



Influx of calcareous nannoplankton to the Arctic Basin during late Pleistocene and Holocene times

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Calcareous nannofossils have been quantified in seven short cores from ridge crests in the Arctic Ocean. Observed taxa are all described from extra-Arctic oceans, implying that they are transported into the Arctic Basin. The Fram Strait is the major gateway for this transport, which is not affected by glacial-interglacial scale changes in sea-level, in contrast to the Bering Strait. The composition and abundance patterns of observed taxa is different in each of the interglacial Marine Isotope Stages (MIS) 7, 5 and 1, permitting these to be determined biostratigraphically and biochronologically. These data suggest also that MIS 5e can be distinguished from MIS 5a. *Emiliana huxleyi* becomes clearly more abundant than *Gephyrocapsa* spp. during latest MIS 3, at ca. 28 kyrs (corr. 14C). The two Alpha Ridge cores and the southern Mendeleev Ridge core show one to two orders of magnitude lower abundances compared to the cores raised from the central Mendeleev Ridge, the Lomonosov Ridge and the Gakkel Ridge. This probably reflects the diminishing influence of shallow Atlantic waters with increasing distance from the Fram Strait gateway. An assemblage from MIS 5 from one of the Lomonosov Ridge cores shows roughly one order of higher abundance, compared to MIS 1 from the Lomonosov Ridge and Gakkel Ridge, implying more open water conditions at the Lomonosov Ridge site during MIS 5. Reworking becomes intensified around MIS boundaries, which presumably reflects surface ocean changes in input of ice-rafting rather than winnowing and redeposition of older sediments at the seafloor.