



## **Palaeozoic - Mesozoic tectonics of the western Transbaikalian segment of the Central Asian Orogenic Belt**

Dmitry Gladkochub, Tatiana Donskaya, and Anatoly Mazukabzov

Institute of the Earth's crust SB RAS, Irkutsk, Russian Federation (gladkochub@mail.ru)

The western Transbaikalian segment of the Central Asian Orogenic Belt (CAOB) is a key to understand a scenario of gradual growth of continental crust in this part of the Northern Eurasia. In general this growth was directly controlled by long-living processes related to interaction of the southern margin of the Siberian craton with different units of the Palaeo-Asian and Mongol-Okhotsk oceans. The Neoproterozoic activity within this area was related to opening and development of the Palaeo-Asian Ocean. The early Palaeozoic stage was characterized by collision of numerous terranes (microcontinents, relicts of island arcs and back-arc basins, etc.) with the southern flank of the Siberian craton. These events reflect an early stage of Palaeo-Asian Ocean closure and the beginning of CAOB building. Since the late Palaeozoic the development of the Transbaikalian segment of the CAOB was related to the evolution of the Mongol-Okhotsk Ocean. Late Silurian – middle Devonian clastic and carbonate sediments were deposited along a passive margin of the Mongol-Okhotsk Ocean. The low-angle subduction of oceanic lithosphere of the Mongol-Okhotsk Ocean beneath the Siberian continent started in the middle Devonian. In the early to late Carboniferous, a steeper dip of subduction led to tectonic switching from extension to compression. This period was characterized by compression, metamorphism, deformations and thickening of continental crust. Autochthonous biotite granites of the Angara-Vitim batholith (ca. 320-300 Ma) were emplaced during this phase. Destruction of the subducted slab and roll-back toward the ocean in the late Carboniferous – early Permian caused extension of continental lithosphere and magmatic input from the mantle into the continental crust. These processes were responsible for voluminous magmatism that is spectacularly represented by allochthonous granitoids of the Angara-Vitim batholith and magmatic rocks of the western Transbaikalian belt (ca. 300-270 Ma). In the late Permian to late Triassic igneous activity was controlled by normal-angle subduction that led to emplacement of various types of intrusions, including the Khangay (ca. 260-240 Ma) and Khentey (ca. 230-210 Ma) batholiths. The majority of early Mesozoic magmatic rocks of Transbaikalia were produced along an active continental margin related to the subduction of the Mongol-Okhotsk Ocean and mantle (hot spot) input. A significant decrease in igneous activity in the Jurassic might be explained by the end of subduction of the Mongol-Okhotsk ocean crust beneath the Siberian continent and closure of this ocean in its western part. The early Cretaceous (ca. 120 Ma) was marked by large-scale intra-plate extension and exhumation of numerous metamorphic core complexes. The Transbaikalian segment of the CAOB developed as a stable intra-continental area since the late Mesozoic.