

PALEOPROTEROZOIC COMPLEXES OF SOUTH-WESTERN MARGIN OF THE SIBERIAN CRATON

NOZHKIN A. D., TURKINA O. M., RUMYANTSEV M. Yu. Institute of geology, SB RAS, Novosibirsk, Russia

Geological and petrological investigations on the Proterozoic complexes of south-western margin of the Siberian craton (Enisey Ridge, Eastern Sayan) suggest that continental-margin and ensimatic volcanic arc belts can be recognized there. Continental-margin supracrustal and granitoid complexes comprise extended (about 1500 km) the Angara fold belt (AFB), which have been formed in two stages. At the first stage (2.2-2.0 Ga) the mainly terrigenous high-Al sediments with minor continental rift-like basalts were accumulated in epicontinental riftogenous basins. At the second stage (2.0-1.7 Ga) the tholeiitic, calc-alkaline and subalkaline volcanics corresponded to Andean-type active continental margin series were formed (ca. 1.85 Ga). They followed by dominant Na-K S-type granitogneisses (ca. 1.88 Ga) which related to formation of collision orogen at the Siberian craton margin. Continental-margin nature of AFB is supported by presence of oceanic complexes with similar age in Eastern Sayan. They include amphibolite-gneiss suites and tonalite-trondhjemite intrusions of juvenile ensimatic volcanic belt of the Arzybey-Derbina block, which is part of accretional orogen. Supracrustal complex consists of subducted-related tholeiitic metabasalts and metaandesite-dacites, greywackes. All of them are strongly depleted in Rb, Th, K, and LREE. Felsic volcanics and granitoids corresponded to modern adakites have generated from mafic sources in oceanic island arc environment. U-Pb data suggest that juvenile subducted-related complexes began to form since ca. 1.9 Ga.