hours.

We demonstrated yet again that there is no substitute for slow acclimatisation to the sun and we had no cases of sunburn. Uvistat cream and spectroban lotion were found to be most useful and our supplies were adequate.

e. Injuries. We had one case only of potentially serious injury when one of our lead climbers fell twenty feet on to a ledge in a deep crevasse landing on his thorax. When seen four hours later he was complaining of some left sided chest pain but otherwise felt well. Apart from some minor superficial bruises and abrasions the only abnormal finding was tenderness over the left 4th - 5th ribs anterio-laterally. Chest expansion was normal and there were no abnormal findings on percussion or auscultation of his chest. I observed and rested him at Base Camp over three days. He was symptomless on the fourth day and climbed M6 two days later. A chest radiograph obtained in Delhi on our return showed no fractured ribs and normal lung fields.

Another member developed severe (L) sided neck pain radiating into the shoulder during the approach march. Although his symptoms were much relieved by rest, analgesics (distalgesic) and local steroid injection (depot-medrone), they recurred on any activity. Sadly he was much restricted in his activities in the mountains throughout the period of the expedition. Although there was no relevant past history radiographs of his neck on return to the U.K showed considerable spondylitic changes in the mid and lower cervical regions.

Two members developed Achilles para-tendinitis after their first days carry to Advanced Base Camp. Their symptoms and clinical findings responded to rest and simple analgesics after three days and they subsequently carried and climbed without recurrence.

Three of the team developed blisters on their feet during the approach march. Blisters always need careful management on any expedition such as ours; they were punctured and drained under aseptic conditions and dressed with elastoplast. Recovery was rapid and complete in every case and minimal disability ensued.

5. LOCAL MEDICINE

A number of the indigenous population were seen and treated during the approach marches. These consisted mainly of the average conditions seen in General Practice anywhere in the world; respiratory tract infections, finding problems in infants, unexplained upper abdominal pain, etc. One 15 years old shepherd was seen with an acutely inflamed, swollen and painful testicle. A diagnosis of epididymo-orchitis was made and treatment with co-trimoxazole (septrin) introduced. Rapid recovery occurred and 48 hours later the patient was well.

This case caused some anxiety as the possibility of a torsion of the testis can never be confidently excluded in these cases.

In general, my 'clinics' were busy and withstanding the high incidence of tuberculosis in the population nothing very dramatic or uncommon was seen or treated.

Kangra Shepherds.

These are a nomadic people who live in Kangra, an area of Himachal Pradesh. In the summer they journey some 200 Kilometres North with their flocks of goats and sheep to the valleys of Lahaul and Spiti. The men go alone. In winter, they journey a similar distance South to the Punjab. Their migration is to ensure plentiful grazing for their flocks.

Some 23 of these shepherds, ranging in age from 15 years to 78 years were examined by me and were found to have the following features in common:

1. They were all thin but well nourished.
2. They had plethoric mucous membranes.
3. They all smoked heavily.
4. Their teeth were heavily stained but free of caries.
5. A great deal of pyorrhoea was common.
6. Many of them had what looked like pityriasis versicolor.
7. None of them had evidence of peripheral arterial disease.
8. An outstanding feature was the presence of a low blood pressure in all of them. The highest recorded systolic pressure was 115 and the highest diastolic pressure 80 mms. There was certainly no correlation between advancing age and higher levels of blood pressure, as is the case in the peoples of the western world. One 78 year old, who was fit and well, had a blood pressure of 80/50, and another 64 year old a B.P. of 100/60.

   Other studies have pointed out the low incidence of coronary artery disease in people living at altitude, and one contributary factor to this low incidence might well be a low blood pressure.
9. Their diet was the usual one of those peoples in this part of the third world and consisted of rice, chappatis, lentils, onions, potatoes, garlic and meat on 2-3 occasions a week. They drank goats milk and very sweetened tea.

6. MEDICAL EQUIPMENT AND DRUGS

The equipment and drugs listed in Appendix 1 were provided and packed by the staffs of the Medical Equipment Depot at Ludgershall. My choice of supplies was based on experience of many previous Himalayan expeditions. Where possible, drugs were chosen which would serve two or even more purposes. Although the total weight of the equipment, which included the weight of the containers and of the oxygen was 320 lbs (ie 5 mule loads!), my equipment was certainly less than others have carried.

The containers used were of two types, all purpose fibre board boxes and Service 'haversack patrol medical packs'. The former were extremely strong and robust and were in excellent condition on our return to the U.K. The 'haversack patrol' packs fared far less well and were all beyond repair and in poor condition on our return. Three of these containers were irretrievably damaged and most of their contents lost or damaged during the descent to the wire crossing in the dark and during heavy rain at the end of the first day of the walk out from Base Camp.

The climbers personal medical kits with their comprehensive range of drugs and topical preparations were very well received by all members of the team, who had been instructed by me on their use on several different occasions, both before and after leaving England. A minority felt that the packs were too bulky and a few felt that the inclusion of an antacid in a suitable form would have been an advantage.

Once Advanced Base Camp was established I was faced with the considerable logistic problem imposed by an expedition such as ours. At any one moment in time several members might be at or climbing from one of the high assault camps whilst the remainder would be divided between Advanced and Base Camps. In an effort to solve the problem, I decided to keep the surgical, anaesthetic and resuscitation equipment, one oxygen set and the stretcher at Advanced Base Camp and divided the contents of the stock drug pack between the two base camps. In addition, a separate stock drug pack containing replenishments for the personal kits was kept at Base Camp from which members of the team 'helped themselves'.

It is easy in retrospect to accuse oneself of having taken too much in the way of equipment and drugs. As a novice to ex edtion medicine I erred on the side of taking too much. However I felt I was reasonably equipped to deal with most eventualities. Thankfully I had no serious illness or injury to deal with but I was disappointed in not having had the opportunity of trying my hand out at some dentistry! One group of drugs I did miss were the non-steroidal anti-inflammatory agents such as brufen or naprosyn. I should have also taken some gentamycin and clindamycin in parenteral form in case I was involved in the non-operative treatment of appendicitis. Early on in my deliberations I decided not to frighten myself by enquiring as to how many of my companions still possessed their appendices!

ACKNOWLEDGEMENTS

1. Dr J S Wilson (A.V.M, RAF Rtd) of the RAF Institute of Community Medicine, for helpful advice regarding the preparation and care of expedition personnel.

2. Sqn Ldr Tony Boden, of the Defence Medical Equipment Depot at Ludgershall, and all his staffs, in particular Mr Mungo Malloch, Chief Pharmacist, and Mr Tom Travers, Officer in Charge of Wharehousing, for their helpful advice and kind forbearance regarding the choice, provision and packing of our medical supplies.

3. Sergeant Richard Furnish, Environmental Health Technician, RAF St Athan, for much helpful advice and instruction regarding the essential features of field and base camp hygiene.

4. Dr Dermot Grene of the British High Commission, New Delhi, for material and moral support during our stay in Delhi, and for his kindness and care concerning two of the team who were his patients.

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APPENDIX:

1. Medical Equipment and Drugs.

MEDICAL EQUIPMENT AND DRUGS

DIAGNOSTIC KIT + PERSONAL MEDICAL KITS X 6

Weight 18 lbs (8.2 Kgs)
Dimensions: 14" x 14 " x 8"
(35 x 35 x 20 cms)

CONTENTS OF DIAGNOSTIC KIT

Serial No	Item	Qty
1	Stethoscope, Littman	1
2	Sphygmomanometer, Aneroid	1
3	Diagnostic Set, Keeler	1
4	Spatula Wooden, Box	1
5	Scissors, Sharp pointer 5"	1
6	Thermometer, low temp	2
7	Thermometer, clinical	2
8	Eye Loup	1
9	Pen torch, disposable	6
10	Multistix strips, bott	1
11	Batteries (for Serial No 3)	4
12	Bulbs (for Serial No 3)	2

CLIMBERS PERSONAL KITS - QTY 16

Codeine Phosphate 15 mgm tablets x 10
Imodium Tablets x 20
Paracetamol Tablets x 12
Valium 5 mgm Tablets x 20
Dequadin Lozenges x 1 Tube
Water Sterilizing Tablets x 100
Otrivine Nasal Spray 0.1% x 1
Sun Screen and Insect Repellant Cream x 1 Tube
Uvistat Cream x 1 Tube
Spectroban x 1 Bottle
Lipsalve (Uvistat) x 1 Stick
Brulidine Ointment x 1 Tube
Lasonil Cream x 1 Tube
Tineafax Powder x 1 Tin
Amethocaine Minims x 2
Anusol Suppositories x 4
Safety Pins x 2
Crepe Bandage 3" x 1
Melolin Dressings (4" x 4") x 2
Elastoplast Assortment in Envelope x 1
Papaveretum Syringe Ampoule x 1
Multivite Tablets x 20
Triangular Bandage x 1

DRESSING PACK

Weight: 55 lbs (25 Kgms)
Dimensions: 19" x 24" x 16½"
(48 x 61 x 42 cms)

CONTENTS

Serial No	Item	Qty
1	Shears, Plaster of Paris	1
2	Elastoplast, Doctor's Sets	3
3	Bandages Crepe 3"	24
4	Melonin Dressing 4" x 4"	40
5	Melonin Dressing 2" x 2"	20
6	Elastoplast Dressing Strip 3" x 1 yard	10
7	Elastoplast Adhesive Bandage 3"	6
8	Carbonet Dressings, Tins	6
9	Elastoplast, Assorted Dressings in Envelopes	60
10	"Sleek" 7.5 cm Rolls	3
11	Micropore 1.25 cm, Rolls	12
12	Micropore 2.5 cm Rolls	6
13	Pins Safety, Tins	6
14	Cotton Wool, Rolls	3
15	Lint, absorbent, Rolls	2
16	Antiseptic Wipes	240
17	Eye Pads	12
18	Swabs, Gauze 4" x 4"	100
19	Bandage Tubular, Size 01	1
20	Bandage Tubular, Size 34	1
21	Bandage Tubular, Size 78	1
22	Applicator for Serial 19	1
23	Applicator for Serial 20	1
24	Applicator for Serial 21	1
25	Bandage P.O.P. Carton	1
26	Bandage P.O.P. Carton	1
27	Bandage P.O.P. Carton	1
28	Gauze, Absorbent, Rolls	24

RESUSCITATION, INTRAVENOUS AND ANAESTHETIC EQUIPMENT

Weight: 60 lbs (27.2 Kgms)
Dimensions: 19" x 24" x 16.5" (48 x 61 x 42 cms)

CONTENTS

Serial No	Item	Qty
1	Resuscitator, Laerdal, Resusci-Bag	1
2	Macons Extractors	2
3	Syringe, Disp 10 ml	10
4	Needles, Disp	20
5	Medicuts 16 SWG	4
6	Scalpel Disposable	2
7	Laryngoscope	1
8	Batteries (for Serial No 7)	2
9	Bulbs (for Serial No 7)	2
10	Bandage Crepe 3"	3
11	Antiseptic Skin Swabs	30
12	Steristrip Wound Closures $\frac{1}{4}$", Pkt	1
13	Swabs, Gauze, Regal	100
14	Micropore Tape, 2.5 cms, Roll	1
15	Giving Sets, IV	4
16	Butterfly Needles	8
17	Trocar and Cannula Sets, Thoraic, Argyll	2
18	Malecot Catherters	2
19	Chest Valve, Heimlich	1
20	Rubber Tubing and Connector for Serial 19	A/R
21	Rheomacrodex Soln. 500 mls in Saline Bottle	3
22	Hartmann's Solution	6
23	Lignocaine 2% plains, 20 ml.	1
24	Lignocaine 2% with Adrendine, 20 ml vial	1
25	Ketamine 100 mgm inj	5
26	Syringe, Cartridge, Dental	1
27	Needles for Serial No 26, Packet	1

SURGICAL KIT

Weight: 27 lbs (12.5 Kgms)
Dimensions: 9" x 24" x 16"
(23 x 61 x 41 cms)

CONTENTS

Serial No	Item	Qty
1	Scissors 7" SP	1
2	Scissors 7" Blunt Point	1
3	Forceps Haemostat 6"	2
4	Forceps Dissecting, toothed 5"	1
5	Forceps Dissecting, Plain, 5"	1
6	Forceps Needle Holding	1
7	Handle, scalpel No 3	1
8	Blades, scalpel No 11	12
9	Suture, catgut with needles	12
10	Suture, silk with needles	12
11	Bags, Urine	3
12	Catheter, urethral,Foley 20FG	1
13	Catheter, urethral, Foley 20FG	1
14	Spigots	2
15	Tourniquet	1
16	Protoscope, disposable	1
17	Tube, nasogastric	1
18	Bur Holse kit neurosurgical	1
19	Scissors 5" SP	4
20	Collars, cervical, padded polythene, adjustable	2
21	Gloves, Surgical, Size 7½"	3
22	Gloves 'Disposagloves'	20
23	Forceps, Dental, upper	1
24	Forceps, Dental, lower	1
25	Excavator, Dental,large	1
26	Spatula, Dental	1
27	Mirror, Dental	1
28	Forceps, Dental	1
29	Aluminium Crown Forms Pkg	1
30	Dressing Packs	3

BOX NO 1 Weight: 19 lbs
(8.7 Kgms)

BOX NO 2 Weight 24 lbs
(10.9 Kgms)

Dimensions 1 &2 14" x 14" x 8"
(35 x 35 20 cms)

STOCK DRUG PACK

Serial No	Item	Qty
1	Adrenalin, Injection 1:1000ampoules	12
2	Ampicillin Capsules 250 mgm	400
3	Aminophylline Inj. ampoules	12
4	Oxytetracycline Tabs. 250 mgm	400
5	Septrin Tablets	200
6	Triplopen injection vials	30
7	Ampicillin inj. 500 mgm	10
8	Flagyl Tabs. 200 mgm	100
9	Paludrine Tabs 100 mgm	1500
10	Chloroquine Tabs	50
11	Alcopar Sachets 5G	25
12	Tinaderm Cream, Tubes	4
13	Digoxin Tabs 0.25 mgm	50
14	Digoxin 2ml inj amps	10
15	Frusemide Tabs, 40 mgm	100
16	Frusemide inj. 20 mgm	20
17	Ronicol tabs	100
18	Ventolin tabs, 4 mgm	100
19	Ventolin inhaler	2
20	Solprin Tablets	300
21	Paracetamol Tabs	300
22	Distalgesic Tabs	200
23	Codeine Phos. Tabs 15 mgm	300
24	Imodium Capsules	500
25	Dulcolax Tabs	200
26	Anusol Suppositories	36
27	Anusol Cream, Tubes	4
28	Mag. Triseil Tabs	500
29	Stemetil Tabs 5 mgm	50
30	Stemetil inj 12.5 mgm	10
31	Diazepam tabs. 5mgm	200
32	Diazepam inj 10 mgm	10
33	Largactil Tabs 50 mgm	50
34	Kemadrin Tabs 5 mgm	25
35	Phenobarbitone tabs, 30 mgm	100
36	Phenobarbitone inj. 200 mgm	5
37	Chloramphenicol Eye Ointment 1% 4G Tubes	8
38	Mydrilate Minims 1%	20
39	Chloramphenicol Minims 0.5%	40
40	Amothocaine Minims	40
41	Betamethasone Eye/Ear/Nose Drops 5ml Bot	4
42	Fluorescein Minims	20
43	Multivitamin Tabs	500
44	Multistix Strips, Bottle	1
45	Dexamethesone/betamethasone Inj 4 mgm amps	15
46	Dexamethasone/betamethasone tabs, 0.5 mgm	200
47	Piriton Inj 10 mgm	5
48	Piriton tabs 4 mgm	50
49	Water for Injection 2 ml amps	40
50	Lignocaine Plain 1%, 5 ml vial	5

CONTINUATION OF STOCK DRUG PACK

Serial No	Item	Qty
51	Lignocaine with Adrenaline injection cartridges	50
52	Lignocaine Plain Injection Cartridges	50
53	Water sterilizing tablets	2400
54	Mercurodrome Crystals 25G Bottle	1
55	Sun Screen and Insect Repellant Cream, tubes	48
56	Caladryl Cream, tubes	6
57	Tineafax Powder 25G Tin	36
58	Eurax Cream, tubes	6
59	Brulidine Cream, tubes	24
60	Zinc and Caster Oil Cream, 112G Jar	8
61	Lasonil Cream	24
62	Otrivine Nasal Spray	24
63	Uvistat Cream, tubes	24
64	Spectroban Bottles	24
65	Brompton Cough Lozenges	500
66	Dequadin Lozenges, tubes	24
67	Lipsalve, Uvistat sticks	50
68	Morphine inj., 15 mgm amps	22
69	Papaveretum Inj., 30 mgm syringe ampoules	16
70	Depot Medrone 5 mls	2
71	Lorexane x 3 Powder and Lotion	3
	x 3	3
72	Timodine Cream	6

STRETCHER, SEMI-RIGID

Weight: 17 lbs (7.8 Kgs)
Dimensions: 46" x 39" (117 x 99 cms)

CONTENTS

Serial No	Item	Qty
1	Stretcher, Semi-Rigid, Folding	1

PERSONAL KITS X 10 + MISCELLANEOUS

Weight: 14 lbs (6.4 kgs)
Dimensions: 14" x 14" x 8" (35 x 35 x 20 cms)

CONTENTS

Item	Qty
Dressing, Eye, Standard	2
Eye Patches	2
Splint Inflatable Arm	2
Splint Inflatable Leg	2
Bags, Dispensing, Polythene	100

RESUSCITATOR AND INHALATOR X 2

Weight: 43 lbs (19.5 Kgs)
Dimensions: 24" x 10½" x 10" (61 x 27 x 2 cms)

CONTENTS

Serial No	Item	Qty
1	Resuscitator and Inhalator RAF Pattern, complete with 750 litre O_2 cylinder, tubing and facemasks.	1

PHOTOGRAPHY

(Sergeant G J Drinkwater)

The aim of the photographer was to record the expedition in slide form and black and white prints. From these reproduced sets of slides will be given to each member and black and white prints will be available for the report, as well as for the individuals.

Equipment

The following equipment was taken and used on the expedition:

- 25 mm Fujica ST 605 SLR (55mm lens)
- 35 mm Rollei 35B
- 135 mm Telephoto lens
- X3 Converter lens
- 35 mm Wideangle lens
- Extension Tube Set
- Flash Unit
- Tripod
- Skylight or UV filter
- 85 filter

Film

The film was obtained through the RAF and will be processed, developed and duplicated by JARIC.

Film Taken: 65 rolls; 20 exposure Ektacrome
High speed colour slide film (Tungsten 3200K)
Tungsten film required the 85 filter for daylight photography

65 rolls; 35mm Ilford FP4 (Black and white prints)
This film was mainly for the expedition report

Kodak 25 ASA colour slide film was taken by individuals and bought at a reduced price by the expedition.

VETERINARY RESEARCH

(Mr Hugh Morris)

The primary objectives of the veterinarian accompanying the expedition, were twofold. Namely:

a. As a participant in the climbing activities of the expedition, and

b. To undertake an ecological study of liver fluke infection (Fascioliasis) in the Beas and Chandra river valleys.

The study was limited to the disease in the sheep and goat population; and, although enquiries were made, no in-depth study was undertaken of the disease in the cattle, buffalo or wild herbivore population of the area.

The study was accomplished by means of collecting the intermediate host - the snail Limnea truncatula - from sites in the grazing area, ie sites of indiginous grazing areas and sites along the nomadic grazing trail. Other snails associated with these sites were collected for further study as one of them, a Limnea pereger type, was found to contain cercariae (the infective larval stage of the Fasciola parasite). Sheep faeces were collected at the sites and at the final grazings of the nomadic flocks in order to determine the degree of infection in the primary host.

The slaughtering areas at Manali were visited on numerous occasions to examine the livers of slaughtered sheep and goats.

In order to establish the effect of the disease and other related factors upon the flock rearing and management in this area, shepherds were questioned (through an interpreter) whenever possible. To make communicating with the shepherds easier I held numerous surgeries at base camp, and diagnosed and treated a variety of diseases in sheep, goats, dogs and horses. I contacted veterinarians throughout the Beas River Valley area and discussed local disease problems and husbandry practices.

Preliminary findings in the field suggest that Fascioliasis is prevalent in its chronic form in both the indigenous and nomadic sheep and goat population of this area. There is no evidence to suggest the presence of an intermediate host in the Chandra River Valley East of Tandi, and therefore no facility for the completion of the life cycle exists here. However, it was established that ideal conditions frequently exist in the Beas River Valley for the completion of the life cycle.

It would appear that Fascioliasis is a potential source of economic loss to this agricultural community through the influence of chronic desease upon the productivity of the flocks and as a result of death from acute disease in the more immediate post monsoon period.

It may therefore be postulated that treatment of the annual influx of 95,000 sheep and goats, with a modern flukicide, prior to their entry into the Chandra Valley, would effectively curtail the development of the disease and would therefore enhance the productivity of the flocks during their stay in that area.

The report on the veterinary research is a major work in itself and it is not possible to reproduce the extensive findings within this report.

ORNITHOLOGY

(Flt Lt Mike Parsons)

The aim of the study was to identify the birds in the Samundar Tapu Shigu area and the Chandra valley. Birds seen in other areas are also listed.

A total of 89 species were seen in the following areas:

Dehli and the Indian Plain	-	33 species
Manali area	-	29 species
Chandra valley	-	38 species
Glacier area	-	15 species

DEHLI AND THE INDIAN PLAIN (28/9 May and 29 Jul - 7 Aug)

Bulbul - red vented
- red whiskered
Black stork
Black vulture
Crow - jungle
- house
Cinereous vulture
Crested swift
Dark kite
Egret - little
- cattle
Hoopoe
House swift
Large Coucal
Myna - bank
- common
- pied
Peafowl
Paddyfield pippit
Pond Heron
Parakeet - rose ringed
- blossom headed
Robin Dayal
Red wattled lapwing
Purple sunbird
Shrike - rufous backed
- bay backed
Sparrow - house
- tree
Small pied Kingfisher
Small yellow naped woodpecker
Sand martin
White eye

MANALI AREA (30 May - 6 Jun and 22-29 Jul)

The area covered was between Kulu (4400 ft) and Marhi (11,200 ft)

Bulbul - gray
- white checked
Bonelli's Eagle
Crow - jungle
- house
Drongo - black
- ashy
Dipper - brown
Dark kite
Eurasion blackbird
Eurasian cuckoo
Flycatcher - slaty blue
- little pied
Hoopoe
Himalayan tree creeper
Himalayan griffon
Kestrel - (eurasion probably)
Myna - common
Peregrine falcon
Sparrow - house
- tree
- cinnamon
Sand Martin
Swift - large white rumped
Tickells' leaf warbler
Tit - green backed
- sultan
- gray
White capped river chat
White breasted Kingfisher

CHANDRA VALLEY (7-12 Jun 16-19 Jul)

7-12 Jun

Blue rock thrush
Brown dipper
Chukor partridge
Golden eagle
Himalayan griffon
Horned lark
Rock bunting
Redstart - plumbeous
- black
Ruddy Shellduck
Snow pigeon
Vulture - bearded
- Egyptian
Yellow billed choughs
Wagtail - yellow headed
- pied
White capped river chat

17-21 Jul

Cuckoo (young being fed by redstart)
Chaffinch
Golden eagle
Goldcrest
Griffon - Indian
- Himalayan
Eurasian blackbird
Eurasian Kestrel
Himalayan goldfinch
Horned lark
Little bunting
Redstart - plumbeous
- black
Pigeon - hill
- snow
Vulture bearded
Yellow billed chough
Wagtail - yellow headed
- pied
White capped river chat
White breasted dipper

GLACIER AREA (13 Jun - 17 Jul)

This was the area around base camp (13,600 ft) and above

Brants' mountain finch
Crag martin
Horned lark
Himalayan griffon
Golden Eagle
Merganser - deconposed body on glacier (14,500 ft)
Snow pigeon
Snow cock - Himalayan (at 16,000 ft on CB52)
Redstart - black
- guldenstadts' - (at ABC 15,500 ft)
Raven - (at 13,400 ft)
Yellow billed chough (at 18,200 ft)
Yellow headed wagtail
Upland pippit - dead at base camp
Ruddy shellduck

METEOROLOGY

(Flt Lt Mike Parsons)

The aim of the meteorological study was to observe the weather at base camp and to record the maximum and minimum daily temperatures. The weather during the period at base camp was excellent with only three climbing days being lost out of 38. During July, the monsoon had a slight effect in that there was usually a build up of cloud in the afternoon, and occasionally rain showers.

The general daily pattern of weather at base camp was:

> Light cloud quickly clearing at dawn, clear and sunny during the day with occasional clouds, a cool breeze blowing off the glacier. The breeze would die down at sunset as clouds built up and occasionally there were showers.

STATISTICS Period of observation 13 June - 20 July 78

TEMPERATURES		JUNE	JULY	OVERALL
Day	Maximum	76°F	77°F	77°F
	Minimum	65°F	65°F	65°F
	Mean	69.7°F	70.5°F	70.3°F
Night	Maximum	45°F	45°F	45°F
	Minimum	31°F	32°F	31°F
	Mean	38.7°F	41°F	39.7°F
Complete cloud cover (day)		1	3 (9th 13/18th)	4
Heavy rain		1	1	2
Showers		1	8 (3/4/5/7/9/15-17/19)	9

SNOW CONDITIONS

During the whole period of the expedition the snow was melting from the mountains and valleys. At base camp the snow line was at (15,000 ft) on arrival and at about 17,000 ft when we left. There was snow at advanced base camp (15,000 ft) early in the expedition but this had receded 2 miles and 1,700 ft up the silver glacier by July 20th.

PUBLICITY

The expedition publicity was handled by the Command PRO in the UK and by whoever was on hand while in India. Prior to the expedition a booklet for circulation within the Service was produced and details of the expedition were published in the RAF news and DCIs.

After we had climbed Minar a press release was sent and details of the expeditions' success were given as follows:

RADIO

All India Radio (heard by expedition members)
Radio 2 (UK)

NEWSPAPERS

Various Indian Papers
Daily Telegraph) UK
The Sun)

On the 3 August we held a press conference in Delhi and as a result of this articles appeared in the following Indian papers.

NATIONAL HERALD (DELHI)
THE HINDUSTAN TIMES
THE STATESMAN (DELHI)
THE TIMES OF INDIA
MORNING ECHO (DELHI)
THE TRIBUNE (CHANDIGARH)
PATRIOT
EVENING NEWS
THE INDIAN EXPRESS

On our return to Lyneham a press conference was held and articles appeared in a number of UK papers as well as in the 'Climber and Rambler' magazine. An extensive article was published in the RAF News and RAFMA Journal (1979).

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Sinclair
Kodak Ltd
Joe Brown Ltd
Clog (Wales) Ltd
Mountain Equipment Ltd
Bill Marshall (Aberdeen)
The Sporting Life (Tee-shirts, books)
Skyline Prestige Ltd (pressure cooker)
Veterinary Drug Co (Crewe)
Glaxo Ltd
Mr Kipling Cakes
Chance Pilkington
Mars Ltd
Vista Products
Gore Associates Ltd (Gore-Tex)

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