ENVIRONMENTAL AND BIOTIC CHANGE DURING THE PALEOZOIC-MESOZOIC TRANSITION IN SOUTH SPITSBERGEN

Summary

The environmental change and related biotic crisis during the transition between Paleozoic and Mesozoic led to a considerable transformation of global biosphere, and left remarkable evidence in Permian to Triassic profile in south Spitsbergen. Temporal succession of fossil assemblages together with detailed analysis of oxygen and carbon stable isotopes from carbonate brachiopod shells and phosphate fish teeth allowed to better understand the environmental transition that occurred during deposition of investigated geological strata. The change observed indicates clearly a shift from rather warm and shallow shelf sea toward a colder, deep-sea and more open basin, which occurred simultaneously with a paleogeographical drift of the area towards higher northern paleolatitudes. A seasonal pattern recognized in carbon and oxygen isotope record from carbonate shells of permian brachiopods confirmed position of Svalbard within carbonate platform located in temperate zone on northern margins of Pangea supercontinent. Research conducted on south Spitsbergen is an important contribution in understanding history of the Earth during global biotic crisis that occurred on Paleozoic/Mesozoic boundary.