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Neoproterozoic Stromatolites and Microphytolites of the Spitsbergen Archipelago

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The Svalbard archipelago is located in the extreme North-West of the Barents Sea. On the archipelago in the framework of large-scale exploration of the continental shelf exploration work carried out by employees of the Polar Marine Geological Expedition (PMGE).
The authors were further explored and tested the Neoproterozoic sections of the Groups Veteranen, Akademikarbreen and Polarisbreen on the East and West banks of the Sorgfjorden (the Northern part of the Ny Friesland Peninsula) and in the moraine of the glacier Duner.
The rocks carbonate-terrigenous Veteranen Group (upper Riphean) is set in the rocky outcrops on the Western and Eastern banks of Sorgfjorden and in ice-dressed rocks of the Bay. The Group consists of four Formations (bottom to top): Kortbreen, Kingbreen, Glasgowbreen and Oxfordbreen.
The rocks carbonate-terrigenous Akademikarbreen Group (upper Riphean) have a lower areal distribution than the breed Veteranen Group in the project area is established only in the southern part of the Bay, in the valleys Kluftdalen, Rivnedalen and small-unnamed streams, as well as on the plateau Fleinfjellet and Vidarfjellet. The Groups consists of four formation (bottom to top): Grusdievbreen, Svanbergfjellet, Draken and Backlundtoppen.
According to previous researchers, limestone in Kingbreen Formation (Veteranen Group) met with radial-rayed Microphytolites group Radiosus. And in light grey, cream, pink and red limestones of the Academikarbreen Group, in the Svanbergfjellet Formation defined columnar branching Stromatolites Inzeria djejimi Raab., Gymnosolen aff. ramsayi Steinm. Stromatolites of Conophyton miloradovichi Raab. in the dolomites of the overlying sediments Draken and Backlundtoppen Formations contain Vendian the bubbles Microphytolites Vesicularites bothrydioformis Krasnop.
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 columnar Stromatolites of the Conophyton garganicus Kor., columnar Stromatolites of the group Anabaria sp., Inseria chunnbergica Gol, Balcalia mariinica Dol., Lenia jacutica Dol., dome-columnar Stromatolites Tinnia patomica Dol. and formation Stromatolites Stratifera baracunica Dol. In the few carbonate interbeds of the Veteranen Group were found concentric layered Microphytolites of Osagia genuses.
Upper Riphean sections of the Spitsbergen archipelago based on the paleontological and lithological-facial characteristics are correlated confidently with complex of Phytolites of the Riphean stratotype of the southern Urals of Russia. The results of the new biostratigraphic data can be used for paleogeographic reconstruction and recovery lithofacies of the Neoproterozoic of Spitsbergen.
In future studies it is desirable to conduct mapping of fossil organogenic structures, setting their length, width, length, relationship with host sediments.
This may have importance both for the solution of fundamental questions of evolution of life on Earth, and in the search of minerals such as manganese, cobalt, phosphorite, oil, natural gas.