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Basic and intermediate magmatic rocks in the South of the Bohemian Batholith

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Based on petrographical fieldwork and geochemical (XRF) investigations, four subtypes of basic and intermediate rocks could be determined in the south of the Bohemian Batholith. One group is similar to the so-called Redwitzite, which is described from the Bavarian part of the Bohemian Massiv. The redwitzitic rocks were found near Gallneukirchen and in the Gusen valley. They show characteristic large, randomly oriented biotites in a plagioclase-orthoclase-amphibole matrix. Whole-rock geochemistry is ultrapotassic, high in Ni, Cr and Ba. The mode of this type of rock is (quartz)monzonitic. A magmatic body near Engerwitzberg mapped as diorite can be described as "Titanitfleckendiorit" (so-called Engelburgit). The chemical composition is basic and potassium rich. This type of rock displays mm-sized euhedral sphene crystals, which are surrounded by plagioclase. The composition is quartzdioritic. The third type of magmatite is a diorite and located near Oberreichenbach. It represents an amphibole-bearing diorite-porphyry with quartz-dioritic petrography, but potassium poor geochemical composition. The fourth group, also outcropping near Oberreichenbach, is a mafic variety of a Migmagranite. It can be described as a biotite-rich granodiorite with high concentrations of Ba, Zr, Sr and REE.

In the Gusen valley outcrop, the redwitzitic rocks intruded the surrounding Weinsberg- and Engerwitzdorf-Granite. All magmatites of the outcrop show a penetrative greenschist-facies overprint and ductile to brittle deformation along small shear-zones.