

Shape and Genesis of Plate-like Beach Sand Concretion on the Samejima Coast of the Enshu Sea

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1. Introduction

During our survey on the Samejima coast of the Enshu Sea, we found sand lumps. As there was no previous research about it, we named it “Beach Sand Concretion” and started to research its forms and how they were created.

2. Method

By doing field survey, we divided Beach Sand Concretions into some types. Next, we decided the foreshore into a concretion area and a non-concretion area and took some samples. And we did leveling, particle size composition analysis, mineral composition analysis and titration of chloride ion using the mall method. To investigate the further fine structure, we observed them using electron microscope.

3. Results

From this survey it is believed that Beach Sand Concretion are divided into Cliff type and Flat-Surface type, and the latter can be further classified into Plate-like shape and Lump shape. Focussing on Plate-like Beach Sand Concretion, no significant difference was found in its particle size composition and mineral composition in comparison to normal sand on Samejima Coast. Snad from the concretion area included a lot of chloride ion, but non-concretion area side from the concretion area almost did not include it. Using binocular stereomicroscopes, we observed Scaly or granular white or transparent crystals between sand particles. So we carried out Element mapping with an electron microscope and found that they were crystals consisted of salts like sodium chloride and calcium sulfate.

4. Conclusion

From the statement above, we found that precipitated salts made by the evaporation of sea water on the sand at high tide connected sand particles each other and as the result Beach Sand Concretions were formed.

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