



Triassic Clastic Deposits of Western Chukotka (NE Russia): Sedimentation and Deformations

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The South Anyui fold zone (western Chukotka) is considered a suture zone related to closure of the South Anyui oceanic basin and collision of Eurasia with the Chukotka-Arctic Alaska microcontinent in the Early Cretaceous (Seslavinskyi, 1979; Parfenov, 1984; Natal'in et al.1984, 1999; Sokolov et al., 2001). The continental collision and suture development are usually accompanied by the formation of asymmetrical marginal sedimentary basins, whose sediments are thrust toward the smaller collided blocks. The collided blocks are subducted during the collision under larger continental blocks (Grantz et al. 1994; Van der Voo et al., 1999;Chemenda et al., 2000). Sediments of the marginal basins are involved into fold-thrust deformations.

The nappes are composed of fragments of Paleozoic and Mesozoic ophiolites and Mesozoic island-arc volcano-sedimentary rocks typical of the Alazeya-Oloi fold-belt. The autochthon is composed of Paleozoic-Mesozoic rocks of the passive margin of the Chukotka microcontinent

(Sokolov et al., 2001; Bondarenko et al., 2001). Unfortunately, macrofaunas are not numerous in the Triassic deposits, and in some cases deposits are dated by analogy or comparison to the units dated with macrofaunas.

Chukotka's Triassic clastic deposits form three different complexes: Lower-Middle Triassic complex, Upper Triassic Karnian complex and Upper Triassic Nirian complex. The studied part of western Chukotka is composed of variably deformed, folded and cleaved rhythmic deposits. All the complexes are represented by rhythmic intercalation of sandstones, siltstones and mudstones. Triassic deposits are composed of

hemipelagic sediments, low-density flows, high-density flows, and shelf facies associations. During the Triassic, sedimentation was represented by continental slope progradation, in addition the angle of continental slope was increase – decrease.

Relationships between the facies were reconstructed with structural researches and data. Upper Triassic complexes of Chukotka microcontinent represent by different deep-water fans facies. Upper Triassic complexes of Oloy microcontinent - by different shallow-water facies. They are formed once karnian provenance on the original map (Ujamkanda river).

Petrographic study of mineral composition has established the sandstones as graywackes (diagram by Shutov, 1972). Although Triassic sandstones are similar in outcrops and classification, the enclosed rocks fragment grains are different. We chart the evolution of composition of rocks fragments from the Lower to the Upper Triassic. Sandstones with (clasts) rock fragments of lower metamorphic grade rocks dominate at the base of Triassic deposits, sandstones with clasts of higher grade metamorphic rocks dominate in the Later Triassic deposits. This different show us that the Triassic represents an unroofing sequence sours of erosional processes that produced the clastic material eroded more deeply buried rocks through time. Two types of sedimentation and mineral composition of sandstones confirm also petrochemical and REE dates. That dates formed two different field in the classification diagrams.

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