

## Ľubietová-Peklo - drobný výskyt Cu-(±Ag) zrudnenia ukrytý v tieni „medených obrov“ (Slovenské rudohorie, veporikum, Západné Karpaty)

Ľubietová-Peklo - small occurrence of Cu-(±Ag) ores hidden in the shadow of „copper giants“ (Slovenské Rudohorie Mts., Veporic Unit, Western Carpathians)

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### Abstract

Ľubietová-Peklo Cu-(±Ag) ore occurrence is located about 20 km to the E from Banská Bystrica (district city) and about 3.7 km to the ENE from Ľubietová village (Central Slovakia). In the past (16<sup>th</sup> - 19<sup>th</sup> century), mining works of a lesser extent were made on this site. Subvertical quartz-carbonate veins (NE-SW to E-W direction) with ore minerals intersect both, migmatitised orthogneisses (Lower Paleozoic) and Permian greywackes of the Veporic Unit. Ore veins are intersected and displaced by NW-SE directed younger tectonic structures (often with development of quartz veins without ore mineralization). Ore mineralization originated in the following stages: I.) pyrite-arsenopyrite stage (quartz I, pyrite, arsenopyrite, cobaltite I); II.) bournonite stage (bournonite-seligmannite, galena); III) carbonate stage (dolomite-Fe dolomite, barite) and quartz-sulphidic stage (quartz II, cobaltite II, sphalerite, chalcopyrite I and II, tetrahedrite, tennantite). Supergene zone is represented by small amounts of cerussite, malachite and goethite. Mineralogically remarkable are zonal crystals of bournonite-seligmannite (almost complete solid solution). The most extreme difference between As and Sb content in a single crystal can be expressed as Bnn<sub>99</sub>Slg<sub>1</sub> to Slg<sub>84</sub>Bnn<sub>16</sub>. The Sb content generally increases from the centre of the crystals toward their rims. On the most deposits, mineral phases of the bournonite-seligmannite series occur as a younger minerals (in association with jordanite, geocronite and galena) and crystallize usually after precipitation of tetrahedrite, tennantite, or chalcopyrite. As for the Ľubietová-Peklo occurrence, mineral phases of bournonite-seligmannite series crystallize directly from As- and Sb-bearing hydrothermal fluids, unusually before crystallization of tetrahedrite, tennantite and chalcopyrite. Hydrothermal vein mineralization has an Alpinian age and originated most probably during Upper Cretaceous.

**Key words:** quartz-sulphidic mineralization, Cu-Pb-Sb-As sulphosalts, seligmannite, tetrahedrite, tennantite, sulphoarsenides, Veporic Unit, Western Carpathians

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