

## **GEOCHEMISTRY, MINERALOGY AND PETROLOGY OF CARBONATITES OF UKRAINE**

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In Ukraine there are some genetical types and ages levels of carbonatites. Each of them has specific geochemical, mineralogical and petrological peculiarities. The oldest carbonatites of Ukraine (2.1 Ga) are related to massifs of alkaline-ultrabasic formation. They are characterized by mantle values of  $\delta^{13}\text{C}$ ,  $\delta^{18}\text{O}$ ,  $\delta^{34}\text{S}$ ,  $^{87}\text{Sr}/^{86}\text{Sr}$ ,  $\epsilon\text{Nd}$ . Calcite, dolomite, seldom ankerite represent carbonates of these carbonatites, and their femic minerals belong often to iron-rich varieties (ex. olivine  $\text{Fa}_{20-68}$ , clinopyroxenes aegirine – hedenbergite). These rocks contain often graphite together with iron-rich olivine and magnesioferrite-poor magnetite. We explain these and many other extraordinary peculiarities of these carbonatites by abyssal conditions during crystallization of carbonatite melt in deep magmatic chambers (recent erosion cutting about 20 km). The carbonatite of the second age level (1.6-1.8 Ga) are spatially related to massifs of gabbro-syenitic formation. They are represented by small bodies and consist mostly of calcite (very seldom of siderite) and low-temperature silicates. Isotopical composition of O, C and Sr evidences for alteration of these rocks in crust conditions. Paleozoic carbonatites are known in the juncture zone of Ukrainian shield and Dniper-Donetsk depression as well as in the last one. There are effusive facies among them. Carbonatites of these age levels are insufficiently studied. In general the Ukrainian shield is the richest and unique province of the Proterozoic alkaline and carbonatic magmatism.