end-member reactions involving garnet, phengite, glaucophane, paragonite and quartz are 500 °C and 1.3 GPa.

Ar^{39}-Ar^{40} dating from muscovite gave a well defined plateau age of 370 Ma which is similar to that in the Zadiel micaschists. Results of petrological study in combination with geochronological data indicate that amphibolite facies crustal rocks involved in the Jurassic subduction zone come from a basement unit that is not more exposed. Excepting garnet-amphibole gneiss and amphibolite from Rudnik that could be correlated with the Klatov group rocks, the micaschists differ from the underlying Gemericum by lithology, metamorphism and age. Remarkable information deduced from this observation is the preservation of textures (lack of younger deformation) and Variscan age, despite of heating up to 500 °C during high-pressure metamorphism.

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Metamorphic PT Conditions Estimated for Eclogite and Garnet Peridotite from Spačice and Uhrov Localities, Bohemian Massif

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Several occurrences of eclogite bodies are known near Spačice and Uhrov (ca 80 km SE from Prague) for that pressures of 1.7–2.0 GPa and temperatures of 750–960 °C were calculated (Medaris et al. 1998). Higher pressure of 3.8 GPa at 1083 °C was obtained by these authors for garnet peridotite in Uhrov. We found mineral assemblages, indicating very high-pressure metamorphism in two eclogite bodies, one occurring in granulite near Spačice and other in serpentinized garnet peridotite from Uhrov. In the first case, eclogite forms up to ca 50 m long lens in granulite. It shows advanced degree of retrogression and partial equilibrium in granulite facies conditions. In the second case eclogite forms ca 20 cm thick and 2 m long layers (veins?) that are partly deformed. In composition it corresponds to plagioclase-rich gabbro near to anorthosite. Both eclogites are formed by garnet, omphacite and kyanite. The eclogite from granulite contains two textural and compositional varieties of garnet and of clinopyroxene. The eclogite facies garnet – Gr I (Py_{36}, Grs_{34}, Alm_{28}) contains rutile inclusions and associates with omphacite Cpx- I (Jd_{29}). Some pyroxene analyses indicate ca 5 % Ca-eskola component. Garnet I is partly replaced by Al-rich clinopyroxene (Cpx II) and anorthite. A new Ca-rich garnet Gr-II (Py_{10}, Grs_{65},Alm_{23}) that forms either individual grains or rims the coarse-grained eclogite facies garnet, indicate textural equilibrium with Al-rich clinopyroxene and plagioclase. There is a sharp compositional jump with a very weak diffusion profile between these two garnet varieties. Mn content is low in both garnet, but the Ca-rich garnet has relatively higher Mn, suggesting decomposition of older garnet. Small amount of tschermakitic amphibole replacing Ca-rich garnet is also present.

Metagabbro in garnet peridotite has relatively high-Mg garnet (Py_{42}, Grs_{34}, Alm_{22}) and omphacite with Jd_{30}. Similar to eclogite from granulite, garnet is replaced by Al-rich clinopyroxene and anorthite ± amphibole and kyanite by anorthite, spinel and locally. Garnet contains rutile needles that mostly have parallel orientation. Majorite content in garnet ranges between 0.6–1.3 mol%.

The surrounding garnet peridotite has relicts of olivine, orthopyroxene, clinopyroxene, spinel and rarely of amphibole. Chromium-rich spinel forms inclusions in garnet and in clinopyroxene. Compositional maps indicate progressive formation of garnet after spinel. Garnet is rich in Mg (Py_{69},$Grs_{11}Alm_{18}$) and forsterite content in olivine is about 93 mol%. Clinopyroxene is diopside with $X_{Mg} = 0.9$. Orthopyroxene with $X_{Mg} = 0.8$ has Al_2O_3 about 1.7 wt.%. Spinel corresponds to Al-chromite with composition of $Mg_{0.54}Fe_{0.47}Al_{0.73\text{-}1.0}Cr_{0.8\text{-}1.19}O_8$.

Maximum PT conditions of ~4 GPa at 700 °C were calculated for eclogite. The garnet peridotite reveals pressure conditions similar to eclogite but at relatively high temperature of about 1000 °C. Textural relations and chemical composition, mainly the presence of Ca-rich garnet in eclogite suggest that decompression was followed by rapid cooling.

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