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NICCOLITE-MAUCHERITE ASSEMBLAGES FROM THE ALBANIAN OPHIOLITE COMPLEX

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Two Ni-arsenide occurrences are known in the Jurassic Albanian Ophiolite Complex; i.e. from the Vrith Puka and the Runa-Kukesi localities. The first one is of the niccolite – maucherite type, whereas the second one is classified as maucherite type. The Ni-As mineralizations are situated in serpentine-chlorite rocks derived from dunitic protoliths. Fine grains of maucherite were discovered in chromitite too. Some of the mineral assemblages determined include: niccolite – maucherite – (breithauptite, native gold) – Fe-chromite and maucherite – Cr-garnet – Cr-chlorite – Fe-chromite. Aggregates of niccolite are surrounded by maucherite rims. The minerals occur in veinlets and fill cracks and fissures or are situated along grain boundaries of niccolite. Very small and elongated breithauptite grains and veinlets containing native gold are enclosed within niccolite.

Some euhedral corroded chromite grains, partially altered to Fe-chromite, occur in the serpentinite-chlorite matrix and within niccolite + maucherite aggregates.

Microprobe analyses of niccolite revealed Ni:As ratios of nearly 1:1, with relatively minor contents of Co (0.36 wt.%) and Sb (0.26 wt.%) and almost no Fe (0.07 wt.%). Niccolite is present also in sulfide Cu-Co mineralization as common inclusions together with Au-hedleyite or native Au in euhedral Ni-cobaltite grains (ÇINA,1990; 2004).

Maucherite of various assemblages is characterized by large variation of Ni:As ratios (1:0.665 to 1:0.879), resulting in formulae of Ni_8As_7 to Ni_3As_2. Maucherite within chromitite is characterized by higher contents of PGE, especially Os, Ir and Ru, ranging from 0.03 up to 0.88 wt.%. The contents of Co and Sb are similar to those of niccolite.

The Albanian Ni-arsenide mineralizations are comparable to those on Cyprus (FOSSE et al.; 1985; THALHAMMER et al., 1986). The transformation of niccolite to maucherite, as documented from Vrith-Puka, is supposed to be the result of a decrease of temperature and of the As content during the late stages of mineralization (THALHAMMER et al., 1986; CINA, 1981; 2004).

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