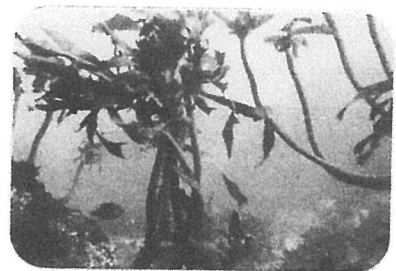
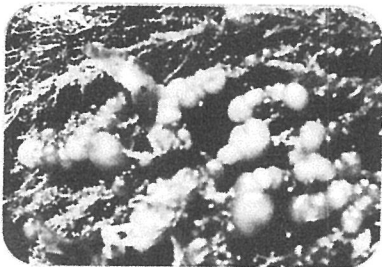
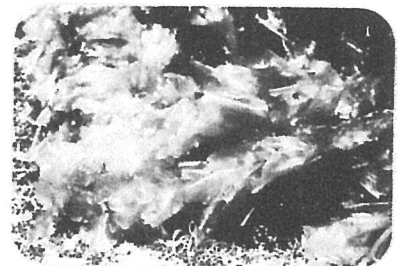
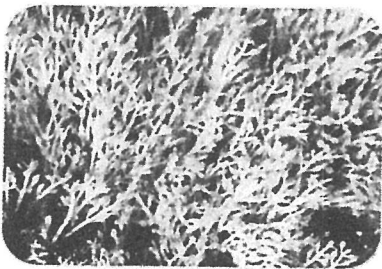


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[PB-001]

Melting pond algal communities in the central Arctic Ocean

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As a Chinese IPY event, the 3rd Chinese National Arctic Research Expedition (CHINARE) was conducted in the central Arctic Ocean from late July to early September in 2008. During the cruise period, we investigated physicochemical environments and productivities of microalgal communities in melt ponds on the sea ice in the central Arctic Ocean. There were two types of melt ponds distinguished by their colors. One is light sky blue ponds whose bottoms were closed. The salinity ranges of the closed ponds were 0 to 20. The other is deep blue color ponds whose bottoms were open to the seawater. The salinities in the open ponds were similar as those of surrounding surface water. The averaged productivity of the algae in melting ponds was $0.09 \text{ mg C m}^{-3} \text{ h}^{-1}$ ($\pm 0.11 \text{ mg C m}^{-3} \text{ h}^{-1}$) which were somewhat higher than those of phytoplankton (average \pm S.D. = $0.07 \pm 0.06 \text{ mg C m}^{-3} \text{ h}^{-1}$) at surface water in the Arctic Ocean over 80°N . Small unidentified flagellates mostly dominated the phytoplankton communities in both waters. Nano unidentified flagellates in bottom closed ponds were *Chlamydomonas nivalis*, which is common on ice floes and melt ponds in the central Arctic Ocean. Overall, there were more diverse species of phytoplankton in surface water than melt ponds. Current and ongoing climate changes such as a sea ice decrease are expected to impact largely on this unique habitat in the melting ponds.