



Collisional Orogenic Belts of North-East Russia

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There are two Mesozoic collisional orogen in North-East Russia: Verkhoyansk-Kolyma Mesozoic and Anyui-Chukotka [Zonenshain et al., 1990; Parfenov, 1991; Sokolov et al., 1997]. Verkhoyansk-Kolyma arcuate collisional orogen (Kolyma Loop) is formed as a result of Late Jurassic to Early Cretaceous accretion of the Asia craton continental margin with the Kolyma-Omolon superterrane. The Anyui-Chukotka orogen is originated by Chukotka microcontinent and Asian craton collision at the end of Early Cretaceous [Sokolov et al., 2000].

External part of Verkhoyansk-Kolyma orogen (Verkhoyansk fold-and-thrust belt) includes Paleozoic to Mesozoic shelf sediments and turbidite of the Asia continental margin. The central part (Chersky belt) consists of several continental terranes which were rifted from Asia margin in the Late Paleozoic. These complexes have been tectonically overlapped by allochthones of ophiolite and metamorphic rocks. Back part (Alazeya-Oloy belt) contains deformed Paleozoic to Mesozoic island arc volcano-terrigeneous rocks. Early accretionary deformations in the Verkhoyansk-Kolyma orogen (Middle Jurassic) were connected with the Kolyma-Omolon microcontinent and Asian craton amalgamation. Thrusts, nappes, and recumbent and overturned folds of north-east vergence fixed this event. Late oblique collisional deformations (Late Jurassic-Neocomian) were characterised by combine kinematics with sinistral transpression component, and counter clockwise rotation of convergent structures.

Anyui-Chukotka orogen is limited by the south allochthones of island arc complexes of the Alazeya-Oloy belt. The north vergent nappes consist of ophiolite, Late Paleozoic-Mesozoic volcano-terrigeneous rocks and accretionary melange. The autochthone includes high-deformed Triassic turbidite of the Chukotka microcontinent passive margin. The dismembered ophiolites and Late Jurassic volcanic sequences located along

the allochthone front. Two main stages of the Mesozoic structural evolution are identified for the Anyui-Chukotka collisional orogen. The first stage is connected with Late Jurassic and probably Early Mesozoic convergence processes. The second stage is connected with Asian craton and Chukotka microcontinent collision. The north vergent nappes were formed during early collision in Valanginian to Hauterivian time. The orthogonal collision has been transformed into the oblique collision during the second part of Early Cretaceous. The dextral transpressional strike slip faults were formed during this substage.

Mesozoic orogenic belts of North-Eastern Asia were formed as a result of the closure of a small oceanic and/or a marginal basins. The Verkhoyansk-Kolyma and Anyui-Chukotka orogens of North-East Asia are attributed to collision of microcontinents (respectively Kolyma-Omolon and Chukotka) and long-lasting existing convergent margins of North-Asian continent.

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