The breakup of Rodinia and the fold belts along the SW Siberis craton

Teruo Watanabe [1]

[1] Earth and Planetary Sci., Hokkaido Univ.

On the basis of review of geology along the SW Siberia craton, the author points out that the tectonic evolutuion from rift stage to accretion process has been recorded in the Sayan mountains.

The SW margin of the Siberian craton is bounded on the Altai-Sayan Fold Belt by the Derbina shear zone and its southestern extension, Sayan shear zone(Dobretsov et al., 1995). The both shear zones run through, broadly speaking, from Krasnoyarsk to Irkutsk. In the Beret area(western side), carbonates ranging from Late Riphean(900Ma - 640Ma) to Cambrian through Vendian distribute widely. They apparently overlie mafic - acidic volcanics of Kuvai Group(OIB,MORB,IAT origin).The age of carbonates is well constrained by fossils(Postnikov, 1982). But, the age of volcanics are not known. Preliminary isotope study of a mafic rock indicates Late Riphean(ca.775Ma).

In the central Sayan mountains,alkaline rocks intruding Riphean sedimentary rocks are observed,and in the eastern Sayan mountains,pre-Vendian fresh dike swarms occur in the high grade metamorphic zone.

The geology, thus, along the SW Siberia craton in the Sayan Mountains indicates that the region is a good field for study of tectonic evolution from breakup of Proterozoic craton(a part of Rodinia) to formation of accretion complex.