

Applications of NIES-TERRA ^{14}C dating for bone sample from Japan

Minoru YONEDA ¹⁾, Hikaru UNO ²⁾, Ryo SUZUKI ²⁾, Toshiyuki KOBAYASHI ³⁾, and
Yasuyuki SHIBATA ²⁾

1) *Graduate School of Frontier Sciences, University of Tokyo, Kashiwa, Japan.*

2) *NIES-TERRA, National Institute for Environmental Studies, Tsukuba, Japan.*

3) *Hakuto Co. Ltd. Tokyo, Japan.*

The National Institute for Environmental Studies (NIES) celebrated the 10th anniversary of its accelerator mass spectrometer (AMS) facility, NIES-TERRA, last October. During the last decade, the number of unknown-samples measured by this AMS has exceeded 6000 and the annual number of measurements is still growing. One of the unique character of this AMS is wider range of research interests, because this was designed not only for dating but also for applying AMS technique on the new research fields including environmental issues. Hence, the results by NIES-TERRA were reported in more than 60 papers published on various kinds of academic journals. The project on archaeological human remains has been conducted since 1997.

The human remains are unique target of research not only for anthropologist but also for the researcher who interested in the history of environmental pollution. Of course, the precise ages of samples are very important to reconstruct the history of human populations and the relationship between environment and human activities. However, the age determination of human remains are still challenging task for us because of the difficulties to estimate the impact of radiocarbon marine reservoir effect and the uncertainty of pre-bomb marine reservoir ages around Japan.

In the case of Japan, the origin and the population history in this region is one of the major topics of anthropology and archaeology. According to the physical anthropological evidences, the morphological and genetic influences on the native Jomon people by the emigrated Yayoi people seems quite apparent, especially in the western Japan, because of the geographical reasons. However, it was addressed that the immigrant impact in Eastern Japan could be more moderated because of much denser population of Jomon people in this region. We measured radiocarbon ages of a series of human remains housed in the University Museum of the University of Tokyo and the results showed some problems in the accepted history of Japanese populations.

The recent application of radiocarbon dating in Japanese archaeology and anthropology will be review and some advances and problems of pretreatments and measurement of bone materials at NIES-TERRA will be reported as well.