

Comparative studies of the Salt manufactures (the salt manufacture by eathernware, the salt farm method and the ion exchange membrane method etc.) and developments of general teaching material concerning salt.

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Summary

We have mainly researched the teaching material for historical studies of salt manufactures.

Now we have comparatively studied for the salt manufactures of the ancient eathernware method and the ion exchange membrane method and tried the development and practice of the general teaching material concerning salt.

The salt is the indispensable material for human and that's systematic production started in the latter half of the Jomon (the straw-rope pattern) late period.

In Japan at ancient times, the salt was taken from boiling concentrated sea water (kansui) in earthen vessel (eathernware method of salt production). This method was very taken time and the salt yield was small quantity.

In present day, we can be easily obtained the industrial salt that imports the bay salt (dried salt in the sun) and foods salt that products from ion exchange membrane method. Yet we must be not weakly interest for salt.

In this time, we have produced an electrolytic cell of ion exchange membrane for teaching material and examined of an experiments by this apparatus. As the gas is generated from both ends cells, this cells wall is used of stainless steel plate and combined the electrode. An aptitude electro-dialyzer current of this apparatus was good over 0.7A for 3% salt soln. From the experiments results of electro-dialyzer solution, it was confirmed to be mutually dense and light with the concentration of five cells solution. Thus experiment is a useful teaching material to understand the electro-chemical behavior of ion for science.

Next, we have visited one of the ancient salt manufacture remains in Wakayama Prefecture (The Nishinosho remain) and investigated a scale of the Salt manufacture work place, the kilnmarks and the fragments of eathernware etc.

Then we have tried the general educational practice in two elementary schools by the learning from the eathernware manufacture to the salt production. In this practices Children had experience of the change from clay to eathernware and the production from sea water to salt. And they very interested and understood for salt manufacture. Through understanding the relation between ancient human and nature (clay and salt etc), they recognized the importance of the familiar nature conservation in nowadays, too.