

CRYSTALLOCHEMISTRY OF CHLORITES ASSOCIATED WITH ULTRAMAFIC BODIES FROM SOUTH CARPATHIANS (ROMANIA)

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Chlorites are one of the most widespread mineral groups of the phyllosilicates, associated with the ultramafic rocks from the South Carpathians.

They have been observed in ultramafic bodies enclosed in both major tectonic units of the South Carpathians (Danubian and Getic) with similar morphological, physical and optical characteristics: pale-dark green microscopic or large flakes, grouped in geometrical packets, randomly distributed in the mass of the ultramafic rocks, in veins crossing the bodies, or in the marginal zones of them.

Chemical investigations have emphasized the presence of specific cations [Mg (mainly) Al, Fe³⁺, Fe²⁺, Mn, Cr, Ni, in variable proportions] for clinocllore, with some obvious substitutions in tetrahedral and octahedral sheets.

The structure of clinocllore belongs to the trioctahedral type (2:1:1), determined by the entire filling of the octahedral positions in both of its sheets, octahedral and octahedral interlayer ones.

As an exception one has to mention the Tisovita-Iuti occurrence, where have been found a tri-dioctahedral chlorite.

The most frequent substitution in the tetrahedral sheets is between Si and Al, more obviously in the Getic chlorites; sometimes Fe³⁺ is present in the tetrahedral positions in chlo-

rites investigated from ultramafites from Banat (Tisovita-Iuti occurrence).

The octahedral sheets, in the majority of chlorites, are occupied mainly by Mg and octahedral interlayer ones are filled by Mg and others, respectively Al, Ti, Fe³⁺, Fe²⁺, Mn, Cr and Ni.

The substitutions in the octahedral sheets determined a few changes of the magnesian character of clinocllore; in some occurrences clinocllore has a ferric/ferrous character (Sebes-Cibin Lotru, Semenic and Almaj Mountains), it is less aluminous in the chlorites from Semenic Mountains and it contains Cr - Ni cations in chlorites collected from Cibin, Sebes, Semenic and Almaj Mountains.

The variations of the reticular cell parameters reflect all Mg substitutions, but they are similar to those mentioned in the literature: a = 5.322–5.329 Å; b = 9.233–9.249 Å; c = 14.100–14.267 Å.

The lack of difference between Danubian and Getic chlorites pointed out the similar conditions of their crystallization, the emphasized differences being determined by local variation of the chemistry of crystallization environment.