JOINT UNIVERSITY 'SILVER SPOON' EXPEDITION TO NORTHERN ICELAND

17th June – 29th July 1986

Field area; Nautadalur, Skjóldalur, 20km south of Akureyri, Tröllaskagi.

Expedition Leader; Elizabeth Martin, 42 Cromwell Street, Walkley, SHEFFIELD, S6 3RN. South Yorkshire.

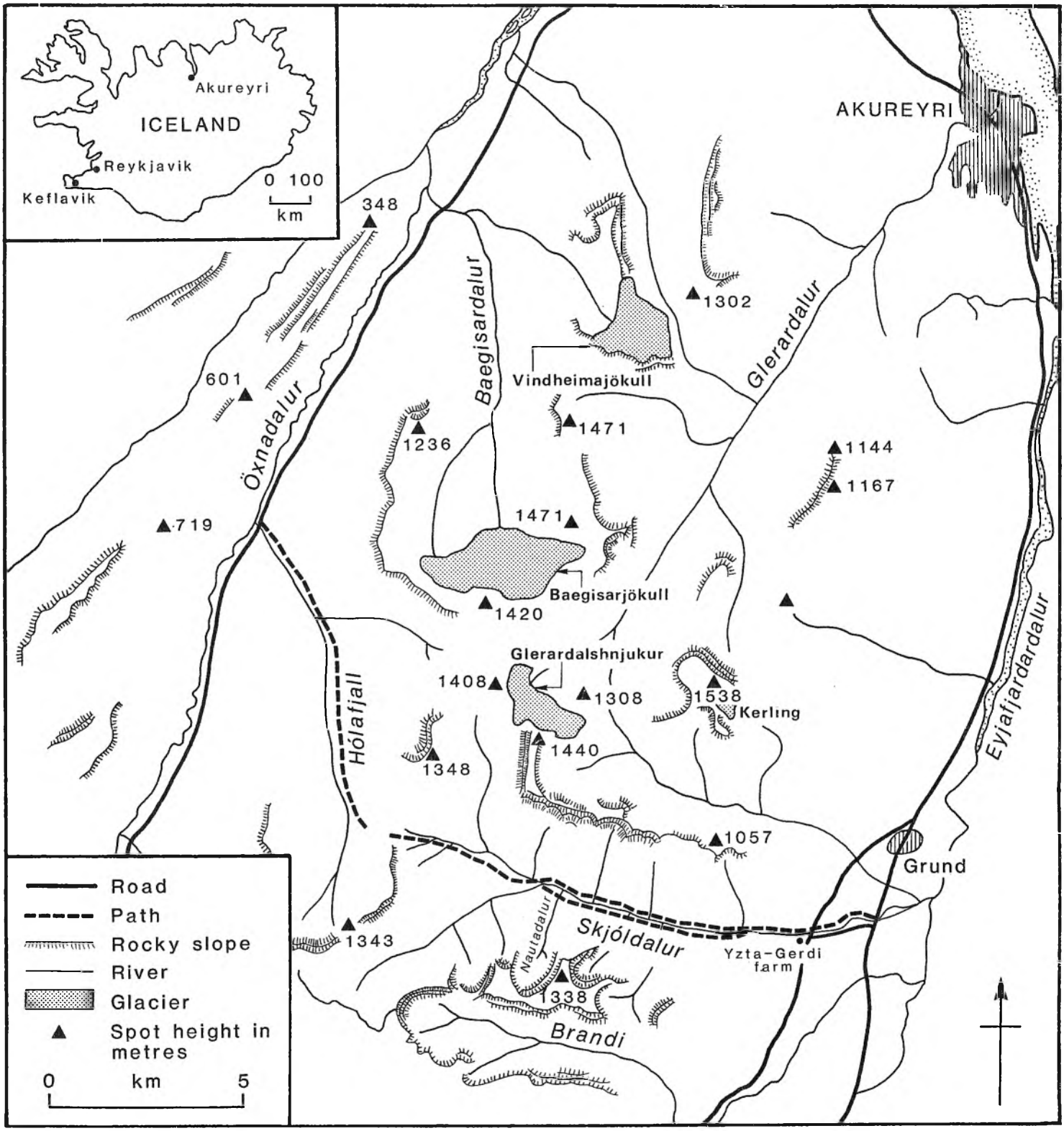
October 1986

ABSTRACT

The Joint University 'Silver Spoon' Expedition was, for its six week duration, based in Nautadalur, a tributary of Skjóldalur, 20km south of the town of Akureyri, Northern Iceland (figure 1). Its aim was to continue a programme of rock glacier* monitoring which began in 1977. Research was carried out on both the glacial remnant exposed at the head of the rock glacier and on the inputs and outputs of this geomorphological system. A wide variety of projects including rockfall analysis, mapping and monitoring of glacier and rock glacier movement, studies of rock surface stability and vegetation colonisation, rock glacier fabric analysis, and stream hydrology were employed. From this data base, and others derived from previous expeditions (Devizes School Expedition 1977 and, Joint University Expedition to Northern Iceland 1985) we are now able to shed much light on the evolution and significance on the rock glaciers of the Tröllaskagi peninsula of Northern Iceland.

*Rock glaciers are a peculiar type of debris covered glacier. Little is known about the evolution and significance of these features which are widespread in marginally glaciated areas

LOCATION OF FIELD AREA, NORTHERN ICELAND



PERSONNEL

Elizabeth Martin, 23. Expedition Leader. Postgraduate research student in geography at The Queen's University of Belfast.

Brian Whalley, 37. Reader in geography at The Queen's University of Belfast.

Helen Boothroyd, 20. Undergraduate in geography at Oxford University.

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Mountaineering in Tröllaskagi, Northern Iceland,

with specific reference to the valleys of Skjóldalur and Brandi.

Gordon Hamilton, Aberdeen University

The highest continuous mass of mountains in Iceland is to be found in the Tröllaskagi peninsula. The area is typified by a series of basalt plateaux which have an average altitude of 1300m. The plateau is occasionally exceeded by a series of higher more defined peaks, such as Kerling (1538m), the highest mountain in Northern Iceland.

Access to the Tröllaskagi Plateau

Our expedition was based in Nautadalur valley, approximately 6km from the head of Skjóldalur (see figure 1). The plateau area between Skjóldalur and its neighbouring valley Brandi can be reached by a substantial number of long, steep snow gullies giving climbing at Scottish Grade I-II, with no technical difficulties. Most of the gullies exceed 1000m in length. During the summer season their snow content may diminish and be confined to their upper reaches, or even in some cases disappear entirely by early August. There is a complete absence of any ice pitches and the climbing is generally on sound névé. Obviously as the day progresses the snow becomes softer and the risk of avalanche increases. Accessibility to the plateau top via these snow gullies is therefore best before 11am. The only difficulty of this route is to be encountered on the edge of the plateau top where large cornices guard the exits to the gullies. Care must be exercised when crossing them as they have often broken away from the cliff edge.

As the plateau is almost completely surrounded by steep sides these gullies provide the best means of access to the summit. An alternative route taken on a number of occasions by expedition members was to firstly walk up to the eastern side of the rock glacier and then proceed up the eastern flank of the valley. This is a short walk but conditions varied on it from thigh deep snow in late June to bare talus in mid July.

Yet another ascent was made to the plateau top via the corrie backwall. This route was a much more exciting alternative. In mid-June this route was banked-out with winter snow and most of the backwalls characteristic stepped rock outcrops concealed. Climbing was of grade I-II. However after a months snow melt when most of the snow cover had disappeared the climbing increased to grade III. More sustained ice pitches were obtained on the now steeper upper reach of the backwall. Snow and rock avalanches were frequent and a formidable cornice was encountered at the summit.

Access to Brandi from Skjóldalur

At the end of June, two members of the expedition made a high level traverse to the southern side of Brandi. The route, (see figure),which was undertaken in excellent conditions during a period of fine weather, began in Nautadalur with an ascent of the corrie backwall. the summit plateau was then crossed to reach the start of the ridge heading west. This ridge fell away steeply on either side, but due to each ridge of

the basalt layers being truncated, a series of passable steps were produced, so the route taken was just below the summit on the south side. No snow was present on this ridge and the unstable nature of the rock provided some heart-stopping moments before it widened. This section was the only problemmatic one encountered. The remainder of the route followed a series of plateau levels and steep snow slopes.

Slope stability

In general the main problem encountered by the expedition was the unstable nature of the slopes. These problems were derived from the fact that the slopes were generally covered in a deep mantle of loose rock fragments of various sizes, the bedrock where exposed was highly weathered and particularly susceptable to collapse, and the ground was during our field season saturated with snow melt. This instability was highlighted when two expedition members had a close encounter with some geomorphology in action. An area of ground saturated with snow melt gave away whilst they were crossing the slope below. A landslide was initiated, which narrowly missed them. The landslide consisted of some boulders over 2m in diameter and the path it took made a considerable scar in the hillside. Similar scars are visible all along the Skjóldalur valley and high rockfall and landslide activity must be borne in mind when climbing in this region.

Certain sections of the rock glacier were extremely insecure. It took some time for the expedition members to develop a suitable technique for crossing its surface. (Some of us never did.) This technique was based on ones ability to distinguish between loose and stable rocks. Once this was done it was relatively easy to boulder-hop. One thing worth noting at this point is that if you fall on the rock glacier cuts and bruises are guaranteed as the rocks are extremely abrasive - these were the major injuries sustained by expedition members. Also this loose bouldery surface is not kind to walking boots and even the studiest boots suffered many cuts. Therefore it is imperative to have good boots before you start walking let alone climbing in this area.

Accessibilty of Nautadalur Glacier

Nautadalur glacier is located at the head of the rock glacier, in fact the two features are continuous. Access to the glacier could be from the valley sides or from the rock glacier downstream. The glacier surface was extremely easy to cross due to its small size, absence of crevasses and either snow or lightly boulder covered surface. Crampons were never required. By late July an extensive melt pool had developed at the junction between the rock glacier and glacier, care had to be taken not to fall in this deep pool of icy water. A bergschrund opened up at the base of the corrie backwall in late July. This area was particularly dangerous as often snow bridges covered this large crack in the ice. Ropes would be advisable if work was to be carried out in this locality.