

## SIBERIAN AND URALIAN FOSSIL FAUNAL AND FLORAL AFFINITIES OF ALASKA TERRANES

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The Arctic Alaska-Chukotka, Farewell and Alexander terranes contain distinctive megafossils that have strong paleobiogeographic affinities primarily with Siberia and the Ural Mountains rather than with North America. The Arctic Alaska plate (including Chukotka) 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 southwestern Alaska. Late Ordovician brachiopods, gastropods, trilobites, and ostracodes are known from the Shublik Mountains, northeast Brooks Range and York Mountains of the Seward Peninsula. Affinities are likewise primarily with Siberia, sharing the Siberian pentameroid brachiopod genera *Tcherskidium* and *Eoconchidium* and the strictly Siberian trilobite genus *Monorakos*.

Late Early Devonian and Middle Devonian brachiopods, gastropods 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 (Siberian) affinities. Permian faunas of Arctic Alaska show strong affinities as well with the Siberian Arctic, virtually lacking any fusulinids and reefal buildups (both of the latter 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 northeastern Siberia rather than to western or northern North America, suggesting close spatial relationships between Siberia and Arctic Alaska at least until Late Triassic time.

At present, the precise location of the Arctic Alaska plate during Proterozoic through Late Triassic time is uncertain. Mounting evidence that includes these very strong faunal and floral associations with Siberia, indicates that it was likely one of the peri-Siberia terranes that accompanied the Siberian craton during its northward drift from the southern hemisphere in the Cambrian, crossing the paleoequator during the Ordovician into the northern hemisphere where it has remained since Silurian time. The Farewell and Alexander terranes likely had a similar position in close proximity to the Uralian seaway and the Siberian craton in the Paleozoic.