

Paleozoic-Triassic Biogeographic Affinities of Fossil Biota from the Arctic Alaska Plate Indicate an Origin from Siberia (rather than from the Canadian Arctic Islands)

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Evidence for a connection of the Arctic Alaska plate (including Chukotka) with Siberia from Cambrian until Late Triassic time can be made on the basis of paleobiogeography. Arctic Alaska contains a number of biogeographically distinctive megafossils for select time intervals, notably the Middle Cambrian, Early and Late Ordovician, Early and Middle Devonian, Late Mississippian, Permian and Late Triassic. Middle Cambrian trilobites are strictly Siberian in affinity, but also show close affinities with coeval trilobites from the Farewell terrane of SW Alaska. Late Ordovician brachiopods, gastropods, trilobites, and ostracodes are known from the Shublik Mountains, NE Brooks Range and York Mountains of the Seward Peninsula. Affinities are likewise primarily with Siberia (sharing the primarily Siberian pentameroid brachiopod genera *Tcherskidium* and *Eoconchidium* and the strictly Siberian trilobite genus *Monorakos*), but also with the Farewell terrane. Late Early Devonian and Middle Devonian brachiopods and calcareous green algae from Arctic Alaska are similarly allied with Siberia and the Farewell and Alexander terranes of southern Alaska. Early Mississippian faunas from the lower part of the Lisburne Group and underlying Endicott Group contain relatively widespread fauna, including taxa recognized both in North America and Eurasia, consistent with the relatively cosmopolitan paleobiogeographic conditions of this interval. However, Late Mississippian brachiopod fauna from the upper part of the Lisburne Group contain many brachiopods of strictly Eurasian affinities, notably the gigantoproductids, which are unknown in Laurentia, but widespread across Eurasia and North Africa. Late Mississippian lycopods from Arctic Alaska demonstrate strong Angaran affinities. Permian faunas of Arctic Alaska show strong affinities as well with the Siberian Arctic, virtually lacking any fusulinids and reefal buildups (both of which are commonly found in the Canadian Arctic Islands). Richly diverse Upper Triassic fauna (halobiid and monotid bivalves, brachiopods) are present in the both the Shublik Formation and Otuk Group. These show closer affinities with NE Siberia rather than to western or northern North America, suggesting close spatial relationships between Siberia and Arctic Alaska at least until Late Triassic time.