

- 1. Earthquake Disaster • Reconstruction and Risk-Management ()
- 2. International City “Kobe” and Global Culture ()
- 3. Proposal : Change International Dispute & Conflict to Peace & Collaboration ()
- 4. Global Science and “Kobe” as a Regional Core-city (○)
- 5. Others ()

[Outline]

Seaside Study Trip

1. Theme

Learning about the Environment and Biological Diversity from the Inland Sea area.

2. Objective

- (1) To learn not only from academic study, but by experiencing through the senses by putting yourself in a natural environment.
- (2) Learn about organic evolution and the diversity of marine life such as algae.
- (3) Learn about the research of experts and use it to deepen the students’ own research activity.
- (4) Broaden one’s horizon against natural environment by thinking of environmental problems and measures including oceanic issues from both macro and micro standpoints.

3. Itinerary

- 9:00 Gathering at Kobe University Research Center for Inland Seas (KURCIS), Opening ceremony
- 9:15 Lecture by Professor Kawai, Q&A
- 10:30 Collecting seaweeds at Maehama Marine-Site
- 12:00 Lunch
- 13:00 Observation of DNA and Autofluorescence of chloroplast and nucleus, specimen preparation, observing plankton through microscope.
- 17:00 Cleaning, Closing ceremony

4. Scenes of Activity



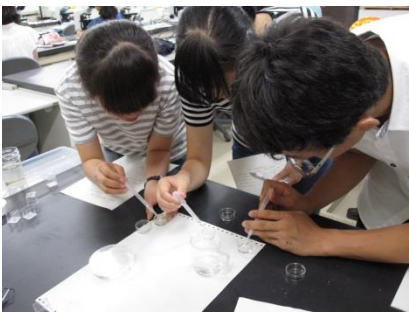
Scene of lecture



Before collecting seaweeds



Collecting seaweeds



Dyeing Diatom DNA



Sorting algae after collecting



Observing plankton

5. Remarks from participating students

I was able to have a very valuable experience this time. I've experienced preparing specimen of plants and going out to collect biological samples. Since this was the first time to put my attention on algae, I was able to participate with a very fresh feeling. Also it was a new experience for me to be able to conduct an exclusive experiment in a very technical facility. The most unforgettable field study I had this time was the experiment using a fluorescence microscope. I was able to have a definite understanding of the body structure of microorganism by conducting the experiment after understanding the mechanism of dyeing and the way of observation. Also, the technical experiment using a compact centrifuge and DAPI was very interesting.

The vegetation of seaweeds was the most impressive of the seaside study this time. It is about when water has a low degree of transparency because of eutrophication, the diversity of species decreases because the critical water depth necessary for growth becomes too shallow due to the light not reaching them. I've learned about vegetation in biology classes at school, but I haven't studied about vegetation in water, so it was fun studying since it aroused my interest to conduct studies on my own. Furthermore, it was a new experience for me to do experiments using devices and methods not available at school. I found the technics to actually confirm what you have learned in your school classes by your own eyes to be very attractive. To learn many new things and to widen my range of interest was a great memorable experience for me this summer. I will like to recommend this program to my juniors in school.

In this field study, I was able to learn many things I couldn't have in the school classes. I was able to experience many things with my senses such as smelling the salt from the sea, touching the seaweeds in the water, observing with fluorescence microscope and listening to the lecture from Professor Kawai. The most impressive was the specimen preparation. I tried to categorize the seaweeds taken from the sea by comparing to pictures, but it was very difficult to categorize accurately since the shapes looked alike and the colors were only slightly different. I was able to name them by getting help from the teachers, but I felt it was a very difficult task since I was not used to it. Also it was fun to compare with the other specimens because when actually preparing them, you could notice that the shape of the seaweeds and the way they branched out was clearly different. I look forward in seeing how the final complete specimen will come out. There was one more thing that I was surprised at. It is the number of life forms existing in the sea. When categorizing the seaweeds, I noticed something moving in the small water pool at the tip of the bat. When looking carefully, there were not only one but countless number of living things moving actively in many shapes and sizes. However, I couldn't name even one of them. And because of this, I strongly felt the desire to learn more about the various life forms in the sea.