AN EXAMPLE OF COEXISTENCE OF THREE PYROXENES IN THE MAGNETITE GABBRO OF THE WEST PANSKY TUNDRA LAYERED INTRUSION, KOLA PENINSULA, RUSSIA

CHISTYAKOVA, S.YU., LATYPOV, R.M.

Pyroxenes crystallizing from tholeiitic magma are usually described by the following evolutionary sequence: Mg-augite+bronzite - augite+pigeonite - ferroaugite - ferrohedenbergite (Wager & Brown, 1968). The very rare phenomenon in basic/ultrabasic layered intrusions is simultaneous coexistence of three pyroxenes: augite, pigeonite and hyperstene. We discovered and investigated three pyroxene paragenesis in magnetite gabbro of the West Pansky Tundra layered intrusion located in the central part of the Kola Peninsula, NW Russia. Physico-chemical analysis shows that coexistence of the three pyroxenes is getting possible when orthopyroxene is replaced by pigeonite during some period of contemporaneous crystallization of both pyroxenes. The rare occurreneses of this paragenesis in nature is due to rather short interval of P-T conditions in the field of intersection of the cooling curve of magma with the pyroxene inversion curve. According to pyroxene thermobarometry, crystallization of magnetite gabbro of the West Pansky Tundra layered intrusion took place under pressure of 1-2 kbar and temperature of 797-844°?.