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RADIOCARBON AND OXIDIZABLE CARBON RATIO DATES FROM THE CAMP JOY MOUND (41UR144) IN NORTHEAST TEXAS

Timothy K. Perttula, Mike Turner, and Bo Nelson

INTRODUCTION

The Camp Joy Mound (41UR144) is a looted Caddo mound on property owned by the U.S. Army Corps of Engineers, Fort Worth District, at Lake o' the Pines (Turner 1993; Perttula et al. 1996). Although only a small number of artifacts have been found in the mound deposits — principally a few brushed sherds — it appears to be a Late Caddoan period construction with two mound platforms, separated by extensive charcoal lenses from one (or more) burned Caddoan struc-

ture exposed in a larger looters trench. To ascertain the age of the burned Caddoan structure that stood on the main mound platform, we obtained two charcoal samples and two oxidizable carbon ratio (OCR) samples (see Frink 1994 for information on the OCR procedure for dating archeological features) of sediments from the charcoal lens in our freshly cleaned profile of the trench cutting across the mound (Turner 1993:Figure 4).

Provenience and Results

The charcoal samples were collected from about 60-70 cm below surface from two sides of the large looters trench. The northern profile sample (Sample #3) was collected where the top mound and the underlying platform mound are conjoined, whereas the eastern profile sample (Sample #2) was near the base of the top mound, about 10 cm above Sample #3. The calibrated radiocarbon dates are A.D. 1495 -1605 (0.83 probability; Beta-84435, northern side of profile trench sample #3) and A.D. 1515 -1592 (0.42 probability) and A.D. 1621 - 1675 (0.39 probability;

Beta-84436, eastern side of profile trench sample #2).

The two OCR samples came from the southern trench profile (57 cm below surface, correlating in depth with radiocarbon sample #3) and the northern trench profile (70 cm below surface, correlating in depth with radiocarbon sample #2). The OCR date from the southern trench profile is 296 ± 8 years BP, rounded up to 300 ± 10 years BP (ACT #2218) or A.D. 1650 ± 10 , and the other OCR date is 420 ± 12 years BP (ACT #2219), rounded to A.D.

1530 \pm 10, from the northern trench profile.

There is a strong correlation between the calibrated age estimates for the burned structure at the Camp Joy Mound from the radiocarbon dates and the two OCR dates. The radiocarbon and OCR dates from *ca.* 57 and 60 cm bs are cal AD 1495 - 1605 and A.D. 1640 - 1660, respectively, whereas the slightly deeper radiocarbon and OCR samples (*ca.* 70 cm) are cal AD 1515 - 1592 or cal AD 1621 - 1673 and A.D. 1520 - 1540, respectively. Based on the overlapping ages of the four samples, indicating their broad contemporaneity, we estimate that the structure buried by the second mound platform at Camp Joy was burned and then capped with soils between

ca. A.D. 1550 - 1560.

The four dates provide good evidence that the Camp Joy Mound was in use in the 16th and 17th centuries, a period of time when it has generally been agreed that Caddoan peoples in Northeast Texas outside the Red River Valley were no longer building and using earthen mounds (cf. Thurmond 1990; Perttula 1992). Further investigations of the mound are planned to examine the profile in more detail, and collect additional radiocarbon and OCR samples for dating, particularly to evaluate the possibility that the charcoal lenses exposed in the looters trench are from two or more temporally sequent Titus phase structures, one slightly above the other.

Dating the Late Caddoan Period in Northeast Texas

The Late Caddoan period is thought to date from *ca.* A.D. 1350/1400 - 1680 (Story 1990:334; Perttula 1992). In the Cypress Creek basin of the Northeast Texas Pineywoods, both the Whelan and Titus phases fall into this period. A few calibrated radiocarbon dates for the Whelan phase indicate it began around A.D. 1350, whereas the Titus phase is still rather imprecisely dated from *ca.* A.D. 1450 to at least the early 1600s (Thurmond 1990; Perttula 1992:102-107). The chronological span of the two phases is poorly developed because of few radiocarbon dates for the Late Caddoan period sequence (Thurmond 1990:Table 60; Story 1990:Table 81). Only 22

radiocarbon dates have been obtained from Whelan and Titus phase components (Table 1), including those from the Camp Joy Mound.

As Table 1 shows, radiocarbon dates from assumed Whelan and Titus phase components overlap at the 1-sigma range, lending some credence to Thurmond's (1990:225) assertion that "the existing radiocarbon data base from the Cypress basin is unsuitable for use in an interpretation of the local culture history". Nevertheless, the most reasonable (i.e., with probability distributions at one sigma or greater than 0.76) of the recent calibrated 1-sigma radiocarbon dates from

Table 1. Late Caddoan Radiocarbon Dates from the Northeast Texas Pineywoods and Post Oak Savanna.

Site	Provenience	Lab #	¹⁴ C Age (B.P.)	Corrected Age (B.P.)*	Calibrated Age (B.P.)**	Reference
WHELAN PHASE (after Thurmond 1990)						
UR10	House 4 under Mound D	Tx-84	490 ± 100	490 ± 108	AD 1385-1515 (0.72) AD 1311-1352 (0.17) AD 1593-1620 (0.10)	Jelks and Tunnell 1959; Tamers et al. 1964
	Mound B fill	Tx-238	265 ± 65	265 ± 76	AD 1511-1599 (0.39) AD 1616-1680 (0.34) AD 1756-1804 (0.20)	Jelks and Tunnell 1959; Pearson et al. 1966
	Mound C fill	Tx-239	330 ± 110	330 ± 117	AD 1444-1668 (0.98)	Jelks and Tunnell 1959; Pearson et al. 1966
	Mound C fill	Tx-240	555 ± 70	555 ± 81	AD 1382-1437 (0.56) AD 1308-1357 (0.44)	Jelks and Tunnell 1959; Pearson et al. 1966
	House 4, beam above floor, Md. D	Tx-241	345 ± 75	345 ± 85	AD 1479-1641 (1.00)	Jelks and Tunnell 1959; Pearson et al. 1966
UR11	latest of 2 structures under mound [House B]	Tx-83	480 ± 110	480 ± 117	AD 1391-1520 (0.68) AD 1571-1626 (0.21) AD 1316-1346 (0.11)	Davis and Gipson 1060; Tamers et al. 1964
UR133	N184-E402, lev. 4 [terrace area midden]	Tx-7989	578 ± 118	554 ± 118 (-26.5 o/oo)	AD 1295-1455 (1.00)	Nichols et al. 1995
possibly WHELAN PHASE (after Thurmond 1990)						
CP8	submound structure, charred pole in md. fill	Tx-199	320 ± 60	320 ± 72	AD 1490-1605 (0.76) AD 1613-1649 (0.24)	Tunnell 1959; Pearson et al. 1965
	submound structure, charred pole in md. fill	Tx-202	240 ± 90	240 ± 99	AD 1724-1816 (0.34) AD 1621-1696 (0.29) AD 1515-1592 (0.24)	Tunnell 1959; Pearson et al. 1965
CP5	Burial 10 fill	Tx-666	360 ± 70	360 ± 81	AD 1536-1635 (0.63) AD 1473-1530 (0.37)	Turner 1978
TT182	Feature C1	Beta-44786	220 ± 80	220 ± 80	AD 1717-1819 (0.46) AD 1634-1703 (0.30)	Kotter et al. 1991
	Feature C5	Beta-44787	290 ± 120	290 ± 120	AD 1465-1680 (0.81) AD 1759-1803 (0.14)	Kotter et al. 1991
	Zone 2 (humates)	Beta-44789	320 ± 70	320 ± 70	AD 1492-1605 (0.76) AD 1613-1649 (0.24)	Kotter et al. 1991
TT392	N501-E476, level 3	Beta-64977	320 ± 80	300 ± 80 (-26.1 o/oo)	AD 1483-1666 91.00)	Nash et al. 1995

Table 1 (continued). Late Caddoan Radiocarbon Dates from the Northeast Texas Pineywoods and Post Oak Savanna.

Site	Provenience	Lab #	¹⁴ C Age (B.P.)	Corrected Age (B.P.)*	Calibrated Age (1-sigma)**	Reference
TT672	Feature 1	Beta-80432	430 ± 50	430 ± 50 (-25.9 o/oo)	AD 1431-1510 (0.90) AD 1602-1615 (0.10)	Dixon et al. 1995
UR 118	BHT 46, organics on sherd	Beta-72372	300 ± 60	300 ± 60 (-27.3 o/oo)	AD 1624-1679 (0.40) AD 1518-1591 (0.32)	Nichols et al. 1995
	N123/E143, N118/E131	Beta-90532	440 ± 40	440 ± 40 (-25.0 o/oo)	AD 1430-1483 (1.00)	Unpublished
UR129	N198-E211 (humates)	Tx-7990	403 ± 41	458 ± 41 (-21.6 o/oo)	AD 1425-1470 (1.00)	Nichols et al. 1995
UR133	BS6/BS7	Beta-90534	360 ± 40	360 ± 40 (-25.0 o/oo)	AD 1562-1630 (0.61) AD 1480-1523 (0.39)	Unpublished
UR144	Feature 1, burned lens at contact between md. fills	Beta-84435	390 ± 60	340 ± 60 (-28.3 o/oo)	AD 1495-1605 (0.83) AD 1613-1636 (0.17)	Perttula et al. 1996
	Feature 1, burned lens	Beta-84436	310 ± 60	270 ± 60 (-27.4 o/oo)	AD 1515-1592 (0.42) AD 1621-1675 (0.39)	Perttula et al. 1996
WD529	trash midden	Tx-3473	480 ± 80	480 ± 90	AD 1393-1515 (0.82)	Bruseeth and Perttula 1981

Key to Table 1 (Note: All site numbers are preceded by "41").

* Age not calibrated; delta ¹³C values in parentheses. Assays on nutshell and wood charcoal ¹³C values use the value estimates for fractionation correction suggested by Stuiver and Reimer (1993a:Table 1), namely -25.0 o/oo. These particular assays have standard deviations that include an error in the estimated delta ¹³C.

** Calibrations use bidecadal record of Stuiver and Reimer (1993a, 1993b), using CALIB 3.03c, Test 10; probability distributions are in parentheses.

good Titus phase contexts at 41TT182, 41TT392, 41TT672, 41UR118, and 41UT144 consistently span the period from cal AD 1431 - 1680; a Period 3 (Perttula 1992; after ca. A.D. 1550) burial from Tuck Carpenter (Turner 1978) dates at 1-sigma to cal AD 1536-1635. Two other Titus phase radiocarbon assays (from 41UR118 and 41UR129) range in date from cal AD 1425 - 1470 (Table 1).

It is interesting to note that the radiocarbon dates obtained in the 1960s from Whelan phase mound sites fall into two clusters: one spanning the period from cal AD 1382 - 1520, and the other ranging in the period from cal AD 1444 - 1668, the latter more or less the same span as the Camp Joy radiocarbon and OCR dates. The latter cluster, with two dates from Harroun, and one from Sam Roberts

(Table 1), is contemporaneous with those discussed above from Titus phase domestic and mound-building contexts, although the dates from Harroun have been rejected by Thurmond (1990:204) on the grounds of their ceramic associations.

At Sam Roberts, although there is a Titus phase component in one areas of the site and the calibrated date from the submound structure dates to the same period, Thurmond (1990:144) argues that the mound was built during the preceding Whelan phase because "there is no clearly demonstrated instance of mound building in a Titus phase contexts". The two 16th and 17th century radiocarbon dates we have discussed from a burned structure in the Camp Joy Mound, along with the OCR dates of 300 ± 10 BP and 420 ± 12 BP from the same charcoal/daub lens, indicate

the temporal context of the period of construction of the Sam Roberts mound should be reevaluated, as should the notion that Titus phase Caddoan groups did not build and/or use mounds.

Only a single radiocarbon date has been obtained from what is thought to be a Whelan phase domestic context, cal AD 1295 - 1455 from the Rookery Ridge site (41UR133) at the proposed Lake Gilmer (Table 1). The terrace area at 41UR1133 has a buried, single-component occupation with Pease Brushed-Incised jars, Ripley Engraved vessel sherds with the continuous scroll motif, and a Perdiz arrowpoint (Nichols et al. 1995:Table 17-2). These are characteristic of Period 1 (ca. A.D. 1350 - 1450) or Whelan phase occupations in the Cypress Cluster (Perttula 1992:248 and Table A-2).

Summary

Radiocarbon and OCR dates from the Camp Joy Mound strongly suggest that the mound was built and used in Late Caddoan period times, with the final use of the mound (followed by its being capped with a small, second, earthen platform) occurring during the 16th and 17th centuries. Other Late Caddoan radiocarbon dates from Northeast Texas indicate that the Whelan phase dates from about A.D. 1350 - 1450, and the following Titus phase —

when the Camp Joy Mound was in use — dating from ca. A.D. 1450 - 1680. The general concordance in results between the radiocarbon and OCR dates is quite encouraging, and we advocate the combined use of both methods of dating archeological features as a beneficial means for Caddoan archeologists to secure reliable and culturally relevant dates on prehistoric and historic Caddoan sites throughout the Caddoan archeological area.

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