

Restoration of the Paleo-Kano Bay

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I. Background of research

In the Tagata Plain in the northern part of the Izu Peninsula, the sea called "Old Kano Bay" was spread by the Jomon Transgression. There have been studies to restore its coastline, but we have done research to improve its accuracy. Although it is customary to restore the coastline from the results of the topography and boring investigations, we tried to restore the distribution of the ruins and the distribution of *Quercus phillyraeoides* (Ubamegasi).

In the preceding studies, they tried to distinguish the land stratification and the sea stratification, and to identify its coastline using the method of measuring the sulfur concentration of the soil, the method of examining the pieces of diatom and the electrical conductivity of soils.

In the Kanto Plain, which concentrated on the damage caused by the Kanto earthquake was similar to Tagata Plain in the terms of that it was the sea and the weak ground. Therefore, it is possible to predict the existence of the weak ground in the underground several tens of meters by restoring the coastline at that time, it can be expected to be useful for disaster reduction.

II . Research Theme

1.Restoration from ruins

We distribution of the ruins from the Jomon period to the Yayoi period and summarized it on a map.As the age progresses, it moves from the mountains to the plains. The important thing is that in the Jomon period, where the plains which had been the sea has no ruins, and the distribution moved to the plains when the resigning happened. It is presumed that Tagata Plain is a non-residential area in the Jomon period.

2. Restoration from *Q. phillyraeoides*

(1) Distribution Survey

Q. phillyraeoides is the weak plant in the flatland survival competition and prefer the rocky coastline. But the inland part of Tgata Plain, there is a place where *Q. phillyraeoides* colonies exist. So, we supposed that the *Q. phillyraeoides* which exist in the inland, advanced the inland when the Jomon Transgression happenedInland, and was stranded after resigning.

Fieldwork is conducted in Tagata Plain and the west coast of the Izu Peninsula. We picked 12 new samples in the inland area, and 27 new samples in the coastal area. Almost all inland, *Q. phillyraeoides* are similar to the coastal areas of the plant like cliffs and rocky habitat which is difficult environment to exist.

(2) DNA Survey

We assumed coastal colony have been isolated more than 6000 years. It could have caused some differences between DNA of both. To find the changes, we compared DNA of inland and those of coastal area. And tried to prove inland *Q. phillyraeoides* were left behind by the Jomon transgression. Frozen powdery sample DNeasy Plant Kits by DNA of extraction and try to amplify DNA by PCR

We used *Matk*, the *trnH-psbA* and the *atpB-rbcL* as primer. After the amplification we performed Electrophoresis and compared DNA by result of it. We couldn't put the band in a sample of all. But, it seems to be differing slightly between Moriyama in inland and Usibuseyama in coastal area. However, samples concentration is very small. we could not do comparison with other samples and reproduction of experiment. we do experiments, changing the DNA extraction Kit. we used Lysis Solution SLS for Six samples (kareno Park, suisyou Mountain, Siroyama-do, Koganezaki, nannzou, Nagahama castle), and extracted DNA. We do these samples confirmation experiment of DNA.

As a results in all of the samples DNA of a band indicates the presence.

DNA of failed to amplify all but succeeded in extracting the. Conceivable as a cause is concentration and turbidity of impurities. But there were some differences in DNA. Future tasks are further gene analysis such as nucleotide sequence and examine the conditions of PCR.

III Conclusion

Now that we have been able to find many *Q. phillyraeoides* colonies, we can estimate coastlines more finely. In previous researches, it was estimated that the area near Siroyamado would be the southern end, but because there are many *Q. phillyraeoides* living in the south of Siroyamado, the southern end of Kokano Bay is estimated near the Mt.Suisyozan or south of Mt.Suisyozan in this study . Also, from the previous research and this research result, it is considered that the coastline will be as shown in the figure.

IV References

Genetic variation and structure of *Q. phillyraeoides*, In Japan revealed by chloroplast DNA and nuclear microsatellite markers

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