Nature and typomorphism of colors of charoite from deposit "Sirenevy kamen"

SMIRNOV A.A., BUKHTIAROVA E.V., SOBOLEVA T.V.
VNIISIMS, Alexandrov, Russia.

The paper is devoted to study of the cause of idiochromatic, allochromatic and pseudochromatic colors of rare gemstone - charoite; relationship between color type and its formation conditions, late metasomatic and hydrothermal alterations was considered. Idiochromatic colors of charoite are characterized by pure bright violet and purple tones, rarely brown at contacts with melanocratic rocks. Optical spectra of diffusion reflection show the constant presence of hands 520 nm and 930-950 nm, attributed to spin-allowed electron d-d - transition in Mn3+-ions. Appearance of short-wave absorption edge in spectra of brown charoite is connected with Fe3+ - ions impurity. Allochromatic colors (grey, creamy, yellow, brownish, pink, reddish, crimson) may be depended on following factors; 1) pelitomorphic inclusions of host (mother) rocks; 2) formation of needleshaped charoite growth with pectolite, tinaksite, tokkoite, miserite, aegirine; 3) superimposition of bate-formed minerals such as apophyllite and calcite. Pseudochromatic color in a state of silky or pearly lustre manifest itself in semitransparent laminar and fibrous charoite aggregates from hydrothermal veins. Idiochromatic colors and strong lustre are typical for charoite formed at pinching of sloping ruptures, allochromatic ones are characteristic for charoite from zones of intensive brecciation of enclosing rocks.