
Determination of the Radiocarbon (^{14}C) Age for the Specimens of Wolves from Kuzuu, Tochigi Prefecture in the Nobuo Naora Collection of the National Museum of Japanese History, and the Temporal Changes in the Size of the Lower First Molars of Wolves of the Japanese Archipelago

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The radiocarbon (^{14}C) age for four wolf specimens (NMJH A-636-1-1-18-1, A-636-1-1-18-4, A-636-1-1-19-1, and A-636-1-2-41-2) that were collected by Nobuo Naora in 1940s-1960s from the fissure deposits in Kuzuu, Sano City, Tochigi Prefecture in the Nobuo Naora's collection at The National Museum of Japanese History were measured by Accelerated Mass Spectrometry (AMS). As a result, NMJH A-636-1-1-18-1 was unmeasurable as over background, suggesting that it was thought to be of the middle Late Pleistocene or much older in age: in fact it was strongly fossilized. NMJH A-636-1-1-18-4 was initially thought to be of the period between the latest Early Pleistocene and the Middle Pleistocene by Naora himself, but it was measured as the late Late Pleistocene (33645 ± 238 BC). NMJH A-636-1-1-19-1 was also initially thought to be the same age as NMJH A-636-1-1-18-4, but it turned out to be a slightly older than the previous thought, i.e., the late Late Pleistocene (35626 ± 481 BC). NMJH A-636-1-2-41-2 had long been thought to be from the Kofun Period (Mid 3rd century or 7th century) by Naora, but it was measured as an age of the Middle Jomon period (5008 ± 74 BC).

In addition, fossils and remains of wolves from the Japanese Archipelago after the late Late Pleistocene (younger than 50 Ka), whose ages were revealed by ^{14}C dating, were compared based on the size of the lower first molar (M_1) through time, and the mesiodistal diameters of each M_1 were compared with each other to consider the chronological changes of their sizes. As a result, discontinuity of the M_1 size between the fossils older than 12 Ka and the remains younger than 12 Ka was recognized. Furthermore, comparing the proportion (rectangle) of the M_1 s in mesiodistal by buccolingual diameters in occlusal view, the buccolingual diameter is larger and thicker compared to the mesiodistal diameter in fossil wolves, but there tended to be smaller and thinner in the Japanese wolves. We concluded that the Japanese wolf was not a "direct descendant" of the Pleistocene wolf known from the Honshu Island.

Key words: Nobuo Naora collection, ^{14}C -dating method, Pleistocene wolves, Japanese wolves, Lower first molars