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Wintertime surface conditions in the Greenland Sea, with characteristic ice floes and overcast skies. Deep waters formed in this region by convective vertical mixing contain measurable concentrations of dissolved atmospheric chlorofluoromethanes of anthropogenic origin. Recent increases in atmospheric chlorofluoromethane mixing ratios provide valuable new tracers for the study of ocean circulation and mixing rates. See page 265. [John L. Bullister, Scripps Institution of Oceanography, University of California, La Jolla 92037]