青森県陸奥湾産ホタテガイの殻（カルサイト）内の成長に伴う元素変動

Growth variation of elemental concentrations in the calcitic bivalve shell of *Mizuhopecten yessoensis* (Jay) from Mutsu Bay, Northern Japan

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Abstract

The variation of concentrations of elements with growth in the calcitic outer shell layer of Mizuhopecten yessoensis (Jay), living in Mutsu Bay, northern Japan was for the first time presented in detail. The variation was clarified for the contents of eleven elements: Li, Na, K, Mg, Sr, Ba, Fe, Mn, Al, B and P.

The variation patterns make to divide the elements into the following four groups: (1) magnesium, strontium, barium, iron and manganese; showing the seasonal variation pattern. These are occupied in the lattice sites in the calcium carbonte's crystal. (2) lithium and sodium; showing the seasonal variation pattern with reverse pattern for the former group. These are associated with inclusions and/or organic matrices. (3) aluminium, pottasium and phosphorous; showing a random variation pattern. These are originated from foreign detrital grains. (4) boron; showing no seasonal variation pattern and partially high content. Boron may be exsited as an other phase with small garains.

The difference among these variation patterns originates in the difference of phase within shell. The variations of the first and second groups can be explained by "optimum condition model" proposed herein.