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PŮVODNÍ PRÁCE/ORIGINAL PAPER

Sľudy a chlority ako indikátory podmienok metamorfózy karbonátových hornín gelnickej skupiny južného gemerika (Slovenská republika)

Micas and chlorites as indicators of metamorphic conditions of carbonate rocks of the Gelnica Group in the Southern Gemericum (Slovak Republic)

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Abstract

Investigated metacarbonates are located in the Early Paleozoic rocks of Southern Gemericum unit, Slovakia. Metacarbonates are part of Vlachovo Formation (Tichá Voda, Stará Voda) and Bystrý potok Formation (Betliar, Čučma, Malá Hekerová, Smolník - Mária Terézia, Holec). Detailed studies indicated metamorphic pressure-temperature (P-T) conditions of 3 - 7 kbar at 330 - 370 °C for the Gelnica Group. The calculated P-T conditions were verified using chlorite geothermometer and phengite geobarometer. Mineral association of metacarbonates consists of Si rich (3.10 - 3.35 *apfu*) phengitic micas, Fe-Mg chlorites (clinochlore and chamosite), quartz, K-feldspars and accessory fluorapatite. Micas and Mg-Fe chlorites originated from metamorphic recrystallization of clay material with incorporations of basic pyroclastic material during the regional metamorphism of pelitic protolith, which sedimented continuously with carbonates. Metacarbonates belong to the upper parts of Gelnica Group, which were metamorphosed under the greenschist facies conditions.

Key words: muscovite, chlorite, metamorphic conditions, metacarbonate, Gelnica Group, Gemeric unit, Slovak Republic

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