



Comparison of the Neoproterozoic Phytolites from SW part of the Alpha Ridge of the Central Arctic and from the Spitsbergen Archipelago

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As part of the ongoing program of large-scale study of shelf FGBI "VSEGEI" together with specialists VNI-IOkeanologiya and foreign researchers conducted a geological and geophysical study and mapping of the Arctic Islands, coastal land and offshore, deep water morphostructures of the Arctic basin.

In 2010-2012, conducted a complex of works, which included: (1) the adjustment of the geological contours on the geological map given bathymetric data, (2) analysis of the geological structure of the Mendeleev using the map of the anomalous magnetic field magnetometry, (3) integrated analysis of seismic data, underwater topography and sediment distribution of stone material within the Lomonosov ridge and the Mendeleev, (4) revision of the stone collections of bottom material collected in the Amerasian basin expedition "Arctic-2000" and "Arctic-2005", with a selection of igneous and metamorphic rocks for isotopic-geochemical study and Dating, (5) study the bottom-of the stone material obtained by the expedition "Arctic-2012".

Based on the study sampling of sediments within the Amerasian basin, highlighted in the reference sections used for updating the geological maps of the Circumpolar region.

According to geological data of the Neoproterozoic (?) -Paleozoic deposits are discovered within Mendeleev, and also in the SW part of Alpha ridge. The steep scarp slopes of Trukshin where benthic sampling using dredges and manipulator of the submarine raised the eluvial-deluvial fragments of quartz sandstone, quartzite-sandstones and dolomites.

On the point of view № 6 of the surveyed slope of the mountain Trukhin discovered the collapse of boulders with sizes up to 10-15 m of the sedimentary rocks. The surface of the bedrock step, rocks are broken by cracks. Among the debris are dominated by carbonate rocks, mostly dolomites.

On General geological considerations, the capacity developed here Neoproterozoic (?) -Paleozoic sediments may amount to 2-2.5 km, and at the bottom of the scarp was assumed Neoproterozoic carbonate and clastic rocks.

It turned out that poorly marbled beige-brown Dolomites of the samples recovered from the NW and SE slopes of Trukshin contain organic remains. This - microbial education is represented by Stromatolites with laminar Stratifera sp. and concentric layered Microphytolites of Osagia sp.

Unfortunately, the microstructure of fossil plants has undergone secondary changes and primary microstructure is sometimes not preserved. However, it were found organics allows making a conclusion about the age of Neoproterozoic dolomites.

We can compared these sections of outcrops of the mountain Trukhin from the Amerasian basin with the Neoproterozoic sections of the Groups Akademikarbreen from the Sorgfjorden (the Northern part of the Ny Friesland Peninsula of Spitsbergen Archipelago). In carbonate rocks of the Akademikerbreen Group were confirmed by the finds of Neoproterozoic microbial entities identified by previous researchers, and identified new locations of Stromatolites Stratifera baracunica Dol. and Microphytolites of Osagia geneses.

Found in the dolomites of the mountain Trukhin organic remains suggest the identity of the carbonate rocks to the Neoproterozoic organic remains buildings lake reefs with Phytolites formations characteristic of the marine basin, located in the subtropical humid climate zone.