



Volcanogenic-plutogenic complexes of the North-Asian Craton

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Igneous crust of the ancient Siberian Platform as a part of the North-Asian Craton owes its origin to ascending of the largest in the World mantle superplume. Thick (up to 4 km) sequence of tholeiitic basalts was formed at the boundary of late Permian and early Mesozoic; in its lower part are found alkali basalts and plagiopicrites. It is generally accepted that overall volume of the igneous crust is 1.5-3 mln. km³. However, this volume is only geological documented part of all igneous rocks. According to geophysical data, large “layers” of mafic and mafic-ultramafic rocks occurred in the crust, which are far in excess in volume of basites on the surface.

Subalkaline and mafic-ultramafic lavas, coupled with comagmatic intrusions are formed volcanogenic-plutogenic complexes. Such complexes are widespread in Tunguska syneclyse, and the most studied are located in Noril'sk region, where layered intrusions contain large and unique sulfide PGE-Cu-Ni and low-sulfur PGE ore deposits (Talnakh, Oktyabr'skoe, Noril'sk I, Vostochno-Noril'skoe, etc.). These intrusions, judging to their major and rare elements content, derived from plagiopicrite melts. Studied by author and other investigators inner structure and composition of plagiopicrite lavas and differentiated mafic-ultramafic intrusions showed their komatiitic nature, comagmatism and specific geodynamic conditions of their localization.

Conclusion remarks. Igneous crust of the North-Asian Craton and particularly Noril'sk region is represented by thick sequence of tholeiitic volcanics. They were preceded by formation of alkali-basalt and mafic-ultramafic volcanogenic-plutogenic complexes, which were developed in long-lived riftogenic structures. Some differentiated intrusions contain large ore deposits.