

Environment changes of the Japan Sea viewed from the water and TOC contents of the cored sediments off Joetsu City

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We have measured water and total organic carbon contents of three sediment cores (MD179-2996, -3304, -3312) taken from the Joetsu area, the Japan Sea in a few-cm intervals. The water contents decrease in logarithmic ratio with increasing depth, but another cyclic change of short periodicity overlies on the general trend. This change of short term seems to imply increasing or decreasing of biological production of the Japan Sea.

The temporal changes of the total organic carbon (TOC) content from MD179-3304 and -3312 are very similar each other, and also resemble to the delta18O curve of NGRIP ice core in detail. As the TOC of homogeneous clayey sediments reflects biological productivity of the sea, some mechanisms controlled both the glaciation in Northern Atlantic region and biological productivity of the Japan Sea in the same timing. This is a problem to be solved in a near-feature.

It is found that the horizon of high TOC contents certainly corresponds with dark layer. This means that abundant organic matters in the surface water in a high productivity period sink down in a deeper water and causes anoxic condition in the bottom layer of the Japan Sea. High potential of organic matter in anoxic condition may be favorable for methane formation in the sediments of the Japan Sea.

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