A STUDY OF TRANSMAGMATIC FLUIDS AND THEIR ACTIONS WILL BECOME THE TOPIC OF MAGMATISM AND ORE GENESIS IN XXI CENTURY

ZOTOV I.A. The Institute of geology of ore deposits, petrography, mineralogy, and geochemistry of RAN, Moscow, Russia

The experimental petrology and mineralogy supplied us with enough profound and comprehensive knowledge about features of magmatic melts and distribution of ore components between magmatic minerals, remaining melts and gase phase (fluid) during their crystallization. But many obvious geological magmatic processes such as great hybridization of magmas (especially granitic ones by basic wall rocks), variation in degree of differentiation of basic magmatic bodies, and even usual sequence of magmatic phase intrusions in granitic complexes from early basic ones to more and more enriched with silica phases remain unexplained. And the appearance of magmatogenic ore deposits, especially big ones, is often taken as a miracle, because their maternal ore-forming magmatic intrusions are not most commonly marked in unusual big size or enrichment by the ore elements. About 50 years ago well-known petrologist D.S. Korzhinskii (1952) supposed that natural magmas evolve in participation of the fluid phase which can go through melts. Generated in mantle such transmagmatic fluids, if they are abundant, influence actively on the speed of consolidation of magmas, their composition and ability for hybridization. In addition, the transmagmatic fluids proved to be able to transport ore components which compose the significant part of the large deposit lodes. This is the main idea of our hypothesis of generation of the big magmatogenic ore deposits (Korzhinskii, Pertsev, Zotov,1984; Zotov,1980,1989 both in Russian, Marakushev, Zotov et al.,1988).