

**NEW INTERESTING TYPES OF GRANITOIDS IN THE THREE-CORNER-COUNTRY (DREILÄNDERECK) OF AUSTRIA; CZECH REPUBLIC AND GERMANY**

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During a cooperation-project between the Czech Geological Survey and Geological Survey of Austria aiming at geological mapping of Sumava (Böhmerwald) and Mühlviertel, several new varieties of granitoids were found. A follow-up petrological and geochemical study of these rocks is now supported by the Czech-Austrian program AKTION-KONTAKT.

An equigranular fine-grained mafic biotite granodiorite probably represents the oldest Variscan magmatic rock in the studied area. It forms a small lenticular body about 1km SE of the summit of the Plöckenstein (Austria).

Porphyritic coarse-grained biotite granite of the Weinsberg type is the most widespread granitic rock in the whole Moldanubicum. In the studied area, we found a relative basic variety of Weinsberg granite, which, in addition to some Kfs phenocrysts, also contains ubiquitous phenocrysts of oligoclase-andesine, locally up to 7x2cm in size. Chemically, this granite is characterised by (in wt. %) 62-63 SiO<sub>2</sub>, 5-6 FeO<sub>tot</sub>, 1.6-1.8 MgO, 3.0-3.2 CaO, 2.8-3.3 Na<sub>2</sub>O and 3.9-4.1 K<sub>2</sub>O.

Mafic K-Mg-rich granitoids termed durbachites (or Rastenberg type in Austria) are another typical rock type of the Moldanubicum. One large and several small bodies of typical durbachite (SiO<sub>2</sub> around 60-65%) are exposed in the Czech territory to the north of the Vltava valley. Several smaller bodies of extremely basic and mafic varieties of durbachite were found on both the Czech and Austrian sides of the border: pyroxene-biotite melasyenite (<50% SiO<sub>2</sub>) and amphibole-biotite melasyenite (50-55% SiO<sub>2</sub>). Both varieties contain phenocrysts of Kfs (about 3x1 cm) in a matrix of oligoclase, Mg-rich biotite and diopside or actinolite. Their chemistry is of particularly interesting: 47 to 61% SiO<sub>2</sub>, 5.5 to 8.5% FeO<sub>tot</sub>, 4.0-13.7% MgO, 2.3-6.7% CaO, 1.0-2.0% Na<sub>2</sub>O and 4.7-7.7% K<sub>2</sub>O, 200-700 ppm Cr, 70-260 ppm Ni, 300-450 ppm Rb, 280-500 ppm Sr, 250-600 ppm Zr.

Heavy porphyritic medium- to coarse-grained two-mica granite (preliminary termed as "Three-country-granite type") (SiO<sub>2</sub>=70.5-71.5%, FeO<sub>tot</sub> =1.8-2.2%, MgO=0.4-0.6%, CaO=0.8-1.0%, Na<sub>2</sub>O=2.5-2.8%, K<sub>2</sub>O=4.8-6.2%, Zr=170-220 ppm, Th=50-90 ppm) differs from the other two-mica granites in the southern Moldanubicum in a substantially higher content of Kfs-phenocrysts and especially in an extreme content of monazite and zircon inherited in biotite flakes. Monazite contains high amounts of thorium and thus this granite represents one of the most radioactive rocks within the whole Bohemian Massif. The surface area of this granite has been contained using gamma spectrometry field measurements.