

14C Dates of archeological sites and possibilities of human migration in the Bishri Region, Middle Euphrates, Syria

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We have conducted a field survey on archeological sites along the middle Euphrates River, as well as geographical and geological environment in the Bishri region, southeast of Raqqa, Syria, in the Near and Middle East. The aim of this study is to conduct a chronological analysis of the archeological sites, in particular, to establish chronology of the Tell Ghanem al-Ali site, by radiocarbon (14C) dating on carbonaceous remains at the site with the accelerator mass spectrometry facility of Nagoya University in Japan.

During the survey, we have visited the Tell Ghanem al-Ali site that is located on the lowest terrace of Euphrates River, where extensive archeological excavations have been performed at two trenches, Square-1 (9x9 m²) and Square-2 (3x15 m² and separated into eight sedimentary layers), in the northeast side of the Tell. We have detected several fragments of pottery as well as black layers composed of charred soil and/or charcoal fragments. The layers were quite clear and we can believe that these layers have resulted from human activities at the site. We have collected totally 31 charcoal samples such as charcoal and wood fragments from Square-1 and Square-2 trenches as well as adjacent outcrops to the site.

The calendar dates calibrated from 14C ages obtained by the present study range from 3100-2900 cal BC at the oldest level to 2250-2050 cal BC at the youngest level of the Tell Ghanem al-Ali site, and concentrate to the period from 2650-2450 cal BC. Since the pottery fragments collected on the surface of the Tell before the excavation survey was started, as well as those collected from the sediments during the excavation were assigned based on their typological analysis to the periods of Early Bronze Age (EB)-IV and EB-III, the archeological chronology is almost consistent with the 14C chronology that is established here. However, the calendar age of the oldest level (level-7 and -8) obtained by the present study dates back to 3100-2900 cal BC, and these figures are older than the oldest limit of the EB period that has been established so far. A new framework of absolute chronology based on 14C dating will be required.

A numerous number of graves in the form of a cairn, existing in the desert area of the Bishri Mountain, located in the south of the Middle Euphrates, have been surveyed, and during the survey of the cairns at Tor Rahum-1 from May 10th to June 2nd, 2009, Fujii and Adachi (2009) have collected several charcoal samples for 14C dating from the cairn tombs Nos. 117, 130 and 131. 14C ages for charcoal samples collected from the cairn tombs in the desert area form a group at around 3410-3540 14C BC, except for one age as young as 3140 14C BC. The calibrated calendar dates for these samples, ranging from 1940-1670 cal BC, coincide with a period of an early part of Middle Bronze age. The calendar dates for the cairn tombs are all younger than those for the Tell Ghanem al-Ali site, and both dates continue smoothly from the latter to the former. This suggests the possibility that human who had dwelled at the lowland area along Euphrates River, the Tell Ghanem al-Ali site, from 3100 cal BC to 2050 cal BC, migrated to the highland area at around 2000 cal BC.

To be compared to this results, we also have measured charcoal samples collected from the Wadi Shabout cemeteries adjacent to Tell Ghanem al-Ali. 14C age of a charcoal sample from the Wadi

Shabout tumulus-1 was obtained to be 3882±38 14C BP and its calibrated calendar age to be 2471-2278 cal BC (89.9% probability). This calendar date is older than those of samples collected from Cairn tombs in Mt. Bishri (1940-1670 cal BC), but consistent with the calendar dates of Uppermost layers (2400-2050 cal BC) and Level-1, and-2 (2650-2350 cal BC) at Square-2 trench of Tell Ghanem al-Ali. This suggests that the Wadi Shabout cemeteries are more related with people who lived at Tell Ghanem al-Ali than those who lived on Mt. Bishri.

Keywords: 14C age, archeological site, early Bronze Age, the Middle Euphrates, Bishri Mountains, migration