NEW MINERALS OF THE SKARN DEPOSIT OF THE RECSK ORE COMPLEX, MÁTRA MTS., HUNGARY

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The NE Hungarian Paleogene Recsk Ore Complex is well known for its porphyry copper and epithermal Cu-Au mineralisations, but polymetallic skarn and carbonate replacement (CR) ores can also be found, although limited information is available about them. The skarn ore is located around the porphyry intrusion, hosted by Oligocene and Mesozoic carbonate and siliciclastic sedimentary rocks (BAKSA, 1983; HAAS *et al.*, 2013).

The polymetallic skarn ores of Recsk contain mainly andradite garnet, diopside, tremolite, epidote, zoisite, anhydrite, calcite with pyrite, chalcopyrite, galena, sphalerite and minor fahlore as well as various sulphosalts. However, a few new minerals have been identified from the Rm-77 drillcore at 470.0 m. This rock consists of yellowish-grey wall-rock along with massive, macroscopically homogenous black material and a few millimetres thick galena veins. X-ray powder diffraction analysis, Raman microspectroscopy and SEM-EDS were used to identify the minerals of this rock. The presence of brucite, alabandite, monticellite, tochilinite/valleriite along with sphalerite galena, magnetite, serpentine and hydrous garnet were confirmed with all the above mentioned methods, while the presence of perovskite is also possible based on SEM-EDS observations. Perovskite has not been described from the area while alabandite, monticellite, valleriite, and tochilinite are new minerals in Hungary (SZAKÁLL & FEHÉR, 2020).

These minerals, with the exception of alabandite, have been reported in Mg-skarns from the Slovakian Vysoká-Zlatno Cu-Au skarn deposit (UHER *et al.*, 2011). Brucite and monticellite are known in the Mg-skarn of the Yerington District, Nevada, where brucite appears as pseudomorph after periclase (HARRIS & EINAUDI, 1982). The periclase alteration by brucite was also observed from the Recsk skarn deposit by CSILLAG (1975), which was described as a kind of replacement of an unstable Mg-skarn.

Tochilinite, along with brucite and antigorite or lizardite can form with Mg-rich hydration of pentlandite and pyrrhotite (VAN DE VUSSE & POWELL, 1983). The presence of pyrrhotite in the Zn-Cu skarns (FÖLDESSY & SZEBÉNYI, 2008) enables the formation of tochilinite, while valleriite may replace chalcopyrite (COOK & CIOBANU, 2001).

Alabandite most often can be found in epithermal veins associated with rhodochrosite and rhodonite (RAMDOHR, 1980) and in low-temperature hydrothermal deposits, usually accompanied by sphalerite, galena and chalcopyrite. It has also been described from the Western Carpathians in metamorphic deposits and polymetallic veins (KANTOR & KRIŠTÍN, 1973).

The newly identified minerals in the drillcore are unmentioned as of today in any of the studies from Recsk. This skarn specimen might represent a unique mineral assemblage formed during fluid-rich retrograde metasomatism. Our new findings inspire a more detailed research to understand metasomatic skarn processes associated with the porphyry stock at Recsk.

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