

## **XENOLITHS IN KIMBERLITE, MELILITE AND CARBONATITE DYKES FROM THE EAST SAYAN FOOTHILL CARBONATITE COMPLEXES**

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Carbonatites (Belaya Zima, Tagna, Yarma etc) in foothills of East Sayan occur as a chain of round massifs with complex structure. Older alneite bodies (Pozharitskaya, Samoilov, 1972; Samoilov, 1984,) were intruded by carbonatites, and later by melilitite and kimberlite dykes. Phlogopite kimberlites contain abundant rounded debris of serpentized dunites with minor Cr-spinel, olivine with Sr-calcite grains, rare phlogopite, Cr-diopside, sulfides (pyrotite) globules and later pyrite tracing the abundant fractures. Cr-diopsidites (0.92-0.89mg', ~1%Na, 750-1000oC) contain carbonate, mica and spinels. More ferriferous glimmerites include spinel, sulfides and less Cr-diopside. This set of xenoliths was likely captured from the layered complex resulting from evolution and liquation of volatile rich carbonate or potassium ultramafic magma. The early bottom dunite accumulation interacted with the liquated sulfide and carbonate melts. Clinopyroxenites formed an intermediate chambers, whereas glimmerites floatated. The green carbonatite (kimberlite) dykes carry coarse grained K-fieldspar cumulate nodules with aegirine, alkali amphibole, calcite, Ti-magnetite, and later fluorite and sodalite. Compositionally similar veined xenoliths occur in these deep alkaline complex. According to pyroxene barometry the first-type xenoliths formed near the crust/mantle boundary, but the second type showed the less deep conditions. These upper Paleozoic complexes and Proterozoic kimberlites (Sekerin et al, 1992) probably trace a long-living deep-seated mantle metasomatic (essentially micaceous) zone located at the marginal part of an ancient cratonic area. RFBR grant 99-05-65688