Research into the Use of Radiocarbon for the Dating of Commoner & Upper-class Houses: Hikobe House, Motegi House, Minamitani House, Sekisuiin (Kozanji), Kokin Denju-no-Ma, Seiunji Kuri, Tenshin-in Guest Hall (Manpukuji)

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As part of a research project into the use of radiocarbon analysis for determining the date of construction of houses, we made a comparative study of the methods appropriate for the dating of commoner houses (*minka*) and upper-class residential structures in Japan. Through examination of 3 commoner houses and 4 upper class structures, this paper considers the purpose of the dating research and establishes criteria for selection of samples to obtain a meaningful result using radiocarbon dating.

Carbon-14 dating is effective in establishing the construction dates of commoner houses to within a range of about 30 years, which is generally considered sufficient (though a more precise date may sometimes be useful). On the other hand, in the case of upper-class houses, greater precision is often desirable in order to establish the details of their histories. Thus, because studies of commoner houses and upper class houses have different purposes and significance, different levels of precision in dating analysis may be required. We were also able to establish that radiocarbon dating can provide useful insights in the case of both commoner and upper class houses, if the members to be sampled are appropriately selected. In the case of commoner houses, posts and other members are generally made from relatively small logs, and therefore contain sapwood, un-barked timber and heartwood with wide annual rings, from which it is easy to select material for analysis which will indicate date of felling. Care should be taken to distinguish re-used members from earlier structures, however, as these will distort results. In the case of upper-class houses, members cut from material away from the periphery of large close-grained logs (often specially selected to expose edge-grain on all faces), should be avoided for dating, as the relation to the final growth rings is often unclear, so date of felling cannot be accurately established. Un-barked timber and sapwood from the roof frame should be selected instead. In the case of *sukiya* style structures, members with bark and sapwood may be available and should be selected. This paper thus reveals approaches to dating and sample selection criteria applicable both for commoner and upper-class residential structures.

Key words: commoner houses, upper-class houses, radiocarbon dating/carbon-14 dating, date of construction