

THE COMPOSITIONAL FEATURES OF KIMBERLITES ON THE EASTERN SLOPE OF THE ANABAR SHIELD (YAKUTIA, RUSSIA)

1KOSTROVITSKY, S.I., 1CHERNYSHEVA, E.A., 2DE BRUIN, D.1- Institute of Geochemistry, SB RAS, Irkutsk, 664033 Russia2- Geol. Survey of S. Africa, Bag X 112, Pretoria, S. Africa, 0001

The submeridional zone of Mesozoic kimberlite volcanism, comprising over 300 pipes, is confined to the eastern boundary of the Anabar shield. The zone consists of three sites (from south to north) different in composition of kimberlites and related rocks: (i) Kuranakh field composed of kimberlites not differing from typical diamondiferous ones; (ii) Luchakan, Djukensky, Ary-Mastakh and Staryrechensky fields including typical kimberlites and monticellite- and melilite-bearing varieties. The rocks show affinity to pyroxene-free alkaline picrites, high FeO_{total}, TiO₂, K₂O, P₂O₅ abundances and are rich in incompatible elements; (iii) the northern site (Nomokhot and Orto-Yarginsky fields) consists of the pipes filled with picrite and porphyrites, in places rich in carbonatite material in the clastic form. The Pre-Anabar kimberlites are impoverished in minerals of mantle paragenesis (only lherzolite and pyroxenite associations are the case, dunite-harzburgite one is not available). The increased abundances of Fe, Ti and alkalis in kimberlites of the region reflect carbonatite magmatism and related metasomatism of the upper mantle rocks occurring in the northern margin of the Siberian platform. The research was supported by grant #98-05-64174/RFFR.