Radiocarbon and Oxidizable Carbon Ratio Dates From the Camp Joy Mound (41UR144) in Northeast Texas

Timothy K. Perttula
Heritage Research Center, Stephen F. Austin State University, tkp4747@aol.com

Mike Turner

Bo Nelson
Heritage Research Center, Stephen F. Austin State University, rbonelson@aol.com

Follow this and additional works at: https://scholarworks.sfasu.edu/ita

Part of the American Material Culture Commons, Archaeological Anthropology Commons, Environmental Studies Commons, Other American Studies Commons, Other Arts and Humanities Commons, Other History of Art, Architecture, and Archaeology Commons, and the United States History Commons

Tell us how this article helped you.

Cite this Record
Perttula, Timothy K.; Turner, Mike; and Nelson, Bo (1997) "Radiocarbon and Oxidizable Carbon Ratio Dates From the Camp Joy Mound (41UR144) in Northeast Texas," Index of Texas Archaeology: Open Access Gray Literature from the Lone Star State: Vol. 1997, Article 27. https://doi.org/10.21112/.ita.1997.1.21
ISSN: 2475-9333
Available at: https://scholarworks.sfasu.edu/ita/vol1997/iss1/27

This Article is brought to you for free and open access by the Center for Regional Heritage Research at SFA ScholarWorks. It has been accepted for inclusion in Index of Texas Archaeology: Open Access Gray Literature from the Lone Star State by an authorized editor of SFA ScholarWorks. For more information, please contact cdsscholarworks@sfasu.edu.
Radiocarbon and Oxidizable Carbon Ratio Dates From the Camp Joy Mound (41UR144) in Northeast Texas

Creative Commons License

This work is licensed under a Creative Commons Attribution 4.0 License.

This article is available in Index of Texas Archaeology: Open Access Gray Literature from the Lone Star State: https://scholarworks.sfasu.edu/ita/vol1997/iss1/27
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 structure 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 ± 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 1960; Tamers et al. 1966 |
| UR133 N184-E402, lev. 4 [terrace area midden] | Tx-7989 | 578 ± 118 | 554 ± 118 (-26.5 o/oo) | AD 1293-1455 (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 1621-1656 (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)       | Dixon et al. 1995  |
| UR118  | BHT 46, organic on sherd         | Beta-72372 | 300 ± 60            | 300 ± 60 (-27.3 o/oo) | AD 1624-1679 (0.40)       | Nichols et al. 1995|
|        | N123/E143, N118/E131            | Beta-90332 | 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-90334 | 360 ± 40            | 360 ± 40 (-25.0 o/oo) | AD 1562-1630 (0.61)       | Unpublished        |
| UR144  | Feature 1, burned lens on contact between mld. fills | Beta-84435 | 390 ± 60            | 340 ± 60 (-28.3 o/oo) | AD 1495-1605 (0.83)       | Perttula et al. 1996|
|        | Feature 1, burned lens           | Beta-84436 | 310 ± 60            | 270 ± 60 (-27.4 o/oo) | AD 1515-1592 (0.42)       | Perttula et al. 1996|
| WD529  | trash midden                     | Tx-3473   | 480 ± 80            | 480 ± 90              | AD 1393-1515 (0.82)       | Bruseth and Perttula 1981|

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

* Age not calibrated; $\delta^{13}$C values in parentheses. Assays on nutshell and wood charcoal $^{13}$C 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 $\delta^{13}$C.

** 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...
Caddoan Archaeology Newsletter

(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 area 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. AD 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 AD 1350 - 1450, and the following Titus phase — when the Camp Joy Mound was in use — dating from ca. AD 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.
References Cited

Bruseth, James E., and Timothy K. Perttula
1981 Prehistoric Settlement patterns at Lake Fork Reservoir. Texas Antiquities Permit Series, Report No. 2. Texas Antiquities Committee and Southern Methodist University, Austin and Dallas.

Davis, E. Mott, and J. R. Gipson
1960 The Dalton Site: A Late Caddoan mound Site in the Ferrell’s Bridge Reservoir Area, Northeastern Texas. Submitted to National park Service, Contract No. 14-10-333-242, by division of Research in Anthropology, The University of Texas at Austin.

Dixon, Boyd, Elizabeth Skokan, Roabaert Rogers, Steve Kotter, Michael Nash, and Edward Barnhart
1995 Archaeological Testing of Site 41TT672 and Geomorphological Exploration of Tankersley and Dragoo Creek Drainages, Titus County, Texas. Document No. 950565. Espey, Huston & Associates, Inc., Austin.

Frink, Douglas J.
1994 The Oxidizable Carbon Ratio (OCR): A Proposed Solution to Some of the Problems Encountered with Radiocarbon Data. North American Archaeologist 15(1):17-29.

Jelks, Edward B., and Curtis D. Tunnell
1959 The Harroun Site: A Fulton Aspect Component of the Caddoan Area, Upshur County, Texas. Archaeology Series, No. 2. Department of Anthropology, The University of Texas, Austin.

Kotter, Steven M., Laura Jones, Charles Frederick, and Wayne Glander
1991 An Archaeological Investigation of 41TT182 in the Monticello-Winfield South Surface Mine, Titus County, Texas. Document No. 910264. Espey, Huston & Associates, Inc., Austin.

Nash, Michael A., Steven M. Kotter, Kathryn V. Reese-Taylor, Elizabeth A. Skokan, E.R. Foster, Robert M. Rogers, and Wayne P. Glander
1995 National Register Testing of Ten Sites in the Monticello B-2 Surface Mine, Titus County, Texas. Review Draft. Document No. 930529. Espey, Huston & Associates, Inc., Austin.

Nichols, Peter, Larry Banks, Martha D. Freeman, Mark Parsons, Bert Rader, and David Shanabrook
1995 Test Excavations at Proposed Lake Gilmer, Upshur County, Texas. Horizon Environmental Services, Inc., Austin.

Pearson, F.J., Jr., E. Mott Davis, and Murray A. Tamers
1966 University of Texas Radiocarbon Dates IV. Radiocarbon 8:453-466.
Caddoan Archeology Newsletter

Pearson, F.J., Jr., E. Mott Davis, Murray A. Tamers, and R. W. Johnston
1965 University of Texas Radiocarbon Dates III. Radiocarbon 7:296-314.

Perttula, Timothy K.
1992 "The Caddo Nation": Archaeological and Ethnohistoric Perspectives. University of Texas Press, Austin.

Perttula, Timothy K., Bo Nelson, and Mike Turner
1996 Initial Report on Archeological Investigations at Lake o' the Pines, a U.S. Army Corps of Engineers-Owned Lake Facility in Northeast Texas. Friends of Northeast Texas Archaeology, Pittsburg and Austin.

Story, Dee Ann
1990 Cultural History of the Native Americans. In The Archeology and Bioarcheology of the Gulf Coastal Plain, by Dee Ann Story, Janice A. Guy, Barbara A. Burnett, Martha D. Freeman, Jerome C. Rose, D. Gentry Steele, Ben W. Olive, and Karl J. Reinhard, pp. 163-166. Research Series No. 38. Arkansas Archeological Survey, Fayetteville.

Stuiver, Minze, and Paula J. Reimer
1993a CALIB User's Guide Rev 3.0.3A for Macintosh Computers. Quaternary Research Center, University of Washington, Seattle.

1993b Extended 14C Data Base and Revised CALIB 3.0 14C Age Calibration Program. Radiocarbon 35(1):215-230.

Tamers, Murray A., F.J. Pearson, Jr., and E. Mott Davis
1964 University of Texas Radiocarbon Dates II. Radiocarbon 6:138-159.

Thurmond, J. Peter
1990 Archeology of the Cypress Creek Drainage Basin, Northeastern Texas and Northwestern Louisiana. Studies in Archaeology, No. 5. Texas Archeological Research Laboratory, The University of Texas at Austin, Austin.

Tunnell Curtis D.
1959 The Sam Roberts Site, Ferrell's Bridge Reservoir, Texas. MS on file, Texas Archeological Research Laboratory, The University of Texas at Austin, Austin.

Turner, Mike
1993 A Two-Phase Caddo Mound at the Camp Joy Site (41UR144). Notes on Northeast Texas Archaeology 2:66-75.

Turner, Robert L.
1978 The Tuck Carpenter Site and its Relation to Other Sites Within the Titus Focus. Bulletin of the Texas Archeological Society 49:1-110.