morphose (M 3). Zeitgleich kam es im Gebiet des Pfaffengrates zur Intrusion von basaltischen Schmelzen (Klötzli et al., 2008). Ob dieses Ereignis in den anderen Einheiten des Arbeitsgebietes nachgewiesen werden kann, ist noch offen.

In den Amphiboliten bzw. in den MGG-Myloniten finden sich Relikte von Meta-Eklogiten. In Analogie zum Milchenkar im mittleren Ötztal (Miller & Thöni, 1995) wird die Eklogit-Bildung, d.h. die Subduktion einer ozeanischen Kruste, als frühvariszisch angenommen (M 4a).

Die strukturprägende Metamorphose (M 4b) war amphibolitfaziell, wie die Paragenese Kyanit + Staurolith + Granat im Schrankogel-Komplex belegt. In Analogie zum übrigen Ötztalkristallin wird diese Metamorphose und damit die Bildung des Extrusionskeils als jungvariszisch eingestuft. Die jüngste (alpidische?) Deformation ist im Kartierungsgebiet unter kühlen, grünschiefer-faziellen Bedingungen erfolgt und äußert sich z.B. in der Bildung von kinks in den Glimmern (M 5).

Quartäre Ablagerungen

Das Arbeitsgebiet zeigt eine typische, hochalpine Moränenlandschaft. Die Kare sind z.T. bis unter 2.400 m mit Moränenmaterial der letzten Eisrückzugsstadien aufgefüllt. Einige End- und Seitenmoränen sind noch gut erhalten, z.B. die markante Seitenmoräne entlang des Falbesoner Sees.

In den südexponierten Karen bis über 2.800 m sind Überreste von Grundmoränenmaterial erhalten, das z.T. bereits mit Hangschutt überlagert ist.

Die Hänge unterhalb von 2.400 m sind mit Überresten von älterem (Grund-)Moränenmaterial bedeckt. In diesen Bereichen sind die alpinen Rohböden schon gut entwickelt.

Bei der rezenten Hangschutt-Bedeckung ist, bedingt durch die ansteigende Permafrost-Grenze, eine Zunahme des groben Blockwerks zu beobachten.

Das Meta-Eklogit-Vorkommen rund um die Regensburger Hütte bildet eine Steilstufe zwischen Hohem Moos und Ochsenalm. Dieser kompakte Riegel und die den Karboden abdichtende Grundmoräne haben zur Vernässung des Kares unterhalb des Hochmoosferners geführt und damit die Entwicklung eines alpinen Niedermoores ermöglicht.

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Bericht 2014 über kristallingeologische Aufnahmen im Bereich Franz-Senn-Hütte and Bassler Joch auf Blatt 147 Axams

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Introduction

The mapping area is located in the Stubaier Alpen between the Franz-Senn-Hütte in the NW, the Sommerwandspitze in the West, the Uelasgratspitze in the South, the Bassler Joch in the SE, the Platzenkopf in the NE and the Oberissalm in the North.

The mapping area is part of the Ötztal-Stubai polymetamorphic complex, which is part of the Austroalpine nappe system (Miller & Thöni, 1995) which is dominated by mafic to ultramafic rocks (amphibolites, eclogites and metagabbros), Bt-Pl-gneisses (mineral abbreviations after Kretz, 1983) and different granite-gneisses. The mafic rocks have been described and characterised by Schindlmayr (1999) and Hoernes & Hoffer (1973). Around Längenfeld, Hoernes & Hoffer (1973) distinguish between 5 subunits from North to South:

- "Bänderamphibolite" of the N' Eclogite Zone.
- Diablastic Garnet Amphibolite.
- Alumosilicate-Gneiss-Series.
- "Wechselseries".
- Eclogite to Eclogite-Amphibolite of the S' Eclogite-Zone.

In the "Alpeiner Metabasitzone" of the Stubaier Alpen, Schindlmayr (1999) distinguishes between three subunits:

- Series A including eclogite lenses.
- Series B as equivalent to the "Wechselseries" of Hoernes & Hoffer (1973).
- Series C as a Hbl-Grt-Gneiss or Grt-Micaschist.

These subunits strike more or less E–W or SE–NW and contain amphibolites and Bt-Pl-gneisses.

Further on, SCHINDLMAYR (1999) describes several orthogneiss-bodies incorporated in these "Metabasites". These are the "Alpeiner Granodiorite", the "Sulztal and Muschenschneid Granite" and the "Bassler Granite" (first described by HAMMER et al. (1929) as "Bassler Masse"). Due to strong deformation processes, these bodies predominantly occur as gneisses (except the "Alpeiner Granite" which shows a weak deformation). The E' "Bassler Granite" and the W' "Alpeiner Granite" are compact massive bodies, the "Sulztal Granite" and the "Muschenschneid Granite" form an elongated ~E–W oriented unit.

An important tectonical feature represents the NE–SW running "Längental Fault Zone", with a sinistral offset of 3–4 km.

Lithology

For a consistent description of the lithologies and structural features and a consistent mapping, it was necessary to define several working terms. As the subdivision of the "Alpeiner Metabasitzone" is rather complex, more descriptive terms have been used:

- "Alpeiner Orthogneiss"
- "Bassler Granite Gneiss Suite" including
  - "Bassler Stängel-Orthogneiss"
  - "Bassler Qtz-Fsp-Orthogneiss"
  - "Bassler Quarzite"
  - "Grey Bassler Orthogneiss"
  - "Bassler Phyllonite"
  - "Bassler Micagneiss" (optional)
- "Franzsenn-Hütte Bt-Micaschist"
- "Oberissalm Mylonite"
- Schrimmen-Suite
  - "Schrimmen Bt-Pl-Schist"
  - "Schrimmen (Bänder)Amphibolite"
- "Schrimmennieder Fault Zone"

Examples for several lithologies are given on board 1 to 4.

"Alpeiner Orthogneiss"

The "Alpeiner Granite Gneiss" is a slightly deformed equigranular gneiss with a granitic composition and origin. It lacks large clasts but shows bluish quartz grains. It occurs between Aperer Turm, Alpeiner-Ferner and Sommerwand-Ferner. Within the mapping area debris of "Alpeiner Orthogneiss" occurred within moraine material.

"Bassler Granite Gneiss"

The term „Bassler Granite Gneiss" includes all gneisses and schists derived from the "Bassler Granite" (HAMMER, 1929). According to several tectonic features affecting the gneisses, several varieties can be described. The general properties are a granitic composition, large feldspar clasts, moderate biotite contents and the lack of white mica (despite some serizite) or xenolithic clasts.

"Bassler Stängel-Orthogneiss"

The pinkish „Bassler Stängel-Orthogneiss" is characterised by a granitic composition (quartz; K-feldspar; plagioclase; 10–30 % biotite; accessoric serezitic white mica) with large pinkish K-feldspar clasts and a strong elongation. Therefore, the term "Augengneiss" seems appropriate as well. A moderately ENE dipping stretching linear is the dominating structural feature. Therefore, the granite gneiss appears protomylonitic to mylonitic on surfaces parallel to the stretching linear and coarse grained slightly deformed perpendicular to the stretching linear. Deformation bands occur and show a dominant foliation. The biotite appears as up to cm large selvages. The „Bassler Stängel-Orthogneiss" was found in the centre of the "Bassler Granite Gneiss" in the "Unnützes Grübl", at the "Uelasgrat" and in the upper parts of the "Gschwezgrat". The continuous gradation to the "Bassler Qtz-Fsp-Orthogneiss" is characterised by a rising degree of silicification and a reduction of the biotite content. The gradation to the "Grey Bassler" and the "Bassler Phyllonite" in the NW is due to a rising chloritization. A rising biotite content to the South may indicate a further variety ("Bassler Micagneiss", biotite content up to 50 %).

"Bassler Qtz-Fsp-Orthogneiss"

The "Bassler Qtz-Fsp-Orthogneiss" occurs localised on a low-T to brittle N–S trending vertical fault zone running through the "Schrimmennieder" and the "Platzengrube" ("Schrimmennieder Fault Zone"). It is characterised by a porphyric texture and a chemical depletion reflected by reduced contents or absence of biotite and high contents of quartz. This depleted composition is due to silicification of feldspar. The feldspar content can be estimated by pseudomorph mineral structures on weathered surfaces.

On fresh surfaces the differentiation between quartz and feldspar remains difficult. White mica occurs as serizite. In the centre of the fault quartz content reaches 90 %. The dominant foliation is parallel to the N–S trending fault zone and shows mylonitic bands and crenulation cleavages. To the West, a gradational transition to the pinkish "Bassler Stängel-Orthogneiss" can be seen. In the East, it is bordered by "Schrimmen Amphibolites" and "Franzsenn Bt-Gneisses".

"Bassler Quarzite"

The "Bassler Quarzite" (nomenclature after STRECKEISEN & LE MAÎTRE, 1979) is a fully silicified gneiss which occurs in the centre of the "Schrimmennieder Fault Zone". A second, larger outcrop 100 m further to the North shows high quartz contents but was classified as a quartz rich granite. The "Bassler Quarzite" contains numerous thick layers of mobilised and strongly deformed quartz and is dominated by a vertical N–S oriented foliation.

"Grey Bassler Orthogneiss"

The "Grey Bassler Orthogneiss" is characterised by massive layers of quartz and feldspar, feldspar clasts and subordinated mm–cm thick mylonitic micaschists, deformation bands and localised chloritization. Crenulation cleavages occur. In the SE it is limited by the "Bassler Phyllonite", in the NW by the several m thick "Franzsenn-Hütte Bt-Micaschist" followed by the "Schrimmen Bt-Pl-

Schist” and in the North by the “Oberissalm Mylonite”. The “Grey Bassler Orthogneiss” is defined by the occurrence of mylonitic mica-rich deformation bands, its grey colour (chloritization) and a dominant foliation.

(“Bassler Micagneiss”)

The “Bassler Micagneiss” is characterised by a high biotite content up to 40 %. The biotite occurs in cm large selvages and lenses. It remains unclear if the “Bassler Micagneiss” can be seen as a variety of the “Bassler Granit Gneiss” as the different appearance may be due the rising “freshness” of the surfaces and debris to the South (as the “Bassler Micagneiss” appears in the elevated regions with active rock-glaciers).

“Bassler Phyllonite”

The “Bassler Phyllonite” is a grey, fine grained phyllitic schist cutting through the “Bassler Granite Gneiss” consisting of quartz, chlorite and white mica. It divides the pinkish “Bassler Stängel-Orthogneiss” in the SE from the “Grey Bassler Gneiss” in the NW, whereby the gradation from the pinkish “Bassler Stängel-Orthogneiss” to the “Bassler Phyllonite” appears as “Grey Bassler Orthogneiss” as well. The mica-rich greyish rocks north of the Platzenkopf can be interpreted as the continuation of the phyllonite. A sinistral offset on several splays of the “Schrimmennieder Fault Zone” is obvious.

“Franzsenn-Hütte Bt-Micaschist”

The “Franzsenn-Hütte Bt-Micaschist” is a 10–20 m thick biotititic layer at the N’ border of the “Bassler Granite Gneiss”. It shows a strong foliation parallel to the contact to the “Bassler Granite Gneiss”. Because of its composition and location, it seems to be a restitic band at the contact to the “Bassler Granite Gneiss”. It occurs SE and south of the Franz-Senn-Hütte.

“Oberissalm Mylonite”

The “Oberissalm Mylonite” is a 10–50 m wide ENE–WSW striking vertical ultramylonitic zone of leucocratic and mafic layers between the Franz-Senn-Hütte and the Oberissalm. Its occurrence is controlled by the NW’ edge of the „Bassler Granite Gneiss“ (north of the mapping area) where the strain is localised in a narrow zone of a few meters. To the east, it is obscured by quaternary sediments, to the west of the Franz-Senn-Hütte it seems to fringe out.

Different lithologies occur associated with the “Oberissalm Mylonite”, which cannot be differed on the map. This assemblage includes micaschists, Grt-micaschists, Ep-Bt-schists, leucocratic Grt-gneisses and mafites. It seems likely that this zone is a tectonic mixture of different lithologies including the “Schrimmen Amphibolite” and the “Schrimmen Bt-Pl-Schist”. Therefore, the “Franzsenn-Mylonite Framework Succession” is characterised by its heterogeneous composition and it’s up to cm-large garnets. The “Framework Succession” occurs north of the “Franz Senn Mylonite” between the “Franz-Senn-Hütte” and the Oberissalm.

Schrimmen Suite

The term “Schrimmen Suite” includes the “Schrimmen Bt-Pl-Schist” and the “Schrimmen(Bänder) Amphibolite”. Both lithologies can be found at the Schrimmen to the east of the mapping area and at the Franz-Senn-Hütte. The amphibolites form partly massive layers within the schists which cannot always differed on the map.

“Schrimmen Bt-Pl-Schist”

The “Schrimmen Bt-Pl-Schist” is a layered biotite rich schist. The layers show large variations in quartz, feldspar and biotite content. Where the composition is more leucocratic, the foliation is less intense and the term gneiss is appropriate. A migmatic event is indicated by several massive m thick leucocratic concordant layers located near to the “Bassler Granite Gneiss”, by the leucosome-melanosome-like appearance and by the rising leucosome content in direction of the “Bassler Granite Gneiss”. Therefore, the “Schrimmen Bt-Pl-Schist” seems to be, at least in parts, a metatexite in the area south of the Franz-Senn-Hütte. The “Schrimmen Bt-Pl-Schist” shows intense folding. Fold axial surfaces show large variations but fold axis dip moderately to the NNE.

Schrimmen (Bänder) Amphibolite

The term “Schrimmen Amphibolite” is a summary of mafic to ultramafic rocks such as massive and banded amphibolites with subordinated biotitites. They consist of massive ultramafic layers of amphibole and epidote and of felsic feldspar rich layers. The ultramafic layers are up to several 10ths of meters thick. Therefore, the term “Banded Amphibolite” seems appropriate. Layers and bands of biotitites occur. The “Schrimmen Amphibolite” shows intense folding. Fold axial surfaces do not show a preferred direction but fold axis are mostly inclined (30–60°) to the NNE. Folds occur in all sizes and variations. In some cases, sheath fold-like structures were found. Boudins of biotitites and leucocratic layers occur. In one case, a discordant aplite was found.

Eclogites and Gabbros

Huge boulders of metaeclogites and gabbros were found at the Rinnensee NW of the mapping area. These lithologies are probably cut by the “Längental Fault Zone”, which runs NE–SW directly north of the mapping area.

Structural Description

Folds

Folds are located in the “Schrimmen Bt-Pl-Schist” and to a lesser degree in the “Schrimmen Amphibolites”. All sizes of folds, from crenulation cleavages up to 10ths of meters occur and show complex refolding structures (or probably sheath-folds). Fold axial surfaces show some variation, but a NE–SW striking NW dipping and a NW–SE striking NE dipping direction dominate. Fold axis dip moderately to the NNE or north. Beautiful examples can be found directly at the Franz-Senn-Hütte. There a gap containing “Schrimmen Bt-Pl-Schist” opens between the mylonites and the “Bassler Granite Gneiss” and becomes broader to the west. The folding intensity decreases to the west. This indicates a relation between the folding and the formation of the mylonites. Disregarding later rotations, folding and deformation would point to an ~E–W compression indicating a dextral shearing.

"Oberissalm Mylonite"

The "Oberissalm Mylonite" consists of ultramylonitic mafic to leucocrate rocks between the Franz-Senn-Hütte and the Oberiss Hütte. About 100 m to the south of the Franz-Senn-Hütte, the deformation is highly localised at the NW' edge of the Bassler Gneiss. To the west the mylonite fringes out which means that the deformation becomes delocalised. The nearly vertical foliation strikes NE–SW at the Franz-Senn-Hütte and turns to an E–W direction at the Alpeineralm. Between the Franz-Senn-Hütte and the NW' edge of the "Bassler Granite Gneiss", the foliation turns to NNE–SSW. From the map, it becomes clear that the orientation of the "Oberissalm Mylonite" was controlled by the border to the "Bassler Granite Gneiss". Therefore, the occurrence of such a (high-T?) ultramylonitic zone is probably a local feature.

"Bassler Phyllonite" Zone

The "Bassler Phyllonite" Zone is a phyllitic schist cutting through the "Bassler Granite Gneiss". It can be observed where an extensive outcrop situation exists. Where outcrops are sparse, it is always missed.

The "Bassler Phyllonite" Zone can be traced on satellite images and laserscans. The vertical foliation strikes NE–SW. The phyllitic occurrence indicates greenschist facies or even lower-T conditions. It is more likely, that both were controlled by the border of the "Bassler Granite Gneiss". From the map, a sinistral offset of several 100ths of meters seems possible.

"Schrimmennieder Fault Zone"

The "Schrimmennieder Fault Zone" is a vertical fault zone running from the Stubaital in the south straight to the NNE passing the Schrimmen, cutting through the Schrimmennieder and through a prominent loophole between Schalderspitze and Wildkopf. There, it suddenly disappears probably cut by the "Längental Fault Zone". Measurements on faults confirm the vertical N–S to NNW–SSE running character of the fault zone. The chemical depletion of the "Bassler Qtz-Fsp-Orthogneiss" indicates a high fluid activity causing an intense silicification. The map offers the picture of a dextral deformation. At the Platzenkopf, the fault zone splays into several parts passing the Platzenkopf in the east and west and causing a staggered offset. Whether the "Bassler Phyllonite" Zone is tectonically related to the "Schrimmennieder Fault Zone" remains unsolved.

Deformation of the "Bassler Granite Gneiss"

According to the map, it seems obvious, that the „Bassler Granite Gneiss" is influencing or even controlling the orientation of all ductile features. Therefore, most measured ductile foliations are parallel to the borders of the granite gneiss which acted as a hard clast within a soft matrix composed of Bt-gneisses and amphibolites. Nevertheless, the "Bassler Granite Gneiss" shows several internal deformation features. The "Grey Bassler Orthogneiss" contains several deformation bands parallel to the "Oberissalm Mylonite" and to the "Bassler Phyllonite" Zone. Due to the chloritic appearance, it can be assumed, that the "Grey Bassler Orthogneiss" was weakened during the formation of the Oberissalm Mylonite. Later on, a low-T deformation reactivated these weakened parts and produced the chloritic shear bands and the phyllites. South of the phyllites, in the centre of the Stiergschwez, a second NW–SE striking foliation was identified, which becomes the dominant foliation to the south. This represents the rising influence of the S' border of the "Bassler Granite Gneiss". At the W' edge, the striking of the foliation of the granite gneiss and the surrounding lithologies seem to bend from NE–SW to N–S and then to NW–SE and W–E. This traces the border of the granite gneiss and confirms the key role of the granite gneiss during the (?amphibolite facies or higher T) deformation. In the central parts, the "Bassler Stängel-Orthogneiss" lacks a dominant foliation. Instead, an extremely prominent NNE to NNW dipping lineation occurs. As the foliation is influenced by the lithological contacts, the central lineation might be a more reliably tracer of the regional stress filed. This indicates rather a pancake shaped (Sigma 1 = Sigma 2 > Sigma 3) than a cigar shaped stressfield (Sigma 1 > Sigma 2 > Sigma 3). The NW to NNW dipping lineations at the W' transition to the "Grey Bassler Orthogneiss" might be due to later rotation by sinistral deformation at the "Bassler Phyllonite" Zone.

Quaternary Geology

Glacial Sediments and Relicts

Numerous lateral moraines were identified. In the Kuhgschwez several moraine bodies occur west of the Platzenturm and Platzenkopf. These are probably related to a glacier system of the Unnützes Grübl. Measurements of glacial striations confirm an assumed NNE-directed movement. The glacial system derived from the Platzengrube seems to be of subordinated importance. The uppermost moraine may mark a stadial of this glacier. It was probably blocked by the larger glacial system of the Unnützes Grübl. Several lateral moraines in the E' part of the Kuhgschwez seem to be related to a glacial system arriving from the Uelasgratspitze. As there are two sets of lateral moraines, two stadials of this glacier can be reconstructed.

In the Stiergschwez, west of the Gschwezgrat, another set of lateral moraines was identified marking the orographic right side of a glacial system. The northern bodies offer garnet bearing lithologies indicating a relation to the larger system, as the local lithologies lac garnet. At the W' side of the Stiergschwez in the elongation of the Sommerwand, a large lateral moraine body may represent the orographic left side of this glacier. In the centre of the Stiergschwez, large outcrops of glacier polished surfaces occur. A moraine body to the south may represent the 1850 stadial of the Sommerwandferner. A quaternary sediment-body north of the Sommerwandferner and south of the Sommerwand could not be characterised.

North of the Kuhgschwez, two sets of large lateral moraines cut all other features. These lateral moraines and numerous glacier polished surfaces are related to the main glacial system arriving from the recent Alpeiner Ferner as can be seen from the lithological content.

The lithological composition of the lateral moraines of the Kuhgschwez are very uniform and dominated by the "Bassler Granite Gneiss". The "Franzsenn Bt-Gneiss" and "Amphibolite" at the E' border show only minor influence. The uppermost moraine bodies in the Stiergschwez are dominated by Alpeiner Granite Gneiss whereas the moraine bodies derived by the Alpeiner Ferner system show a more complex composition including micaschists and Grt-micaschists.

Rock Glaciers

The mapping area offers a large number of recent and ancient rock glaciers. A steep height between the lower Kuhgschwez and the upper Platzengrube, Unnützes Grübl "Uelasgrübl" (in official term describing the cirque south of the Uelasgratspitze) defines the border between inactive (overgrown) and active (fresh material) rock glaciers. At the height, rock slides regularly occur. A beautiful example are the rock glaciers of the "Uelasgrübl". There, two active rock glaciers deliver different lithologies. The rock glacier to the east consists of granite gneisses ("Bassler Granite Gneiss"), the one to the left is dominated by amphibolites. The compositions of the rock glaciers can be used for a rough estimation of the outcropping lithologies at the upper inaccessible "Uelasgrübl". In the Unnützes Grübl, only granite gneisses occur. Therefore, no other lithologies than "Bassler Granite Gneiss" can be expected (as the mapping on the S' wall face gave the same. At the Gschwezgrat, the impressive rock glacier can be studied best (outcrops 2014-19/08–2014/19/15). There, the rock glacier breaks through the Gschwezgrat at several sites and delivers material into the Stiergschwez. In the Stiergschwez, rock glaciers are of minor importance. One probably inactive example was found east of the undefined sediment body, another one in the north near to the Franz-Senn-Hütte, where a lateral moraine was remobilised.

In general, it can be said, that the north facing orientation of the cirques favoured the development of rock glaciers. After the retreat of the large glaciers, the available moraine material was remobilised as rock glaciers. At several positions, the original lateral moraine can be reconstructed.

Others

Numerous geomorphologic features were observed. The most prominent one is a rockslide (or probably small landslide) at the N' edge of the Gschwezgrat. There, huge (about 1,000 m^2 and more) boulders occur between the Gschwezgrat and the lateral moraine. The lack of these boulders north of the moraine body indicates, that the slide occurred before or during the corresponding stadial. Further on, the rock slide covers the larger lateral moraine of the alpeiner glacier, but not a second, younger set. This may indicate, that the slide occurred between two prominent stadials.

Active rock slides occur at the hights to the "Uelasgrübl" and the Unnützes Grübl, where the rock glaciers deliver fresh material. Between Platzenturm and Basslerjoch, highly active channels can be found. There, rockslides occur almost daily. Therefore, the old path to the Schrimmennieder was closed several years ago. On the path, huge boulders can be found today indicating the activity of these channels. At the ridge between Schrimmennieder and Basslerjoch and from Basslerjoch to the north, rockslides were seen as well endangering the official path to the Schrimmennieder. As the permafrost seems to melt, the slopes become more and more instable.

Springs are a common feature in the mapping area. They occur predominantly as "Schuttquellen", but in the Stiergschwez, several springs can be interpreted as "Stauquellen". Springs predominantly occur, where glacier polished surfaces can be seen at the end of sediment bodies such as rock glaciers or debris cones.

Key Outcrops

Lithological contacts were found at several locations. The most important show the borders between "Bassler Granite Gneiss" and the surrounding "Schrimmen Suite".

A tectonic contact was found in the Platzengrube at site **2014-13/11** (also site **2014-16/05** and **2014-16/06**), where a difficult situation with sparse outcrop quality occurs.

Another vertical N–S striking contact between "Bassler Granite Gneiss" in the NE and "Schrimmen Amphibolite" occurs at the prominent cirque between Platzenkopf and Platzenturm (site **2014-21/05**) where both lithologies are divided by 1 m of grass.

A continuous contact between "Bassler Granite Gneiss" in the south and "Schrimmen Bt-Pl-Schist" in the north was found in the small river south of the Franz-Senn-Hütte (site **2014-28/05–2014-28/08**). This contact is marked by several m thick restitic dark micaschists ("Franzsenn-Hütte Bt-Micaschist") which pinch out to the NW' edge of the "Bassler Granite Gneiss" marked by the inflow of this river into the Alpeiner River. There, the "Bassler Granite Gneiss" directly touches the "Oberissalm Mylonite". Between site **2014-27/17** and site **2014-27/20**, a continuous transition from a granite gneiss to a mylonite to an amphibolite can be seen.

At the Sommerwand, a beautiful section from "Bassler Granite Gneiss" in the east to "Schrimmen Bt-Pl-Schist" and "Schrimmen Amphibolite" in the west was found (site **2014-29/16–20114-29/19**). This site includes mylonitic parts which probably represent (a splay of?) the continuation of the "Oberissalm Mylonite". The amphibolites occur as layered or banded rocks.

The S' border of the "Bassler Granite Gneiss" to the "Schrimmen Bt-Pl-Schist" was found at site **2014-29/23**.

A highly important outcrop was found at the winter path at site **2014-26/15**. There, a direct contact of a fine grained "Bassler Granite Gneiss" and a (fried?) host rock occurs. The contact is folded with an FA dipping steeply to the NNE. This outcrop may come near to what can be called a primary contact similar to an outcrop known from the Schafsleger NE of the Regensburger Hütte. Nevertheless, the tectonic overprint prohibits calling it an intrusive primary contact.

The winter path from the Oberissalm to the Franz-Senn-Hütte itself offers the most beautiful section through the mapping area, as all sorts of rocks and many beautiful structures occur.

Intense folding was found at numerous sites. At the Platzenturm between site **2014-20/01** and **2014-21/05**, all sizes of folds were seen. Further on all outcrops between the two rivers directly at the Franz-Senn-Hütte offer beautiful folds.

Site **2014-14/16** in the Platzengrube offers the best example for the silicification of the "Bassler Granite Gneiss" at the "Schrimmennieder Fault Zone".

Site **20143-18/14** lies in between the two rock glaciers from the "Uelasgrübl", where the lithological content can be compared best. This is important for the interpretation of the lithology of the inaccessible upper part of the "Uelasgrübl".

At site **2014-14/22**, the rock slide covering the lateral moraine can be seen.

Beautiful springs were found at site **2014-13/05**, **2014-16/10–2014-16/11**, **2014-15/09–2014-15/13**.

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Blatt 154 Rauris

Bericht 2014–2015 über geologische Aufnahmen im Quartär auf den Blättern 154 Rauris und 155 Bad Hofgastein

MATHIAS BICHLER

Die letzte publizierte Kartierung der quartären Phänomene und Sedimente im Gasteinertal auf Blatt 154 Rauris geht auf EXNER (1956) bzw. EXNER (1957) zurück. Im Zuge der geologischen Aufnahme für Blatt Rauris wurde dieses Gebiet unter Zuhilfenahme einer hochauflösenden Laserscan-Topografie des Landes Salzburg und unter Berücksichtigung moderner stratigrafischer Erkenntnisse neu kartiert. Das Hauptaugenmerk lag hierbei einerseits auf der Erfassung und stratigrafischen Klassifikation von Gletscherständen sowie andererseits auf der Neukartierung von großen, bisher undifferenzierten Quartär- und Massenbewegungsflächen. Vor allem die Massenbewegungen waren hinsichtlich ihrer Dimension, ihrer Struktur und Lithologie sowie ihrem Versagensmechanismus zu erfassen. Darüber hinaus galt es, ihre chronologischen Beziehungen zu den Moränen der verschiedenen Gletscherstände zu charakterisieren. Die Arbeit profitierte dabei von sehr hilfreichen Hinweisen zur glazialen Ausdehnung während des Hoch- und Spätglazials sowie einer detaillierten Karte spätglazialer Moränenstände aus der Dissertation von JAKSCH (1956), die dieser der Geologischen Bundesanstalt freundlicherweise zukommen ließ.

Hinweise zur Kartierung des Quartärs

Aufgrund der Präsenz mehrerer Seiten- und Endmoränen des Gschnitz- bzw. des Egesen-Stadials wurde versucht, die verschiedenen ehemaligen spätglazialen Gletscherausdehnungen chronologisch einzuteilen und zu beschreiben. Dabei orientiert sich die stratigrafische Gliederung der spätglazialen Sedimentabfolgen in Eiszerfallsphase, Gschnitz-Stadial und Egesen-Stadial an den auf Blatt 179 Lienz (LINNER et al. 2013) gewonnen Erkenntnissen (REITNER et al., in Druck). Wo möglich wurde versucht, die historische ELA (Equilibrium-Line Altitude; Deutsch: Schneegrenze) mit Hilfe der Methode Lichtenecker (auch Methode MELM genannt) zu bestimmen und mit benachbarten Gebieten zu vergleichen. Bei dieser sehr einfachen Methode bestimmt der Ansatzpunkt der höchsten Seitenmoräne die Schneegrenze (LICHTENECKER, 1938). Die Benennung von lithogenetischen Einheiten, geomorphologischen Einheiten und Phänomenen folgt der sich derzeit (Jahre 2015–2016) im Aufbau befindenden Datenstruktur für das Quartär und für Massenbewegungen.

Einzugsgebiet Wiedner Almbach

Das Einzugsgebiet des Wiedner Almbaches mit der Schmaranz (1.768 m) und der Biberalm (1.734 m) sowie der Wasserebenhütte (1.381 m) liegt in einem E–NE verlaufenden, an das Leidalmbachtal (BICHLER, 2014) nördlich anschließenden Seitental vom Gasteiner Tal. Morphologisch wird der Kar-Bereich von Guggenstein (1.979 m), Hundskopf (2.404 m), Kramkogel (2.454 m) und Schwarzwand (2.204 m) eingerahmt. Östlich der Schwarzwand dreht der Kammbereich in Richtung Nordost und verläuft über die Hohe Scharte und den Wachtberg (1.931 m) bis in den Glockenwald. Der tiefere Bereich Richtung Gasteiner Tal, zum größten Teil auf Blatt 155, zieht sich von Süden startend beim Weiler Wieden über Breitenberg bis nach Harbach (alle Gemeinde Bad Hofgastein).

Die vorherrschende Lithologie im südlichen Kammbereich ist Schwarzphyllit, während im nördlichen Kar-Bereich Kalkglimmerschiefer mit Schwarzphyllit wechsellagert.