

Paleozoic and Mesozoic magmatic evolution of continental margins of an Andean type of the North-Asian craton

GORDIENKO, I.V. Geological Institute of the Siberian Branch of the Russian Academy of Sciences, Ulan-Ude, Russia

The formation of the continental crust in the fold boundaries of the south of the Siberian platform completed by the end of the Low Paleozoic. It resulted in the occurrence of a continental margin of the ancient mainland – the North Asian craton. The margin bordered the Paleotethys and the Paleopacific. Starting in the Devonian the interrelation of the continental margin and oceanic plates was active what caused the formation of various-age volcano-plutonic belts on the active continental margin.

In D-C₁ thick tectono-magmatic processes revealed themselves along the whole south (present coordinates) margin of the North-Asian continent. They caused the formation of an extended volcano-plutonic belt. In the cross section of the belt the lateral composition changes within the magmatic complexes were found. Alkalinity (first of all potassium) increases and isotopic content of strontium in magmatic complexes in the depths of the active margin of the North-Asian continent decreases. These data and sizing of depths of the Devonian subduction zones allow to compare the structural-magmatic zonality of the belt and present geodynamic settings of an andean type of South America. In C₂ on the margin of the continent a geodynamic setting of a western-pacific ocean type (island-arcs and marginal seas) occurred. In C₃ – P₁ it was changed by a setting of the active continental margin of an andean type where extended volcano-plutonic belts were formed. Later in P₂ and T₁ the geodynamic setting complicated due to the formation of rift volcano-tectonic structures at the back of the active continental margin similar the graben Altiplano and Kito in South America. The Mesozoic history was related to the interrelation of the North-Asian continent and the Paleopacific.