

Relationship between various elements in shells and crystal form of CaCO_3 constituting inside seashell All over Japan

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Seashell and coral contains mainly inorganic substances are consisted by calcium carbonate and partially organic substances. The seashell consists various combination of Calcite and Aragonite.

In this study, seashells collected on the coast of 10 areas in Japan have analyzed the crystal structure and the elements concentration.

And inorganic elements [Ca, Na, P, Si, Sr, Zr, Y, Rb, S] concentration of seashells are considered from relationship between the crystal structure and each element concentration.

Calcites contain more P and S than Aragonites, Aragonites contain more Sr and Zr than Calcites

There is a strong correlation between Sr and Zr concentration in the seashell.

Also Corals and Barnacles, contain more Sr and Zr than seashells sample.

Zr element is concentrated to 10^6 times the concentration of seawater.

Y element is also concentrated to 10^5 times the concentration of seawater. But Y element isn't correlation the other elements.

It is considered that there are some unknown reason in biomineralization of seashell.

Keywords: biomineral, calcite, aragonite, element