# BASITE MAGMATISM OF THE YAKUT KIMBERLITE PROVINCE

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The analysis of peculiarities in distribution of basite magmatic associations within mantle sequences of the eastern Siberian platform revealed that spatially and temporally they are related to kimberlite magmatism products.Igneous activity in the region started with a supply of a basite melt followed later by a kimberlite intrusion. Kimberlites often broke the earlier basite intrusions and effusions entrapping the latter as xenoliths. The study of basite xenoliths, their identification with different-aged magmatites really existing on the platform allow us to correct the age of kimberlite magmatism, as well as to define more exactly a prekimberlite tectonic setting. Basite associations on the Siberian platform are known to be confined to Late Precambrian and Middle Paleozoic paleorift structures, or they can be related to the formation of negative structures of ancient platforms, i.e.trap syneclises.

Among from different-aged intrusive basites of Late Precambrian age dominate derivatives from normal and subalkaline tholeiite-basalt series of melts generally with different-manifested features of magmatic alkalization. Most of basites from Late Precambrian paleorift zones are characterized by the ubiquitous-manifested enhanced titanium content: 2.2-2.6% $TiO_2$. The content of $P_2O_5$ reaches 0.25-0.35% and increased are K abundances, up to 2-3% in alkalized differences. At the final stage of Riphean-Vendian tectono-magmatic cycle on the northeastern Siberian platform there occurred a supply of limited amounts of alkaline olivine-basalt melt giving rise to trachybasalt formation-type magmatites.

The basite emplacement during the Middle Paleozoic was controlled by peculiarities of magma formation in paleorifting regime. It gave rise to the emergence of both normal and different-alkalified tholeiite-basalt melts which form rocks saturated with silicic acid and rich in Ti, K, P, Sr, V, Th but poor in Ni, Cr, Sc. As in the case of Late Precambrian basites, typical products composed of alkaline olivine basalts were developed at the final stage of the Middle Paleozoic.

Basites of a regime of autonomous magmatic activization of ancient platforms correspond to the formation-type trap rocks composed of derivatives of tholeiite-basalt and picrite-basalt melt series, which form a common complementary sequence of magmatites.As compared with basites of paleorift systems, the most abundant magmatites from this group are characterized by Ni-, Cr-high and K-, P-, Ti-, V-, Sr-,Ba-, B-low concentrations.

During the Permian-Triassic, the alkaline olivine-basalt basites were developed on a limited scale and only in the marginal zone of the Siberian platform.

The diversity of basites from the Siberian platform to a certain extent is caused by an evolutionary nature of a melt after its leaving the region of magma generation. Both geodynamic conditions of paleorifting and the emplacement of trap syneclises make it possible for a basaltic magma to differentiate at a depth in accordance with monzonitoid and anorthosite tendencies. Magmatic melt evolves at a depth interacting with components of transmagmatic reducing fluid introducing a number of petrogenic and ore-forming components.

Concentrations of basite xenoliths in kimberlite bodies of Yakutia studied together with F.F.Brakhfogel show that the pipes from the most southern Malo-Botuobiya kimberlite field contain only gabbro-dolerites and basalts Middle Paleozoic in age.

In the middle part of the Yakut Kimberlite province basite xenoliths are absent in pipes.

Reconnaissance revealed the facts of kimberlite bodies to be intersected by Late Paleozoic-Ealy Mesozoic traps which affected the kimberlites both mechanically and contact-metasomatically.

In kimberlite pipes of the eastern Anabar region established are basite xenoliths identified with magmatites of Late Cambrian and Permian-Triassic age. In pipes from the Mid-Olenek group of kimberlite fields revealed are basite xenoliths Late Precambrian and Middle Paleozoic in age, whereas in some pipes in the north of the Yakut Kimberlite province observed are trap xenoliths of Permian-Triassic age along with Middle Paleozoic basite xenoliths present in most of pipes of this region.