Mesozoic Ocean in the Arctic: paleontological evidence

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The fauna of the seas, which occupied the areas of modern Arctic margins and the islands of Arctic Ocean during the Mesozoic, was dominated by stenohaline mollusks. Among them there were recognized endemic taxa, however those of North Pacific and North Atlantic origin prevailed. To ensure a high taxonomic diversity in specific marine biota and to preserve the ways for migration of marine animals through Mesozoic, there should exist the basin of oceanic type. A great body of marine water was necessary for to maintain persistent environments: salinity and temperature in surrounding large epicontinental basins during 180 Ma. During the Triassic and Jurassic there existed South Anyuy paleoocean. In the Triassic the ocean stretched from the North Pacific along the northern margin of Chukotka deep into the Arctic (to Svalbard). Biogeographic differentiation between the Canadian and North Siberian provinces on the basis of mollusks confirms the existence of insurmountable barrier of oceanic type. In the Arctic all groups of fauna suggest a single arctic province for the Jurassic: paleoocean did not reach the Novosibirsk islands. Neither in the Triassic nor in the Jurassic the South Anyuy ocean penetrated into the Lena-Yenisey depression, that is supported by a complete similarity in both taxonomic composition of fauna and structure of benthic assemblages, occurring on both shores of the Lena-Yenisey sea-strait. Early in the Cretaceous the South Anyuy paleoocean "slammed". The Euramerian Cretaceous ocean occupied the territory of modern Canadian and Makarov basins. Along the southern margins of this ocean, migration and free exchange of fauna between the North Siberian and North American seas occurred during the Cretaceous.