

EVIDENCE FOR STEPPED PYRAMIDS OF SHELL IN THE WOODLAND PERIOD OF EASTERN NORTH AMERICA

Thomas J. Pluckhahn, Victor D. Thompson, and W. Jack Rink

Antiquarians of the nineteenth century referred to the largest monumental constructions in eastern North America as pyramids, but this usage faded among archaeologists by the mid-twentieth century. Pauketat (2007) has reintroduced the term pyramid to describe the larger, Mississippian-period (A.D. 1050 to 1550) mounds of the interior of the continent, recognizing recent studies that demonstrate the complexity of their construction. Such recognition is lacking for earlier mounds and for those constructed of shell. We describe the recent identification of stepped pyramids of shell from the Roberts Island Complex, located on the central Gulf Coast of Florida and dating to the terminal Late Woodland period, A.D. 800 to 1050, thus recognizing the sophistication of monument construction in an earlier time frame, using a different construction material, and taking an alternative form.

Los anticuarios del siglo XIX se refirieron a las grandes construcciones monumentales en el este de América del Norte como pirámides, pero este uso desapareció entre los arqueólogos a mediados del siglo XX. Pauketat (2007) ha vuelto a introducir el término pirámide para describir los montículos del período Mississippian (1050 a 1550 d.C.) del interior del continente, reconociendo estudios recientes que demuestran la complejidad de su construcción. Se carece de estudios que permitan este reconocimiento para montículos anteriores y para aquellos construidos de concha. Se describe la reciente identificación de pirámides escalonadas de concha del Complejo Isla Roberts, situado en la Costa del Golfo central de Florida y que data del período Woodland Tardío terminal, 800 a 1050 d.C., ampliando así la comprensión de la complejidad de la construcción monumental a un período más temprano, un material de construcción diferente y una forma alternativa.

Three decades of postmodernist critique make it clear that archaeological terms often develop interpretive weight not necessarily intended in their original formulations. This is true not only of theoretical concepts like “agency” or “state,” but also of the seemingly mundane vocabulary of material remains. When, for example, may we accurately describe a monument of earth or shell as a pyramid? Darvill (2003:344), in the *Concise Oxford Dictionary of Archaeology*, defines a pyramid “strictly speaking” as “a square-based structure with four triangular sides tapering to a point, as represented in the large stone examples found in Egypt.” However, he goes on to note that the term “is also used for step-sided structures of pyramidal form

found in Egypt and elsewhere in the world.” Antiquarians of the nineteenth century commonly referred to the largest monumental constructions of earth and shell in eastern North America as “pyramids” (e.g., Brackenridge 1848; McKinley 1873; Squier and Davis 1848). The use of this term for describing monuments in the region soon faded in favor of “mound.” Major cultural historical syntheses for the New World from the early and middle twentieth century, such as Willey and Phillips (1958), reserve “pyramid” for monuments in Mesoamerica and South America.

Pauketat (2007:99) has recently reintroduced the use of “pyramid” to describe the flat-topped, steep-sided monuments of the Mississippian period in eastern North America:

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Excavations reveal that, while towns were occupied, the earthen pyramids were well-proportioned quadrilateral constructions with sharp-angled corners and terraces. They were not grass-covered, eroded lumps of earth but packed-earth pyramids.

His use of “pyramid” in this context is presumably intended to provoke greater appreciation of the labor invested in design, construction, and maintenance of these monuments, and thus also the complexity of Mississippian societies (Pauketat 2007). Pauketat’s (2007) reappraisal draws from recent excavations documenting the sophistication of construction, as evidenced by such hitherto unrecognized features as the use of buttresses or bulwarks to add stability; the addition of veneers to discourage the infiltration of underlying layers by rainwater; the use of zoned fill layers of alternating permeability to improve moisture balance and to increase slope strength and reduce shear stress; and the deliberate selection of soils of certain colors for aesthetic or ideological reasons (Bareis 1975; Collins and Chalfant 1993; Sherwood 2013; Sherwood and Kidder 2011). With few exceptions (see Sherwood et al. 2013), such studies have been limited to the earthen monuments common to interior eastern North America, and particularly those of the Mississippian period (A.D. 1050 to 1540).

In recent decades, it has become clear that the construction of flat-topped monuments preceded the Mississippian period in some portions of eastern North America (Jefferies 1994; Knight 1990, 2001; Milanich et al. 1997; Pluckhahn 1996, 2003). Perhaps the best example of this is the Gulf Coast and adjacent interior regions of Florida, Georgia, and Alabama, where a dozen or more flat-topped mounds of earth or shell (or combinations of these materials) are known for the Middle and Late Woodland periods (ca. A.D. 100 to 1050). The sophistication in construction of these monuments merits greater appreciation.

We present evidence for stepped pyramids of mounded shell at the Roberts Island Complex on the central Gulf Coast of Florida. Stepped construction was identified in ground-penetrating radar profiles and in strata from trench excavations on two of the three flat-topped monuments that comprise the complex. Radiocarbon

and OSL dating, as well as relative dating of ceramic assemblages, indicate that construction occurred during the terminal Late Woodland period, ca. A.D. 800 to 1050. This finding suggests a greater sophistication in architectural planning and execution than commonly recognized for this region and time period, thus supporting and extending the use of the word “pyramid” in reference to some of the monumental architecture of the region.

Description of the Roberts Island Complex

The Roberts Island Complex is comprised of a series of anthropogenic islands at the junction of the Crystal and Salt Rivers, about halfway between the Crystal River’s source at a series of springs and its mouth 9 km to the west at the Gulf of Mexico (Figure 1). The complex lies only about one-half km downstream from the Crystal River site, famous primarily from the work of C.B. Moore (1903, 1907, 1918) in the early twentieth century. Moore’s excavations in the burial mounds at Crystal River resulted in the recovery of a large and diverse assortment of exotic artifacts that supports contemporary understanding of the site as the southernmost major Hopewellian center (Pluckhahn et al. 2010; Seeman 1979; Weisman 1995a). In 2011, we began fieldwork directed to a more precise understanding of the extent and timing of monument construction at Crystal River and its contemporaries, including the Roberts Island Complex.

As defined by Weisman (1995b), the Roberts Island Complex includes five separate sites originally recorded by Ripley Bullen in 1972 (documents on file at the Florida Master Site File, Tallahassee). Weisman’s (1995b) report, which summarized the limited understanding of the site, was instrumental in the acquisition of the property by the state of Florida. Prior to our study, the sites were virtually unknown, apart from very limited surface collections, which suggested rough contemporaneity with Crystal River during the Woodland period.

Three of the sites in the complex are relevant to this study. Site 8CI41, the largest site in the complex, consists of an island of midden measuring approximately 200-m long and 20-50-m wide (Figure 2). Systematic investigation with 17 50-

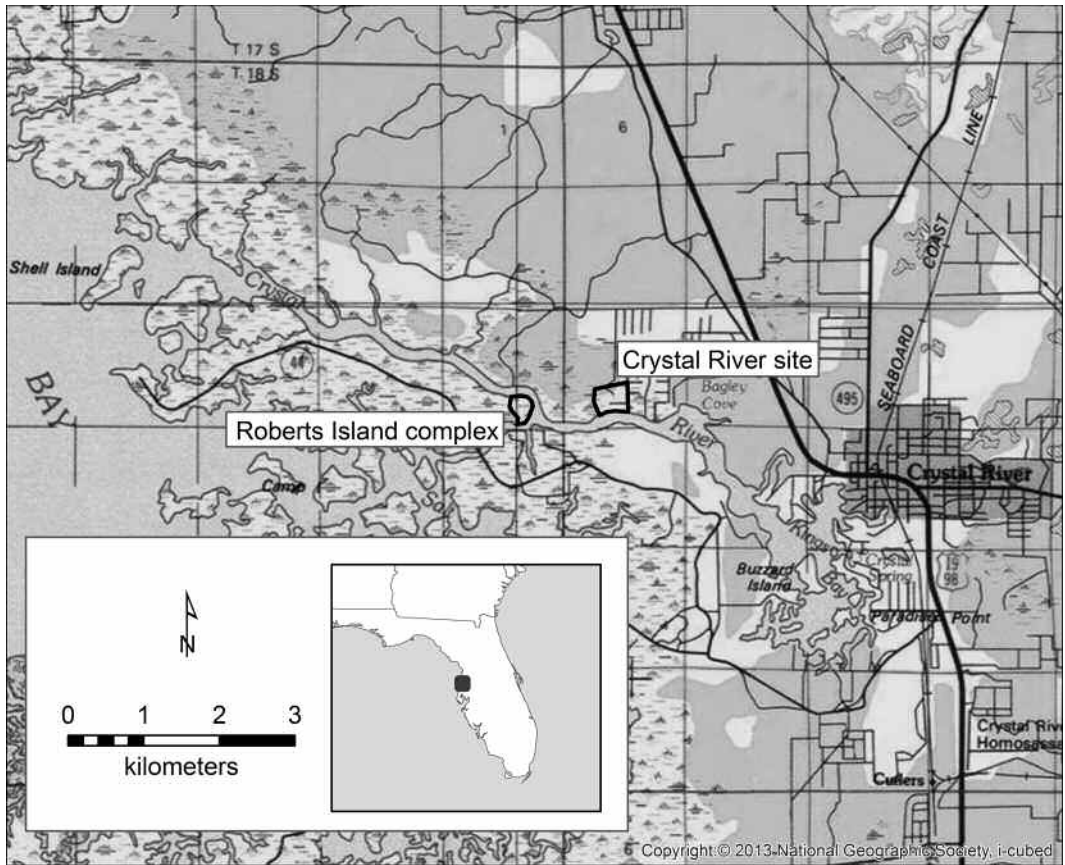


Figure 1. Locations of the Roberts Island Complex and Crystal River site.

x-50-cm shovel tests excavated at 20-m intervals in off-mound areas revealed that the island is almost completely anthropogenic, comprised mainly of discarded oyster shell and lesser amounts of other mollusk shells, faunal remains, and other artifacts. In several tests, we encountered an occupation layer around 1 m below the modern ground surface, at or slightly below the level of the mean high tide. This level, which contained comparatively little shell, appears to mark an initial occupation of a low marsh island at a time when sea levels were ca. 1 m lower than present (Balsillie and Donoghue 2004; Milanich 1999; Walker et al. 1994). Bayesian modeling of radiocarbon dates from middens at Crystal River and Roberts Island places this initial occupation in the interval from around *cal A.D.* 521 to 747 (68 percent probability) (Pluckhahn, Thompson, and Cherkinsky 2015). Covering this initial occupation layer is a shell-dense deposit varying in thickness

from 1 to 1.5 m. Bayesian modeling suggests this upper portion of the midden dates from around *cal A.D.* 779 to 982 using 68 percent posterior estimates (Pluckhahn, Thompson, and Cherkinsky 2015).

This uppermost midden layer eventually served as a substrate for the erection of Mound A, a rectangular platform mound measuring about 29 x 32 m at its base and 14 x 21 m at its summit (Figure 3). The flat top of the mound is about 4 m higher than the surrounding ground surface. The axes of Mound A are oriented with the cardinal directions, with the long axis running north-south. True to previous descriptions (Weisman 1995b), midway along the eastern slope of the mound there is a discontinuity in elevation suggestive of a ramp (as with several of the mounds at Crystal River). The presumed ramp connects the mound to a flat, plaza-like midden deposit that extends about 40 m east before trailing off into marsh. As

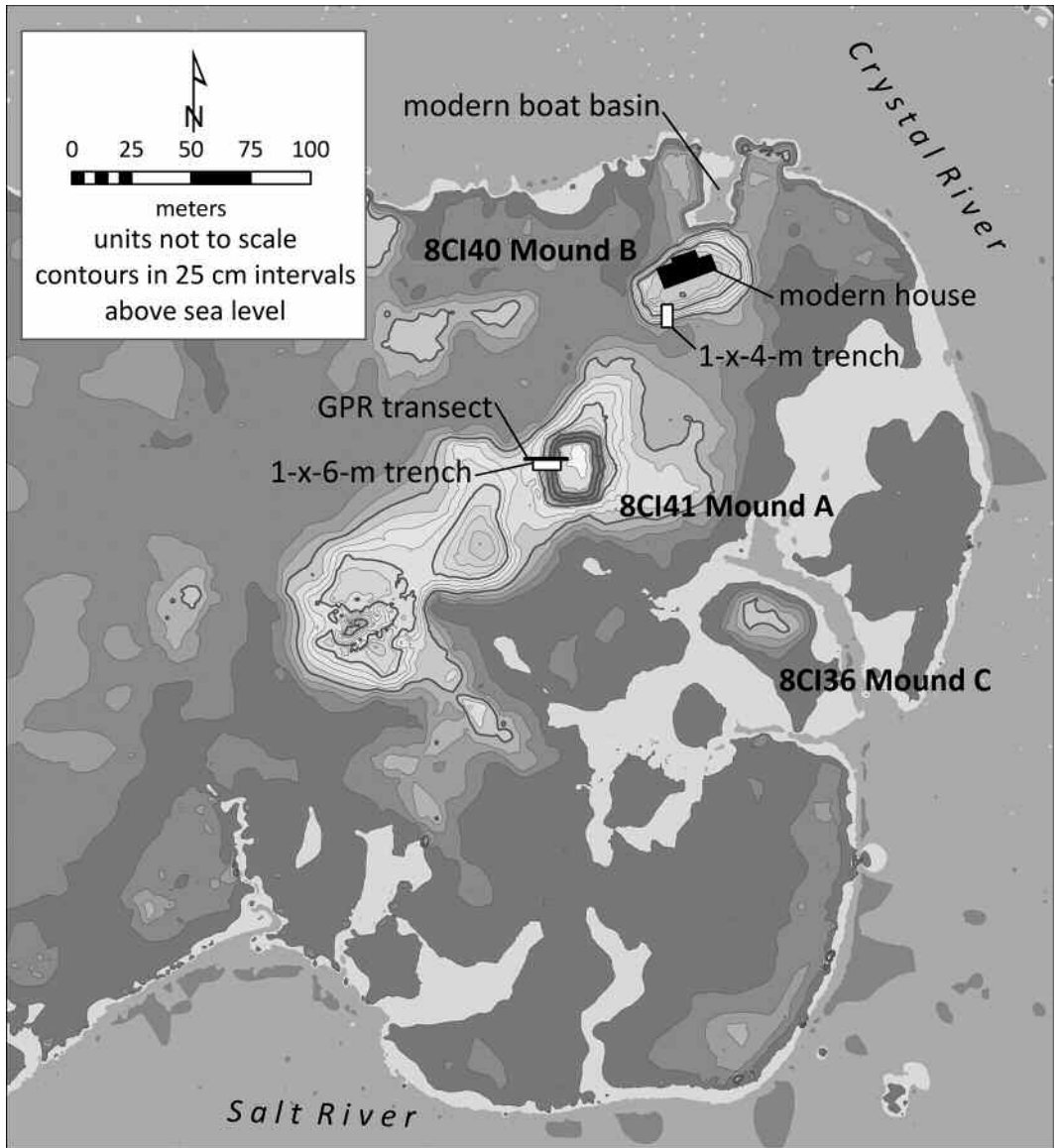


Figure 2. Map of the Roberts Island Complex showing locations of mounds and trenches.

described in more detail below, excavation of a trench on the flank of Mound A revealed that it was constructed almost entirely of oyster shell, and at about the same time that the upper layers of midden were deposited.

To the northwest of Mound A across a small slough lies site 8CI40, a smaller island occupied almost entirely by a second shell monument, here referred to as Mound B (Figure 4). A house was constructed on top of this mound in the 1950s, but the mound appears to be otherwise relatively

well preserved, especially on its western edge. Mound B is rectangular and measures 40 m x 18 m at summit and 56 x 30 m at base. With the exception of fill deposited to the north of the mound to create a small boat basin, Mound B is now surrounded by river and marsh. A trench excavation on Mound B revealed that it too was constructed mainly of oyster shell, and dates about the same times as Mound A.

The final part of the complex that is relevant to our discussion is site 8CI39, located on a small



Figure 3. View to the west of Mound A at Roberts Island.

island to the east of the two previously described sites. Topographic mapping using LiDAR data, confirmed by archaeological survey, revealed that this island consists of a rectangular rise measuring about 25 m x 17 m at the summit and 33 x 26 m at the base. The rise, which we refer to here as Mound C, has a height of about 1 m. A single 50-x-50-cm shovel test excavation on the summit of the presumed mound revealed construction consistent with that of Mounds A and B, with fill consisting mainly of discarded oyster shells.

Together Mounds A, B, and C form an approximate isosceles triangle with sides of 93 m (A to B), 103 m (A to C), and 145 m (B to C), measuring between the approximate midpoints of the mounds. This pattern, coupled with roughly contemporaneous dates for Mounds A and B (as described below), suggests that the three mounds formed an integrated architectural complex.

Evidence for Stepped Pyramidal Construction

Mound A

To better understand the timing and methods of

mound construction, Mounds A and B were investigated with a combination of ground-penetrating radar (GPR) and small-scale excavation. We used the Geophysical Survey Systems, Inc. (GSSI) SIR-3000 GPR with a 400 MHz antenna to collect data for several transects extending from mound summit to base, and processed the data using GPR Viewer, developed by Jeff Lucius and Lawrence Conyers (Conyers 2012:14). Figure 5 documents the reflection (corrected for topography) of a GPR transect on the western side of Mound A, drawing attention to a series of relatively shallow anomalies. These anomalies correspond closely with the horizontal and vertical positions of the stratigraphic breaks noted in the profile of our adjacent trench excavation. The only other significant anomalies lie near the lower limit of our radar profiles and are thus difficult to interpret, but could possibly indicate the existence of a low “primary” mound stage. In general, however, the radar profile is consistent with stratigraphic evidence (described below) that the mound is comprised principally of undifferentiated oyster.

The trench on Mound A was placed adjacent to the previously described GPR transect on the



Figure 4. View to the northeast of Mound B at Roberts Island.

western slope of Mound A. The trench measured 1 x 6 m and was excavated in 1-x-1-m sections, beginning with the unit nearest the summit and continuing downslope to the base. Owing to the instability of the shell matrix, we generally terminated excavation when we reached the ground surface in the adjacent, downslope unit, thus forming a stepped trench that facilitated excavation. The trench revealed a relatively simple stratigraphic profile (Figure 6). Stratum I is the modern A horizon, a very dark brown loamy sand with occasional crushed oyster shell. Stratum II is a dark grayish brown loamy sand with common crushed shell. We assume that this represents sediment accumulating primarily from natural processes but also perhaps from the use of the mound in antiquity. Stratum II transitions abruptly to Stratum III, the apparent mound core, consisting almost exclusively of loosely-consolidated, whole oyster shells (i.e., halves), with few other artifacts and little or no soil.

Oyster shell was a common building material for the prehistoric societies of the Atlantic and Gulf coasts; in this regard, the construction of the mound fit the expected pattern. However, closer examination of the stratigraphy of the trench re-

vealed that, rather than paralleling the modern ground surface, the contact between Stratum II and III consisted of a series of alternating horizontal and vertical surfaces consistent with the GPR profile and possibly representing a stepped form of construction.

This pattern is observable in the profile drawings (see Figure 6) and a photomosaic of the northern profile (Figure 7). Beginning from the left (west) in Unit 6, the stratigraphic boundary marked by the dense oyster shell of Stratum III exhibits a roughly horizontal surface, followed by a point of inflection to a slope of approximately 45 degrees, followed by another point of inflection to another nearly horizontal surface, and continuing in this pattern to the top of the mound to the right (east) in Unit 1. Although our excavations were not sufficiently deep in one or two of the units to definitively identify steps in these locations, we can infer their presence by interpolating from the slope of the stratigraphic boundaries where they are visible. The steps are consistent across the northern and southern profiles, suggesting that the steps do not represent undulating fill associated with random basket-loading; minor variations in the steps may reflect the fact that

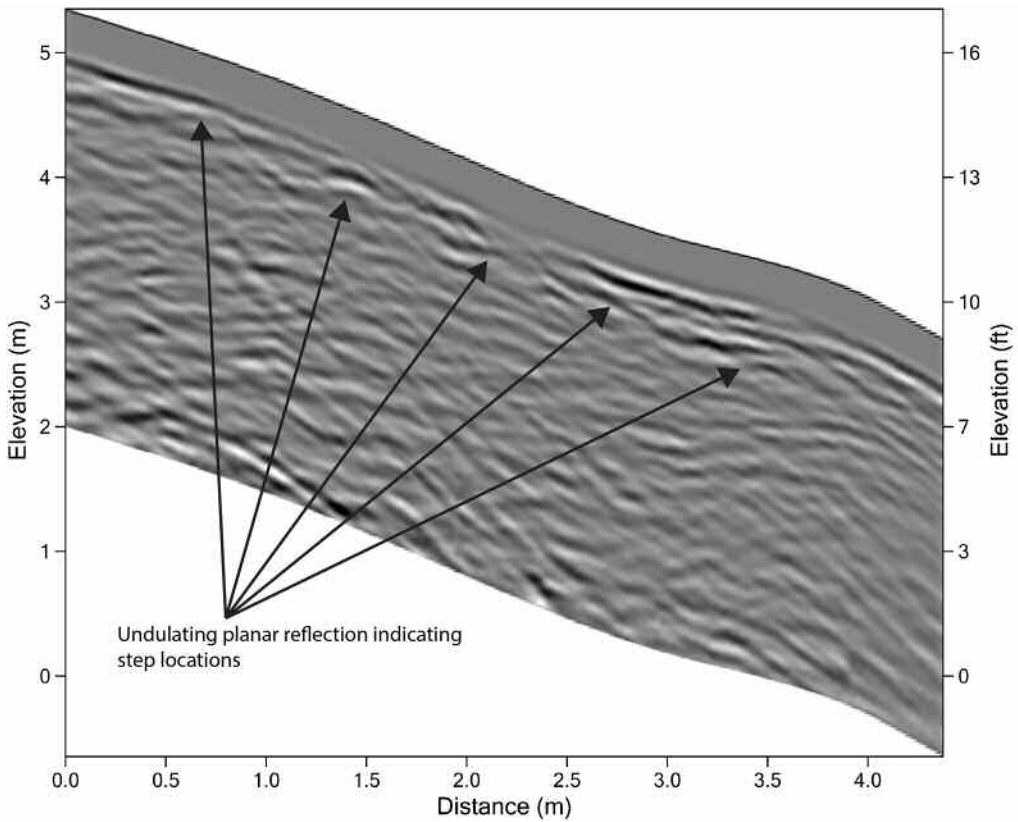


Figure 5. GPR profiles of Mound A at Roberts Island.

our trench was positioned slightly oblique to the orientation of the mound.

Considering the trench profile as a whole, we believe there were between two and six steps on the slope of the mound between the base and summit; the horizontal surfaces that we have labelled Steps 2 and 5 in Figures 6 and 7 are the clearest, the others less so. Assuming a total of seven steps, there is a tendency for the steps to get smaller with increasing height, such that lowermost Steps (or Treads) 1 and 2 measure about 90 cm and 75 cm deep (respectively), while uppermost Steps 5 and 6 measure only about 40 cm and 30 cm (respectively). The vertical risers are more consistently sized, at least where they are well-defined in our trench; the lowermost riser between Steps 1 and 2 and the higher riser between Steps 5 and 6 measure about 55 cm. Figure 8 shows the excavated trench after it was partially backfilled with oyster shells in accordance with the profiles to recreate the surface of the core mound layer.

Comparative data from other flat-topped shell monuments in the area are limited. However, stratigraphic profiles from excavations at Brown's Complex Mound 1 at the Pineland Complex (Walker and Marquardt 2013:78–96), the East and West Mounds at Big Mound Key (Luer 2007), and a mound at the Estero Island site (Schober 2014) all demonstrate mound strata of generally gradual slope, lacking the alternating vertical and horizontal contacts observed in Mound A at Roberts Island.

We piece-plotted 213 whole oyster shells (i.e., left or right valves) in the northern profile of the trench in Mound A and drew these on the profile with their approximate angle and orientation (see Figure 6 top). Bearing in mind that this represents only a very small fraction of the 53,216 oyster halves (left or right valves) that were counted and weighed from this trench, and that some degree of irregularity might be expected, there is a slight tendency for the shells on or stratigraphically

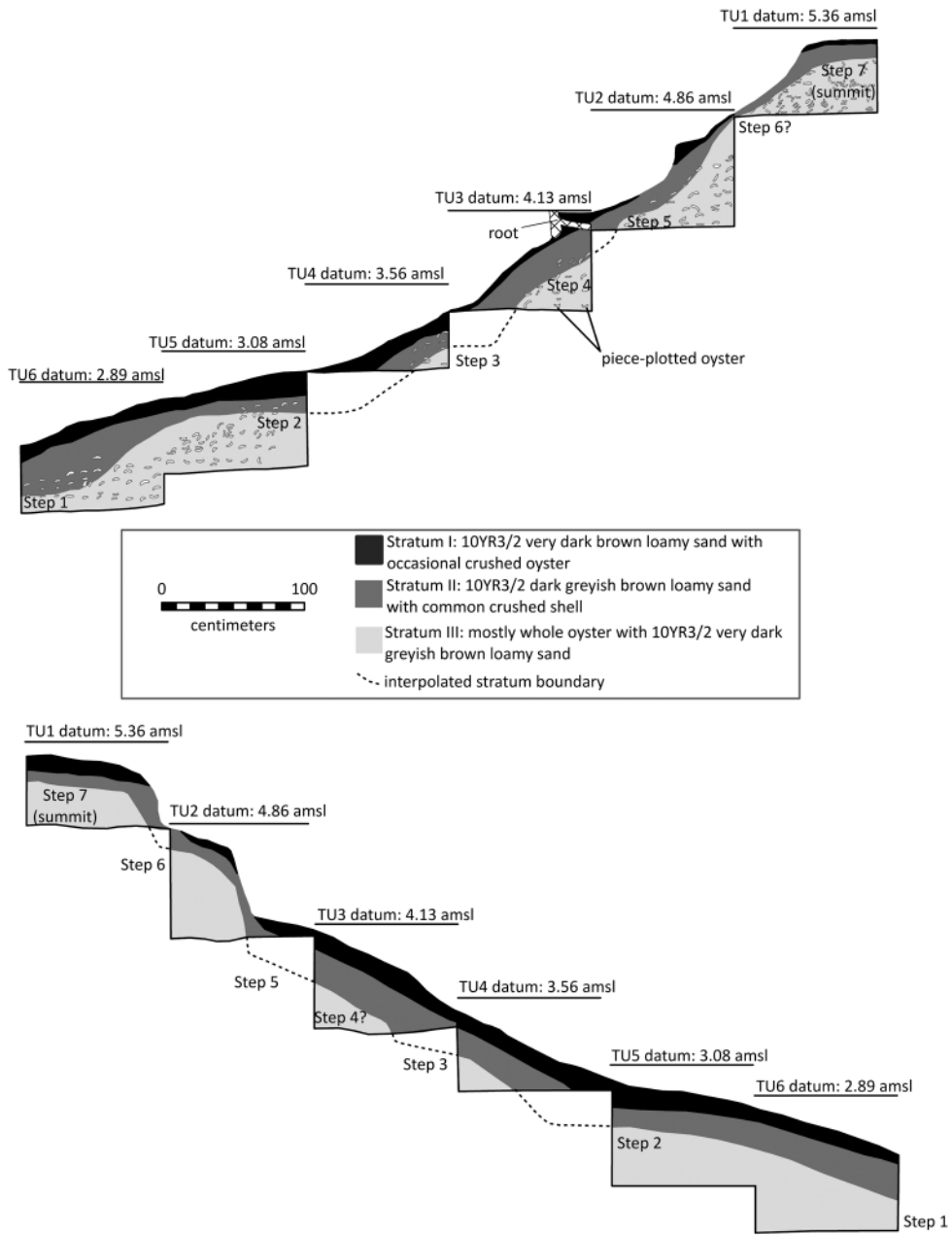


Figure 6. The north (top) and south (bottom) profiles of the trench in Mound A at Roberts Island.

near the steps ($N = 135$) to lie approximately horizontal (60.0 percent). Shells on or stratigraphically nearer the risers ($N = 78$) were also mainly horizontal (52.5 percent), but the difference was less pronounced.

AMS dating of a deer bone found mixed in with the shell at the top of Stratum III in our

trench of Mound A yielded a radiocarbon age of 1140 ± 40 , or cal A.D. 775 to 985 (95.5 percent) (BETA-303341) (Pluckhahn, Thompson, and Cherkinsky 2015). OSL dating of sand grains adhering to shells in Stratum III produced age estimates of 930 ± 60 (A.D. 1080 ± 60) and 1100 ± 80 (A.D. 910 ± 80) using central age models and

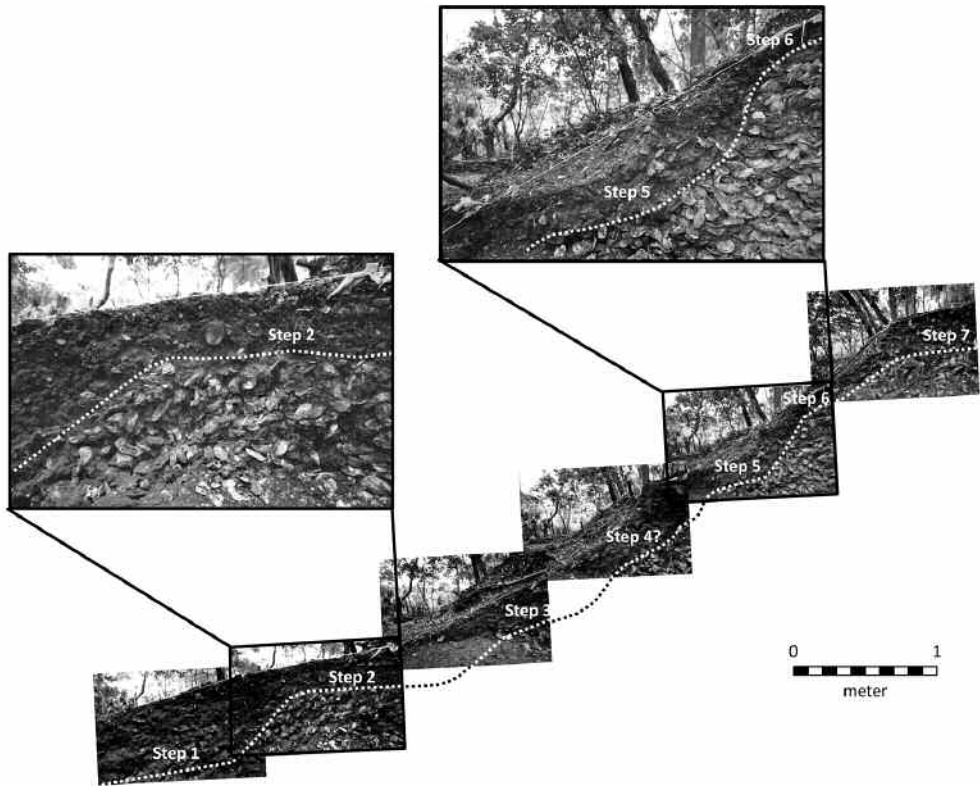


Figure 7. Photomosaic of the north profile of the trench in Mound A at Roberts Island.

calculating calendar dates relative to the year 2010 (Hodson 2012:22; Pluckhahn et al. 2015). Bayesian phase modeling of these three dates suggests that construction began between *cal A.D.* 737 and 967 and concluded between *cal A.D.* 975 and 1231 using 68 percent posterior estimates (Pluckhahn, Thompson, and Cherkinsky 2015).

The ceramic assemblage from the trench in Mound A is comprised mainly of plain pottery with the exception of Wakulla Check Stamped, St. Johns Check Stamped, and a few other varieties of the Weeden Island series. St. Johns Check Stamped is thought to be diagnostic of the St. Johns II period beginning about A.D. 750 (Goggin 1952:53–54; Milanich 1994:262–263). Wakulla Check Stamped, although difficult to definitively distinguish from the earlier Deptford type, is considered a marker of late Weeden Island, after around A.D. 700 (Willey 1949:437–438; Milanich 1994:224). Other Weeden Island types include Ruskin Dentate Stamped, which has a similar time range as Wakulla (Willey 1949:441–442), and

Weeden Island Red Filled, which can be dated only generally to the Middle and Late Woodland periods (Willey 1949:448). In general, the diagnostic pottery types are consistent with the chronometric dates.

Several lines of evidence support the inference drawn from the lack of stratigraphic breaks that Mound A was completed quickly. First, the fill of the mound consisted mainly of “clean” oyster with very little sediment and relatively few artifacts (but see Marquardt 2010:554 for a discussion of the problems with this term and the inference of rapid accumulation). The six 1-x-1m units in Mound A produced a total of 839 sherds weighing 1802 g; the density of pottery here and in other mound excavations is considerably less than we observed in off-mound middens (Figure 9). The same pattern holds for flaked stone artifacts, which are particularly scarce in mound excavations (Figure 10).

However, perhaps the most compelling arguments for rapid construction come from the oyster assemblage. Sampson (2015) compared the size of



Figure 8. Trench in Mound A at Roberts Island backfilled with oyster shell to show the stepped mound core.

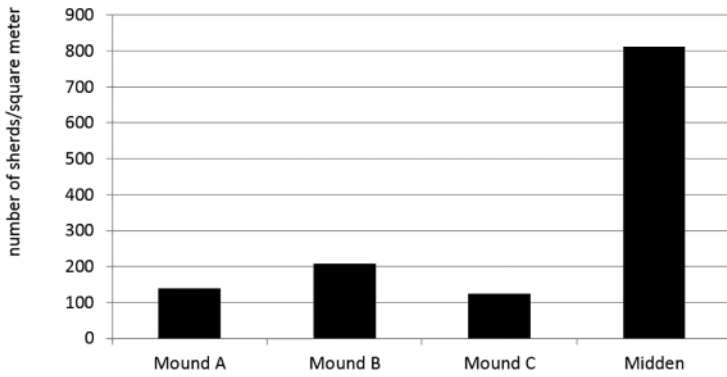


Figure 9. The density of ceramics in mound and midden excavations at Roberts Island.

oysters from mound and midden contexts at Roberts Island site 8CI41. Her analysis revealed significantly greater variation in the oysters from midden layers, supporting the notion that Mound A was constructed in an interval of more limited duration than that associated with midden formation.

As a corollary to this, Thompson et al. (2015) recently reported the results of isotope studies to determine the season of capture for oyster, finding significant discrepancies between mound and midden samples. Figure 11 summarizes the subset of their sample from Roberts Island. In contrast with the samples from the midden, which appear to have been procured year-round, the samples from the mound were harvested exclusively in the

fall/winter and winter. This does not prove that they were collected in a single season, but it does raise this possibility.

Unfortunately, we have little evidence for what use may have been made of the flat summit of the mound. No excavations were conducted on the summit, and a GPR grid revealed no strong anomalies. As we noted above, artifacts of stone and ceramics were rare on the mound slope. We might surmise that the mound was not topped by a substantial structure or permanent habitation. Knight’s (1990, 2001) review of the features found on top of Woodland platform mounds suggests that evidence for structures is rare; it is likely that most functioned as stages for rituals.

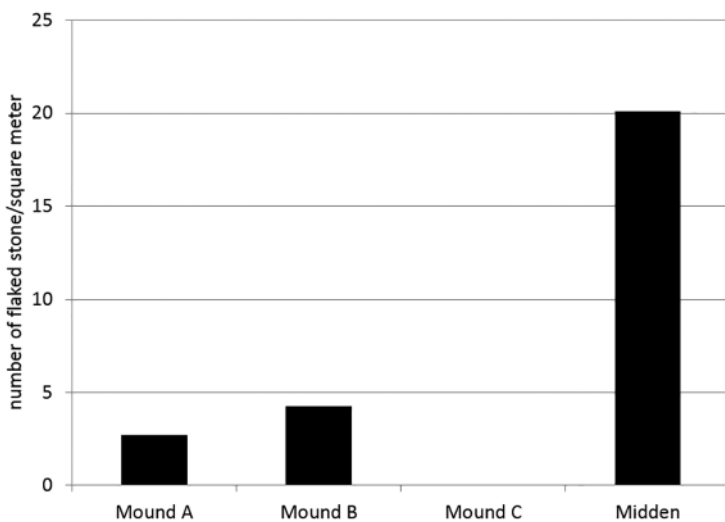


Figure 10. The density of flaked stone in mound and midden excavations at Roberts Island.

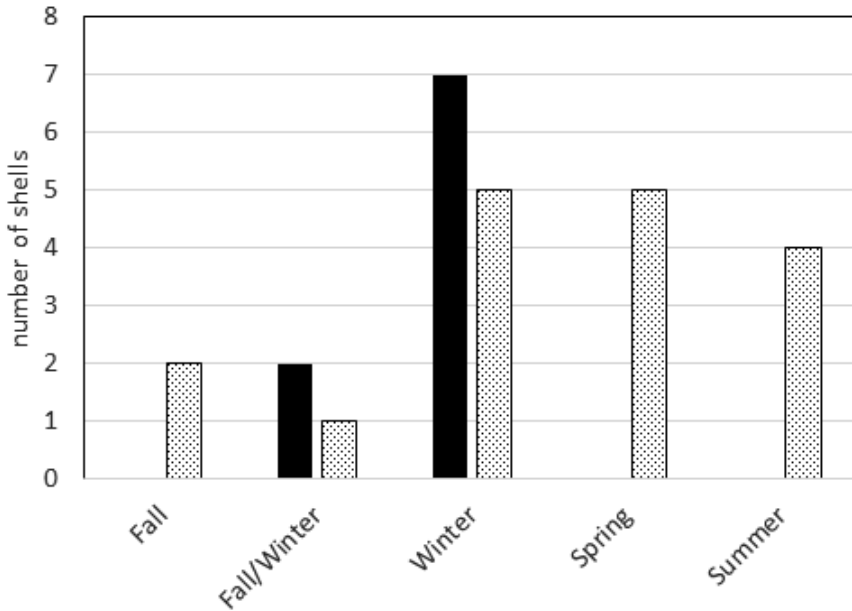


Figure 11. Histogram of shell season of capture distribution by mound and midden context at Roberts Island.

Mound B

We excavated a 1 x 4 m trench on the southern slope of Mound B, on the better preserved western half of the mound (see Figure 2). As with Mound A, the trench was excavated in 1 x 1 m sections, beginning with the unit nearest the summit and continuing downslope to the base. Here, however, the more gentle slopes of the mound permitted excavation in stratigraphic levels and allowed us to expose the entire surface of the core mound layer.

The stratigraphy of Mound B closely parallels that of Mound A (Figures 12 and 13). Stratum I is the same modern A horizon, but here contains an abundance of historic and modern artifacts associated with the home that was constructed on top of the mound. Stratum II is the dark grayish brown loamy sand with common crushed shell that may have resulted from use of the mound in antiquity or soil development and weathering after construction, or a combination of these. As with Mound A, there is a clear boundary between this and Stratum III, the apparent mound core consisting almost exclusively of loosely consolidated whole oyster shells.

In comparison with that of Mound A, the profile of our trench in Mound B documents a strati-

graphic boundary that is more gently undulating. This may in part reflect the fact that the trench here was at an oblique angle to the edge of the mound; this was clearly visible in the floor of the unit as a diagonal line between the oyster heavy (and largely sediment-free) mound fill near the summit and the more sediment-rich soil that had accumulated on the first step downslope (Figure 14). In addition, less pronounced steps might be expected given that Mound B is smaller and has slopes that are less steep than Mound A. One must also bear in mind the disturbances from construction of the house and other modern activities. Nevertheless, the pattern of alternating horizontal and vertical contacts in the profile is similar to Mound A, and unlike the profiles of other shell mounds in the area (Luer 2007; Walker and Marquardt 2013:78–96). Including the northern-most horizontal contact in Unit 1, which may represent the original mound surface, we see evidence of at least five treads spaced roughly 1 m apart (see Figures 12 and 13). However, our trench did not extend to the base of the mound, so it is possible that another downslope step is present. It is also possible that another step was present at the summit but was either not detected by our trench or was obliterated by construction of the modern home (along with any definitive evidence for the

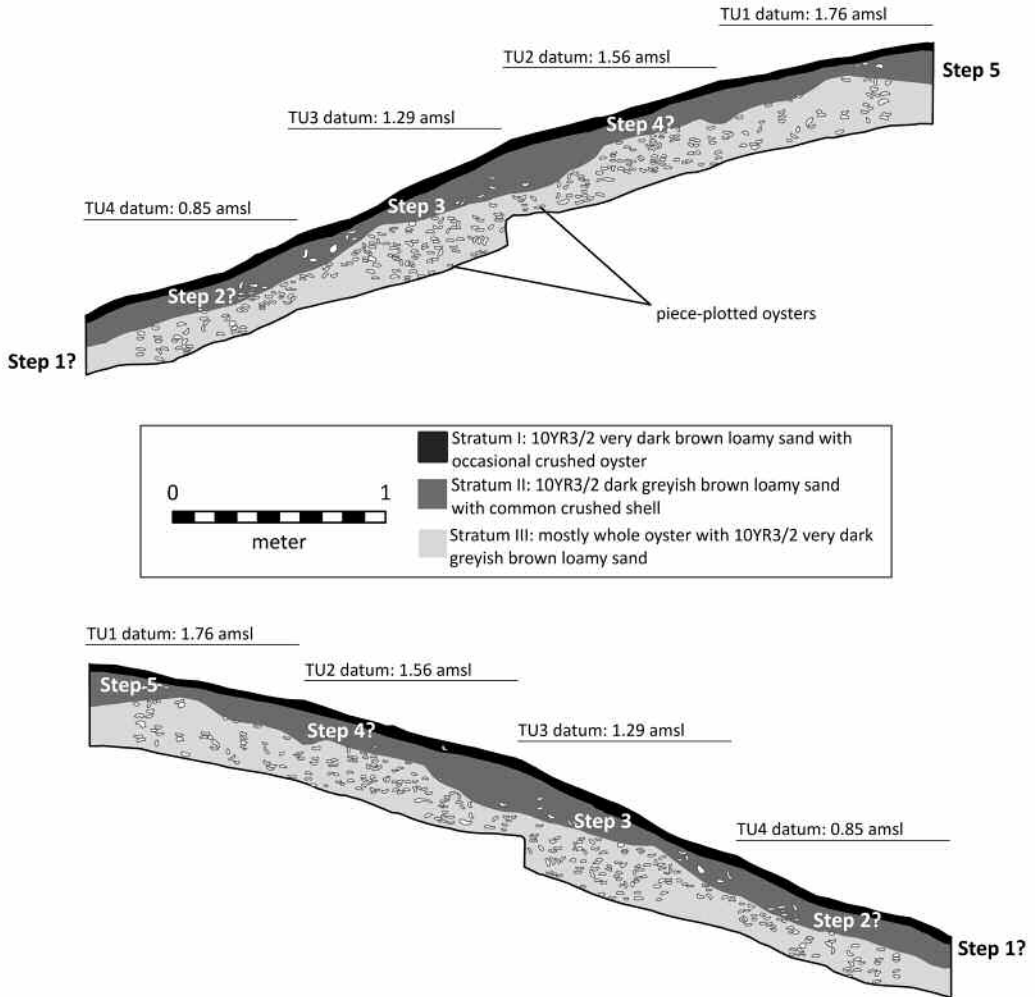


Figure 12. The west (top) and east (bottom) profiles of the trench in Mound B at Roberts Island.

use of the summit). If either of these scenarios is true, then Mound B may have also had a total of seven steps. The risers that separate the steps on Mound B, although more irregular, are generally consistent in height with those on Mound A, at roughly 20 cm.

We piece-plotted a sample ($N = 565$) of whole oyster shells (i.e., left or right valves) in the east and west profiles of the trench in Mound B (see Figure 12). As with Mound A we found that a slightly greater percentage of the shells on or stratigraphically nearer the steps ($N = 327$) were found lying approximately horizontal compared with those on or near risers ($N = 238$), although

the difference here was minimal (79.8 to 77.3 percent, respectively).

AMS dating of a deer bone found in Level 4 of Test Unit 4 yielded a radiocarbon age of 950 ± 20 B.P. (UGA-17621) (Pluckhahn, Thompson, and Cherkinsky 2015). This is calibrated to cal A.D. 1025 to 1059 (25.8 percent) and cal A.D. 1065 to 1155 (69.6 percent). Thus, Mound B dates to the same approximate interval as Mound A. In keeping with this observation, the ceramic assemblage ($N = 832$ sherds) shows roughly the same proportions of decorated types, with the exception of a higher frequency of Swift Creek Complicated Stamped. Swift Creek is generally

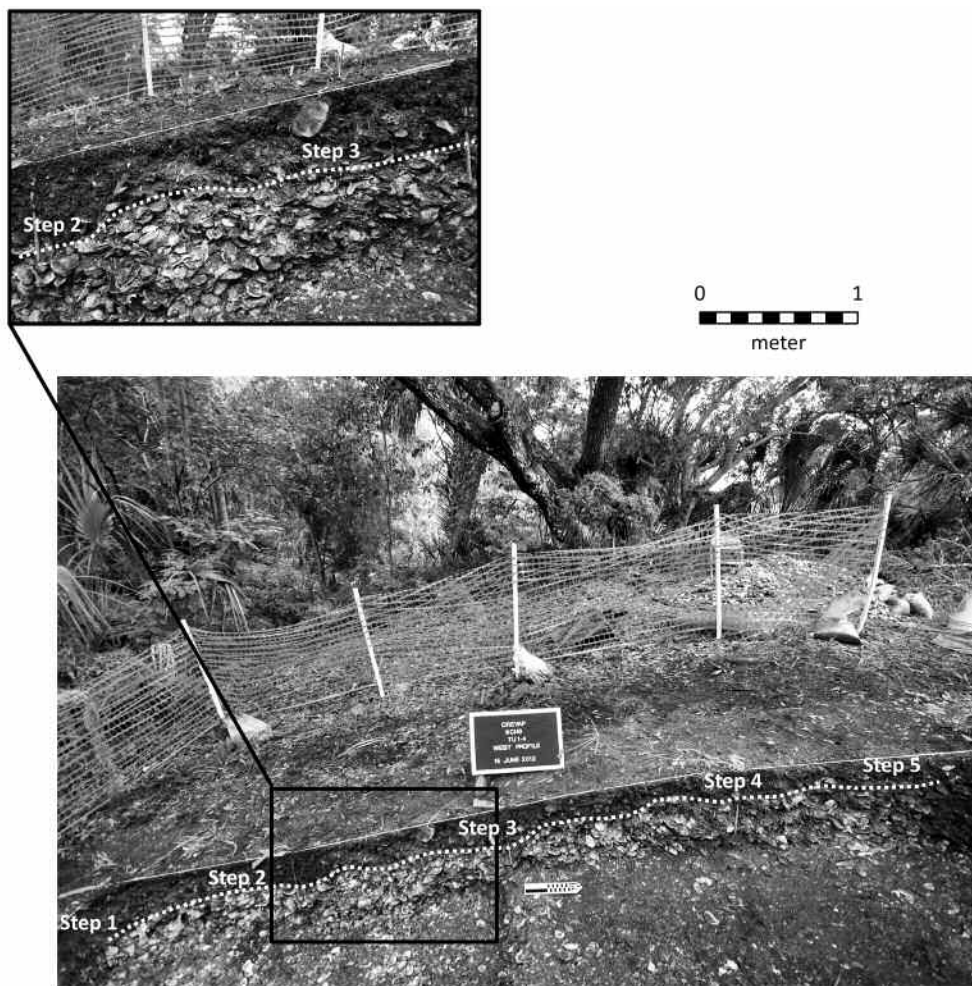


Figure 13. Photo of the west profile of Mound B at Roberts Island.

considered a Middle Woodland pottery type, although radiocarbon evidence suggests that it persists well into the Late Woodland (Stephenson et al. 2002:Table 15.2).

The Context for Stepped Pyramidal Construction

Many of the earthen mounds of the Mississippian period made use of terraces or levels; the most famous example of this is Monks Mound at Cahokia (Bareis 1975; Collins and Chalfant 1993; Schilling 2013; Sherwood and Kidder 2011). These massive terraces arguably make these monuments worthy of description as pyramids, as Pauketat (2007) suggests. However, they are ob-

viously unlike the step-sided construction of Mounds A and B at Roberts Island.

There was a spiral ramp encircling the circular Mound B at the Mississippian-era Lamar site in Georgia; a similar feature may have been present on a now-destroyed mound at the Rembert site, also in Georgia (Williams 1999:17). Mid-twentieth century photographs of Mound B at Lamar (National Park Service 2014) document a step-like appearance to the mound not unlike that which we suppose for Mounds A and B at Roberts Island. However, there is no indication that the steps we observed at Roberts Island were part of a ramp; indeed, the rectangular form of Mound A and the presence of a possible ramp on the eastern side suggest that this was not the case.

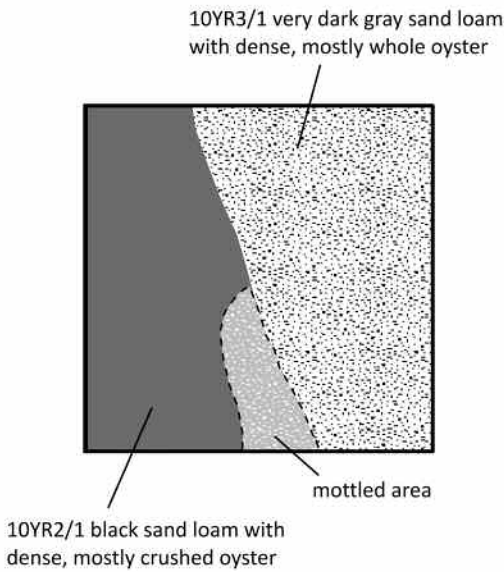


Figure 14. Plan of Unit 1 in Mound B showing the oblique angle of the edge of the mound core.

Perhaps the closest parallels for the stepped-pyramids of shell at Roberts Island may be found in prehispanic sites of the Yucatan. Ensor (2003) noted the presence of a number of multi-level shell mounds at the Isla de los Cerros complex, located in the Mexican state of Tabasco and dating to the Late Classic-Epiclassic/Early Postclassic period. These mounds were around the same size as the mounds at Roberts Island; some were larger at the base, but none were as tall as Mound A at Roberts Island. In noting the parallels in stepped-pyramidal shell mound form, we posit no historical connections between the two sites or regions. Instead, we draw attention to a parallel level of sophistication in architecture associated with a society of generally accepted complexity of social organization, for which the term pyramid is commonly employed without hesitation.

Williams (1999:19) hypothesizes that the step-like ramp at Lamar Mound B may have been used to facilitate a mound construction episode that was never completed. We acknowledge the possibility that the slopes of Mounds A and B at Roberts Island were stepped to facilitate construction, making it easier to ascend the mound bearing basket or net loads of shell. However, the risers

on the lower slopes of Mound A, at around 55 cm, may have actually made it more difficult to climb the slope of the mound than if it had been sloped gradually. Moreover, the stepped construction would have required more effort, given that greater attention had to be paid to the distribution of shell. Nevertheless, the stepped construction would have certainly added a measure of stability to the mound, since the treads would have helped prevent any erosion of the shell surface from continuing down the slope.

The primary significance of the stepped construction for the native inhabitants of the Roberts Island site was likely aesthetic and symbolic. The stepped construction would have made the mound look taller than its actual height; the fact that the treads are deeper near the base than the summit would have accentuated this visual effect. With regard to possible symbolism, earlier we noted that there were six probable steps on the slope of Mound A; however, this did not include the summit, which brings the total to seven—a number with ritual and cosmological import for later prehistoric and historic native societies in the region. In particular, among some native societies in the region, the world that people inhabited (This

World) was an island comprised of seven levels and stabilized in the cardinal directions by cords, winds, serpents, or other beings (Hudson 1976:122; Lankford 2007). The seven levels of Mound A, in combination with the orientation of the mound with the cardinal directions, would have strengthened the metaphorical association with the earth and This World, an association Knight (1986, 2006) has proposed for the platform mounds of the Mississippian period more generally.

In sum, we see evidence for stepped pyramidal construction in two shell mounds at the Roberts Island site dating to the terminal Late Woodland period, ca. A.D. 800 to 1050. The use of steps undoubtedly had practical benefits in terms of stabilizing the loose shell. However, we suggest that the steps were equally or more important for their aesthetic and symbolic qualities. Regardless of their purpose, the steps would have required additional planning and labor to construct. Additional foresight and effort must have been necessary to design the orientation of Mound A, to reckon its placement relative to Mounds B and C, and to maintain the orthogonality of its edges.

The mounds at Roberts Island suggest that we may need to reappraise our understandings of either the organization of labor that is required to build mounds or the organization of Late Woodland societies. The Weeden Island complex of the northern Gulf Coast has long been hailed as an exception to the rule of pervasive decline or reorganization during the Late Woodland period of eastern North America archaeology, a bridge connecting the ostensible “climaxes” of the Middle Woodland and Mississippian periods (Muller 1997:123; Nassaney and Cobb 1991:314; Willey 1966:289). Among those who work in the region, however, this Weeden Island “exceptionalism” represents something of a half-truth: mound construction and the interregional exchange of commodities like copper continued later here than elsewhere, persisting as late as around A.D. 650, but these appear to have waned by the terminal Late Woodland from around A.D. 750 to 1050 (Milanich et al. 1997; Pluckhahn 2003). A truer exception to the Late Woodland decline may be the Caloosahatchee complexes of southwestern Florida, where the construction of mounds and other public architecture, as well as the trade in exotics like greenstone and galena, increased from

around A.D. 800 to 1200 (Caloosahatchee IIB) (Marquardt 2014:14–15). Despite this, central and southwestern Florida rarely figure in discussions of the Late Woodland period or Mississippian origins, probably because of their geographic isolation from the Mississippian hearth in the American Bottom and the seeming dissimilarities in subsistence and material culture. However, there must have been exchanges of materials and information—whether direct or indirect—between these regions. Marine shell beads (probably from Gulf Coast sources) and ceramic effigies of whelk shell cups appear in Terminal Late Woodland Lindeman phase contexts at Range and other sites in the American Bottom (Kozuch 2013). We have not yet sourced a cube of galena found at Roberts Island, but Austin and colleagues’ (2000) analysis suggests that much of the galena from Florida sites can be traced to southeastern Missouri—probably the same source as the galena found in the nearby American Bottom (Austin et al. 2000; Pauketat et al. 1998:39; Walthall 1981). In the context of these connections, we should perhaps not be surprised by the possibility that Mississippian peoples may have drawn on a tradition of platform mound construction that was maintained, and perhaps elaborated on, by the people at sites like Roberts Island. At the least, central and southwestern Florida should not be so easily excluded from discussions of the geopolitics of the terminal Late Woodland and Mississippian emergence.

This study adds to the growing body of work supporting the idea that the native peoples of eastern North America built structures of considerable architectural sophistication. Pauketat (2007; see also Alt 2011) has provocatively employed the term pyramid in reference to the earthen platform mounds of the late prehistoric Mississippi Valley, in support of his argument that the agricultural societies here merit equal consideration with the state-level civilizations of Egypt, Mesoamerica, and elsewhere. Like Pauketat, we recognize that the terms archaeologists employ to describe prehistoric monumental architecture have implications for the manner in which we view the societies that constructed these monuments. Mound A at Roberts Island is not as imposing as Monks Mound, and probably did not require the same amount of planning or labor. Nevertheless, the stepped form of Mound A approximates the term pyramid as used

by archaeologists, and evinces an architectural sophistication rarely granted to shell mounds, or to mounds of the Woodland period.

There has been considerable debate in recent years regarding the monumentality of shell matrix sites (Marquardt 2010; Pluckhahn, Thompson, and Cherkinsky 2015; Randall 2011; Randall and Sassaman 2010; Randall et al. 2015; Sassaman 2010; Thompson and Worth 2011). In some cases, shell mounds may have resulted from gradual accumulations of refuse over time (Marquardt 2010). In contrast, the case from Roberts Island indicates that Woodland-period hunter-gatherer-fishers of the Gulf Coast actively exploited shell to build architecture of sophistication in design comparable to that of the Mississippian interior and coastal Mexico. If the monument builders of the interior Mississippian Southeast were the “DaVincis of dirt,” as Sherwood and Kidder (2011) have suggested in reference to the sophistication of earthen construction, perhaps we can use the metaphor “Michelangelos of mollusks” to describe the builders of these stepped pyramids of shell.

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References Cited

- Alt, Susan M.
2011 Building and Scales of Explanation in Archaeology. In *Ideologies in Archaeology*, edited by Reinhard Bernbeck and Randall H. McGuire, pp. 194–211. University of Arizona Press, Tucson.
- Austin, Robert J., Ronald M. Farquhar, and Karen J. Walker
2000 Isotope Analysis of Galena from Prehistoric Archaeological Sites in South Florida. *Florida Scientist* 63:123–131.
- Balsillie, James H., and Joseph F. Donoghue
2004 *High Resolution Sea-Level History for the Gulf of Mexico Since the Last Glacial Maximum*. Report of Investigations 103. Florida Geological Survey, Tallahassee.
- Bareis, Charles J.
1975 Report of 1972 University of Illinois-Urbana Excavations at the Cahokia Site. In *Cahokia Archaeology*, edited by Melvin L. Fowler. Papers in Anthropology, Vol. 3, pp. 11–15. Illinois State Museum, Springfield.
- Brackenridge, Henry Marie
1848 On the Population and Tumuli of the Aborigines of North America. In A Letter from H.M. Brackenridge, Esq., to Thomas Jefferson (1818). *Transactions of the American Philosophical Society* 1:151–159.
- Collins, James M., and Michael L. Chalfant
1993 A Second-Terrace Perspective on Monks Mound. *American Antiquity* 58:319–332.
- Conyers, Lawrence B.
2012 *Interpreting Ground-Penetrating Radar for Archaeology*. Left Coast Press, Walnut Creek, California.
- Darvill, Timothy
2003 *Oxford Concise Dictionary of Archaeology*. Oxford University Press, Inc., New York.
- Ensor, Bradley E.
2003 Islas de Los Cerros: A Coastal Site Complex Near Comalcalco, Tabasco, México. *Mexicon* 25:106–111.
- Goggin, John M.
1952 *Space and Time Perspectives in Northern St. Johns Archeology, Florida*. Publications in Anthropology 47. Yale University, New Haven.
- Hodson, Alex
2012 The Crystal River Project: Determining the Ages of Two Ceremonial Mounds in Florida Using Optically Stimulated Luminescence Dating. Unpublished senior thesis, School of Geography and Earth Sciences, McMaster University, Hamilton, Ontario.
- Hudson, Charles M.
1976 *The Southeastern Indians*. University of Tennessee Press, Knoxville.
- Jefferies, Richard W.
1994 The Swift Creek Site and Woodland Platform Mounds in the Southeastern United States. In *Ocmulgee Archaeology 1936–1986*, edited by David J. Hally, pp. 71–83. University of Georgia Press, Athens.
- Knight, Vernon J., Jr.
1986 The Institutional Organization of Mississippian Religion. *American Antiquity* 51:675–687.
1990 *Excavation of the Truncated Mound at the Walling site: Middle Woodland Culture and Copena in the Tennessee Valley*. Report of Investigations 56. Division of Archaeology, Alabama State Museum of Natural History University of Alabama, Tuscaloosa.
2001 Feasting and the Emergence of Platform Mound Ceremonialism in Eastern North America. In *Feasts: Archaeological and Ethnographic Perspectives on Food, Politics, and Power*, edited by Michael Dietler and Brian Hayden, pp. 311–333. Smithsonian Institution Press, Washington, D.C.
2006 Symbolism of Mississippian Mounds. In *Powhatan's Mantle: Indians in the Colonial Southeast*, edited by Peter H. Wood, Gregory A. Waselkov, and M. Thomas Hatley, pp. 421–434. University of Nebraska Press, Lincoln.
- Kozuch, Laura
2013 Ceramic Shell Cup Effigies from Illinois and Their Implications. *Southeastern Archaeology* 32:29–45.
- Lankford, George E.

- 2007 Some Cosmological Motifs in the Southeastern Ceremonial Complex. In *Ancient Objects and Sacred Realms: Interpretations of Mississippian Iconography*, edited by F. Kent Reilly and James F. Garber, pp. 8–38. University of Texas Press, Austin.
- Luer, George Mather
2007 *Mound Building and Subsistence during the Late Weeden Island Period (ca. A.D. 700–1000) at Big Mound Key (8CH10), Florida*. Ph.D. dissertation, Department of Anthropology, University of Florida. ProQuest Information and Learning Company, Ann Arbor.
- McKinley, William
1873 *Mounds in Georgia*. Smithsonian Annual Report for 1872. Smithsonian Institution, Washington, D.C.
- Marquardt, William H.
2010 Shell Mounds in the Southeast: Middens, Monuments, Temple Mounds, Rings, or Works? *American Antiquity* 75:551–570.
2014 Tracking the Calusa: A Retrospective. *Southeastern Archaeology* 33:1–24.
- Milanich, Jerald T.
1994 *Archaeology of Precolumbian Florida*. University Press of Florida, Gainesville.
1999 Introduction. In *Famous Florida Sites: Crystal River and Mount Royal*, edited by Jerald T. Milanich, pp. 1–27. University Press of Florida, Gainesville.
- Milanich, Jerald T., Ann S. Cordell, Vernon J. Knight, Jr., Timothy A. Kohler, and Brenda J. Sigler Lavelle
1997 *Archaeology of Northern Florida, A.D. 200–900*. Reprinted. Academic Press, New York. Originally published 1984, Academic Press, New York.
- Moore, Clarence Bloomfield
1903 Mound Near the Shell-Heap, Crystal River, Citrus County. *Journal of the Academy of Natural Sciences of Philadelphia* 12:440–494.
1907 Crystal River Revisited. *Journal of the Academy of Natural Sciences of Philadelphia*, Second Series 13:406–425.
1918 Aboriginal Site on Crystal River, Citrus County. *Journal of the Academy of Natural Sciences of Philadelphia*, Second Series 16:514–581.
- Muller, Jon
1997 *Mississippian Political Economy*. Plenum Press, New York.
- Nassaney, Michael S., and Charles R. Cobb
1991 Patterns and Processes of Late Woodland Development in the Greater Southeastern United States. In *Stability, Transformation, and Variation: The Late Woodland Southeast*, edited by M.S. Nassaney and C.R. Cobb, pp. 285–322. Plenum Press, New York.
- National Park Service
2014 State of the Park Report for Ocmulgee National Monument. Electronic document, <http://www.nps.gov/stateoftheparks/ocmu/index.cfm>, accessed April 13, 2015.
- Pauketat, Timothy R.
2007 *Chiefdoms and Other Archaeological Delusions*. Altamira Press, Lanham, Maryland.
- Pauketat, Timothy R., Preston T. Miracle, and Sandra L. Dunavan
1998 *The Archaeology of Downtown Cahokia: The Tract 15A and Dunham Tract Excavations*. University of Illinois Press, Urbana.
- Pluckhahn, Thomas J.
1996 Joseph Caldwell's Summerour Mound and Late Woodland Platform Mounds in the Southeastern United States. *Southeastern Archaeology* 15:191–210.
2003 *Kolomoki: Settlement, Ceremony, and Status in the Deep South, A.D. 350 to 750*. University of Alabama Press, Tuscaloosa.
- Pluckhahn, Thomas J., Alex D. Hodson, W. Jack Rink, Victor D. Thompson, Robert R. Hendricks, Glen Doran, Grayal Farr, Alexander Cherkinsky, and Sean P. Norman
2015 Radiocarbon and Luminescence Age Determinations on Mounds at Crystal River and Roberts Island, Florida, USA. *Geoarchaeology: An International Journal* 30:238–260.
- Pluckhahn, Thomas J., Victor D. Thompson, and Alexander Cherkinsky
2015 The Temporality of Shell-bearing Landscapes at Crystal River, Florida. *Journal of Anthropological Archaeology* 37:19–36.
- Pluckhahn, Thomas J., Victor D. Thompson, and Brent R. Weisman
2010 Toward a New View of History and Process and Crystal River (8C11). *Southeastern Archaeology* 29:164–181.
- Randall, Asa R.
2011 Remapping Archaic Social Histories along the St. Johns River in Florida. In *Hunter-Gatherer Archaeology as Historical Process*, edited by Kenneth E. Sassaman and Donald H. Holly, Jr., pp. 120–142. University of Arizona Press, Tucson.
- Randall, Asa R., and Kenneth E. Sassaman
2010 (E)Mergent Complexities During the Archaic in Northeast Florida. In *Ancient Complexities: New Perspectives in Precolumbian North America*, edited by Susan M. Alt, pp. 8–31. University of Utah Press, Salt Lake City.
- Randall, Asa R., Kenneth E. Sassaman, Zackary I. Gilmore, Meggan E. Blessing, and Jason M. O'Donoghue
2015 Archaic Histories beyond the Shell "Heap" on the St. Johns River. In *New Histories of Precolumbian Florida*, edited by Neill Wallis and Asa Randall, pp. 18–37. University of Florida Press, Gainesville.
- Sampson, Christina Perry
2015 Oyster Demographics and the Creation of Coastal Monuments at Roberts Island Mound Complex, Florida. *Southeastern Archaeology* 34:84–94.
- Sassaman, Kenneth
2010 *The Eastern Archaic, Historicized*. AltaMira, Lanham, Maryland.
- Schilling, Timothy
2013 The Chronology of Monks Mound. *Southeastern Archaeology* 32:14–28.
- Schober, Theresa
2014 Deconstructing and Reconstructing Caloosahatchee Shell Mound Building. In *New Histories of Precolumbian Florida*, edited by Neill Wallis and Asa Randall, pp. 38–61. University of Florida Press, Gainesville.
- Seeman, Mark F.
1979 The Hopewell Interaction Sphere: The Evidence for Inter-Regional Trade and Structural Complexity. Ph.D. dissertation, Department of Anthropology, University of Indiana, Bloomington. University Microfilms, Ann Arbor.
- Sherwood, Sarah C.
2013 A Georcheological Study of the Mound A Stratigraphy. In *Archeological Investigations at Shiloh Indian Mounds National Historic Landmark (40HR7), 1999–2004*, Volume 1, edited by David G. Anderson, John E. Cornelison, Jr., and Sarah C. Sherwood, pp. 448–527. National Park Service, Southeast Archeological Center, Tallahassee.
- Sherwood, Sarah C., John H. Blitz, J.H., and L.E. Downs
2013 An Integrated Geoarchaeology of a Late Woodland Sand Mound. *American Antiquity* 78:344–358.

- Sherwood, Sarah C., and Tristram R. Kidder
 2011 The DaVincis of Dirt: Geoarchaeological Perspectives on Native American Mound Building in the Mississippi River Basin. *Journal of Anthropological Archaeology* 30:69–87.
- Squier, Ephram G., and Edwin H. Davis
 1848 *Ancient Monuments of the Mississippi Valley: Comprising the Results of Extensive Original Surveys and Explorations*. Smithsonian Institution, Washington, D.C.
- Stephenson, Keith, Judith A. Bense, and Frankie Snow
 2002 Aspects of Deptford and Swift Creek of the South Atlantic and Gulf Coastal Plains. In *The Woodland Southeast*, edited by David G. Anderson and Robert C. Mainfort, Jr., pp. 318–351. University of Alabama Press, Tuscaloosa.
- Thompson, Victor D., Thomas J. Pluckhahn, Oindrila Das, and Fred T. Andrus
 2015 Assessing Village Life and Monument Construction (cal. AD 65–1070) along the Central Gulf Coast of Florida through Stable Isotope Geochemistry. *Journal of Archaeological Science: Reports* 4:111–123.
- Thompson, Victor D., and John Worth
 2011 Dwellers by the Sea: Native American Coastal Adaptations along the Southern Coasts of Eastern North America. *Journal of Archaeological Research* 19:51–101.
- Walker, Karen J., and William H. Marquardt
 2013 Excavations and Chronostratigraphy at the Pineland Site Complex: 1988–1995. In *The Archaeology of Pineland: A Coastal Southwest Florida Site Complex, A.D. 50–1710*, edited by William H. Marquardt and Karen J. Walker, pp. 53–154. Monograph No. 4, Institute of Archaeology and Paleoenvironmental Studies. University of Florida, Gainesville.
- Walker, Karen J., Frank W. Stapor Jr., and William H. Marquardt
 1994 Episodic Sea Levels and Human Occupation at Southwest Florida's Wightman Site. *The Florida Anthropologist* 47:161–179.
- Walhall, John A.
 1981 Galena and Aboriginal Trade in Eastern North America. *Scientific Papers*, Vol. XVII. Illinois State Museum, Springfield.
- Weisman, Brent R.
 1995a *Crystal River: A Ceremonial Mound Center on the Florida Gulf Coast*. Florida Archaeology Series No 8, Florida Department of State, Division of Historical Resources, Tallahassee.
 1995b The Roberts Island Shell Mound Complex and Its Archaeological Significance. Manuscript No. 4365, Florida Master Site File, Tallahassee.
- Willey, Gordon R.
 1949 *Archeology of the Florida Gulf Coast*. Smithsonian Miscellaneous Collections 113, Smithsonian Institution, Washington, D.C.
- Willey, Gordon R., and Phillip Phillips
 1958 *Method and Theory in American Archaeology*. University of Chicago Press, Chicago.
- Williams, Mark
 1999 *Lamar Revisited: 1996 Test Excavations at the Lamar Site*. LAMAR Institute Publication 43. Electronic document, http://shapiro.anthro.uga.edu/Lamar/images/PDFs/publication_43.pdf, accessed February 11, 2016.

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