

## **Preliminary Geology of the Area Northeast of Bernstein, Austria**

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Metamorphic rocks of para and ortho origin, Tertiary detritals and alluvium were mapped in the area under study. Rock units are the High Crystalline Rock Series, Grobgneis Series, Rednitzer Series, Conglomerate Series and Alluvium.

High Crystalline Rock Series consist of different gneisses (para and ortho), amphibolite, eclogites, marble, schist, serpentinite, pyroxenite, quartzite and minor pegmatite granite.

Grobgneis Series consist mainly of augen gneisses with „septe“ of few gneissic schists, garnet mica schist, muscovite schist, quartzitic schist and biotite amphibolite. The gneisses of this series are also of ortho origin and could be similar to the ortho gneiss of the High Crystalline Rock Series.

Rednitzer Serie consist of different phyllites, greenschists, serpentinite, few marbled limestone and small gabbro intrusives.

Tertiary detritals und alluvium cover these metamorphic series.

Tectonic forces affected the area giving rise to two different types of metamorphism. From this point of view, the rocks are divided into several facies.

Two phases of tectonics which have affected the area have been recognized: (a). Pre-Alpine tectonics which gave rise to the amphibolite facies of metamorphism in the High Crystalline Rock Series. Here deformation and crystallization are simultaneous; (b). Alpine orogeny — which affected the High Crystalline Rock Series and the Rednitzer Series. The High Crystalline Rock Series could have been the basement of the Rednitzer Series and this orogeny could have uplift the series. Uplift gave rise to a „dome structure“ Folding and faulting followed. Mylonitization and sericitization was observed in the High Crystalline Rock Series. Grobgneis and other ortho-gneis derived from pre-Alpine, possibly Hercynian, intrusions and which were subsequently affected by metamorphism. Whether the granite was of anatectic or purely magmatic origin is still a problem.

In the Rednitzer Serie the metamorphism is of the greenschist facies.

The origin of the serpentinite in the Rednitzer Series can be related to the gabbro. The origin of the serpentinite and other basic rocks in the High Crystalline Rock Series seem to be different from the above mentioned serpentinite.

Methods of petrofabric analyses were used of orientation diagramms are preliminary and mainly descriptive since the area, where the samples were taken, is tectonically complex.

## **Petrographical and Mineralogical Notes on Rocks from the Area between Hochneukirchen and Bad Schönau**

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Low metamorphic rocks consist of coarse grained gneiss and schists. High metamorphic rocks are a series of coarse grained gneiss, quartzite (banded) and basic rocks with 30—50% Anorthite content. Conglomerate of the area consists of big boulders of gneiss rarely they are forming structures. Poor in binding material.

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