

Pleistocene deep-sea ostracodes at IODP Site U1426 and their implication for paleoenvironments

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In the Sea of Japan, the Quaternary glacial-interglacial climate changes have affected deep ocean floor environments as well as coastal environments and biota [e.g., Kitamura and Kimoto, 2006, *Palaeogeogra., Palaeoclim., Palaeoeco.*, 236: 355-366; Watanabe et al., 2007, *Palaeogeogra., Palaeoclim., Palaeoeco.*, 247, 50-64]. Little is known about the Pleistocene deep-sea ostracodes and their response to environmental changes. We present Pleistocene ostracodes at IODP Site U1426 (37°2.00'N, 134°48.00'E; 903 m water depth). Twenty-one taxa were obtained from 87 Pleistocene (2.0-1.2 Ma) sediments of the interval between 123.50 and 218.14 mcd. Ostracodes occur from sediment samples with L* values of more than 33. Benthic ostracode accumulation rates (BOARs) exhibit less than 14 ind/cm²/kyr. At 180 mcd, BOARs show a change: BOARs indicates maxima of 0.6-4.2 ind/cm²/kyr above 180 mcd (~1.7Ma), whereas BOARs show maxima of 1.7-14 ind/cm²/kyr below 180 mcd. *Acanthocythereis dunelmensis*, *Krithe antiswanensis*, *Krithe hemideclivata*, *Krithe reversa*, and *Robertsonites tabukii* are found ubiquitously. The ostracode fauna indicates oxic condition, alternation of export productivity, and possibly warm water-mass. Generally ostracodes are sensitive to oxygen contents. Their population vanishes in condition with oxygen contents of less than 0.4 ml/l O₂ [Dingle, 1995, *Mar. Geol.*, 122, 207-225]. We infer that the sediments with high L* values (>33) were deposited at oxic condition (> 0.4 ml/l O₂). Because BOARs are influenced by export productivity [Yasuhara et al., 2012, *Paleobiol.*, 38, 162-179], the change in BOAR at 180 mcd suggests alternation of export productivity. According to Kitamura (2009, *J. Quat. Sci.* 24, 880-889), who discuss the surface and intermediate water-masses during the Pleistocene, the flow of the Tsushima current was intensified after 1.7 Ma. The change in surface water-mass probably made effects on surface productivity and benthic ostracodes. *R. tabukii* [= *R. reticuliforma* of Ozawa, 2003, *Paleontol. Res.*, 7, 257-274], that lives in seafloor environments with water depth of 150-250 m and temperature of 2-5°C, indicates a warmer water-mass than the modern intermediate water with 0-1°C temperature.

Keywords: Sea of Japan, Ostracoda, Pleistocene, Deep sea