Seasonal vertical migration of Calanus hyperboreus (Copepoda) in the Amundsen Gulf, south-eastern Beaufort Sea

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An upward-migrating swimmer trap (UST) which can collect sequentially 12 samples of zooplankton moving upward was deployed at 100 m above the bottom of the central part to the Amundsen Gulf for 280 days from October 2003 to July 2004 as par of the CASES Project. The UST was used to know the ontogenetic vertical upward-migration of copepods. The upward migrating zooplankton was mainly obtained every 15 days. The seasonal change in migration was apparently obtained in adult Calanus hyperboreus with the ascent rate (indiv/m2/d) of which were low before January then increased to 1.59 indiv./m2/d until March. The maximum ascent rate (2.04 adults/m2/d) was seen in early March. Just after the peak of adult, nauplii of C. hyperboreus took the position of the major migrants showing 1.36 indiv./m2/d. The present results suggested that ontogenetic upward migration of the adults began from January and completed until May with maximum rate in April, and subsequent change in the generation occurred in early May. The timing and carbon flow by C. hyperboreus of the upward migration are compared to the downward migration obtained with a sediment trap in the Beaufort Sea.