Characterization of Plant Remains on Jomon Potteries
Excavated from the Shimo-yakebe Site, Tokyo, Japan

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Shimo-yakebe site is one of the most important wetland site from Middle to Final Jomon sub-period (ca. 5,300–2,800 cal BP) in the Kanto plain, central Japan. Total of 40 charred plant remains attached to the Jomon potteries had been excavated from varied valley. Charred plant remains on potsherds are ideal for investigating the cooking method of plant foods using pottery during the Jomon period. These charred plant remains are classified into five groups: scaly bulbs remains, fiber remains, fruits and seeds remains, woven remains, and unidentified macro fossil remains. AMS radiocarbon dating, carbon and nitrogen stable isotope analysis and C/N ratio analysis were conducted for 26 charred plant remains to make more refined chronology and to examine origin of these charred plant remains. In addition, radiocarbon dating for 5 seeds and fruits remains conducted. Radiocarbon dating showed that these plant remains attached to the pottery were placed ca. 5,300–2,500 cal BP of the Middle to Final Jomon sub-period. Especially, large majority of these plant remains are placed ca. 3,300–2,700 cal BP of the Final Jomon-sub-period. Carbon and nitrogen stable isotope analysis shows that $^{13}$C values of the all of these plant remains were from -26.5 to -22.5 ‰ (ave. -24.9 ‰) and $^{15}$N values were from 0.8 to 4.5 ‰ (ave. 2.3 ‰). These values are coincides with standard values of the C₃ plants. Charred seeds of Leguminosae (Glycine sp. and Vigna angularis var. angularis type) were placed ca. 4,900 cal BP of the Middle Jomon, and charred fruits of Cannabis sativa placed ca. 3,500 cal BP of the Late Jomon sub-period. Charred seed of Glycine sp. found from the Shimo-yakebe site is the oldest record in the Jomon period at this moment.

Key words: charred plant remains on potsherds, plant utilization, radiocarbon dating, stable isotope analysis, C/N ratio analysis.