Zemmgrund 2014: Expedition Report
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Introduction

With the backing of the Queen Mary Expedition Fund, myself and three other undergraduate students were able to travel to the Zemmgund valley, Austria, for a month of IGS fieldwork. The high alpine setting situated at 2047m a.s.l. provided a unique field site with little previous research attention.

The funds recived from Queen Mary contributed towards accommodation cost at the Berliner Hütte, pictured to the right, and the months worth of lunchs for four people. Food that was transported from a Spar in Mayerhoffen, to the hut, a three hours walk from the nearest road.

Fieldwork

The subjects of all our studies were orientated around the glaciated valley system, my personal project concerning the formation of prominent lateral moraines in the Waxeggkees valley (top picture). Understanding the mechanisms that dictate the formation of lateral moraines has a direct relation to paleoclimatic and paleoenvironmental reconstructions. The aims of my research included:

- to establish lithofacies provenance based on structure,
- to differentiate between sediment transport histories within and between exposures along the lateral moraines,
- to explore the mechanisms of lateral moraine formation

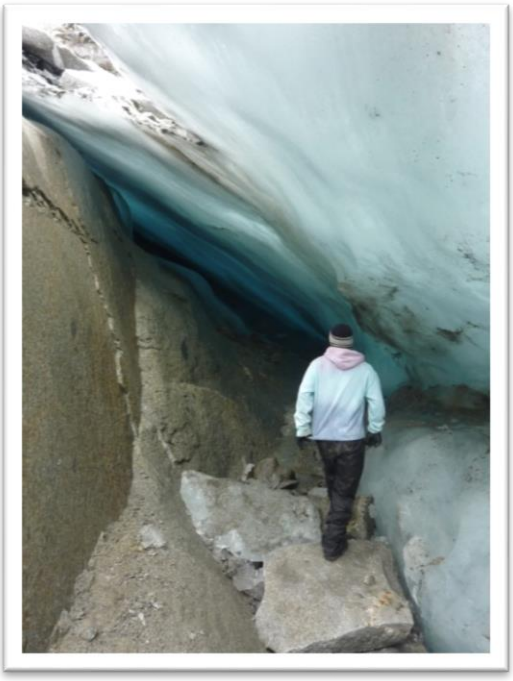
The methods used to achieve the above stated aims employed:

- mapping of the glacial-foreland geomorphology specifically lateral moraines, and
- logging of sediment stratigraphy and architecture using sediment exposure description

Utilising a range of methods including GPS and satellite data, the glacial foreland was mapped at a scale of 1:10,000. As sedimentological analysis of lateral moraine formation is sparse this study aimed to contribute to a growing pool of data. Both artificially exhumed and naturally gullied exposures were described along the lateral moraine crest after hours of excavation (picture two).

Lateral moraines are the result of coalescing ice-contact debris fans, where material is transport by the glacier as part of a valley wide sediment cascade and deposited at its lateral

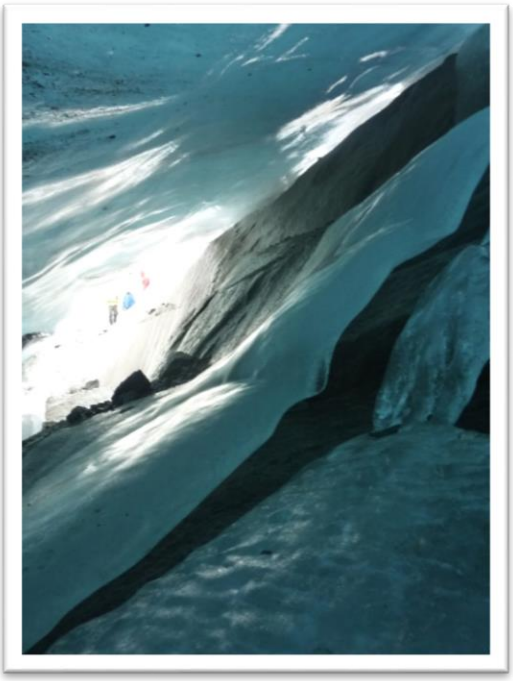
margins. While some lateral moraines remain small, millennia of consecutive glacial advance and retreat cycles have superimposed numerous debris flow events, constructing in increments the 140m high, kilometres long lateral moraines.



Hut life

Used commonly as one night rest stop by hikers and ice climbers, the Berliner Hütte was our home for the entirety of the expedition. This allowed us to get to know the staff and explore the area in detail. Day to day life consisted of a 6:30 am start and a European breakfast, followed by an ice cold shower in the glacial water "trough". After a day of field work (weather permitting) a consistently exquisite four course meal and pint of Weiss bier ensured food comas all round and usually the inability to move by 7:00 pm. The Berliner Hütte is situated at the confluence of three valleys, each with their own defining character.

While assisting our research partners at their field sites we were all able to gain a strong respect for a landscape defined by unimaginably huge ice masses and their glacially fed braided river systems. On our allocated one day off per week the group enjoyed walks to the nearby lake Schwarzsee, rock climbing and playing with the semi wild horses which inhabited the top valley.



Summary

The Queen Mary Expedition fund provided us with a unique opportunity to carry out fieldwork in a beautiful glacial foreland, a sharp contrast to living in the busy and polluted capital. Where descriptions in books vastly understate this landscapes true beauty I personally experienced a level of nature that can truly be described as idyllic; one which, until now, I did not know existed.