Verification and trial of analysis methods for soil and gene sample to restoration of ancient Kano Bay

*Syuusaku Tsuruya[1], *Kouhei Ogawa[1], Taichi Harimoto[1], Daiki Nakatani[1], *Atsushi Watanabe[1]

1. Shizuoka Prefectural Nirayama High School

Ⅰ Introduction

About 6,000 years ago, after the last glacial period, the ocean progressed to the Tagata Plain of the Izu Peninsula due to the Holocene glacial retreat (Jomon-kaishin) and is called the ancient Kano Bay. Last year, we indicated its putative coastline from geological survey data analysis and distribution analysis of Quercus Phillyraeoides. However, we couldn’t clear up all the problem included in these means. Therefore, we conducted this research to analyze inland Quercus Phillyraeoides and to investigate new method to distinguish continental sediment from marine sediment.

Ⅱ Method

Inland Quercus Phillyraeoides analysis

Collect the leaves of Quercus Phillyraeoides from coastal and inland areas, measure the maximum width of the leaf blades, and examine the differences.Extract DNA and examine the differences.

Investigate experimental methods for distinction between continental sediment and marine sediment

Using data obtained from boring at the site which was under the sea when the Holocene glacial retreat occurred, measure sulfur concentration, electric conductivity and pH, and search the diatom distribution by depth.

Based on these data, examine the best way for distinction between continental sediment and marine sediment.

Ⅲ Results and Discussion

We analyzed shapes of leaves and examined the difference between coastal and inland areas. However, we couldn’t prove the specific difference, because we collected leaves from each site without considering the surrounding environment. Also, although we succeeded in DNA extraction, we couldn’t analyze its genes.

We measured some kinds of data, and found it useful to combine the electric conductivity measurement with the diatom distribution examination as the way to indicate continental sediment from marine sediment

We hope that this research will be useful for a more accurate and detailed restoration of ancient Kano Bay.

Keywords: the Holocene glacial retreat, Quercus phillyraeoides, Izu Peninsula