

PRELIMINARY DATA CONCERNING THE Cu, Au, Ag DISTRIBUTION IN THE BOLCANA ORE DEPOSIT, METALIFERI MTS., ROMANIA

POPESCU, GH. C. & CIOACA, M.

Department of Mineralogy, University of Bucharest, 1, N. Bălcescu Bvd., RO-010041 Bucharest, Romania
E-mail: mihaela2012@yahoo.com

The Bolcana ore deposit is one of the 14 porphyry copper structures belonging to the Neogene metallogenesis of the Metaliferi Mts. The deposit is located on the south-western border of the Brad-Săcărâmb District, approximately 25 km NE of Deva. It constitutes a part of the Troița-Măgura metallogenetic field, with an exceptional concentration of metallic elements, presenting a copper-gold ring-zoned structure (POPESCU & NEACSU, 2005); the porphyry mineralization occupies a central position around which gold-silver and polymetallic veins have developed. The copper-gold mineralization has a spatial and genetical relationship with a subvolcanic body of Sarmatian age, formed of amphibole-bearing andesites/microdiorites. The structure exhibits a brecciated structure with intensely hydrothermally altered microveins and/or impregnations within the host rock. The main metallic minerals are pyrite, chalcocopyrite, magnetite and subordinately, bornite, hematite, molybdenite, and native gold. The most abundant minerals are chalcocopyrite and magnetite; subordinate amounts of pyrite and bornite occur in the central part of the ore deposit. The mineralization is superimposed on a potassic alteration zone, whereas pyrite becomes dominant towards the upper and marginal part of the intensely argillized mineralized body. The copper-gold miner-

alization is cross-cut by epithermal polymetallic veinlets formed of sphalerite, galena, pyrite, chalcocopyrite, tetrahedrite, bournonite, marcasite, *etc.*, associated with carbonates and quartz-gold veinlets.

The ore deposit has been investigated with mining works (at five levels) and drill works spanning over 1000 m in depth. Such works have made possible to outline four cylindrical breccia columns within the Bolcana subvolcano ("breccia pipe") which were richer in mineralization (the F17, F282-F13, F21-F4 and F3 zones). Distribution of Cu, Au and Ag marks an increase of the metal content with depth, and a direct correlation between Au and Cu. Distribution maps drafted for each horizon and outlining the four mineralized columns mentioned above, show Cu contents of over 2% and Au contents of over 0.3 g/t, as well as the overlapping of Cu, Au and Ag mineralization in most situations. There are cases where copper, gold and silver occur separately, suggesting two stages of mineral genesis: one with copper and another one with gold-silver.

Reference

POPESCU, GH & NEACSU, A. (2005): In: Abstracts, Vol. 37, No. 97, GSA Annual Meeting SLC 2005, p. 516.