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Vliv diagenetických procesů na asociaci těžkých minerálů v pískovcích z lokality Slivotín (ždánická jednotka, flyšové pásmo Vnějších Západních Karpat, Česká republika)

Influence of diagenetic processes on assemblage of heavy minerals in sandstones from the locality Slivotín (Ždánice Unit, Flysch Belt of the Outer Western Carpathians, Czech Republic)

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Abstract

An electron microprobe study of polished sections prepared from a sample of fine-grained sandstone from the locality Slivotín (Ždánice-Hustopeče Formation, Ždánice Unit, Flysch Belt of the Outer Western Carpathians, Czech Republic) allowed to yield in addition to data on chemical composition also the detailed information on *in situ* textural relationships of individual minerals. During our study, emphasis was given to accessory phases belonging to the translucent heavy mineral fraction. The detrital garnet ($Alm_{36-82}Grs_{2-45}Prp_{2-22}Sps_{0-15}$) was extensively dissolved and replaced by calcite cement from its margins and along the cracks. Detrital fluorapatite was dissolved in a similar way, however, dissolution episode was followed by growth of authigenic rims composed of carbonate-fluorapatite. Other observed heavy minerals (zircon, chrome spinel, TiO_2 phase, monazite, tourmaline) probably remained unaltered by diagenetic processes. The chemical composition of chrome spinels varies mostly between magnesiochromite and chromite, whereas spinel is very rare. The chemical composition of garnets and chrome spinels is comparable with published data from Czech, Polish and Slovak parts of the Flysch Belt of the Western Carpathians, and indicates the primary source of detrital material in rocks of deeper parts of orogen, characterized especially by the presence of catazonal metamorphites and almost lacking volcanic rocks. Redeposition of heavy minerals from older sediments cannot also be ruled out. The pronounced diagenetic alteration of garnet, if not very scarce in the area of Flysch Belt, could help to explain the earlier observations of wide fluctuations of contents of garnet in heavy mineral concentrates.

***Key words**: Outer Western Carpathians, Flysch Belt, Ždánice Unit, heavy minerals, diagenetic processes, garnet, apatite, chrome spinel*

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