

Upper Ordovician-lower Silurian stratigraphy and palaeogeography of Severnaya Zemlya and New Siberian Islands (Arctic Russia)

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The Severnaya Zemlya Archipelago (SZA) and New Siberian Islands (NSI) are located close to the Eurasian Arctic Shelf margin, SZA between the Kara and Laptev seas and NSI between the Laptev and East Siberian seas. SZA constitutes one of the main land areas of the North Kara Terrane (NKT) location of which in the Early Palaeozoic is problematic. Palaeontological and sedimentological data are equivocal: some suggest close connections with Baltica, others with Siberia. Conodonts, providing reliable dating of strata, bear also valuable information about palaeogeographic affinities of the regions. The data available shows that conodont assemblage from SZA is identical to the fauna of the Timan-northern Urals region. This agrees with the provenance studies indicating that NKT was part of the Timanide margin of Baltica at least since the Late Precambrian.

Recent data from NSI imply that the Upper Ordovician conodont fauna yields, together with cosmopolitan taxa, a number of species characteristic of Siberia suggesting close connections between these two regions. The proximity of NSI to Siberia is also indicated by similarities of lithology and other fossil assemblages. Additionally, similar trends in changes of sedimentary environment during Late Ordovician to early Silurian in the three regions around Laptev Sea: NSI (Kotel'ny Island), central and southern Taimyr, and the Siberian Platform point that all of them might have been located in the same sedimentary basin.