

MINERALOGICAL ZONATION OF THE UKRAINIAN CARPATHIANS

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One of the main tasks of topographic mineralogical investigations is the recognition of mineralogical zonation carried out with a help of geology-structural principle. In the course of such zonation, the mineralogical province as elementary regional mineralogical taxon may be used. Province margins according to N. Yushkin coincide as a rule with the boundaries of the large and middle sized structural elements.

The Ukrainian Carpathians belong to the united Carpathian mineralogical province with diverse development of precious metal, sulphide, carbonate and sulphate-chloride mineralization. Four mineralogical subprovinces can be distinguished within the bounds of the Carpathian province: Marmaroshska, Precarpathian, Carpathian and Transcarpathian.

The Marmaroshska mineralogical subprovince occupies marginal northwestern Marmaroshsky massif part with outflow of the most ancient (Upper Paleozoic) metamorphic and magmatic rocks and can be divided into Rakhivsky and Chyvchynsky mineralogical regions. The main mineralogical objects there are the deposits and ore manifestations of gold, subgraphite and manganese rhodonite-rhodochrosite ores, stratiformed iron pyrite, copper-pyrite, pyrite-polymetallic and veined polymetallic ores and marbles.

The Precarpathian mineralogical subprovince includes the territory of the Pre-Carpathian Foredeep filled with thick Miocene molasse series. Three main mineralogical regions can be distinguished here: Stebnyk–Truskavetsky with the deposits of potassium-magnesium and lead-zinc deposits in Miocene halogenous rocks; Kalushsky with potassium-magnesium salt deposits and insignificant copper (chalcopyrite) mineralization and Nadvirnyansky–Yablunivsky with widespread manifestation of the copper mineralization (chalcocite mainly), as well as with ancient placer (Slobodsky conglomerates) and contemporary alluvial gold mineralization.

The Carpathian mineralogical subprovince occupies most of the area of the Folded Carpathians composed of Cretaceous and Paleogene terrigenous flysch formations. The main mineralogical objects here are stratiformed copper (chalcopyrite and chalcocite) and post-sedimentation iron-manganese carbonate mineralization, mercury and antimony-mercury-arsenic ore manifestation and regional development of the Marmaroshsky “diamond”:

The Transcarpathian mineralogical subprovince occupies the foredeep of the same name, formed with the thick series of molasse rocks and Neogene volcanites with intensive and diverse post-volcanic mineralization. Four mineralogical regions can be distinguished here: Beregivsky with the deposits of gold, gold-polymetallic, barite-polymetallic, alunite and kaolinite ores; Vyshkivsky with mercury deposits in the form of cinnabar, metacinnabar-cinnabar and sphalerite-galena-cinnabar mineral types; Solotvynsky with rock salt deposits; Vyhohrat–Gootynsky one with almandine mineralization in dacites, ungvartite and ferriferous (nontronite-goethite) mineralizations as well as quartz-topaz, quartz-tourmaline, quartz-kaolinite and other metasomatites accompanied with tellurium-bismuth mineralization.