UNIVERSITY of CAMBRIDGE

A photographic album of the
1972 EAST GREENLAND EXPEDITION
from the Engineering Department
of Cambridge University

CUED Special Project Report No.3
1974

Department of Engineering

(*38) : 91(08)[1972]

A PHOTOGRAPHIC ALBUM OF THE 1972 EAST GREENLAND EXPEDITION FROM CAMBRIDGE UNIVERSITY

Readers should note that most of the material required for the 1972 expedition technical reports was left at the Roslin Tundra Camp to await arrival of a helicopter. The helicopter never came and it was only in September 1973 that all film, specimens and equipment were brought safely back to the U.K. This is the reason for late publication of this, and other future reports, giving details of the 1972 expedition, a preliminary report of which was distributed in December 1972.

K. J. Miller
TRINITY COLLEGE
Cambridge March 1973

A LIST OF PHOTOGRAPHS

1. BAHMAN YAMINI
2. MARK HANCOCK
3. JOHN BURGESS
4. JOHN THOROGOOD
5. KEITH ROSE
6. PETER CHAPLIN
7. RICHARD CARTER
8. ROGER CAMRASS
9. PETER BARRON
10. TONY WAY
11. PETER MacKEITH
12. DAVID DREWRY
13. DAVID MATTHEWS
14. KEITH MILLER
15. MESTERS VIG STATION
16. A RIVER CROSSING
17. THE SORTE HJORNE HUT
18. THE BIG STREAM
19. MUSK-OX
20. ARCTIC HARE
21. NEARING THE CORNER
22. MELLEM COL
23. THE ACCIDENT
24. THE GLACIER SNOUT AIR DROP
25. DAVE AT ROSLIN GLACIER BASE CAMP
26. THE MESS TENT
27. THE HELICOPTER LIFT
28. A PLANE TABLE STATION
29. A MOULIN
30. THE RADIO ECHO SLEDGE
31. ALL SYSTEMS GO
32. THE 1970 SLEDGE
33. THE STEAM BOILER
34. THE THERMAL PROBE
35. THE METEOROLOGICAL STATION
36. ASCENT OF DALMORE JUNIOR
37. THE SUMMIT OF DALMORE JUNIOR
38. BOULDER PEAK SUMMIT
39. HOMEWARD BOUND

1. BAHMAN YAMINI

As the photograph suggests, Bahman was one of the most cheerful members of the group. The photograph was taken during his recovery from a most unlucky fall into a concealed crevasse containing a melt stream. This accident occurred during the 5 day walk-in from the coast when the party was only a few hours away from Tundra Camp at the snout of the Roslin Glacier, and served to remind all members to treat the area with great circumspection.

Bahman, 3rd year engineering student from St. Catherines College, acted as Medical Officer to the expedition and a more than adequate assistant in any other task that he insisted on doing. Fortunately no member required surgery but I am prepared to accept that his performance would have been applauded by all, except possibly one.

2. MARK HANCOCK

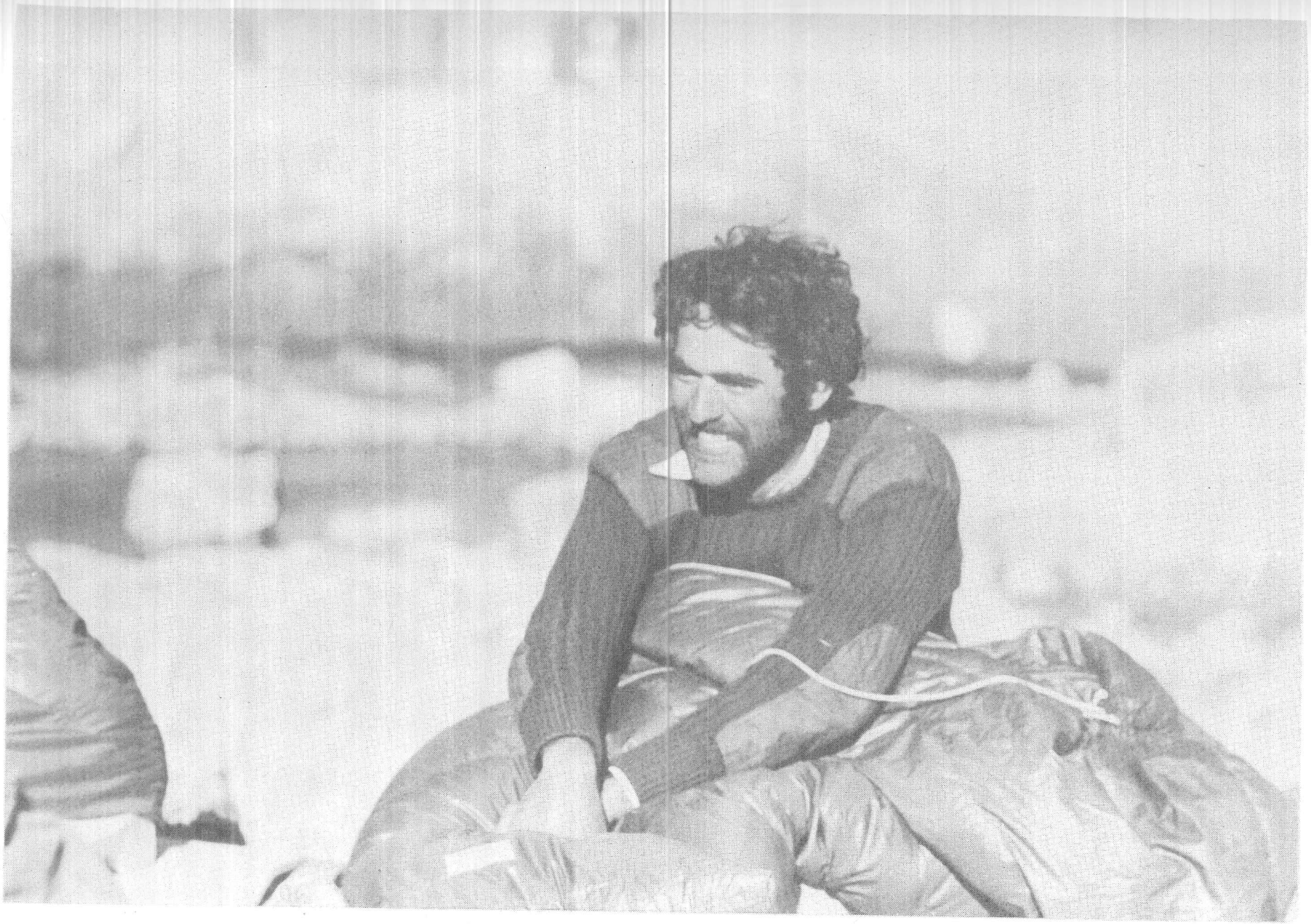
This photograph taken at the close of the expedition at Roslin Tundra Camp shows Mark with his prize find, the horns of a musk ox. Mark was another member who could turn his hand to any duty be it as cook, or acting -huskie for the radio sledge or recording scientific data of the various projects. Always cheerful and never reproaching when his Christian views were forgotten by others during late evening "story-telling" time. At times of difficulty, such as the crossing of streams he could always be relied upon to provide two helping hands.

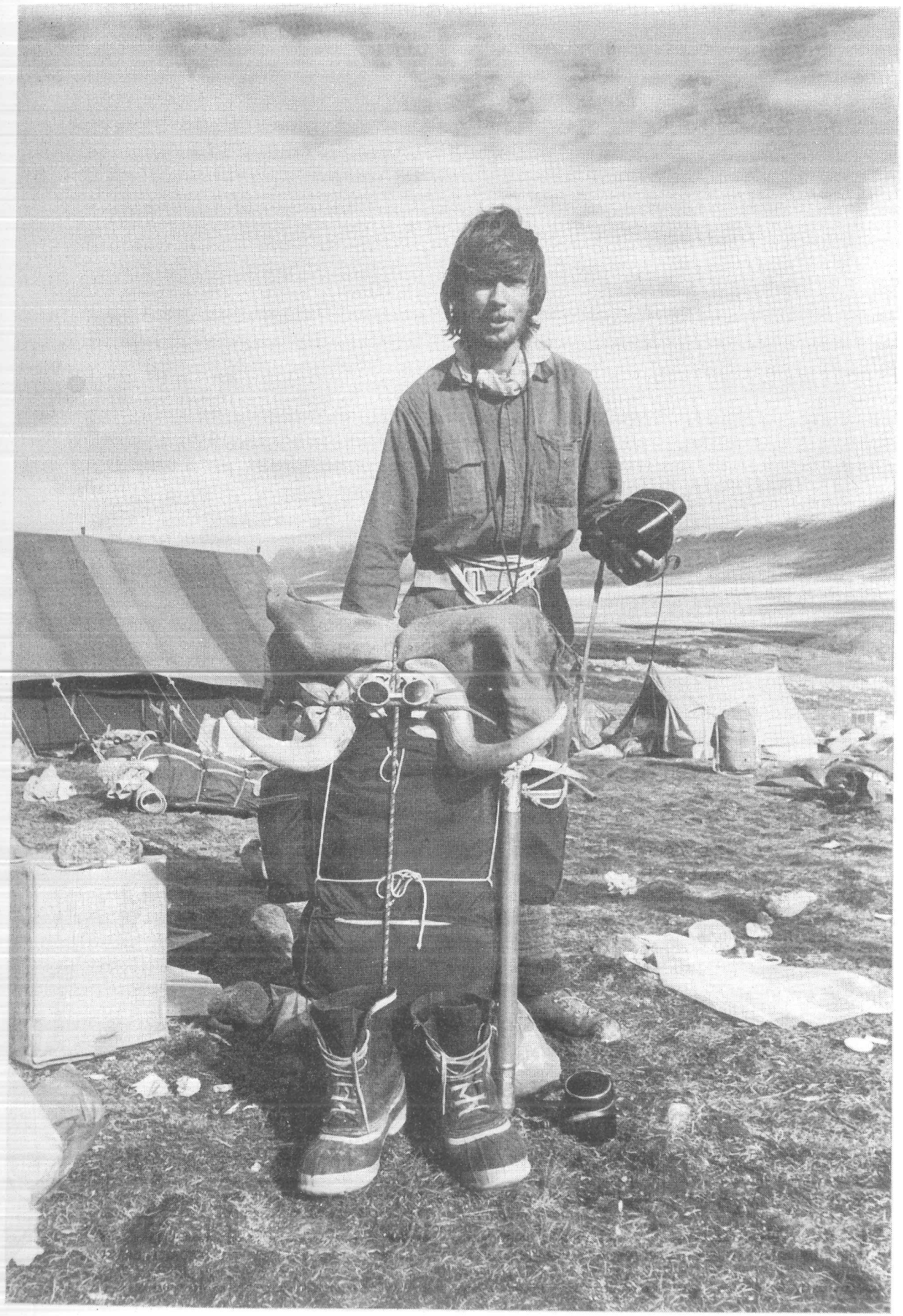
Mark, a third year engineer from Churchill College acted as Expedition Secretary.

3. JOHN D. BURGESS

Beneath the goggles, and the quiet and somewhat quizzical stare, lies the face of a man seldom without a grin. John B (there were three John's on the expedition) had several attributes, a quiet strength, a willingness to try anything once, and an undefineable element which permitted all to fall into an immediate understanding and companionship. Perhaps it may have taken him three times to achieve a suitable fastening of each boot each morning before leaving camp but since we all had far worse faults John B was never other than a most likeable member. He and I will long remember our pleasant day to the summit of Dalmore Junior and our unpleasant loose-rock climb up to survey station Q.

John, a 3rd year engineer from St. Catharine's College, Cambridge, acted as Survey equipment officer.





4. JOHN L. THOROGOOD

Unquestionably John T was the loveable enthusiast of the group; a cocktail of wit, eagerness, and limitless energy that at times bordered on the explosive. He and David Drewry set up the Meteorological Station at Sunny Nook (Camp 1) and worked on shifts to record data at all hours of the 24 hour day. John was also responsible for the steam probe field trials which proved to be highly successful. Certainly John will long be remembered for his rapid, generous and, on some occasions, impetuous actions.

John affectionately referred to as "Thud" was a second year undergraduate from Trinity College and acted as supervisor of the steam probe project as well as general equipment officer to the expedition.

5. KEITH E. ROSE

In many ways Keith was the compliment to "Thud". Quiet but also exceedingly hard working he spent many hours on the fateful thermal probe project, see photo No. 34. Although an extremely good surveyor and photographer he could turn his talents to any activity as proved by his construction of a guitar during the last days of the expedition. The photograph was taken close to Base Camp some 25 km up the Roslin Glacier.

Keith, a second year engineering student from Trinity College acted as expedition food officer and he received no compliments during the course of the expedition! He is now doing post graduate work at the Scott Polar Research Institute, Cambridge.

6. PETER W. CHAPLIN

Peter was leader of the Imperial College group of two men but they shared our camp, company and projects and no report would be considered an adequate record without reference to them.

Peter, a quiet unassuming young man always did a hard days work and was more than a valuable asset to our group. The photograph was taken just behind the Sorte Hjorne hut.

Peter was a second year undergraduate physicist from Imperial College, University of London and from the experience gained in 1972 he led a small and highly successful expedition to the Lang glacier in 1973.

7. RICHARD A. CARTER

Richard, glancing through the telescopic alidade, was the second member of the "Imperial College" group. He and Peter were responsible for the plane table mapping of the radio sledge route. The photograph was taken at the junction of the Dalmore and Roslin Glaciers some little distance above Base Camp. Richard will be remembered as the member who suffered most from mosquito bites. Certainly he was the worst bitten member I have seen during my own travels and yet I never heard a word of despair from him. Perhaps he didn't want to open his mouth and get his tongue bitten! Note the plastic sledge (or "doggie") that carried the kit from station to station. The fact that Richard and Peter worked so well together for the entire trip should underline their equitable temperaments to the reader.

Richard was also a second year physics undergraduate from Imperial College.

8. ROGER J. CAMRASS

Roger was the comic of the expedition, that essential member of any unit. He had the ability to laugh at all times, frequently at his own jokes and the misfortunes of others but largely at himself. Roger had everyone in stiches at his futuristic stories of the second epoch and his laugh could only be described as infectious. There was however a highly skillful side to this engaging young man and he was responsible, along with Peter MacKeith, for the Radio-echo sounding project which proved to be highly successful. Here Roger is seen eating his lunch.

Roger was a third year electrical engineering undergraduate of Clare College.

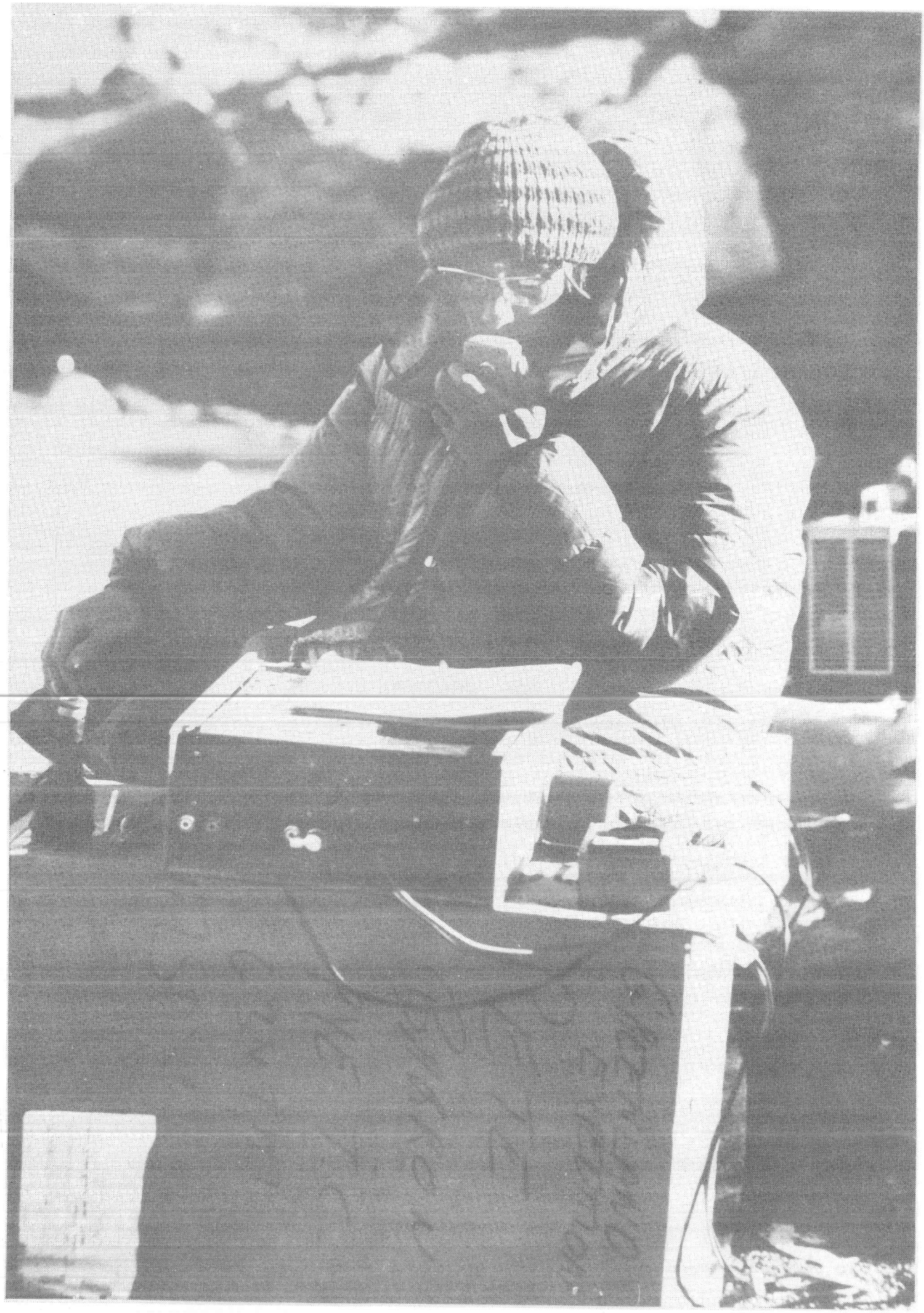
9. PETER A. BARRON

Our "sparks" man and probably the most frustrated member of the entire group since at no-time did he manage a two-way radio link with his Cambridge Amateur Radio associates. One-way contacts were apparently made with South America, Scandanavia, China (judging from the language), one ship (we think) but never with Mesters Vig. 80 miles away. Poor Peter had no luck at all what with water in the generator, icicles on the terminals and Greenland gremlins in the circuitry however he had tenacity and must gain full marks for perserverance. Little did he know that I for one was grateful since my idea of Greenland is to be away from the day-to-day business of Europe.

The photograph shows Peter in his semi-permanent posture that was relieved by his ascent of Dalmore Junior and his kind assistance to other projects. It should be pointed out that Peter joined the group rather late after the untimely withdrawl of one member and in consequence he had little time to prepare his radio crystals.

Peter is a student apprentice in Cambridge and is studying engineering at the North Staffordshire Polytechnic.

Barley Sugar



10. TONY R. WAY

or rather Corporal Way. Tony was "loaned" to the expedition by the British Army Military Survey Establishment and he was excused for frequent swearing at the moraines especially since experienced climbers sometimes swore more vehemently! Tony was often found at camp working out data surrounded by several volumes of seven figure data tables. It wasn't that he couldn't use the pocket calculator, the latter just didn't have the required storage capacity. It was rather a lot to ask him to appreciate undergraduate student attitudes and arguments but he achieved this with ease frequently at their expense. A noteworthy achievement.

Tony did an absolutely first class job with the one-second theodolite and quickly learned how to climb loose rock to precarious survey stations, he was also a very good cook.

Tony is now a quantity surveyor with a commercial organisation.

11. PETER L.C. MacKEITH

Pete, veteran of the 1970 expedition, was one of the four experienced Greenlanders in the party. He and Roger had total responsibility for the radio-echo-sounding project. His wide range of abilities however were frequently in demand, e.g. naming of plants, repairs to camera equipment and generators, cooking, navigation etc. No problem was left unsolved. It was to my regret that we had no one to match him in a "1972 rapid-pun contest" similar to his battles with Mike Hall of the 1970 expedition. The photograph showing Pete having lunch was taken at a make-shift "garage" tent, made from a parachute canopy, to store the electronic equipment of the radio-sledge during construction of the latter.

Peter, a third year engineer at Churchill College, has since worked at the Scott Polar Research Institute and the North Water Project.

12. DAVID J. DREWRY

taking a photograph of David Drewry. This young man was the glaciologist and geographer to the expedition. He along with THUD controlled the tea machine for use by passing sledge-men and wayfarers at Sunny Nook. Dave was both resourceful and hard-working in activities not confined to the intellectual. Previous experience ranged from Greenland to Antarctica and the expedition was pleased to have amoungst its members one with such a store of stories, humour and common sense.

David is now at Emmanuel College Cambridge, working on glaciological/geological post-doctoral studies at the Scott Polar Research Institute.

13. DAVID W. MATTHEWS

affectionably called BIG DAVE by us all. With a Watkins mountain trip to his credit and extensive geological field work including periods in Antarctica with BAS and Norway, Dave was a valuable man to have on the trip. As the photograph indicates he was expedition camera man but he will long be remembered for his technique in the crossing of melt-streams. The silent strong man of the expedition he could be, and was, relied upon as a source of energy and inspiration in times of difficulty especially by the group he led across the Lang moraines.

David is now doing part-time lecturing and post-doctoral work in the Department of Mineralogy and Petrology, University of Cambridge, subsidized by frequent visits to high mountain places.

14. KEITH J. MILLER

The leader of the expedition, author of these short notes and addressee of any complaints concerning any factual errors in this document. The maker of the boots may be pleased to note that they finally capsized on the last day of the 1973 expedition.

Keith is a lecturer in Engineering at the University of Cambridge and a Fellow of Trinity College.

15. MESTERS VIG STATION

The station is manned 12 months a year although over the winter period only a minimal staff remain. The view, taken from the hillside to the south, is by telephoto lens. The airstrip is semi-permenent and can take large aircraft such as a DC 6 but it is more frequently used by light aircraft flying in from Reykjavik, Iceland. A part of the air strip can be seen as a faint sand streak beyond the huts. The harbour is beyond the gap in the middle distance and a ship calls there once a year usually in the first week of August. The far peaks are several miles away on Traill Island beyond the very wide Kong Oscars Fjord.

16. A RIVER CROSSING

Only a few miles after leaving Mesters Vig the second river crossing is made with diffuculty. Tony helps keep his balance by swinging his arms but the best method necessitates a more evenly distributed and well packed load on one's back. We all soon learned that lesson. Peter Chaplin watches with apprehension, its his turn next. Peter Barron prepares for the crossing. These streams can be very dangerous and great care is required because not only is the river bed loose, composed of large and moving, hence noisy, boulders it is also unseen and frequently composed of deep holes!

17. THE SORTE HJORNE HUT

After one or one and a half days depending on the size and fitness of the party, one arrives at this superb situation. The site is best reached via Heste pas and a descent to Mesters Vig fjord itself which is then traversed beyond Expedition Hus of Dr. Lange Koch fame.

In the distance one can just make out the Corner which leads, after a long day, to Mellem col and Malmberg. The Corner of Mellem glacier is indicated by the tip of a long narrow snow gully that slopes down to the left. Once around the corner to the right the col should be clearly visible before an ascent is attempted through large and well-hidden crevasses.

18. THE BIG STREAM

After leaving the Sorte Hjorne one soon reaches a steep and tricky stream. Rucksacks were ferried over on a rope pulley system after Big Dave bludgeoned the initial path across. Alayne Street, leader of a womans expedition from Girton and Newnham Colleges of Cambridge, is seen here keeping her cool. It is regretted that no still picture can capture the aggressive atmosphere here of this stream which is the only very bad one between the Sorte Hjorne and the Mellem glacier. The boulder in the lower right corner is Drewry's head.

19. MUSK-OX

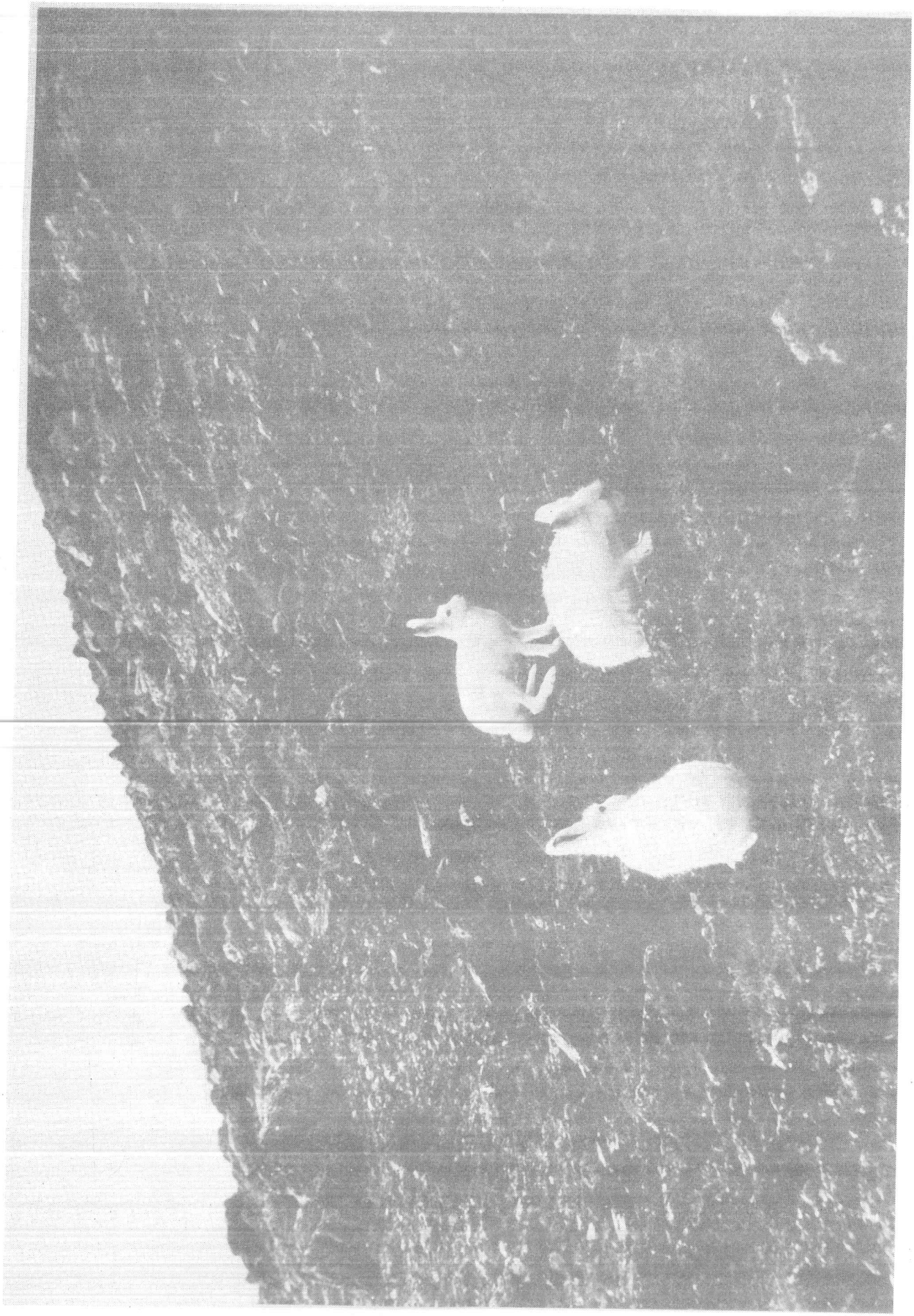
These beasts invariably run away at the approach of humans except old bulls who either know a trick or two or are too tired to gallop off. This one was given a wide berth after the personal story told by Miller who does not recommend lengthy discussions with such animals. Perhaps it is worth noting that Jack Soper of Sheffield in the course of another expedition attempted to befriend one such creature in the hope of an easy ride back to base. He too has now joined the rather select band of previously naïve climbers who have broken the 100 m dash in under 10 seconds carrying large rucksacks as a slight handicap.

20. ARCTIC HARE

Amongst the most friendly and least suspicious of the Greenland animals are the arctic hare. Several groups of hare are to be found on the Schuchert Tundra and we hope future expeditions will not attempt to frighten these lovely creatures away. In 1970 they gathered outside our tents at Roslin Tundra and it was with regret that another expedition, on entering our zone, attacked them in the hope of catching fresh meat. In 1972 and 1973 the hare were still suspicious but let us hope the damage will soon be permanently repaired.

21. NEARING THE CORNER

The distance to the Corner can not be judged by eye. It is best to remember that the Corner is more than half way between the Sorte Hjorne and Malmbjerg and that this is no consolation to those on the trail before and after the memorable landmark. In total 20 persons crossed the Mellem that day, including six members of the Cambridge womans party. In the present photograph four ropes of four members each can be seen on the trail. In theory each group was to have its turn in trail breaking but this does not take into account either the number of the weary or the peverse nature of the masochist who will not be bettered by a frequently yielding snow crust that allows one the experience of dropping into a snow pit and so cooling off ones overheated thigh muscles and temper in the cold snow before the fight begins to extricate oneself. From this it should be noted that it is best to start the ascent of the Mellem glacier between midnight and 1.00 a.m.



22. MELLEM COL

The party nears the col by traversing to a ramp of snow and ice that bridges most of the crevasses that flow in from the left and right. In 1970 an Italian expedition member missed this important feature and so learned the depth of one of the crevasses and was lucky to escape serious injury although minus his outer boots and the termination of his activities in the Stauning Alps.

23. THE ACCIDENT

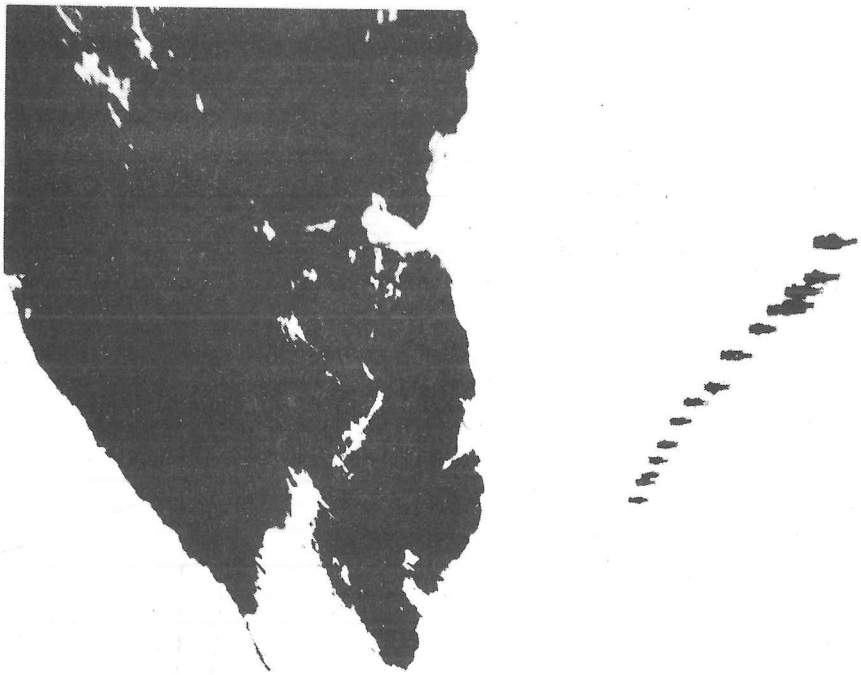
Bahman was the last to cross a well-hidden melt stream which all other members had traversed by using the steps of the previous person. Unfortunately Bahman used one extra ill-spaced step and the snow bridge collapsed. He disappeared from view with an unbelieving expression across his face, which I saw from only a few metres distance and which I will never forget. It took more than 30 minutes to relieve him and his large pack since he was jammed below an ice overhang and it was necessary to cut both hand and foot holds before he could escape. The photograph shows myself, belayed by Chaplin, attempting to give close encouragement as Bahman comes over the top. Fortunately he was able to painfully stagger over possibly the worst moraine patch of the whole journey to Tundra Base and then walk the next day up the Roslin glacier before the foot, lower leg and thigh swelled to such a proportion that it necessarily involved 2 weeks total inactivity. Throughout this period, although in pain no word of complaint was heard and fortunately for the expedition Bahman totally recovered and gave valuable assistance to all the projects.

24. THE GLACIER SNOUT AIR DROP

An exciting moment when the Hercules Transport of the R.A.F. arrives above the first drop zone one minute before schedule. Without such assistance it would have been impossible to operate such a wide range of projects and for such large parties to be accommodated on the Roslin for long periods of work.

From a few hundred feet above ground level the crew can be clearly seen and it is with great relief as the loads are seen to descend and be temporarily jolted on their acceleration to earth as the parachute canopies open and show their full girth and colour.

Locating, sorting, re-packing and transporting stores to a safe dump can take 2 or 3 days but this is a negligible effort when it is considered that it would be impossible to carry the stores to base camp from the coast at Mesters Vig.



25. DAVE AT ROSLIN GLACIER BASE CAMP

Dave cleaning and rewaxing boots at the site of his sleeping strip. Dave chose to sleep out in the open rather than in tents since he did not appear to be affected by the light of the midnight sun, some degreee of darkness being achieved inside a tent. In the background one can see the moraine stream which was constantly eroding the far bank.

26. THE MESS TENT

A badly ripped parachute canopy plus survey plastic poles were used to construct a mess tent in which we all assembled in the evenings. Left to right Keith, Bahman, Roger, Thud and David.

Base camp tents were scattered around the area which was an old dirt cone zone that gave a soft sand bed. The whole area was sheltered from down glacier winds by being in a shallow depression. The camp is 25 km from the glacier snout, a distance which, with loads and early in the season, requires a full days march.

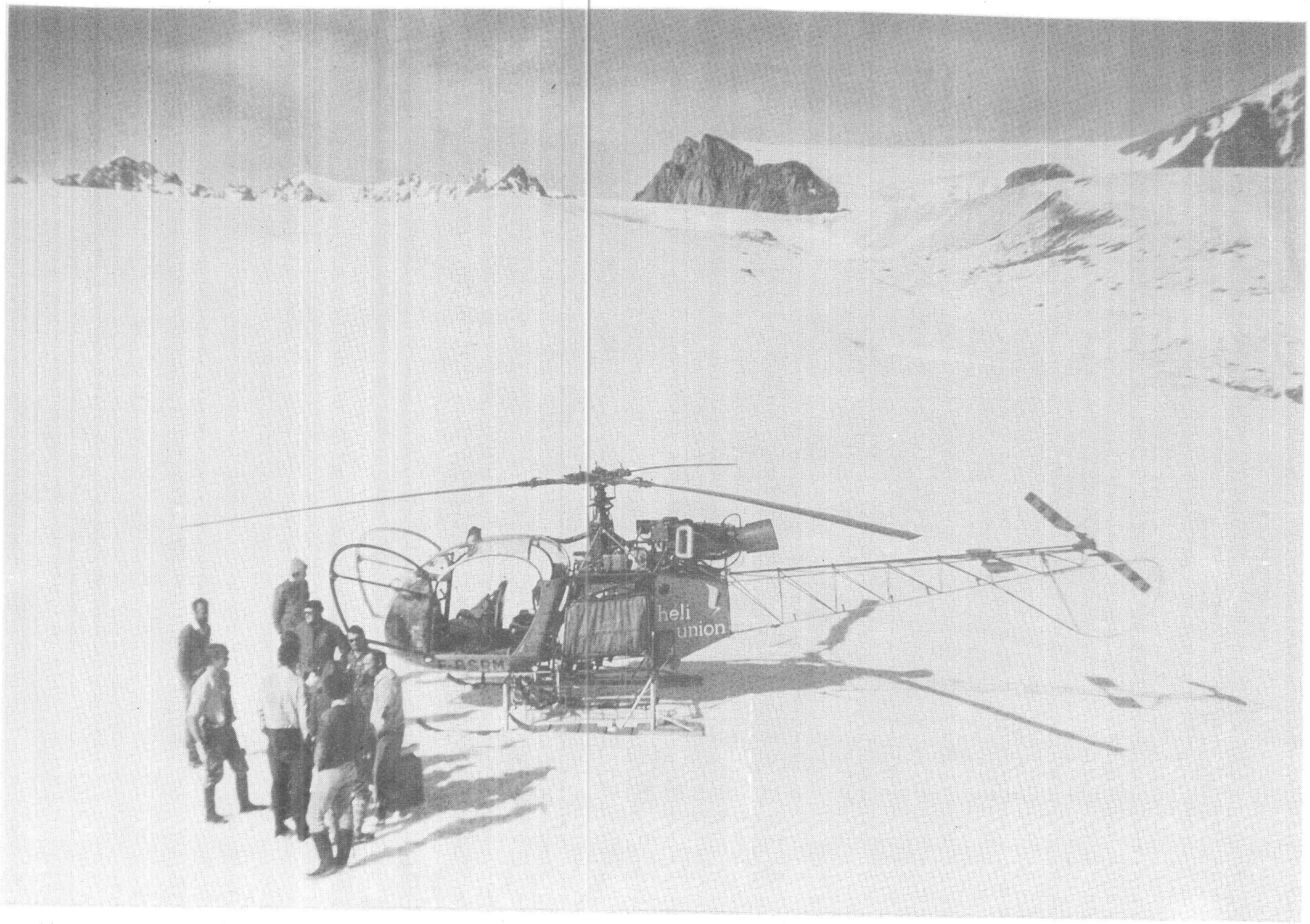
27. THE HELICOPTER LIFT

A minimal quantity of lightweight, delicate and valuable equipment such as theodolites, radio equipment, ice thermometers, potentiometers, etc. were flown in from Mesters Vig direct to the glacier base camp inside 40 minutes, a distance it had taken us some 6 days to walk. In the background rises the snow plateau of Dalmore Junior which eventually rises to the summit on the right.

28. A PLANE TABLE STATION

Perhaps it's David's Boot rocking the table that makes Richard doubt the ray he has just drawn. In the background is Peter.

When mapping by plane table it is essential to have the table both level and stable so that on completion of a long round of readings it is still possible to repeat the initial reading with zero error. This is very difficult in soft snow conditions, difficult on thin snow and still not too easy when there is no snow but just the melting ice surface of the glacier itself. Judging from David's dress the weather was almost too hot for work. The survey grid system and map of the glacier was plotted by the 1970 expedition, see Vol. 2 of the 1970 report, and so the mapping of the 1972 sledge routes could be started without delay.


heli
union

29. A MOULIN

Just below the rock buttress at Pooh Corner which locates survey stations P1 and P2 there is, early in the season, a glacial lake. When the frozen lake melts the slightly higher temperature of the water causes the thin supporting ice bed to melt and the whole lake disappears down the moulin beneath leaving behind the steep ice walls of the old lake. When I first saw this photograph of Thud, who has traversed the broken ice-plates of the old lake bed I literally went cold. It was highly fortunate that I did not see the incident itself since I would probably have lost my temper. On expeditions it is essential not to take unecessary risks and so put the expedition and its members in jeopardy. Accidents occur when least expected, see photo No. 23, and it is wise not to tempt fate.

30. THE RADIO-ECHO SLEDGE

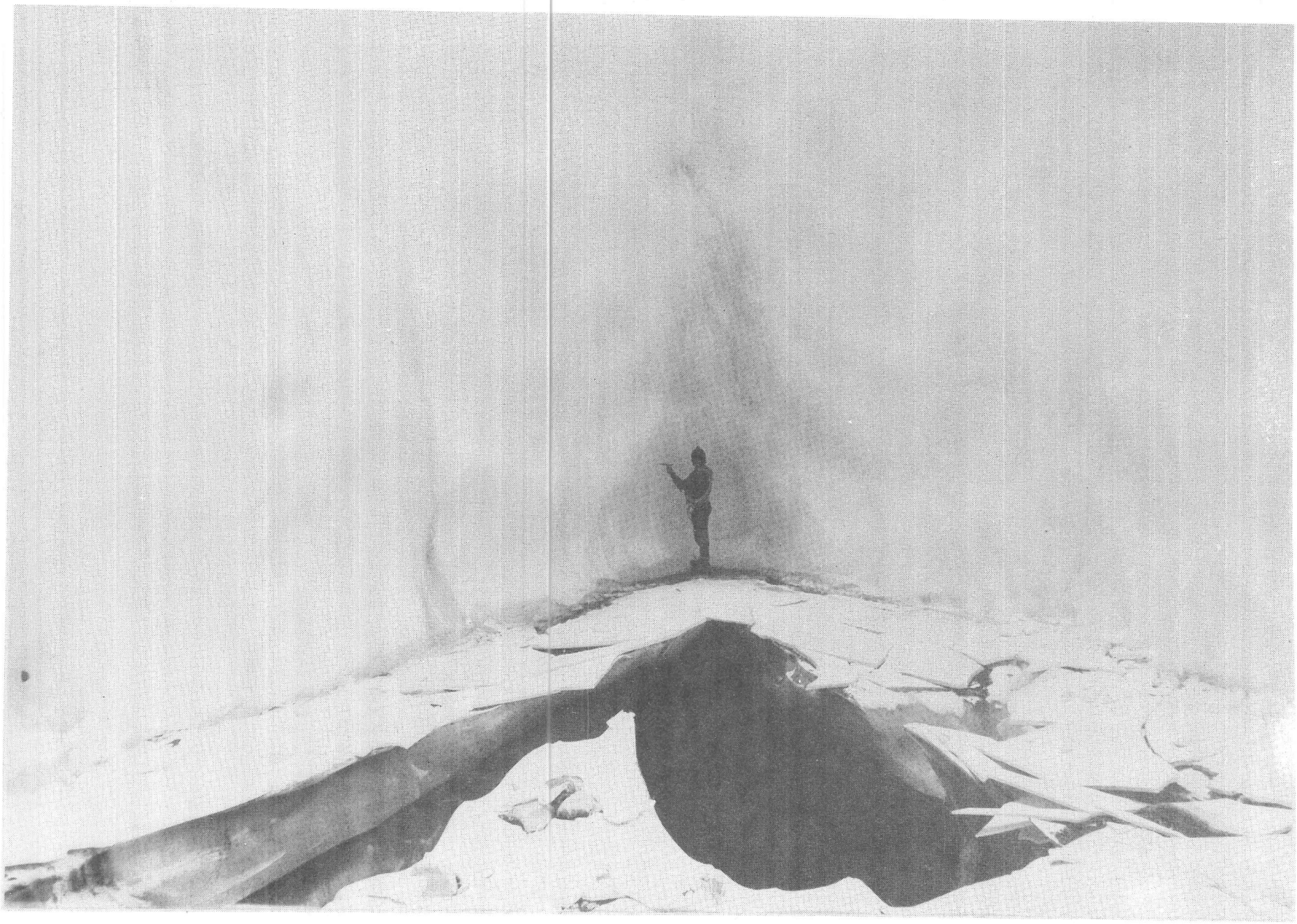
One of the projects involved the determination of the ice depth of the glacier in the zone of the Roslin-Dalmore junction and hence to be able to contour the valley rock bed. The project is being written up as a separate report but the picture shows the light-weight bamboo aerial structure and the electronic-systems sledge ahead, both being pulled by a team of three "huskies". Behind trails the bicycle wheel odometer. Fortunately this work could continue in poor visibility but it was necessary to plane table the route taken by the sledge within a few hours of echo-sounding since signs of the trail soon disappeared.

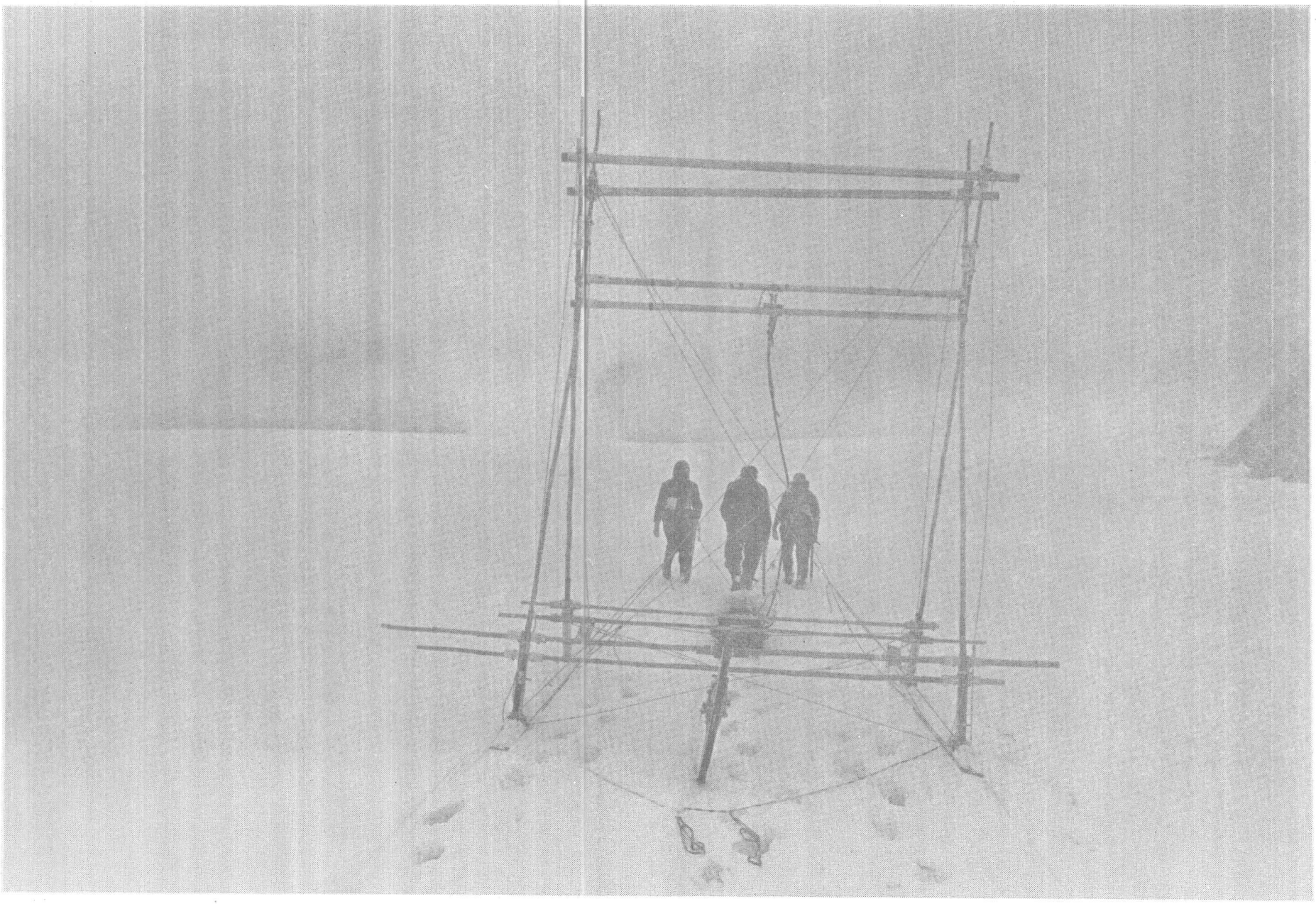
31. ALL SYSTEMS GO

The electronics-system sledge was in fact two plastic "doggies" lashed together. They contained a monitor oscilloscope and slow motion ciné camera that recorded the time intervals between the transmitted and received radio signals. Here Roger is acknowledging all systems are ready for the start of another run.

32. THE 1970 SLEDGE

In 1970 the whole length of the Roslin glacier plus several cross-traverses where made by the sledge shown in this picture. The results have already been published (J. Glaciology, 1973, 12, (64), 87) but in 1972 it was decided to use a more lightweight system designed by Les Davis at the Scott Polar Research Institute. It was Les along with John Halliday who pioneered the 1970 work. The disadvantage of the 12 ft. long aluminium but heavy sledge was the difficulty in crossing wide melt streams and moving over unconsolidated snows at higher altitudes. The sledge is now deposited near the snout of the Roslin glacier. Note the battery and coffin-like boxes at the rear that housed the electronic equipment.





EXIDE
Extreme

33. THE STEAM BOILER

This portable boiler made in aluminium alloy by the University Engineering Department Workshops generated ample quantities of steam that was fed through a flexible insulated hose to a rigid steam nozzle. The nozzle bored holes extremely rapidly into the ice to a depth well in excess of 15 metres. This work will also be the subject of a separate report. The picture shows Thud placing the kerosene blow lamps into position and Dave Matthews awaiting steam. In the background lies Sunny Nook and the entry of the Dalmore glacier into the Roslin.

34. THE THERMAL PROBE

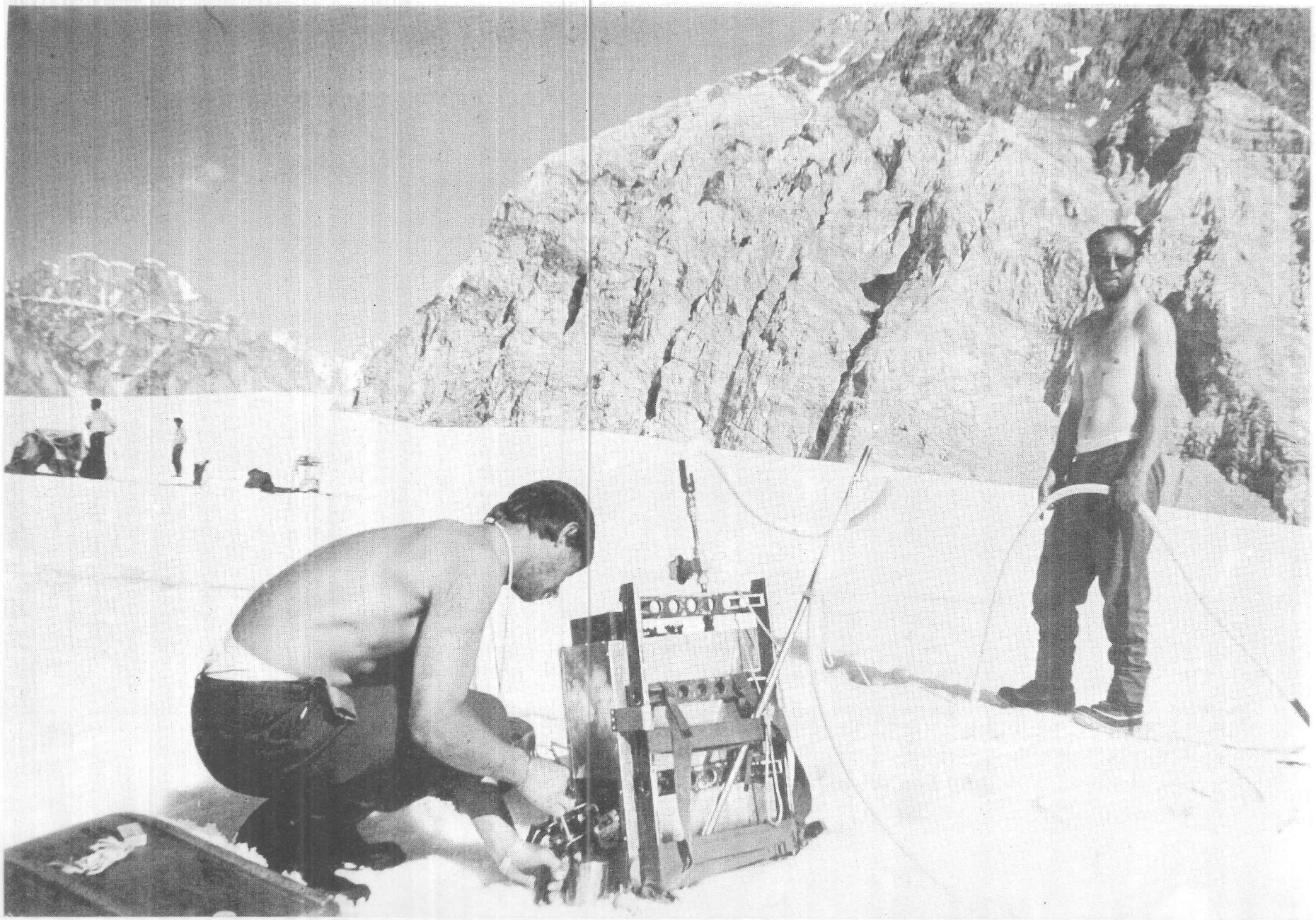
This project, which was not successful, was intended to assist deep ice temperature measurements. Briefly the probe, electrically heated, was to descend at a rate of 1 m. per hour through the ice and was capable of being stopped and started at will and to transmit to the surface ice temperature data. Miller is seen here holding the probe whilst Keith Rose unclamps the copper wire drums. Power was supplied by a 2 kW generator. This work, also the subject of a separate report, is continuing by the development of new probes in the University Engineering Department in co-operation with the Scott Polar Research Institute.

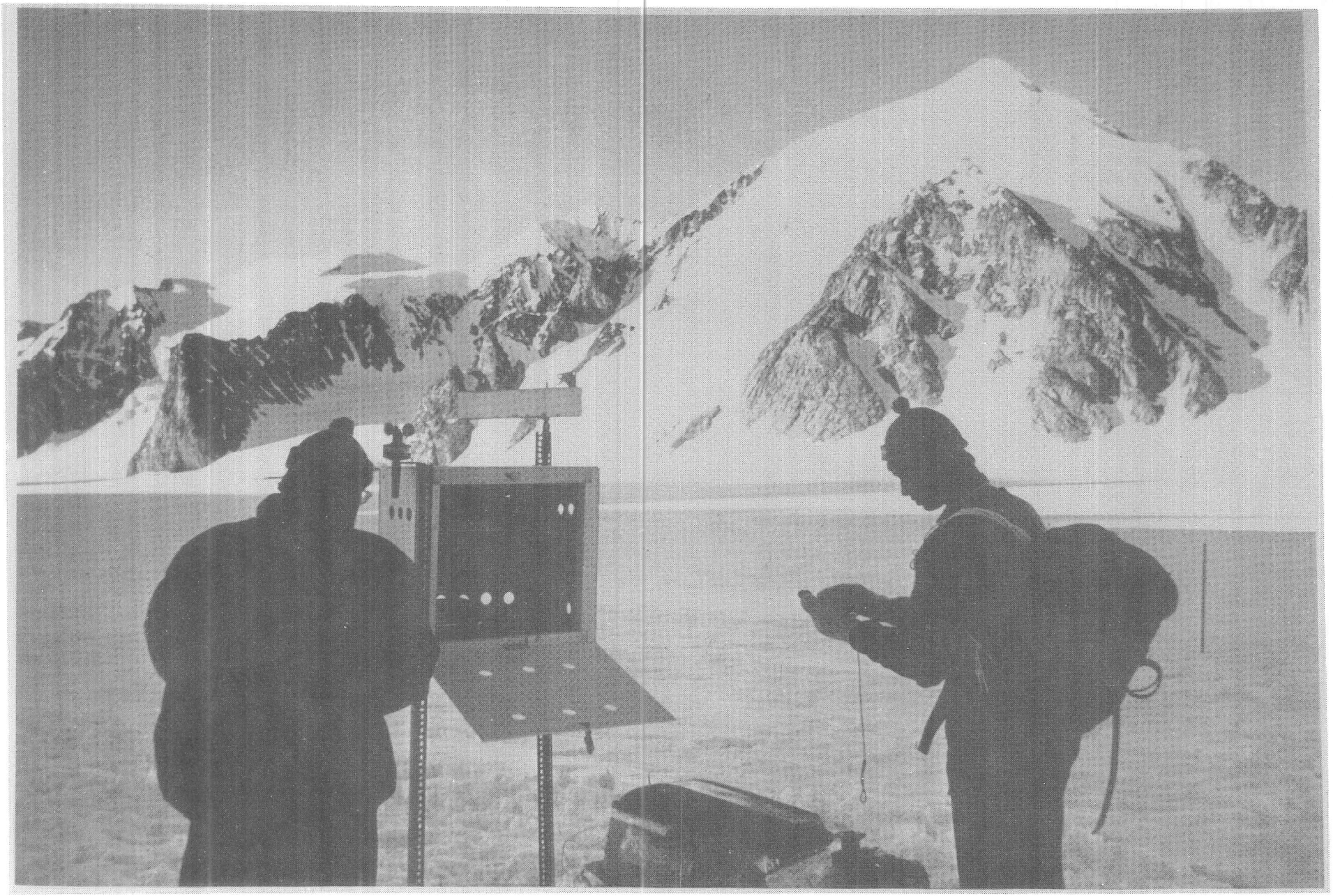
35. THE METEOROLOGICAL STATION

Readings were taken throughout the 24 hours by Thud and David Drewry. This photograph shows the early morning shadows retreating across the Roslin at 6.00 a.m.. Diamond Peak is bathed in sunshine as is Hird Peak to the south. The separated rock ridge that terminates in a triangular shaped rock buttress holds the location of survey station 3 at approximately three quarters its height.

36. ASCENT OF DALMORE JUNIOR

A rest day permitted most members the time to climb Dalmore Junior. Here one sees Dave Matthews, David Drewry and Thud nearing the top. Dalmore glacier is seen entering the main Roslin flow which continues for another 25 km. (16 miles) to the snout. Base Camp is located on the true left bank of the Roslin just below the junction of the two glacier systems.



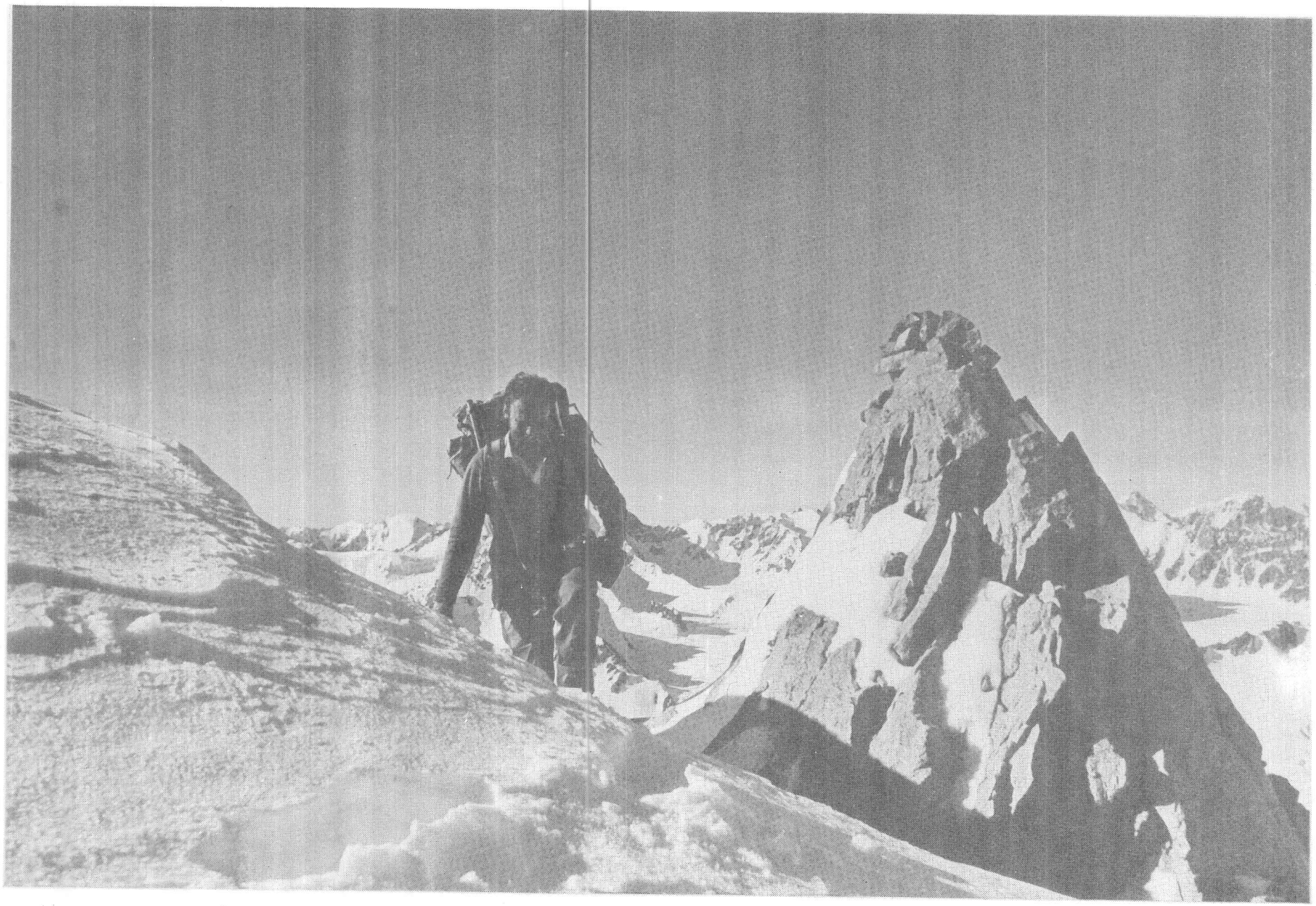
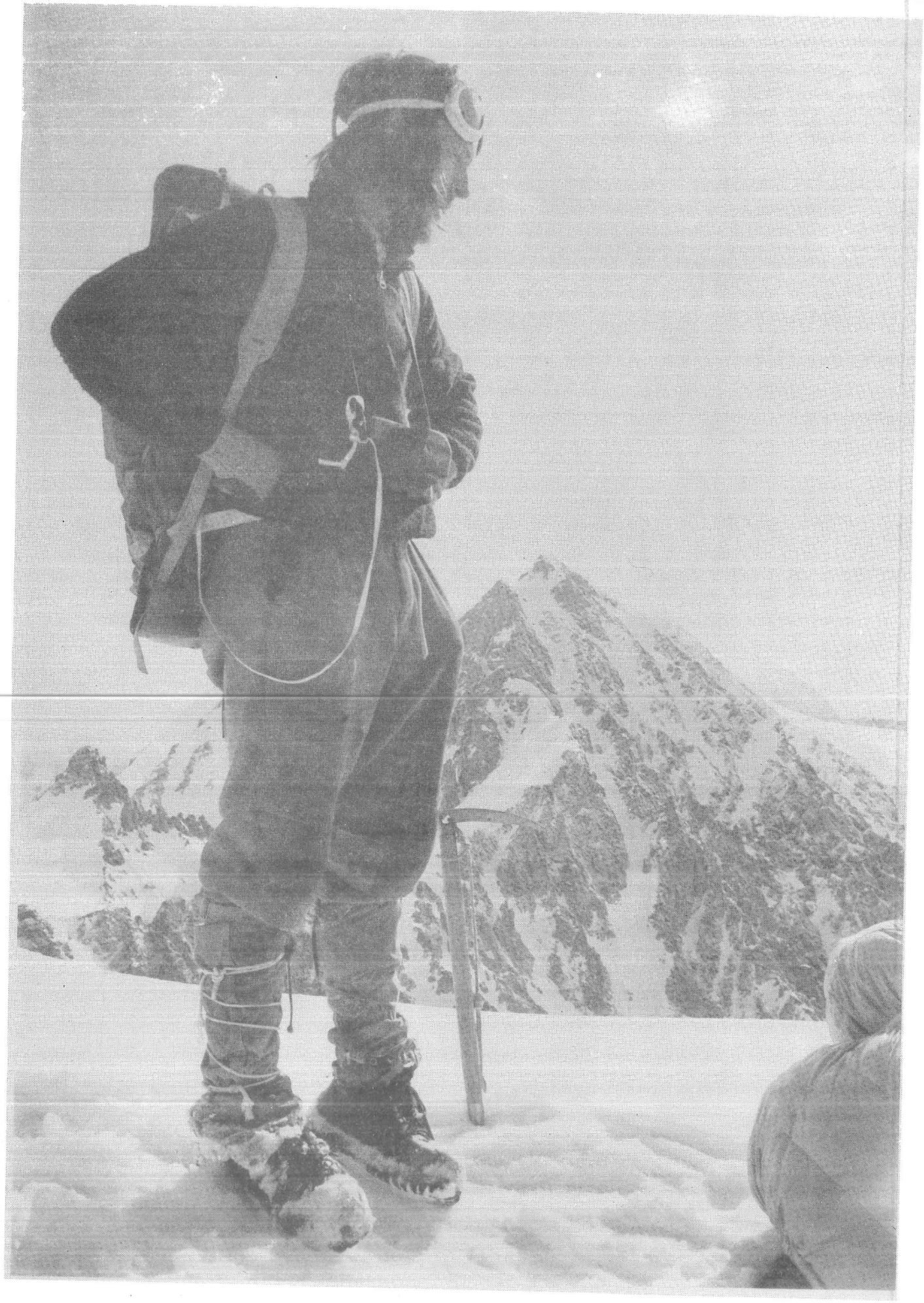
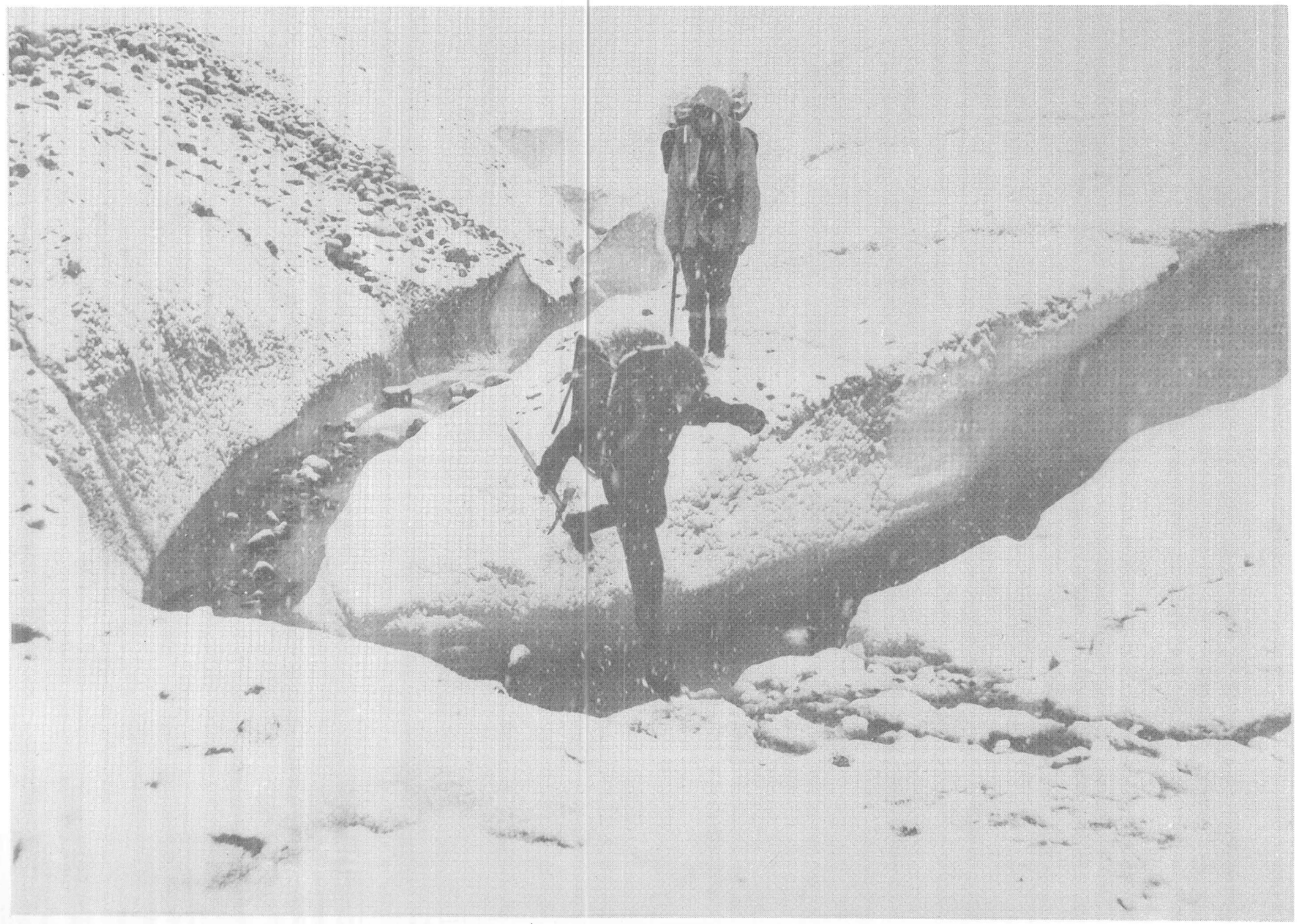


37. THE SUMMIT OF DALMORE JUNIOR

Dave at the snow summit of the peak that dominates the view during the entire walk up the Roslin from the snout to the base camp. The snow plateau, see Fig. 27, is "just ahead" for 6 hours and the peak forms an everlasting impression. It therefore becomes almost a pilgrimage to climb the peak and look back downstream, see Fig. 36. The summit is a twin peak, one of rock and the other a narrow corniced snow ridge.

38. BOULDER PEAK SUMMIT

Pete on the summit of a previously virgin peak behind base camp. The mountain beyond is peak 2223. It is always a pleasure to ascend a new summit and since this particular peak was one constantly studied through the eye-piece of the telescopic alidade during the mapping of the area, it was a double pleasure for the expedition to "knock it off". The route to the top is via the tributary glacier directly behind base camp.

39. HOMEWARD BOUND

The start of the winter snows as the party crosses a glacier en-route for Mesters Vig and home. The journey now takes only 3 days from Tundra base, weather permitting. The first day is direct to Malmbjerg via the Lang river just above it's confluence with the Schuchert river. This route saves one half day by avoiding the Lang glacier, however, the now reduced Lang river, even in late August, has to be crossed with caution. The ascent from Malmbjerg to Mellem col should start at 4.30 a.m. in good visibility and then one arrives back to the haven of the Sorte Hjorne and eventually the wonderful welcome of the Danes at Mesters Vig. Whilst awaiting the arrival of aircraft to carry one home, equipment has to be sorted and perhaps the start made on the expedition reports!