Study on Residential Construction Ages
from Dating Building Materials in Japan's Prehistoric Pit Houses

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Residential activities in the Jomon, Yayoi, and Kofun (Tomb Builder) periods (including the Epi-Jomon and Satsumon cultures in Hokkaido) largely used a half-sunken dwelling known as a pit house. The part of the house-pit facility that has been clarified by archeological surveys is largely the structure of the lower part (the sunken pit part), and its structure and how it was used are being studied. The pit house style remains in the form of sites showing (a) from selection and design of a construction site to actual construction (digging the pit and setting up the associated facilities); (b) its use (residential, food preparation, dining, and other lifestyle aspects); (c) maintenance of the facility (maintenance management, as well as strengthening, repairs, and rebuilding); (d) abandonment, and (e) burial of the site. These chronological changes are organized into a life cycle. After their abandonment as housing they were sometimes simply left untouched, but it has been confirmed that often the prehistoric inhabitants of Japan would continue to have a connection with that area, and (d) repeatedly use the abandoned building sites as dumps, graves, ritual venues, cooking areas, or stonework areas. Finally, they are (e) buried, either naturally or deliberately.

Each stage of the life cycle has a significant meaning for the residential systems, trades and crafts, and social organization of prehistoric people, depending on how much time had passed in that stage. As one part, we would like to estimate how far each process had progressed for each life cycle stage using dating of buried objects.

The key is to understand what stage of the residential life cycle to date, and for that reason, it is important to lay out and grasp the position of the life cycle as a settlement for the samples to date. The present study was based on measurements related to housing construction in stage (a) of the life cycle, with a focus on dating the materials used in heated housing.

The results showed that, in the dating of the construction materials used in the heated housing of both the Jomon period and the ancient history period, four cases out of five with the former (17 cases out of 21 when combined with the reference cases) showed ages quite close to the trees cut down in the same period and the assumed period the dwelling belonged to. In contrast, for the latter both examples (and six examples out of ten from the Yayoi to the ancient periods when the reference cases are included) show some areas where samples suggest older date values, which presumes that old materials have been reused in buildings.
As the archaeological analysis of the corresponding life cycles continues, by accumulating and studying a large number of measurement results it should be possible to recreate the years the building itself survived, the years it was lived in, the degree to which the people there (in the settlement) were connected with it (such as its use as a residence for long periods of time over centuries or for short periods of time of a few years, repeated relocation of residence by season, and so on), the trades and crafts behind this (hunter-gatherer, semi-agricultural societies with managed crop-raising and swidden cultivation, agriculture with irrigation and paddies, etc.) and the social organization (settlement scale, classes, etc.).

Issues include the attributes and characteristics of the samples themselves (such as later contaminations or disturbances) and the problems of technology and materials for the sites themselves (the possibilities of them being coated with coal tar or animal fat, etc.) need consideration, and firstly, there is a need to carry out multiple datings of materials which have clear archaeological provenances.

Key words: Jomon period, Radiocarbon-dating, Pit house