

PERGA BERYLLIUM DEPOSIT OF THE UKRAINIAN SHIELD AS THE GEOLOGICAL PHENOMENA

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The new high-quality type of beryllium ores in alkaline (feldspar) metasomatites with genthelvite was revealed in Pre-Cambrian within the limits of the Ukrainian shield for the first time in the global geological practice. Mineralization is connected with rare-metal granite (apogranite) formation of Late Proterozoic age and located in Suschano-Perga zone of tectonic-metasomatic activation in the boundary northwestern part of the Ukrainian shield. Areal dynamic metamorphism, schist formation, cataclasm, mylonitization of rocks and intensive metasomatic processes - potassium and feldsparization, albitization, greisenization, silicification are exhibited within the limits of this zone. Various metasomatic formations are enriched by alkalis (K, Na), volatile components (F, CO₂, H₂O, S), rare elements (Be, Nb, Ta, TR, Zr, Sn, W, Li, Rb, Cs, Th). Beryllium mineralization is connected with steeply dipping feldspar bodies of alkaline (feldspar) metasomatites of albite-potassium-feldspar, micaceous-feldspar and quartz-siderophyllite structures. The main ore mineral - genthelvite (Zn₄Be₃(SiO₄)₃S) contains 11,5-12,8 % BeO; 42,5-50,3 % ZnO; typical elements - impurities - Ti, Al, Rb, Sn, TR, Cd, Ge, Ga, In, Tl, Th. Accessory minerals are phenakite, cassiterite, columbite, zirconium, cyrtolite, magnetite, martite, hematite, willemite, garnet, fluorite, gahnite, wolframite, molybdenite, sphalerite, galena. About 50 finds of helvite group minerals are known in the world. Genthelvite is considered as the most rare mineral. About 10 its exotic finds where known, and seven of them there where in pegmatites. Iron Mountain helvite-bearing magnetite skarns (USA) are most known, however these ores have low technological characteristics. In this connection the discovery in 60-th of Perga deposit with high-quality genthelvite ores of Pre-Cambrian age has become the global sensation. This deposit is unique and has not analogs in the world by resources and ore quality. Despite of significant term (more than 40 years) past from time of this deposit discovery, there where no messages about discovery of it's doubles in the world yet. This geological phenomenon requires the solution and, obviously, it will be a problem of the next century.