Role of the Arctic Ocean as a Bridge between the Atlantic and Pacific Oceans: Fact and Hypothesis

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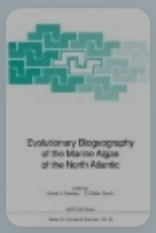

Evolutionary Biogeography of the Marine Algae of the North Atlantic

Robert T. Wilce

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phylogenetic relationships, distribution tracks, and presumed origins. The recognition of these origins is also based on assumptions of genome antiquity, and morphological and reproductive stasis, i.e., continuity of species traits from a pre-Cretaeeous, possibly early Mesozoic, ancestry.

Trans-migration of the N Atlantic-N Pacific biota via the Arctic Ocean occurred periodically during the Tertiary, and was dependent primarily upon massive plate movements. During its evolution, periodic marine incursions, with accompanying biota, occurred from four ocean areas: N Pacific, present Caribbean via Cannonball Seaway, present Mediterranean via Turgai Strait, and the N Atlantic. Post-Pleistocene algal exchange between the N Pacific and N Atlantic is not evident. Post-Pleistocene species migration between the North Atlantic and Arctic Ocean is on-going and dependent only on temperature adaptation.

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