

Occurrence of brecciated crystalline carbonate in association with deep-marine metamorphosed sediments of the Turnaic Unit

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In the Revúcka vrchovina highland, north of Hrušovo village (N 48°31'12,5"; E20°02'55,9") about 15 km north of Rimavská Sobota town, condensed horizon of metamorphosed carbonate breccia and deep-marine sediments of the Turnaic Unit with the thickness of about 18 m occurs. Stratigraphically, the rocks lie directly on the Honce Limestone (Anisian) and upper limit of this formation is restricted by *rauhwacke*.

The base of the study horizon is formed by brecciated crystalline carbonate and clasts of predominantly fine-grained recrystallized limestone with the clast size up to 4 cm. Therein rarely allochems and uniserial foraminifera (*Nodosaria* sp.) without any further stratigraphic importance. Breccia gradually pass to finer grained layers. Matrix is formed by submicroscopic detritic redeposited dolomite (< 25 µm) which is cemented by Fe-Mn oxides and calcareous mud. During diagenesis and metamorphism of dolomite a substitution of Mn²⁺ for Mg²⁺ occurred which resulted in the formation of zonal carbonates. The cores are formed by dolomite relics that are flanked by Mn-Ca-Mg carbonate and the rims are composed of Mn calcite. In the matrix (formerly a very fine-grained cement) the paragenesis of greenschist facies metamorphism is presented with albite, quartz, chlorite, biotite, sericite, Fe and Mn oxides ± apatite and ± monazite mineral association.

A principal part of the study horizon consists of very fine-grained (below 25 µm) macroscopically red-brownish metamorphosed deep-marine sediments very similar to radiolarite. The original major components of deep marine sediments were: (a) – calcareous ooze; (b) – siliciclastics (predominantly quartz, mica, kaolinite, zeolite, and occasionally also zircon) which represent formerly heavily weathered pyroclastic (ash) material from acid/intermediate rocks; (c) – Fe and Mn oxides. These main constituent alternate in a different quantitative ratio and in a different thickness of sedimentary layers. Toward the upper strata siliciclastic material in sediments increasing. A part of the study horizon is composed of grey to black graphitic-muscovite-sericitic schist with intercalation of kaolinite and analcime which were metamorphosed to albite. Such an association of deep-marine sediments is typical for the sedimentary environment at a continental rise.

We suppose that breccia is related to the increased tectonic activity during the Pelsonian rifting and opening of the Meliata Ocean (synrift sedimentary breccia?). The sedimentary

record reflects a chaotic deposition of clasts of varying size and composition up to very fine-grained deep-marine sediments that subsequently underwent lithification, diagenesis, and metamorphosis under the greenschist facies condition.

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