



Middle Vendian postglacial sea transgressions and Ediacaran Metazoa expansion in the Siberan craton shelf

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In the time of Varangerian (Early Vendian) continental glaciation the Pre-Vendian epicontinental sea which has been infilled the Late Riphean aulacogenes and overlaid its shoulders has regressed. The basement of the Siberian craton and aulacogene's deposits were deeply eroded and the regional flat of glacial and glaciofluvial deposits was formed. Postglacial sea transgressions resulted in occurrence of vast shelves. The cap-dolomite, stromatolitic biostromes, carbonate and hybrid sand-waves were related to the first Early Ediacaran transgression. In the time of the second Early Ediacaran transgression the terrigenous shelves relating of tides and storms were extended more than 2500 km along the south-western part of Siberian Craton. The terrigenous depositional systems predominated over carbonate ones. The findings of Metazoa animals were made in Marnya formation of Oselok group in the Sayan Region. The Marnya formation consists of basal glacial deposits of Ulyakha, Nersa, Plity and Kedrovyy members and the cap-dolomite, bioherms and biostromes, sand-waves and bars of Ozerki member and storm dominated below and tide-dominated above terrigenous deposits of Bolshaya Aisa member. There are the more early trace fossils in the middle of Ozerki member. They presented numerous phylogenetic vague trace fossils from morphologic groups *Thalassinoides* and *Planolites* in the black sandstones with organic matter in interbar flats. Soft body animals to all appearances were multispecies association. The second expansion of Ediacaran Metazoa took place after lowstand sea level and deep erosion the carbonate and sometimes glaciofluvial deposits and was related to early Bolshaya Aisa time. Numerous animals moulds and imprints of classes Cyclozoa and Depleurozoa were detected in Bolshaya Aisa member. Fossils of Metazoa closely associated with two ancient environments – tempestites and sand waves

in shoreface and transitional zones and tidelithes in subtidal and supratidal zones. The volumetric animals forms from families *Pteridiniidae* and *Dickinsoniidae* related to sandstone lithofacies of proximal temestites and small sand-waves. On the upper surface of tidelithes the specimens of genera *Cyclomedusa* and *Tirasiana* were collected by tide currents. The fossils are the multistory accumulations and overlap each other. Evolution of Ediacaran biota occurred with influence by open ocean to the southwestern Siberian craton shelf and the nutrient matter with terrigenous clastics currents from low land in the central part of Siberian craton.