

Severnaya Zemlya basin in the system of Silurian and Devonian basins of Northern Europe and Central Siberia

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Comparative paleogeographical and paleotectonic analysis of evolution of Silurian and Devonian sedimentary basins in Severnaya Zemlya, Taimyr, northwestern Siberian craton, Novaya Zemlya, Timano-Pechora Province and other regions of the western and central sectors in the Russian Arctic has been conducted. On the background of the deposit lithofacies diversity in all basins there appears a common cyclic pattern of sedimentation having eustatic nature. The basins of the northwestern group of tectonic blocks (Svalbard plate, northern Baltic shield) are characterized by red terrigenous lithofacies. The basins occurring on tectonic blocks of the southern group (Pechora, South Kara plates, northern Siberian craton) show prevalence of marine shelf lithofacies involving carbonate ones. In Early Silurian the Severnaya Zemlya basin represented a part of shallow water open shelf with carbonate sedimentation and had stable connections with adjacent basins of Siberia and Northern Europe. The accumulation of both carbonate marine and variegated argillaceous-terrigenous lithofacies of shallow shelf occurred there in Late Silurian and Early Devonian. Connections with the Siberian basins were interrupted. In Middle and Late Devonian the Severnaya Zemlya epicontinental basin was in the region of mottled argillaceous-terrigenous sedimentation and was related to the basins of Northern Europe only.