

## GEOCHEMISTRY OF THE SKARN FROM MRACONIA VALLEY, ROMANIA

ANASON, A.<sup>1\*</sup>, MARINCEA, Șt.<sup>1</sup>, BILAL, E.<sup>2</sup>, DUMITRAS, D.G.<sup>1</sup> & IANCU, A.M.<sup>1</sup>

<sup>1</sup> Geological Institute of Romania, 1 Caransebes Str., RO-012271, Bucharest, Romania

<sup>2</sup> Centre SPIN, Ecole Nationale Supérieure des Mines de Saint-Etienne, 158, Cours Fauriel, F-42023 Saint-Etienne Cedex 2, France

\* E-mail: angela.anason@yahoo.com

The research area is of the hydrographic basin of the Mraconia Valley, it is bounded by the alignment Poiana Mraconia and Lugojstea at north; at east by the Satului Valley; southern limit is the Ponicoval Valley and the western limit is Cracul Radului-Cracul Urzicea. The studied rock belongs to two generations of intrusions corresponding to the acid magmatic phase, followed by basic dykes, including kersantite and spessartite. The crystalline schist of the Poiana Mraconia Series (CODARCEA *et al.*, 1934) suffered a progressive amphibolite with almandine facies metamorphism, a kyanite-almandine-muscovite sub-facies, together revealed the meta-pelite paragenesis including kyanite, green hornblende, andesine and almandine. The primary metamorphism was followed by regressive metamorphism of the Assyntic orogeny and Varisc cycles (BERCIA & BER CIA, 1975). The amphibolite paragneiss and the mica ceous paragneiss (with biotite and garnet) associated with the quartz-feldspar gneiss were affected by the arctic migmatization. The endoskarns can be distinguished from their high levels of Al, Na, K, Fe, Mg, Mn, Cu, Pb and Mo, however, the exoskarns are characterized by their high content of W. So we see a duality related to host rock (limestone, hornfels, granitoids) through which the metasomatic fluids were filtered. The skarns in the systems ACF and CaO-SiO<sub>2</sub>-MgO show clearly the difference between endoskarns and exoskarns, and the influence of the crystallization of

garnet and pyroxene on the evolution of fluids between the igneous rocks and limestones. Some exoskarns show the presence of wollastonite in this equilibrium. Finally, endoskarns are characterized by the presence of sulphides of Mo, Pb, Cu, Zn; the other hand, the exoskarns are much richer in scheelite. The garnet is contemporary of sulphidization phase affecting the pyroxene. There has been a syn-crystallization of andradite and sulphides, and silicification associated with sulphides (pyrite, pyrrhotite). The andradite-quartz-sulphide assemblage results from the transformation of pyroxene in the presence of sulphide. If the fugacity of sulphur increases during the transformation, the pyrrhotite is unstable and only pyrite is present (ANASON *et al.*, 2011). The main metallic mineral from Mraconia Valley is scheelite and molybdenite. The skarn is richer in garnet (andradite) and ferroactinolite, magnetite, epidote, apatite, vesuvi-anite and wollastonite.

### References

- ANASON, A., BILAL, E., MARINCEA, Șt., DUMITRAS, D.G., (2011): 17th Meeting of the Association of European Geological Societies (MAEGS-17), Belgrade, 215–217.
- BERCIA, I. & BER CIA, E. (1975): Revue Roumanie de Géologie, Géophysique et Géographie, Série de Géologie, 24:
- CODARCEA *et al.* (1934): C.R. Inst. Geol. Roum., 21: