Acta Mineralogica–Petrographica, Szeged, XLI, Supplementum, 2000

NEW RESULTS ON ORE MINERALIZATION IN THE ŠTIAVNICA–HODRUŠA ORE DISTRICT, SLOVAKIA

JELEŇ, S., HÁBER, M. (Geological Institute Slovak Academy of Sciences, Banská Bystrica, Slovakia) & KODĚRA, P. (Geological Survey of the Slovak Republic, Bratislava, Slovakia)
E-mail: jelen@gu.bb.sanet.sk

Historically, the Štiavnica–Hodruša ore district, with a large number of precious metal and base metal hydrothermal veins, is famous about findings of several interesting minerals.

Galena, sphalerite, chalcopyrite, marcasite, pyrite and hematite are the dominant ore minerals, while bornite, chalcocite, covellite and scheelite are less pronounced. Locally, rare realgar, cinnabar, arsenopyrite, pyrrhotite, stibnite, digenite, famatinite, greenockite, wurtzite, boulangerite (var. plumosite), jamesonite, bournonite, heteromorphite, ferberite, hemimorphite, coffinite and uraninite were found.

Ag and Au minerals occur predominantly in southern subsurface parts of the veins. Already in the past, gold, electrum, küstelite, silver, argentite/acanthite, polybasite, pearceite, Ag-tetrahedrite/freibergite, pyrargyrite, proustite, stephanite, rare xanthoconite and pyrostilpnite were described. Recently stromeyerite, mckinstryite, diaphorite, miargyrite, freieslebenite and rare benleonardite were also found.

For deeper parts of the veins Bi sulphosalt assemblage is characteristic, whose minerals overgrow each other intimately together with galena solid solution (PbS_{ss}). This assemblage consists of emplectite, matildite, hodrushite, aikinite, wittichenite, Ag-wittichenite, paděraite, vikingite, gladite, krupkaite, hammarite, lindströmite, friedrichite, new mineral phases similar to mummeite and ourayite (Kovalenker *et al.*, 1993). Apart of these minerals numerous new other mineral phases were discovered that belong to the system Ag-Cu-Pb-Bi-S ($Ag_4Pb_4Bi_6S_{15}$, $(Cu,Ag)_4PbBi_2S_6$, $Cu_5AgPb_2Bi_4S_{11}$, $Cu_2AgPbBiS_4$, $Ag_5CuPbBi_2S_7$, $AgPb_4BiS_6$, $AgPb_3BiS_5$, $Ag_6Pb_5Bi_6S_{17}$, $Ag_2PbBi_2S_5$, $Ag_5PbBi_5S_{12}$, $AgPb_2Bi_3S_7$ and $(Cu,Ag)_{7,2}Pb_{1,3}(Bi,Fe)_{11,5}S_{22}$), associated with gold of high purity (~ 860). Furthermore, naumannite and an $Ag_{10}Cu_2Te_3SeS_4$ mineral phase are also present.

In the currently exploited Svetozár precious metal vein system in Hodruša, gold of three generations occurs with different fineness. The oldest gold has the highest fineness (910–960), younger gold has lower fineness 810–880 and the youngest electrum has fineness ranging 745 to 790 and it is the visible gold. Recently, hessite and altaite were described in this precious metal assemblage.

Quartz and carbonates of several generations and varieties represent the gangue vein filling. In upper parts rhodonite, barite are abundant, rare adularia, epidote, chlorites, stilbite, gypsum, kaolinite, fluorite, illite/smectite, and halloysite are also present. The supergene mineral assemblage is represented by cerussite, anglesite, wulfenite, gypsum, pyromorphite, malachite, chalcanthite, melanterite, goslarite, diadochite, jarosite, voltaite, copiapite, coquimbite, quenstedtite, halotrichite, alunogen and other minerals.