CHAPTER 5
SILVER GLEN RUN, LOCUS A (8LA1-WEST)

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Locus A at Silver Glen Run is the remnant of a ~200-m-long shell ridge dating to the middle part of the Mount Taylor period (ca. 6300-5750 cal BP). Much of the deposit was mined for shell in the 1923, when 8LA1-East was also mined, but substantial portions of the margins of this ridge remain intact. As shown in Figure 5-1, the outline of the ridge is marked today by a series of discontinuous escarpments and isolated remnants of mounded deposits. The core of this deposit has been largely denuded through mining, although scattered shell on the surface attests to intact subsurface strata (Figure 5-2 top). Shell continued to be removed from this portion of the site until recently, usually in small loads taken with a bucket fitted to a tractor. The margin of this ridge fronting Silver Glen Run expresses the greatest level of continuity, with linear escarpments as much as 2 m tall (Figure 5-2 bottom). It is difficult to judge the original height of the ridge, but it no doubt rose higher than the tops of the extant escarpments. Irrespective of actual height, testing at Locus A revealed substantial subsurface deposits below the grade of the mining pit. We estimate that Locus A originally had at least three to four meters of stratified deposits. Our goal in testing portions of the ridge in 2007 and 2008 was to expose and sample as much stratigraphy as possible from locations where mining operations resulted in the steepest escarpments. Three locations were examined in this fashion (Figure 5-1), totaling 24 m^2 of plan excavation and 12 meters of profile. This chapter reports the results of these efforts.

TEST UNIT EXCAVATION

Six 2 x 2-m test units were excavated in the mining escarpments of Locus A in three different locations: two at the east end (Test Units 5 and 8), one near the west end (Test Unit 6), and three arranged as a trench in an intermediate location (Test Units 9, 10, and 15) (Figure 5-1). In all cases test units were oriented square with the orientation of the escarpment and placed far enough into the escarpment to afford a clean, vertical cut of above-ground deposits. Test units were also excavated below the grade of the mining pit to examine subsurface deposits that were spared the damage of mining. The initial exposure of each escarpment was accomplished by the removal of a wedge-shaped level (referred to as "Profile Cut" in the text and tables that follow below), which was passed through ¼-inch hardware cloth. All artifacts and vertebrate fauna were retrieved, bagged, and returned to the lab for analysis; freshwater shell was not collected. Once intact deposits were encountered, excavation proceeded in 10-cm arbitrary levels, usually within only a 1 x 2-m subunit to the shallow side of the escarpment, to prevent wall collapse (Figure 5-3). Throughout excavation, zones of distinct deposition were removed and processed as subsamples of levels. Pit features and other discrete deposits were mapped, sectioned, and sampled individually. At the close of excavation, all profiles were photographed and drawn to scale. Because the goal of testing at Locus A was to examine stratigraphy, profiles were given more than the usual attention.

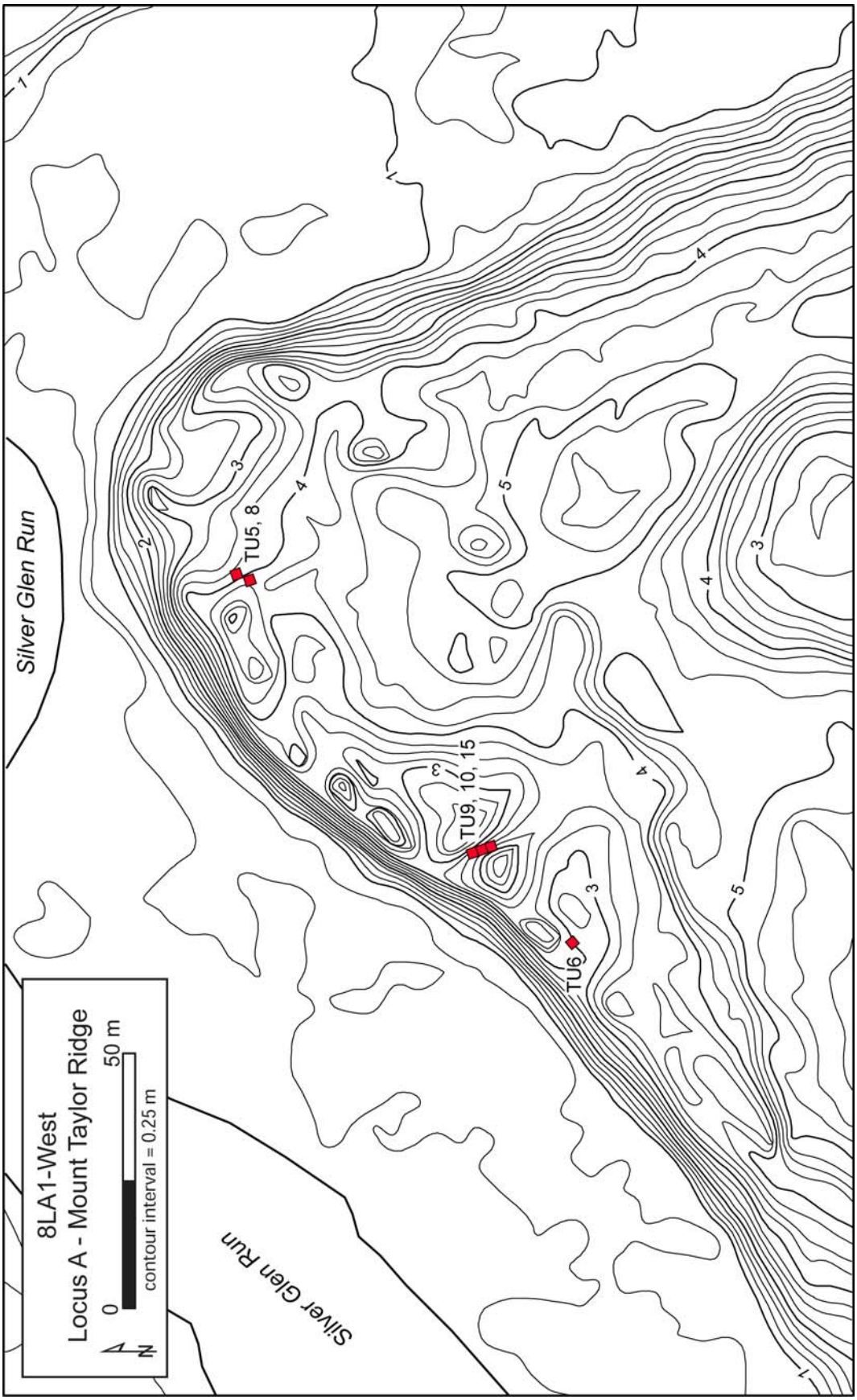

Figure 5-1. Map of 8LA1-West, Locus A, showing locations of test units excavated in escarpments of mining operations.

Figure 5-2. View facing west of the mining pit in the core of Locus A (top), and view facing northeast of the mining escarpment fronting the spring run, into which Test Units 5 and 8 were dug (bottom).

Test Units 5 and 8

Placed at the east end of the shell ridge, Test Units (TU) 5 and 8 were excavated in sequence over two summer sessions (2007 and 2008, respectively) to provide a three-dimensional view of ridge stratigraphy. The units shared a corner but were offset to create two 4-m-long profiles set orthogonally. Test Unit 5 was excavated completely to basal sands, exposing a 3+ m-deep sequence of well stratified, anthropogenic deposition. Test Unit 8 was suspended before reaching sterile substrate due to encounters with human remains, but ~1.6 m of the upper portion of the profile was exposed. The details of this latter unit are provided following a description of stratigraphy in TU5.

Test Unit 5 was placed on an east-facing vertical escarpment. The unit was set back into the escarpment approximately 30 cm to ensure that intact stratigraphy would be exposed throughout. Initially, the unit was excavated to a depth of ~170 cm below the surface (cmbs), which approximates the elevation of the surrounding terrain to the south of the unit. The unit was then subsectioned into two 1 x 2-m units, the eastern (downslope) half of which (TU5-E) was continued to a depth of ~307 cmbs (Figure 5-3). After excavation we recorded the stratigraphy. Photographs and drawings of the west, south, and north profiles are presented in Figures 5-4, 5-5, and 5-6 respectively. Strata color and matrix composition descriptions are presented in Table 5-1. An inventory of objects recovered during excavation is presented in Table 5-2.

Several strategies were employed during excavation. The upper 170 cm was removed as a single "Profile Cut," and all materials were kept together as one provenience. No attempt was made to discriminate between intact and disturbed deposits. Profile cutting operations were ceased at approximately 170 cmbs when a stratigraphic change, characterized by an increase in sand and charcoal, was encountered. At this point, we excavated TU5-E in arbitrary 10-cm levels (beginning with level A). We also recognized several distinct zones that were excavated and bagged separated. Surficial and potentially disturbed fill was designated Zone A. It was recognized during excavation as relatively homogeneous and composed of organically enriched sand,

Figure 5-3. Example of "stepped" excavation in Test Unit 5 to prevent wall collapse and allow for mapping of upper strata.

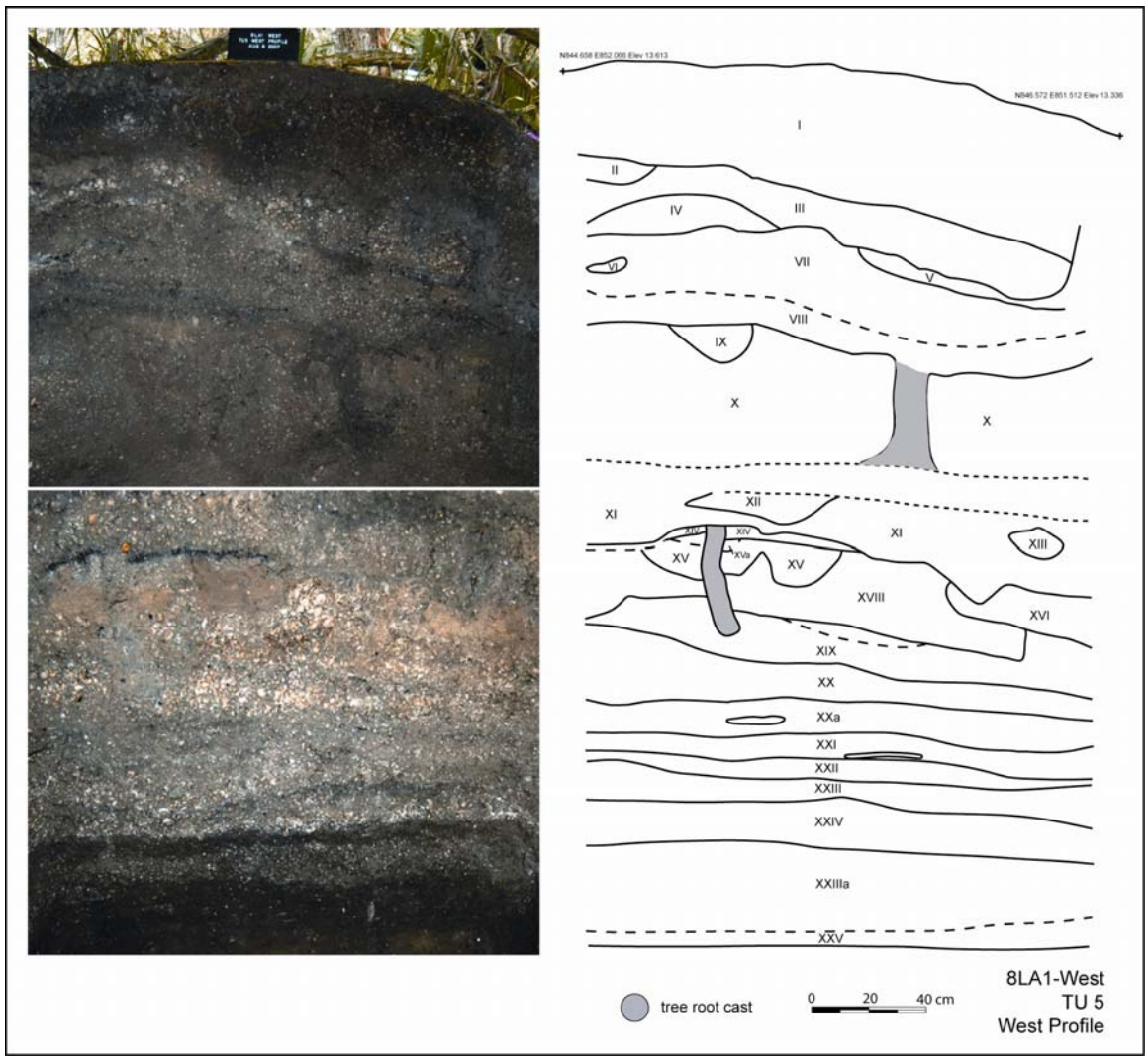

Figure 5-4. Photograph and line drawing of west profile of Test Unit 5, 8LA1-West.

fragmented shell, and living Juniper tree roots. In profile, Zone A corresponds with Strata (hereafter Str.) I and Ia. Beginning with Level A, we recognized several other zones. Zone B was described as a gray/brown sand with crushed shell. Zone C was described as whole and crushed shell. Zone D was described as tan sand. After Level A we simplified the zonation, such that Zone A was the disturbed matrix and Zone C was all shell-bearing matrices. Beginning with Level H we also recognized Zone E, which was characterized as a gray/brown sand with varying shell density. All sediment in Level H through Level M was associated with this zone designation. Excavations were ceased at the bottom of Level M. Although occasional shell and bone fragments were still encountered, the soil had become both very light in color and wet, and vertebrate bone frequency had significantly decreased.

Excavation of TU5 produced a wide array of cultural materials, including bifaces, lithic flakes, marine shell, rock fragments, modified bone, over 3 kg of vertebrate faunal

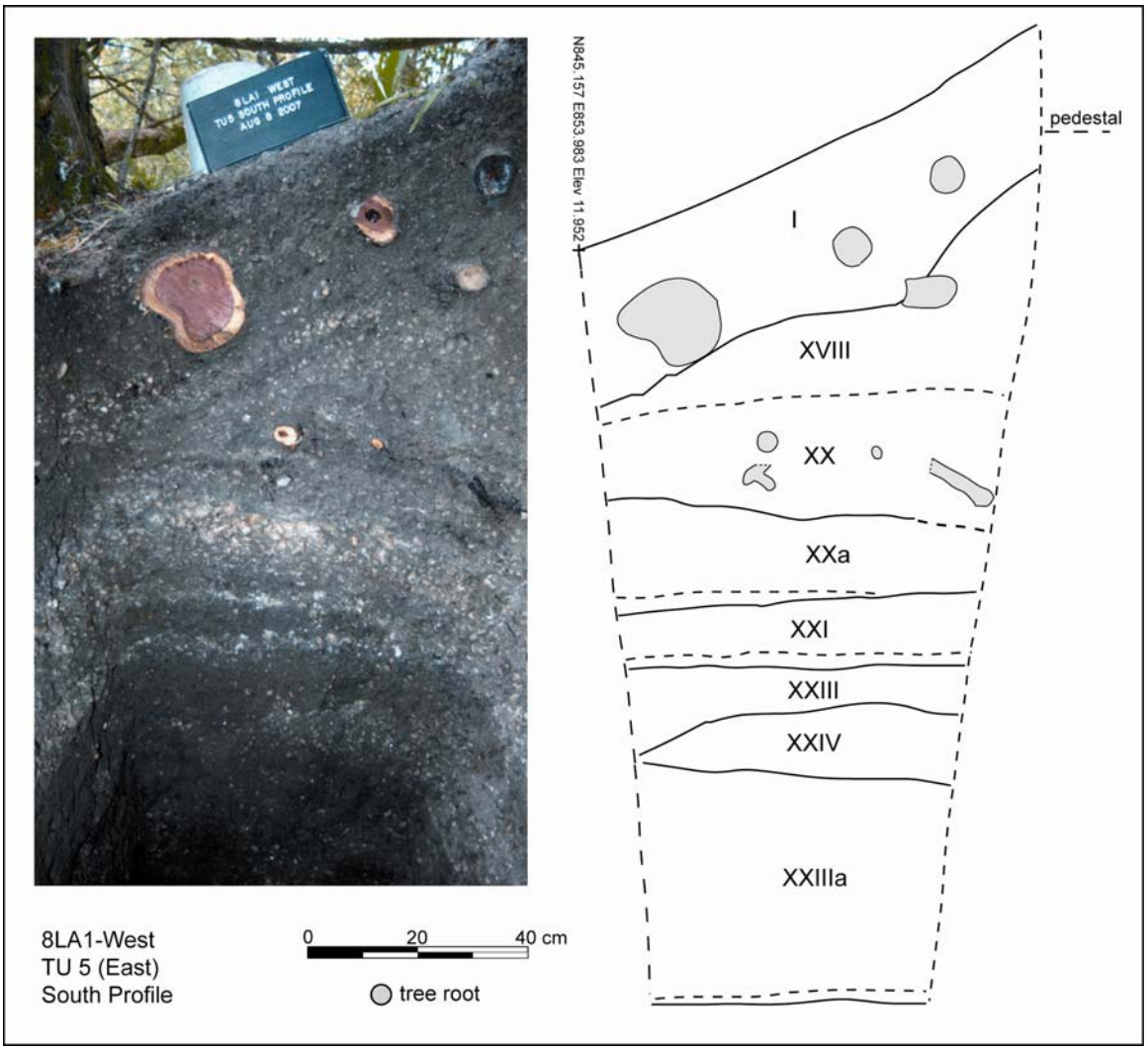

Figure 5-5. Photograph and line drawing of south profile of Test Unit 5 (East), 8LA1-West.

bone, a few sherds, and some historic and modern materials such as nails and plastic (Table 5-2). Vertebrate fauna was found in the greatest density in the profile cut, based on relative volume. We also recovered bone concretions in appreciable quantities. In many cases, these concretions were simply several bones with ash or other sediment that tightly bonding them together. In at least one case (Level G), bone concretions may have represented whole fish that were cemented in place. Finally, excluding the recent objects and sherds of the Orange and St. Johns series, this inventory fits comfortably in the known range of Mount Taylor period assemblages (see examples in photographs in the closing section of this chapter). The majority of non-Mount Taylor objects were recovered from surficial or scree-slope deposits excavated either in the Profile Cut or in Zone A. The one exception is Level G, which yielded two Orange Plain sherds. Level G was the first level in which Zone A was not visually recognized or excavated. It is likely, however, that these sherds were recovered from disturbed contexts. As seen in the north

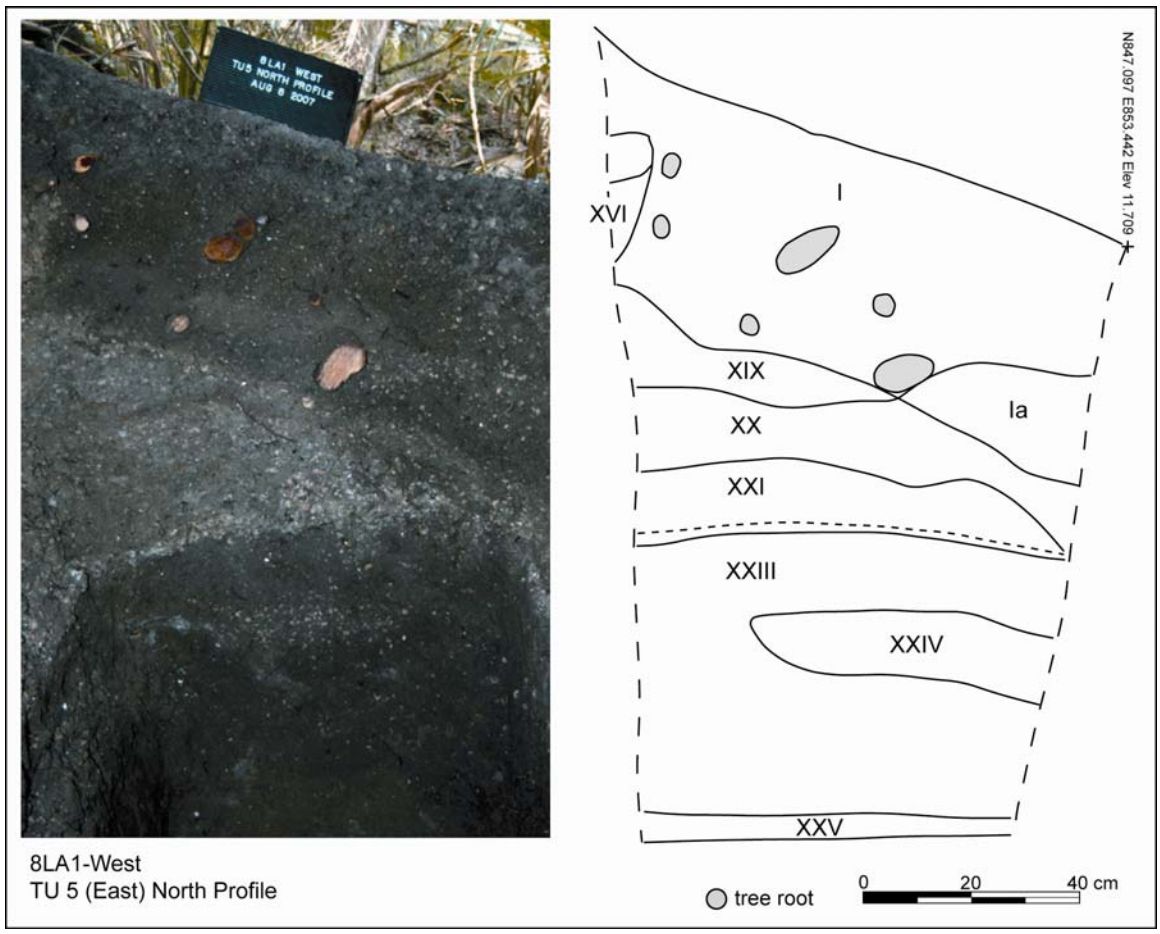

Figure 5-6. Photograph and line drawing of north profile of Test Unit 5 (East), 8LA1-West.

and south profiles, Str. I and Ia have an irregular and dipping contact with intact stratigraphy, and there may have been some deposits of Str. I remaining in Level H which was not easily visible in plan view.

A total of 28 strata were discernible in profile (Table 5-1). For the purposes of discussion, these can be grouped into four macrostratigraphic units that share similar structure. From top to bottom these include: surface deposits, upper shell and sand, lower shell, and basal shell and sand. Overlying all intact strata in TU5 was Stratum I, an organically enriched very dark grayish brown loamy fine sand with abundant roots, in addition to fragments of shell in varying quantities. Related to this matrix is Str. Ia, which was identified in the TU5-E profiles. The extent to which Str. I represents the original mound surface or is a product of mining operations that homogenized and organically enriched sediments is unclear. Based on stratigraphic data and assemblage content, two post-depositional processes are likely represented here. In the west profile, Stratum I varies in thickness between 30 and 50 cm, and its lower margin generally mimics the surface dip. Moreover, the contact between Str. I and Str. II is not sharp, and there is no clear evidence that Str. II or III were truncated. In this location, Str. I may thus represent surficial deposits that were exposed for millennia and subject to bioturbation.

Table 5-1. Stratigraphic Units of Test Unit 5, 8LA1-West, Locus A.

Stratum	Max. Depth (cm BS)	Munsell Color	Description
I	68	10YR3/2	very dark grayish brown loamy fine sand with abundant roots, occasional crushed *Viviparus*, *Pomacea*, and Unionid shell
Ia	--	10YR3/2	redeposited Stratum I with additional shell
II	41	10YR4/3	brown ashy fine sand, partially concreted, no shell
III	81	10YR5/4	abundant whole and crushed *Pomacea* and Unionid with occasional *Viviparus* shell in yellowish brown fine sand
IV	60	10YR2/2	very dark brown fine sand with *Viviparus* and occasional *Pomacea* shell, charcoal; partially concreted
V	85	10YR3/1	very dark gray fine sand with occasional crushed shell and charcoal
VI	74	10YR5/3	brown fine ashy sand with abundant crushed *Viviparus* shell and charcoal (5320 ± 30 BP)
VII	99	10YR3/2-3	very dark grayish brown to dark brown fine ashy sand with abundant whole *Viviparus* shell and charcoal
VIII	109	10YR3/2	very dark grayish brown fine ashy sand with abundant whole *Viviparus* shell and charcoal
IX	107	10YR6/4	light yellowish brown fine sand with 10YR4/3 brown mottles, small flecks of charcoal and crushed shell
X	146	10YR4/4	dark yellowish brown fine ashy sand with whole and crushed *Viviparus* shell and occasional charcoal
XI	184	10YR5/2	grayish brown fine sand with *Viviparus* and occasional *Pomacea* and Unionid shell and flecks of charcoal
XII	155	10YR8/3	abundant whole and crushed *Pomacea* and Unionid with occasional *Viviparus* shell in very pale brown fine ashy sand
XIII	168	10YR5/4	yellowish brown fine sand with occasional flecks of charcoal and crushed *Viviparus* shell
XIV	164	10YR2/1	charcoal in fine sand with occasional crushed shell
XV	177	10YR7/6	yellow fine sand with 10YR4/3 brown mottles and rare flecks of charcoal

Table 5-1. Continued.

XVa	166	10YR6/8	brownish yellow sand with 10YR6/1 gray mottles and abundant crushed shell, flecks of charcoal, and ash
XVI	199	10YR7/6	yellow fine sand with 10YR4/3 brown mottles and rare flecks of charcoal
XVIII	204	10YR6/4	whole *Pomacea* and Unionid in minimal light yellowish brown sand with occasional charcoal
XIX	218	10YR4/2	dark grayish brown fine ashy sand with whole *Viviparus* and occasional crushed *Pomacea* and Unionid shell and flecks of charcoal
XX	226	10YR4/1	dark gray fine ashy sand with whole *Viviparus* and occasional crushed *Pomacea* and Unionid shell and flecks of charcoal
XXa	237	10YR5/4	abundant whole *Pomacea* and *Viviparus* shell in yellowish brown fine sand
XXI	246	10YR3/2	abundant crushed shell in very dark grayish brown fine ashy sand with charcoal throughout
XXII	250	10YR4/3	crushed Unionid, *Pomacea*, and *Viviparus* shell in brown fine sand with flecks of charcoal throughout (5290 ± 40 BP)
XXIII	265	10YR3/2	very dark grayish brown fine sand with occasional crushed shell and charcoal
XXIIIa	302	10YR3/2	very dark grayish brown fine sand with occasional crushed shell and charcoal
XXIV	278	10YR3/1	whole and crushed *Viviparus* and occasional *Pomacea* and Unionid shell in very dark gray fine ashy sand
XXV	307+	10YR5/4	yellowish brown fine sand

The relationship between Str. I/Ia and intact stratigraphy is different for the TU5-E profiles. In both the north and south walls, Str. I and Ia lie unconformably, at roughly a 30-degree angle, upon relatively flat-lying strata that have been truncated. Also significant is that recent Juniper roots were distributed throughout Str. I at this elevation, indicating that it was less compact and easier to grow through (see Figure 5-6). Because we did not excavate the western 1 x 2-m unit, the relationship between the upper and lower Str. I/Ia remains indeterminate. Finally, it is notable that almost all pottery recovered from TU5-E was associated with Str. I deposits (Zone A), further indicating

Table 5-2. Inventory of Artifacts, Vertebrate Fauna, and Miscellaneous Items Recovered from Level Excavation of Test Unit 5, 8LA1-West, Locus A.

Level	Biface (n)	Hafted Biface (n)	Lithic Flake (n)	Lithic Flake (g)	Marine Shell Frag. (n)	Misc. Rock (g)	Vert. Fauna (n)	Vert. Fauna (g)	Modified Bone (n)	Modified Bone (g)	Bone/Shell Concre-tion (g)	Historic Arts. (g)
A (Zone A)*					1		157	43.4			6.9	12.5
A (Zone B)							58	30.9			0.6	
B (Zone A)**			1	0.5			406	167.5			14.8	31.6
B (Zone C)							91	33.9				
C (Zone A)							419	157.5			15.8	
C (Zone C)							282	171.4			7.9	
D (Zone A)					1		272	116.2	2	4.8	5.4	
D (Zone C)					1	3.7	240	85.2			29.4	
E (Zone A)***							27	6.9			1.2	
E (Zone C)						0.3	213	120.9			7.3	
F (Zone A)							47	13.4				
F (Zone C)	1		1	2.7		0.3	370	159.4	1	0.3	22.4	
G (Zone C)+			1	1.8			383	160			35.7	
H (Zone C)++		1			1		189	107.2	1	3	9.4	
H (Zone E)							90	16.4				
I (Zone E)							185	45.8			1.1	
J (Zone E)		1	1	0.3	1	8.7	91	32.6	3	10.2		
K (Zone E)+++			1	1.5			165	61			0.8	
L (Zone E)					2		171	39.6			0.7	
M (Zone E)							68	16.2				
Profile Clean-Up†			1	1.7	1							
Profile Cut††	1	1	16	34.3	8	14.5	3126	1532.2	11	197.1	403.4	21.9
Total	2	3	22	42.8	16	27.5	7050	3117.6	18	215.4	562.8	66.0

* plus one plain St. Johns sherd
** plus one plain St. Johns, and one St. Johns crumb sherd
*** plus one check-stamped St. Johns sherd
+ plus two plain Orange sherds
++ plus one *Euglandina* shell
+++ plus one lithic core 106.6 g
† plus one piece of modified marine shell 2.2 g
†† plus three paleofeces 19.8 g

that this matrix was redeposited from elsewhere. No sherds were recovered during the profile cut excavations.

Strata II through XVIII comprise the upper shell unit, a stratigraphic assemblage internally marked by variable thickness and composition. For example, strata are as diverse as the predominantly whole and unbroken *Pomacea* and *Viviparus* in Str. XVIII to a mostly shell-free yellow sand in Str. XV, and range from ~5 cm thick to more than 50 cm. Although a complex arrangement, these strata share several structural and sequential characteristics that suggest a repeated pattern. In particular, it appears that a certain arrangement of surface features was being maintained. Most of the strata in this sequence have a distinctive topographic expression: they dip from north to south (Figure 5-4). Whether this dip has a corresponding strike to the east is unknown due to mining, but there is similar patterning evident in TU8 to the south and west (see below).

Within the upper shell unit are two repeated depositional subunits: thin burned layers and extensive shell and sand layers. The base of the sequence is composed of sand-only layers in association with whole shell. These different depositional subunits are discussed below. One component of this sequence includes thin strata (ca. 3–10 cm overall), that show evidence for extensive burning, and have variable amounts of shell. Str. II, for example, is characterized by a brown ashy fine sand with no shell. In contrast, Str. XIV is composed almost exclusively of charcoal, with limited sand or shell. Most others, however, have crushed shell of variable quantity, including Str. IV, V, VI, and IX. A sample of Str. VI was collected from the profile. In the laboratory a sample of wood charcoal was removed and submitted for an AMS assay to Beta Analytic. It returned a conventional age estimate of 5320 ± 30 BP. These lenses are frequently concreted, providing further evidence of both burning and the presence of ash. In general, these lenses mimic the contour of the underlying stratum. In the eastern profile, they are typically discontinuous across these surfaces, but are most strongly expressed in the southern half of the west profile. In this sense, these lenses appear to be strongly associated with areas of highest topography, as if they were emplaced directly upon a mounded surface.

A second subunit to the upper shell sequence consists of relatively thick (ca. 10–50 cm) and laterally extensive layers of shell with variable amounts of non-shell inclusions. The vast majority of these are characterized by whole and crushed *Viviparus*, *Pomacea*, and bivalve shell in a yellow-brown to brown fine sand. Often the non-shell matrix is ashy, and contains flecks of charcoal. Layers matching this description include Str. III, VII, VIII, X, and XI. Some layers, however, are composed primarily of whole shell with limited non-shell matrix. Str. XII, for example, was expressed as several small pockets of whole and crushed *Pomacea* and Unionid shell with the occasional *Viviparus* shell. A more thick and extensive whole shell lens is Str. XVIIII, which is composed almost exclusively of whole *Pomacea* and Unionid shell. Crushed shell was present in this stratum, but was concentrated directly beneath Str. XIV and XV.

The whole shell in Str. XVIII is closely associated with the third type of deposit that is composed almost exclusively of yellow-brown sand. In some cases, such as Str.

XIII, the sand is discontinuous. Most striking, however, is the 15-cm thick Str. XV that is composed of yellow fine sand with rare charcoal. It is a lenticular-shaped stratum that lies above whole shell in Str. XVIII and below the burned charcoal of Str. XIV. The presence of ashy sand (Str. XVa) at the contact between Str. XIV and XV suggests that a fire was constructed directly upon the Str. XV surface. A related sand layer is Str. XVI, a ca. 15-cm thick yellow fine sand with brown mottles and rare charcoal. The lateral extent of Str. XVI is unknown because it was truncated by mining, but it is visible in the north profile. Taking these strata together, it would seem that a large layer of whole shell (Str. XVIII) was deposited on a mostly flat surface (Str. XIX). A fire may have been constructed on top of Str. XIX prior to the deposition of shellfish, as there was ash at the contact. Subsequent to the shell deposition, loads of yellow sand were deposited on top of this shell. This layer was then covered with hot coals. This sequence of (1) shell deposition, (2) sand deposition, and (3) burning may provide a model for subsequent deposition. That is, the overlying thick shell/sand layers appear to be linked with thin lenses of charcoal and crushed shell. Following the model considered above, it would seem that loads of sand and shell were emplaced as small heaps, and then the surface of each heap was burned. Whether the burning occurred just after the surface was created, or was conducted in advance of a subsequent deposit remains unknown at this time.

Beneath Str. XVIII, the character of strata shifts drastically from elevated and discrete deposits to laterally extensive, flat-lying, and heterogeneous strata between 10 and 20-cm thick. The composition and disposition of these strata are suggestive of a depositional pattern that did not include the differentiation of shellfish species, but did involve significant mechanical crushing of shellfish remains. For example, Str. XIX is composed of ashy sand with whole *Viviparus,* and crushed *Pomacea* and Unionid shell. Str. XX is similarly composed of whole *Viviparus* with minor shell, and it grades into Str. XXa, a layer of whole *Pomacea* and *Viviparus* shell in a yellowish brown fine sand. These units are underlain by the relatively thin (ca. 8-cm thick) Str. XXI and XXII, which are characterized by abundant crushed shell and charcoal. In some instances, crushed Unionid shell was present in patches. A sample of charcoal was collected from a crushed shell lens in Str. XXII, and submitted for an AMS assay. It returned a conventional age estimate of 5290 ± 40 BP. Although the age intercept for this date is later than the overlying Str. VI, both estimates overlap at 2-sigma, and are thus statistically coeval. What this suggests is that the deposits in this portion of Locus A were rapidly emplaced.

The final macrounit revealed in TU5 excavations provides evidence for intermittent occupation of this landform prior to the extensive deposition described above. During excavation of Level H (ca. 240–250 cmbs) the crushed shell of Str. XXII gave way to Str. XXIII, a ca. 10-cm thick a dark grayish brown, organically enriched fine sand with occasional crushed shell and charcoal. This sediment was found to overlie another extensive deposit (Str. XXIV) of whole and crushed *Viviparus*, *Pomacea*, and Unionid shell. This shell lens was consistently observed in the west, south, and east profiles, but was discontinuous in the northern profile. Beneath the shell we encountered another organic soil with limited shell (Str. XXIIIa). This graded into a yellowish brown fine sand towards the base of the unit. Although it is possible that the shell-free organic sediment was anthropogenic in origin, and purposefully emplaced like Str. XV and XVII,

there are several lines of evidence that indicate both represent A-horizons. First, Str. XXIII and XXIIIa were indistinguishable in the field. They were both organically enriched and characterized by a notable lack of, or comparable reduction in vertebrate fauna. Secondly, a *Euglandina* shell was recovered from shell in Level H. This terrestrial gastropod preys upon other terrestrial univalves. We have argued elsewhere (Sassaman et al. 2005) that *Euglandina* are most likely to be found in association with stable, exposed surfaces that foster colonization of prey species. There is a drop off in the density of vertebrate fauna beginning with Level H, although objects continue to be found in appreciable quantities. We recovered two Florida Archaic Stemmed hafted bifaces, 2 lithic flakes, and 3 marine shell fragments, and four modified bone pieces in this macro-unit.

TU8 was oriented to the west of TU5 (Figure 5-7). As before, one goal of excavation was to expose stratigraphy in this portion of the shell ridge. Drawings and photographs of the north and east profiles are presented in Figure 5-8, and a description of each stratum is presented in Table 5-3. An inventory of objects recovered during excavation is presented in Table 5-4. Because of the surface topography in this location, excavation of TU8 followed slightly different protocols. Unlike TU5, which was emplaced on a sharp escarpment, the surface beneath the TU8 footprint sloped gradually. As a result, we did not remove a profile cut, but instead excavated in arbitrary levels from the start. Levels A and B were removed as 20-cm levels. Thereafter, all levels were removed in 10-cm increments. Each level was a "wedge" cut, which increased in volume

Figure 5-7. View facing northwest of the excavation of Test Unit 8, 8LA1-West.

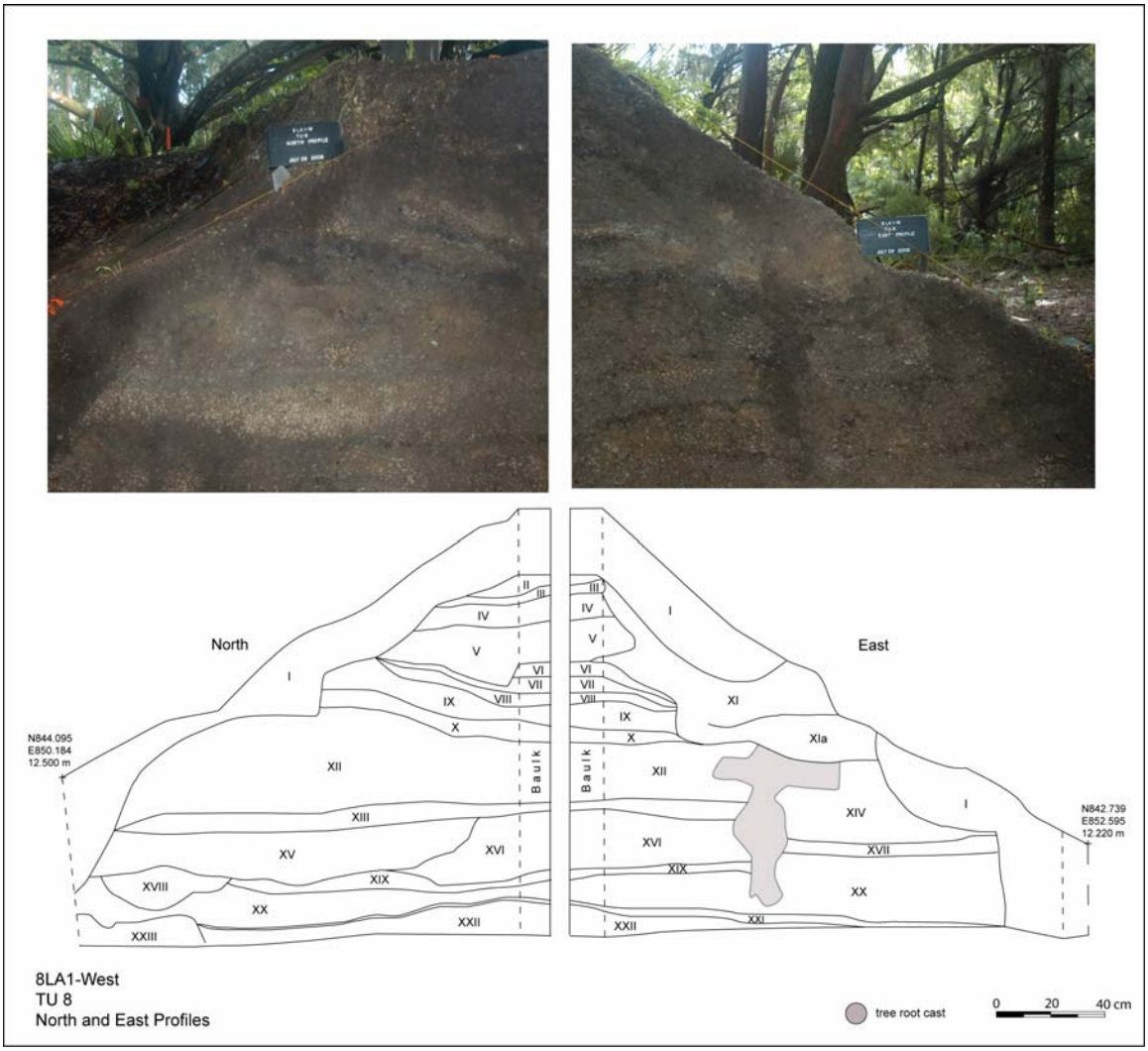

Figure 5-8. Photographs and line drawings of the north and east profiles of Test Unit 8, 8LA1-West.

as excavation proceeded. Beginning with Level F (70 cmbs) we recognized two zones that were excavated, screened, and bagged separately. Zone A corresponds to the organically enriched mining spoil recognized in TU5. It was removed first as each level was removed. All intact stratigraphy not included in Zone A was excavated as Zone B. We ceased excavation in TU8 upon the discovery of two subadult burials (see below).

The material culture assemblage recovered from TU8 is complementary to that recovered in TU5. As enumerated in the artifact inventory from TU8 (Table 5-4), all post-Mount Taylor pottery sherds of the Orange and St. Johns series, as well as historic artifacts, were recovered from Zone A. Vertebrate faunal bone was the most frequently recovered object (n = 8898, 3437.1 g). This density is consistent with the profile cut from TU5 which yielded a similarly large quantity of faunal bone. Otherwise, the

Table 5-3. Stratigraphic Units of Test Unit 8, 8LA1-West, Locus A.

Stratum	Max. Depth (cm BS)	Munsell Color	Description
I	53+	10YR3/2	very dark grayish brown ashy sand with moderate whole and crushed *Viviparus* and occasional Unionid shell
II	32	10YR4/2	dark grayish brown ashy sand with occasional crushed shell
III	36	10YR6/6	abundant crushed Unionid with occasional whole and crushed *Viviparus* shell in brownish yellow ashy fine sand
IV	44	10YR3/1	very dark gray fine sand with occasional whole and crushed *Viviparus* and Unionid shell with flecks of charcoal throughout
V	63	10YR4/2	abundant whole and crushed *Viviparus* and occasional *Pomacea* and Unionid shell in dark grayish brown ashy sand with occasional flecks of charcoal
VI	64	10YR7/6	concreted crushed and burned *Viviparus* and occasional Unionid shell in yellow ashy, gritty sand
VII	70	10YR5/4	yellowish brown ashy, gritty sand with lenses of whole and crushed *Viviparus* and Unionid shell
VIII	75	10YR3/2	very dark grayish brown fine ashy sand with abundant whole *Viviparus* shell and charcoal
IX	84	10YR4/2	light yellowish brown fine sand with 10YR4/3 brown mottles, small flecks of charcoal and crushed shell
X	89	10YR3/1	dark yellowish brown fine ashy sand with whole and crushed *Viviparus* shell and occasional charcoal
XI	58	10YR4/2	grayish brown fine sand with *Viviparus* and occasional *Pomacea* and Unionid shell and flecks of charcoal
XIa	35	10YR5/4	yellowish brown gritty sand with occasional crushed shell intercalated with 10YR3/2 very dark grayish brown sand with occasional crushed shell
XII	112	10YR5/2	grayish brown medium ashy sand with moderate whole and crushed *Viviparus*, occasional whole and crushed Unioinid and *Pomacea* shell, and flecks of charcoal
XIII	115	10YR5/1	gray ashy, gritty sand with abundant whole and crushed *Viviparus* shell

Table 5-3. Continued.

XIV	64	10YR4/1	dark gray sand with moderate crushed and whole *Pomacea* and *Viviparus* shell and occasional charcoal
XV	115	10YR5/3	mostly whole *Viviparus* and occasional *Pomacea* and Unionid shell in a trace of brown sand
XVI	136	10YR4/3	brown ashy sand with abundant whole and crushed *Viviparus* and occasional whole and crushed *Pomacea* and Unionid shell
XVII	66	10YR4/1	abundant crushed Unionid shell and charcoal in trace of dark gray sand
XVIII	69	10YR3/2	very dark grayish brown ashy sand with trace of crushed shell and occasional flecks of charcoal (subadult interment?)
XIX	140	10YR4/1	abundant crushed Unionid shell and charcoal in trace of dark gray sand (probably coterminus with Stratum XVII)
XX	149	10YR6/6	brownish yellow fine sand with occasional whole and crushed *Viviparus*
XXI	150	10YR5/3	crushed shell in brown ashy sand (5280±40 BP)
XXII	161+	10YR5/2	abundant whole *Viviparus* and *Pomacea* shell, with minor crushed shell and abundant charcoal in trace of grayish brown sand
XXIII	87+	10YR5/2	abundant whole *Pomacea* shell, with minor crushed shell and abundant charcoal in trace of grayish brown sand

material culture assemblage included lithic waste flakes, two hafted bifaces, marine shell fragments, and a few modified bone fragments.

Excavation of TU8 revealed 24 stratigraphic units that were mostly complementary to the disturbed and intact upper shell macrounits documented in TU5. Three upper and disturbed strata were recognized. Str. I is an organically enriched and homogeneous ashy sand with moderate amounts of crushed shell. As with TU5, this stratum likely represents both a pre-mining intact surface, particularly above Str. II, in addition to post-mining scree deposits. In both the north and west profiles, Str. I lies unconformably above truncated intact strata. Sherds of the St. Johns and Orange series were restricted to Zone A, which corresponds to Str. I. Another kind of disturbed deposit was recognized in Str. XI and XIa, visible in the eastern profile. These deposits are composed predominantly of gray to yellow brown sand with occasional shell and

Table 5-4. Inventory of Artifacts, Vertebrate Fauna, and Miscellaneous Items Recovered from Level Excavation of Test Unit 8, 8LA1-West, Locus A.

Level	Hafted Biface (n)	Lithic Flake (n)	Lithic Flake (g)	Marine Shell Frag. (n)	Paleo-feces (g)	Vert. Fauna (n)	Vert. Fauna (g)	Modified Bone (n)	Modified Bone (g)	Bone/Shell Concre-tion (g)	Historic Arts. (g)
A*						12	4.0				
B						238	63.4				
C				2		420	134.4			10.2	
D		1	0.2			949	455.1	1	4.7	58.2	
E				1		325	146.8			6.3	
F (Zone A)						209	80.5			10.8	1.9
F (Zone B)						278	75.0			6.0	
G (Zone A)**						210	58.1			16.8	
G (Zone B)						330	83.7			30.1	
G Cleanup	1										
H (Zone A)***		1	0.2			198	66.2			36.3	
H (Zone B)						307	101.5			1.4	
I (Zone A)+				1	1.0	525	66.1			23.3	
I (Zone B)		1	2.2			504	147.4			12.5	
J (Zone A)				1		434	185.2	2	7.1	32.1	
J (Zone B)						933	304.0			159.8	
K (Zone A)++	1	1	1.2		9.4	446	212.1			33.0	
K (Zone B)				1		301	111.5			10.2	
L (Zone A)+++		1	0.3			552	240.8			50.5	
L (Zone B)						176	60.3			6.2	
M (Zone A) †		3	3.3	2		364	255.6				
M (Zone B)		1	0.4			226	78.2			6.2	
N (Zone A) ††		3	2.3			256	186.6			1.6	
N (Zone B)						143	63.4			3.7	
O (Zone A) †††				1		471	219.9			12.9	
O (Zone B)						91	36.9				
Total	2	12	10.1	9	10.4	8898	3437.1	3	11.8	528.1	1.9

* plus one plain St. Johns sherd, 4.0 G

** plus two Orange crumb sherds, 1.3 g; one St. Johns crumb sherd, 0.4 g

*** plus two St. Johns crumb sherds, 1.9 g

+ plus one St. Johns Check Stamped crumb sherd,, 2.8g

++ plus two St. Johns Check Stamped sherds, 18.3 g; one plain St. Johns body sherd, 4.3 g; three St. Johns crumb sherds, 3.0 g

+++ plus one St. Johns Check Stamped sherds, 10.1 g; three plain St. Johns body sherds, 6.0 g; two St. Johns crumb sherds, 1.0 g

† plus one Orange crumb sherd, 0.4 g; one St. Johns Check Stamped body sherd, 4.1 g; two plain St. Johns body sherds, 3.0 g; one St. Johns crumb sherd, 0.2 g

†† plus one St. Johns Check Stamped body sherd, 2.7 g; one plain St. Johns body sherd, 1.7 g; seven St. Johns crumb sherd, 3.5 g

††† plus two Orange crumb sherds, 1.8 g; one plain St. Johns body sherd, 2.0 g; one plain St. Johns rim sherd, 3.9 g; three St. Johns crumb sherds, 1.1 g

charcoal. They too rest unconformably upon intact strata lying more or less horizontally in the eastern portion of the unit. The origin of this sand mass is unknown. Presumably, the sand was emplaced incidentally during the mining process, and perhaps escaped from the steam shovel bucket. On close inspection, there are disaggregated, but intact, clods of whole strata embedded within Str. XI.

Just like TU5, the upper intact shell unit consisted of thin and thick strata of varying composition. In TU8, the relationship between the massive layers and thin strata is made more evident based on surface topography and content. If the thin and thick strata are parts of the same depositional sequence (as argued above), then somewhere between five and six depositional events are represented in the TU8 profiles. Based on excavations at the Hontoon Dead Creek Village (8VO215) and the Hontoon Island North site (8VO202), these elevated surfaces may represent discrete house mounds and floors. Although no architectural features such as post-holes have been identified, similar deposits of shell, roughly 20-50 cm thick and frequently covered with crushed shell, were identified at these other sites. In TU8, the uppermost depositional sequence is represented in Str. II-V. Although varying in composition, they all share the same slope and angle of repose, which can be seen trending upwards to the east and south. The thin strata (II, III) are composed of ashy fine sand with varying amounts of crushed shell. These are likely expressed in TU5 as Str. II. The more massive strata (IV and V) are composed of whole and crushed *Viviparus*, *Pomacea*, and Unionid shell with gray and yellow sand. A secondary sequence is represented by Str. VI-XII, wherein there are many thin complicated strata (VI-X) emplaced upon one massive deposit of ashy fine sand with whole and crushed *Viviparus*, *Pomacea*, and Unionid shell (Str. XII). As seen in the northern profile, the charcoal and crushed shell layers trend upwards to the west, and appear to follow the elevated surface contour of Str. XII. Finally, Str. XII has a large root cast that appears to originate at or near the stratum's surface, although it has been partially truncated by Str. XIa. This is likely the same surface from which root casts originate in TU5 (Str. X), giving further support for a temporary occupational hiatus.

Str. XII is situated upon the Str. XIII surface, which is composed of ashy sand with abundant whole and crushed *Viviparus* shell. This laterally extensive and thin deposit begins a new series of depositional couplets. Str. XVII, XIX and XXI are composed predominantly of crushed bivalve with abundant charcoal. They are present across both the north and east profile. A charcoal sample was extracted from Str. XXI and submitted for an AMS assay to Beta Analytic. It returned a conventional age estimate of 5280 ± 40 BP. The intervening stratigraphic units (Str. XVI, XX) are more massive and composed of both sand and whole and crushed shellfish remains. In the profiles that we exposed, the lower stratigraphy identified in TU8 are mostly flat lying (except for Str. XV and XVIII, see below). Based on the presence of the sand/shell nodes in TU5 at this elevation, it is likely that the strata observed in TU8 represent lateral elements of similar shell domes, and away from the zone of elevated deposition. The base of the test unit just barely exposed an extensive layer of mostly whole *Pomacea* and *Viviparus* shell, with limited non-shell matrix (Str. XXII, XXIII). This layer of shell corresponds with Str. XVIII in TU5 in terms of depth and composition.

As noted previously, excavation of TU8 was terminated prior to reaching basal sands due to the presence of two subadult interments. The first was not recognized in the field. Back in the laboratory as samples were being cleaned, several bones from Level M (140-150 cmbs) were identified as human subadult skeletal elements. At the time of this discovery, we were midway through excavating Level O (160-170 cmbs). As we were cleaning down the base of Level O we encountered yet another subadult interment, this time *in situ*. After consultation with the State Archaeologist, all skeletal elements were reinterred, and we stopped excavations here altogether. After recording the stratigraphy, the unit was backfilled. The stratigraphic relationship of the second interment remains unknown because it was encountered at the base of the unit, although presumably it was associated with the whole shell deposits of Str. XXII. Based on field notes, there is little doubt that the first subadult interment was associated with Str. XVIII, described as very dark grayish brown sand with only a trace amount of crushed shell and some charcoal. In profile, this stratum has the appearance of a small basin, and is likely a pit into which both the subadult and gray sand were emplaced. Importantly, the burial pit lies directly beneath Str. XV, which is composed of mostly whole shell with limited non-shell matrix. In profile, Str. XV also has a basin shape, and appears to lie unconformably upon Str. XVI, which appears to be laterally truncated by Str. XV. Based on these stratigraphic relationships, it would appear that a pit was dug through an existing shell node, and then a subadult was buried in sand at the base of the pit. The burial pit was then filled with whole, and apparently clean shell. These burial practices are the microcosm of interment procedures afforded adults at coeval cemeteries such as the Harris Creek mortuary mound on Tick Island (Aten 1999). Interestingly, subadults were greatly underrepresented at Harris Creek. Based on the discoveries in TU8, it may be the case that Mount Taylor communities buried juveniles in residential spaces, perhaps under house floors.

In sum, excavation of TU5 and TU8 exposed a complicated, 3+ m deep stratigraphic sequence composed of sand, shellfish remains, and other objects. In this portion of the Locus A ridge, at least four macro-stratigraphic units are evident from bottom to top: shell midden above a buried A horizon, a lens of emplaced sand, stacked sequence of house floors and living surfaces, and a post-abandonment stratum. Radiocarbon assays from throughout the sequence suggest that Locus A emerged rapidly (see below), although there may have been intermittent abandonment. The mined disposition and manner in which we excavated the units limits what we can say about material culture frequency, but a few points are worthy of note. With one exception, all post-Mount Taylor material culture was restricted to near-surface of mining scree deposits. Where sherds of the Orange and St. Johns series came from initially remains unknown. One possibility is that they were relocated from somewhere else on the landform, such as Locus B or C, during mining operations. Alternatively, they could have come from surficial deposits within Locus A. Indeed, many large Mount Taylor shell ridges have pottery in the upper 50 cm (Wyman 1875). Secondly, the material culture was diverse and consistent with the earlier Mount Taylor phase. Tools characteristic of the later Thornhill Lake phase, such as microliths and *Strombus* celts were not present. Finally, there was comparably more vertebrate fauna recovered from the upper macrostratigraphic units than in the basal midden.

Test Unit 6

A single 2 x 2-m test unit was excavated in 2007 toward the west end of the Locus A shell ridge in an escarpment running parallel with the long axis of the ridge and the spring run. Test Unit 6 (TU6) generally recapitulated the stratigraphic sequence observed in TU5 and TU8, but with less complexity in the upper unit and an overall shallower profile. Nonetheless, a sequence of basal midden followed by emplaced sand and shallow pit features is fully coeval with the lower sequence at the east end of the ridge. The artifact assemblage from TU6 is likewise consistent with the Mount Taylor assemblage recovered from the east end of the ridge. Similarities in the stratigraphy between the two locations far outweigh the differences, supporting the inference that similar processes of deposition account for the sequences and that they occurred at roughly the same time. It follows that the spatial extent of Mount Taylor activities leading to mounded deposits encompasses upwards of 200 m of the spring run terrace.

Excavation of TU6 generally followed the same protocols as the TU5. A Profile Cut was made from the top of the escarpment to a depth of 107 cmbs, roughly at the point where the southeast corner of the extant mined surface was encountered (Figure 5-9). This wedge-shaped unit crosscut multiple shell-bearing strata and brown sand, and scree deposits. Shell was generally looser than in TU5 and with less associated sand matrix. No pottery was recovered in the Profile Cut, but several lithic artifacts were found, along with marine shell fragments, some worked bone, and relatively abundant vertebrate fauna, although somewhat less per unit volume than in TU5.

The floor plan at the base of the profile cut (ca. 107 cmbs) consisted almost entirely of brown medium sand with only minor shell. Evident at this level were several pit features, including possible postholes. Ultimately, seven circular stains or areas of concreted shell were designated features (Features 6-12; Figure 5-10), but not all were investigated because only the south half of TU6 was excavated below the level of the Profile Cut. As with TU5, TU6 was divided into two 1 x 2-m subunits, with the downslope portion (TU6-South) excavated through the removal of 11 10-cm levels to a depth of 220 cmbs. Figure 5-11 provides a photograph and drawing of the stepped profile. Strata identified in this profile are described in Table 5-5, and an inventory of artifacts, vertebrate fauna, and miscellaneous item is provided in Table 5-6. In the paragraphs that follow we describe the stratigraphy of TU6 and follow with a description of the features.

Fifteen distinct strata were recognized in the profile of TU6. As with TUs 5 and 8, the strata of TU6 can be grouped into four different macrounits, or depositional types: surface deposits, upper shell and sand, lower shell layers, and basal midden. The upper 25 cm (Str. I) consists of very dark grayish brown fine sandy loam with moderate amounts of whole *Viviparus* shell, followed by another 25 cm of similar matrix with a greater density of shell (Str. II). During excavation these strata were assumed to be a post-mining deposit, either fill that was redeposited by heavy equipment during the mining operation, or simply the development of topsoil through natural pedogenic processes. However, as discussed earlier, neither of these scenarios seems very likely in retrospect.

Figure 5-9. View facing northwest of Profile Cut of Test Unit 6, 8LA1-West, Locus A.

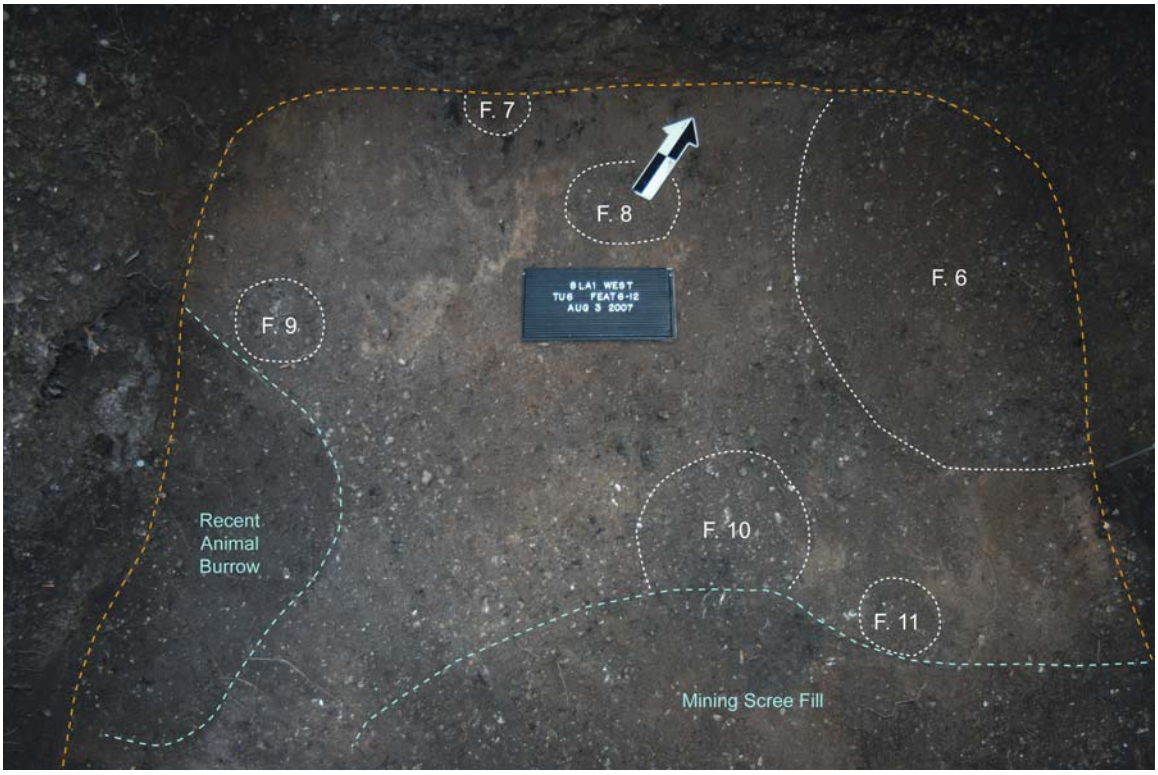

Figure 5-10. View facing northwest of plan at base of Profile Cut, Test Unit 6, 8LA1-West, Locus A, showing Features 6-11 and related zones of disturbance; not shown is Feature 12, to the south of this view.

Figure 5-11. Photograph and line drawing of north profile, Test Unit 6, 8LA1-West-Locus A.

Table 5-5. Stratigraphic Units of Test Unit 6, 8LA1-West, Locus A.

Stratum	Max. Depth (cm BS)	Munsell Color	Description
I	25	10YR3/2	very dark grayish brown fine sandy loam with surface root mat and moderate whole *Viviparus* shell
II	50	10YR4/2	very dark brown fine sandy loam with abundant whole *Viviparus* shell
III	61	10YR4/3	abundant whole *Viviparus* with occasional *Pomacea* shell and charcoal in trace of brown fine sand
IV	88	10YR4/3	brown fine sandy loam with abundant whole *Viviparus* and occasional *Pomacea* shell and charcoal
V	66	10YR5/3	brown medium ashy sand with abundant whole *Viviparus* and occasional charcoal
VI	78	--	abundant whole *Viviparus* shell with trace of charcoal and no matrix
VII	105	10YR3/3	dark brown fine sand with abundant whole *Viviparus* and occasional *Pomacea* shell and abundant charcoal
VIII	105	10YR2/2	very dark brown fine sandy loam (possibly leaching from above)
IX	129	7.5YR4/4	brown medium sand with trace of shell
X	102	10YR4/2	dark grayish brown medium sandy loam with abundant charcoal, trace of shell, and clasts of concreted sand; probable lens of fire-reddened sand along western margin
XI	144	10YR3/2	very dark grayish brown medium sandy loam with crushed shell, including Unionid, and moderate charcoal
XII	145	10YR4/3	brown medium sandy loam with moderate whole and crushed *Viviparus* shell and moderate charcoal
XIII	200	10YR4/2	heterogenous mix of whole and crushed *Viviparus* shell with discontinuous stringers of crushed Unionid shell and occasional charcoal in dark grayish brown medium sandy loam
XIV	211	10YR3/2	very dark grayish brown fine sandy loam with only trace of shell; grades into Stratum XV
XV	219	10YR3/3	dark brown fine sandy loam lacking shell

Table 5-6. Inventory of Artifacts, Vertebrate Fauna, and Miscellaneous Items Recovered from Level Excavation of Test Unit 6, 8LA1-West, Locus A.

Level	Biface (n)	Hafted Biface (n)	Lithic Flake (n)	Lithic Flake (g)	Marine Shell Frag. (n)	Misc. Rock (g)	St. Johns Crumb Sherd (n)	Vert. Fauna (n)	Vert. Fauna (g)	Modified Bone (n)	Modified Bone (g)	Bone/Shell Concre-tion (g)
A							1	429	121.9	1	0.3	187.4
B		1	4	0.8	2	23.9		453	252.1	1	1.5	34.8
C					2			599	321.4	3	3.1	18.6
D			2	0.4				95	75.4	1	1.4	1.5
E			1	0.1				98	52.3	1	1.4	4
F			1	0.9				123	73			
G*			2	0.2				174	50.4			
H			1					332	86.3			
I			1	20.8				358	80.3			1.5
J	1		6	2.9	1		1	342	86.9			
K			3	1.1		0.2		110	23.7			
Profile Clean-Up			1	3	1			2	4.9			
Profile Cut	1		8	15.2	4			2028	876.4	6	15.7	106.9
Feature 6-South								136	97			1.5
Feature 10-South								30	13.1			
Feature 12-South								10	5.6			7.3
Total	2	1	30	45.4	10	24.1	2	5319	2220.7	13	23.4	363.5

* plus one "other" sherd

The contact between Str. I/II and the underlying layers does not express the unconformity of a cut-and-fill event that happened less than a century ago. Likewise, we cannot imagine that enough time has elapsed since the mining to allow for the accumulation of as much as 50 cm of clastic material, especially considering the elevated position of the locations we tested in Locus A. Add to this the limited amount of clastic material available for upward translocation (through bioturbation) from strata immediately below Str. I/II and we are compelled to infer that the upper unit was deposited by humans, much in the same fashion as the deeper sand strata. No pottery was found in Str. I/II of TU6 to corroborate the St. Johns association inferred for this stratum in TUs 5 and 8. Only two small St. Johns crumb sherds were recovered from the entirety of TU6, one from the upper level of TU6 South (in scree deposits), and a second inexplicably from Level J of TU6 South. On balance, the surface stratum of the remnants of ridge in Locus A appears to be anthropogenic, apparently emplaced either during the St. Johns I period or well before, but was thereafter neither truncated nor buried.

The second macrounit in the TU6 profile consists of Str. III through X, a complex array of shell and sand of variable composition, density, and thickness. Unlike its counterparts in TUs 5 and 8, the strata of TU6 do not clearly express a dip-and-strike character, but they are not clearly horizontal either. Rather, this second macrounit includes several pit features that intruded upon shell and sand layers, resulting in profiles that do not clearly express the structure of original deposition. The major shell-rich stratum is the ca. 40-cm-thick Str. IV, consisting of abundant whole *Viviparus* and occasional *Pomacea* shell in a brown fine sandy loam. Below this across most of the unit is ca. 40-cm-thick stratum (Str. IX) of brown medium sand with only a trace of shell. Intercepting both of these strata is a large pit feature in the northeast corner that appears to emanate from the top of Str. IV. It is not clear if this feature is truly cultural (in fact, it was thus not assigned a feature number in the field). Recorded in the profile as Str. V-VII, this intrusion may have been caused by a tree-throw or similar disturbance, but if so it must have occurred before Str. I/II was emplaced. We are more inclined to interpret this as cultural given the apparent thermal activity represented in Str. V, at the top of the feature, similar in many respects to thermal features observed in TU5. A less ambiguous example of a large pit feature in TU6 is Feature 6, which is not seen in the north profile of Figure 5-11, but was sectioned, sampled, and dated, as discussed further below. Another possible intrusive feature in the north profile is recorded as Str. X, a dark grayish brown medium sand with charcoal, a trace of shell, and clasts of concreted sand. Unlike the intrusion recorded as Str. V-VII, Str. X appears to emanate from the top of the sand layer (Str. IX), rather than the overlying shell. Because stratigraphic excavation in the south half of TU6 did not commence until we reached the sand layer (Str. IX), we cannot comment in detail on the distribution of bone and artifacts in the overlying shell except to note that vertebrate fauna were relatively numerous (n = 2028; 876.4 g in Profile Cut sample; Table 5-6), and pottery was entirely absent. One biface fragment, 8 flakes, 6 pieces of modified bone, and 4 fragments of marine shell were also recovered from the Profile Cut.

The third macrounit of TU6 consists of Str. XI-XII, roughly 50 cm of well stratified shell and sand deposits consisting of laterally extensive, flat-lying, and

heterogeneous strata of variable thickness (5-25 cm), much like those of TU5. The uppermost stratum (Str. XI) consists of very dark grayish brown medium sandy loam with crushed shell, including Unionid, and charcoal. This gives way to a 5-10-cm thick stratum (Str. XII) of brown medium sandy loam with moderate amounts of whole and crushed shell followed by a 25-cm-thick stratum (Str. XIII) of dark grayish brown medium sandy loam with whole and crushed *Viviparus* and discontinuous stringers of crushed Unionid shell and charcoal. Throughout these strata were observed in plan small (10-20 cm) pockets of charcoal rich matrix and concreted shell that mimic the structure and disposition of post holes. Although these anomalies were recorded as possible cultural features in the plan drawings of level forms, experience has since led us to infer that these are actually mineralized and/or burned root casts common to shell-bearing deposits across the site. Examples are illustrated in the north profile of TU6 (Figure 5-11) at the base of Str. XIII. The irregular outline of these anomalies in profile attests to their status as tree roots. Despite disturbances such as these, the strata of this third macrounit of TU6, like that of TU5, is indicative of repeated and generally consistent deposition of shell, vertebrate fauna, ash, charcoal, and occasional preceramic-aged artifacts on relatively flat, accretional surfaces. The density of vertebrate fauna and artifact is not terribly great throughout this macrounit, and, in fact, diminishes with depth (Levels B-E; Table 5-6). Still, repeated microlayers of crushed shell, charcoal, and ashy sand attest to relatively intensive, repeated activity throughout the time this macrounit accumulated.

The basal macrounit in TU6 consists of Str. XIV and XV, very dark grayish brown fine sandy loam with a trace of shell that lightens with depth as shell disappears altogether. This is essentially the buried ground surface on which the upper strata accumulated. Although this fourth macrounit is generally devoid of shell, vertebrate fauna register an increase with depth over the macrounit above (Levels F-K; Table 5-6), accompanied by several lithic artifacts and pieces of modified bone. A crumb sherd with spiculate (St. Johns) paste from Level J is clearly intrusive. Despite the lack of shell in this basal unit, we are confident that the vertebrate fauna and artifacts contained therein are not merely translocated down from above, but are instead indicative of occupations that slightly predate the accumulation of shell and associated materials.

Because TU6, like all other test units in Locus A to date, was excavated for stratigraphic purposes, observations on matrices in planview were minimal, precluding the detection and sampling of all possible features. However, TU6 revealed a relatively high frequency of pit features, some of which were recorded, sectioned, and sampled as such. The largest of these was Feature 6, a 18+ cm deep basin some 60 by 75 cm in plan. Feature 6 appears to have been dug from the top of Str. IX, the brown sand layer, although it may very well have emanated from higher up, like the one noted above in the north profile. After recording it in plan, Feature 6 was sectioned and the south half removed for processing through ¼-inch screen. The fill consisted of brown to dark brown fine-medium sand with moderate amounts of *Viviparus* and traces of other shell and a moderate density of vertebrate fauna. No artifacts were recovered from the south section. The north section was left unexcavated in the north pedestal of the unit. In profile, the basin expresses a flat bottom and slightly flaring walls (a photograph of

which can be seen in the north profile of Figure 5-11). Some concreted shell was observed along the southeast edge of the base, although it was not clear if this was truly a basal deposit or part of the matrix of the underlying stratum (Str. XI). A sample of wood charcoal from the fill of the south half of Feature 6 was submitted for AMS dating and returned a conventional age estimate of 5290 ± 40 BP.

Three other features were sampled in the south section of TU6; none of the features besides Feature 6 recorded in the north section of TU6 was excavated and thus remain intact beneath backfill. Feature 10 is a 20 x 35-cm circular pit whose upper portion was truncated by mining operations (Figure 5-10). The remnant observed at ca. 107 cmbs was sectioned and the south half removed for ¼-inch screening, and the north half recovered for flotation. The very dark grayish brown fine sandy loam of the fill contained equal amounts of bivalve and *Viviparus* shell, along with a moderate density of vertebrate fauna (including several catfish spines), and some charcoal, but no artifacts. Feature 11 is a 15 x 15-cm circular patch of concreted shell in a brown sandy matrix. Only about 5 cm deep, the concreted mass was removed in its entirety to reveal an amorphous outline. It is likely that this mass, like the concreted masses at the base of Str. XIII, is merely a portion of a root cast. Finally, Feature 12 is a 21 x 22-cm circular pit with abundant charcoal and a small amount of vertebrate fauna and *Viviparus* shell in a black sandy matrix. Upon sectioning the feature and removing the south half we determined it was likely to be a burned tree root.

In sum, TU6 generally recapitulated the results of stratigraphic testing in TUs 5 and 8, but with less complexity to the upper shell and sand strata and a greater frequency of pit features. The artifact content and radiometric age estimate of strata in TU6 also matches those of TUs 5 and 8. Deviations between the two units in terms of stratigraphic sequence became interpretable following the excavation of Test Units 9, 10, and 15, to which we now turn.

Test Units 9, 10, and 15

The largest exposure of stratigraphy in the Locus A shell ridge came in 2008 with the excavation of three contiguous 2 x 2-m units (TUs 8, 10, and 15) in a mining escarpment in the west-central portion of the ridge (Figure 5-1). The escarpment in this location is one of the few that deviates from the tendency for escarpments to run parallel with the length of the ridge and the spring run. Not quite perpendicular to the long axis of the ridge, the rectangle formed by these three units provided a good opportunity to view stratigraphy in the core of the deposit. Moreover, the six-meter-long profiles of these contiguous units enabled observations to be made about the horizontal relationships among depositional units lying at the same stratigraphic level. What came to be known to field school students as “the trench” proved to be insightful about stratigraphic variations observed in the earlier, smaller exposures, particularly the relationship between emplaced sand and shell.

The strategy for excavating the trench was similar to that used for the other test units but with some modifications. Having staked out three contiguous 2 x 2-m units in

Figure 5-12. View facing south of the excavation of Test Unit 9 (foreground) and Test Unit 10 (background), 8LA1-West, Locus A.

the slope of the escarpment, the end units were opened first, TU 9 at the north end, TU10 at the south end (Figure 5-12). The intervening unit (TU15) was left intact until units of either side of it were completed in order to preserve the respective north and south profiles. Otherwise, excavation procedures followed those outlined above for the earlier test units. Each of the three test units was subdivided into west and east subunits, with the western (upslope) ones unexcavated below the depth of the Profile Cuts (~50 cmbs), and the eastern (downslope) subunits excavated completely to base. Excavation of the subunits proceeded without surprise as the lower deposits mimicked those of earlier test units, with exception of a greater level of concretion near the base, requiring field school students and supervisors to wield rock hammers and pick axes to penetrated to the base.

Considerable effort was expended on recording stratigraphy of the trench upon completion of excavation. Profile drawing followed the usual protocols, but was tedious given the length and complexity of the exposure (Figure 5-13). Photographing the trench profiles, however, required more than the usual method. To capture the detail of the 6-m-long profile, we collected a series of close-up digital shots at ~ 40-cm intervals along stacked horizontal transects. Individual photographs were stitched together in Adobe Photoshop to create the photo mosaic of the entire profile shown in Figure 5-14. The corresponding profile drawing is presented in Figure 5-15, with descriptions of all recorded strata provided in Table 5-7 and an inventory of all artifacts, vertebrate fauna, and miscellaneous items given in Tables 5-8 and 5-9.

Figure 5-13. Recording stratigraphic profiles of the trench (TUs 9, 10, 15), 8LA1-West, Locus A.

The same four macrounits observed in profiles at the other two test locations are evident in the west profile of the trench. However, intervening in the center of the profile of the trench is a massive disturbance, labeled in Figure 5-15 as Feature 21. This anomaly was initially interpreted as a large pit feature, but once the lower portion was exposed, the tap root to a mature tree became apparent. Unfortunately, the disturbance is positioned directly between two distinct deposits in what we refer to as the second macrounit in the other test units. Although the facies of these depositional units is compromised by the disturbance, enough of the profile is preserved to make sound inferences about the sources of lateral variation, its relationship to the macrostrata or other units, and, ultimately, its relevance to interpreting site use.

The upper macrounit of the trench is similar to those of the other units and therefore warrants no further discussion except to note that the massive disturbance of the tree extends to nearly the surface. This does not imply that the tree was recent if we are to accept that this upper macrounit was emplaced long ago, and not simply the byproduct of mining operations in 1923. Comprised of ca. 20 cm of very dark grayish brown fine sandy loam with only occasional whole *Viviparus* shell, Str. I at the very top is consistent with upper strata observed elsewhere, but the remaining portion of this macrounit (Str. II) varies wildly in color, content, and structure. The seeming disarray of these underlying strata, particularly at the north end of the profile, is probably related to the adjacent tree disturbance, but that remains uncertain. Clearly the disturbance had its greatest impact on the upper macrounit, arguably affecting more than three-fourths of the profile.

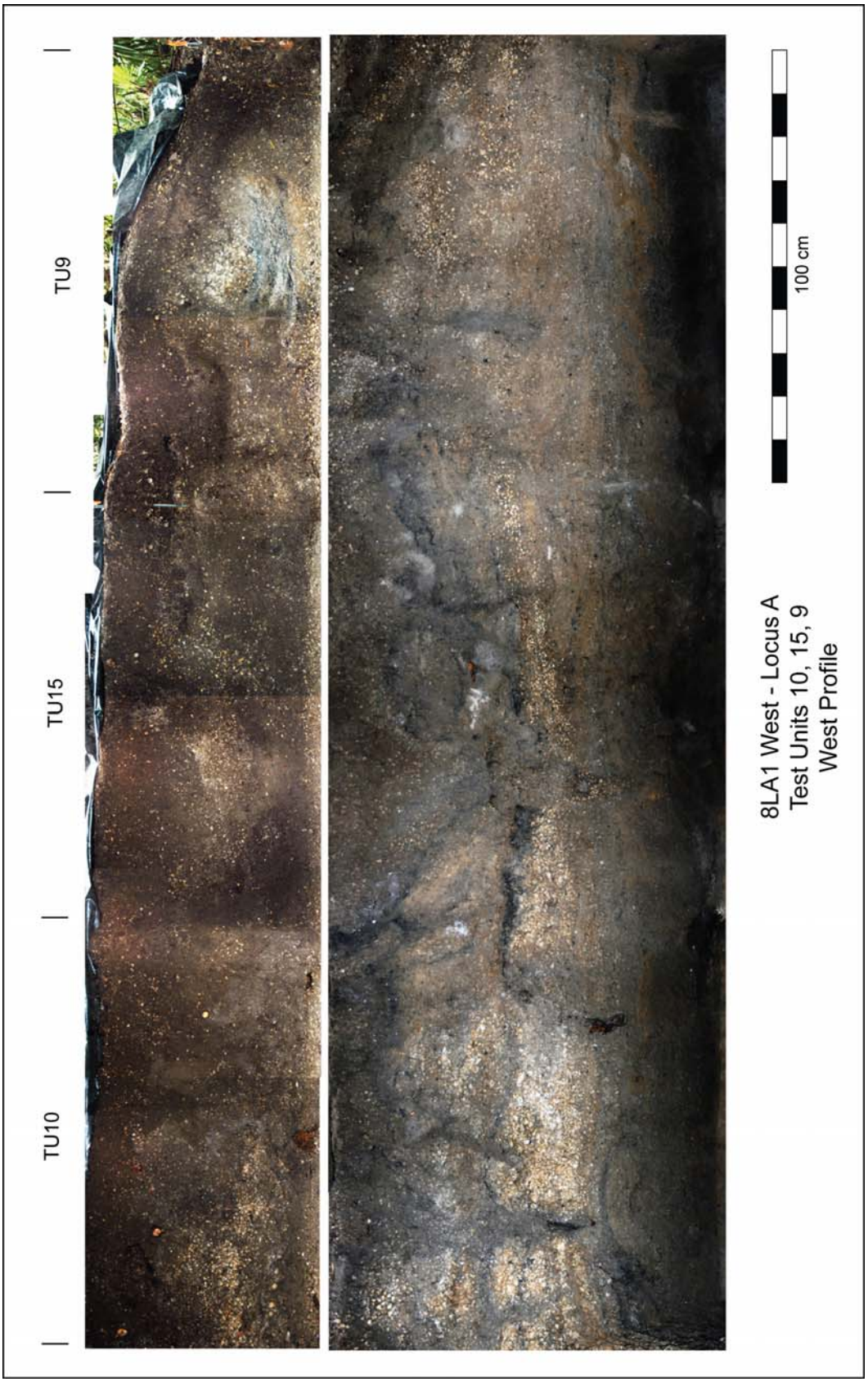

Figure 5-14. Composite photograph of the west profiles of Test Units 9, 10, and 15, 8LA1West-Locus A.

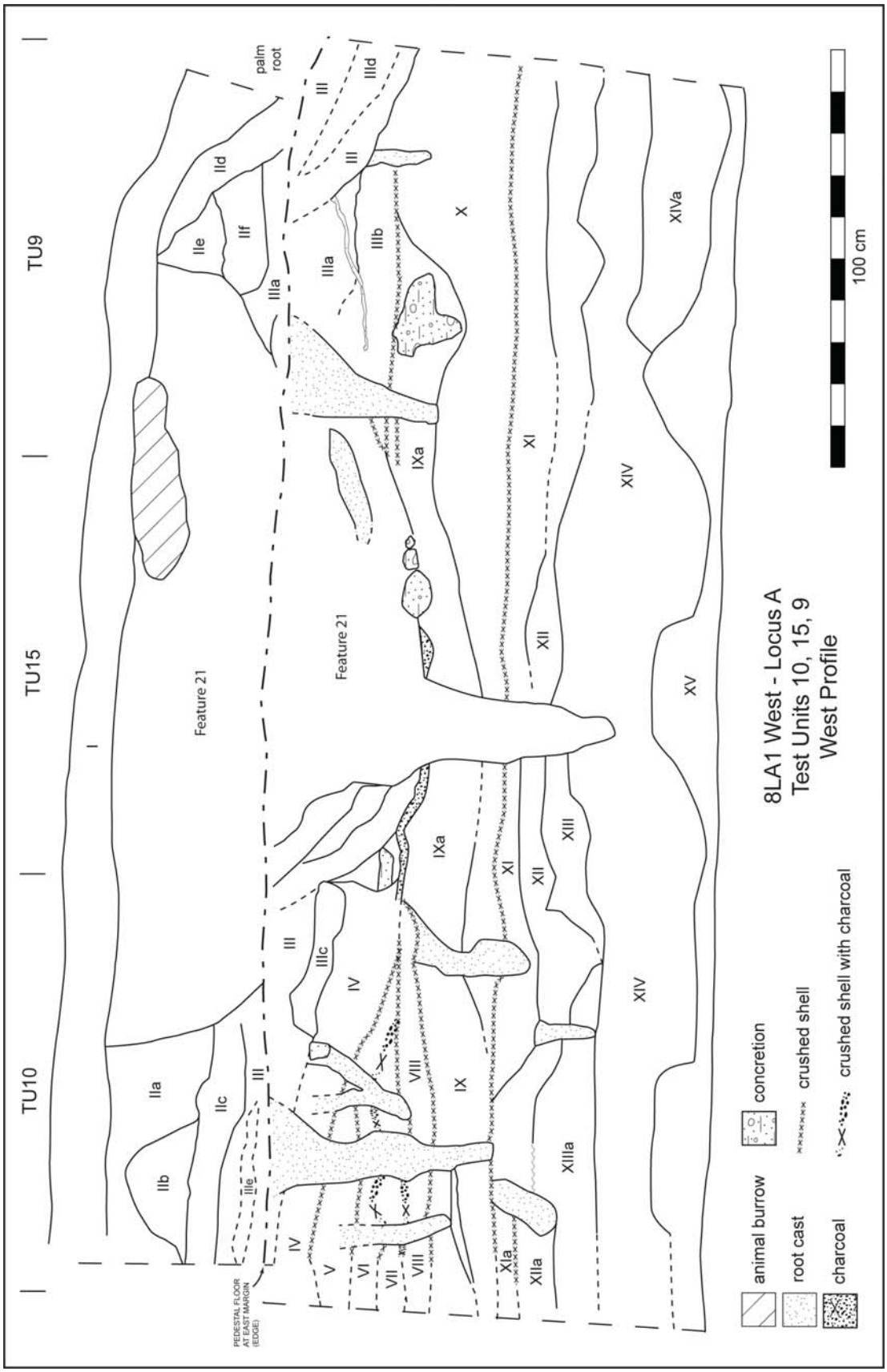

Figure 5-15. Line Drawing of west profile of Test Units 10, 15, and 9, 8LA1-West, Locus A.

Table 5-7. Stratigraphic Units of West Profile of Test Units, 9, 10, and 15, 8LA1-West, Locus A.

Stratum	Max. Depth (cm BS)	Munsell Color	Description
I	47	10YR3/2	very dark grayish brown fine sandy loam with surface root mat and occasional whole *Viviparus* shell
IIa	75	10YR3/1	heterogeneous matrix of very dark gray sandy loam with *Viviparus* shell, charcoal, sand stringers, and roots
IIb	70	10YR4/2	dark grayish brown sand with whole *Viviparus* shell
IIc	92	10YR4/2	whole and crushed *Viviparus* and *Pomacea* shell in dark grayish brown sand
IId	76	10YR3/2	hetereogeneous shell in very dark grayish brown loam
IIe	54	10YR5/3	whole *Viviparus* and *Pomacea* shell with charcoal in trace of brown sand
IIf	74	--	crushed and burned Unionid shell with ash and no sand
III	110	10YR3/2	very dark grayish brown sandy loam
IIIa	118	10YR5/3-4	brown to yellowish brown ashy sand with crushed *Viviparus* shell
IIIb	139	--	whole *Viviparus* with little matrix
IIIc	133	10YR4/3	brown sandy loam
IIId	98	10YR3/2	hetereogeneous shell in very dark grayish brown loam
IIIe	98	--	whole and crushed *Pomacea* shell, no matrix
IV	157	10YR4/2	heterogeneous whole and crushed shell including abundant crushed Unionid in dark grayish brown sand
V	160	--	whole and crushed *Viviparus* and Unionid shell with minimal matrix and occasional charcoal (5130±40 BP)
VI	158	--	whole and crushed *Viviparus* and Unionid shell with minimal matrix
VII	167	10YR4/2	heterogeneous, abundant crushed shell in dark grayish brown sand (5150±50 BP)
VIII	180	--	whole and crushed *Viviparus* and *Pomacea* with minimal matrix

Table 5-7. Continued.

IX	208	--	whole and crushed *Pomacea* with occasional *Viviparus* shell in minimal matrix
IXa	196	10YR6/6	whole *Viviparus* shell in trace of brownish yellow sand
X	195	10YR5/4	yellowish brown fine ashy sand with abundant whole *Viviparus* and occasional crushed Unionid shell and charcoal throughout
XI	228	10YR4/2	dark grayish brown ashy sand with moderate whole and crushed *Viviparus*, *Pomacea*, and Unionid shell and charcoal throughout; crushed Unionid shell lens at top of stratum
XII	255	10YR5/6	yellowish brown sand mottled with 10YR4/2 dark grayish brown sand with occasional crushed shell and charcoal
XIII	256	10YR5/2	whole and crushed *Viviparus*, *Pomacea*, and Unionid shell in grayish brown ashy sand with charcoal throughout
XIIIa	259	10YR4/2	whole and crushed *Viviparus*, *Pomacea*, and Unionid shell in dark grayish brown sand with occasional charcoal (5400±40 BP)
XIV	305	10YR4/3	concreted ashy brown sand with occasional whole and crushed *Viviparus* and Unionid shell and flecks of charcoal throughout
XIVa	270	10YR3/2	very dark grayish brown sand with occasional whole and crushed *Viviparus* shell
XV	310	10YR6/2	light brownish gray medium sand lacking shell

The second macrounit observed elsewhere consists of complex layers of shell and sand, often in tilted or dipping depositional structures. Portions of the trench profile not affected by the tree disturbance reflect the full range of variation seen in the second macrounits of the other profiles. At the south end of the profile, Str. IV-VIII represent alternating thin layers of shell in varied condition and with varying amounts of clastic material, similar to those seen in the west profile of TU5. In the trench profile, the strata of these microunits dip to the north. At the top of this sequence (Str. IV) is a relatively thick layer of dark grayish brown sand with whole and crushed shell, including abundant crushed Unionid shell. This stratum lies conformably on a thin lens of crushed shell, followed immediately by whole and crushed *Viviparus* and Unionid shell with minimal matrix and occasional charcoal (Str. V). Charcoal pulled from a bulk sample of Str. V

Table 5-8. Inventory of Lithic, Ceramic, and Historic Artifacts Recovered from Level Excavation of Test Units 9, 10, and 15, 8LA1-West, Locus A.

Level	Lithic Flake (n)	Lithic Flake (g)	Utilized Flake (n)	Hafted Biface/ Biface (n)	Orange Plain Sherd (n)	St. Johns Plain Sherd (n)	Crumb Sherd (n)	Sand-. stone (n)	Sand-. stone (g)	Historic Artifacts (g)
TU9										
Profile Cut*	10	10.7		2	2	1	8			
A (Zone B)	1	1.0	1							
TU9A										
A (Zone A)	5	10.4	2		4		4			
C (Zone A)							2			
D	2	6.4		2						
F				1						
G	1	0.5	2							
H	2	0.4	2							
I	1	0.5						1	38.0	
J	7	12.3								
L	2	2.8								
M	4	2.6	1							
N	2	1.8						1	71.2	
TU9B										
A	1	2.1								
Subtotal	38	51.5	8	5	6	1	14	2	109.2	
TU10										
Profile Cut**	12	12.7				7				1.5
TU10A										
A (Zone A)	1	0.6					3			
B (Zone A)						1				
C (Zone B)	1	0.4								
F	3	3.7								
G			1							
I	1	0.2		1						

Table 5-8. continued.

Level	Lithic Flake (n)	Lithic Flake (g)	Utilized Flake (n)	Hafted Biface/ Biface (n)	Orange Plain Sherd (n)	St. Johns Plain Sherd (n)	Crumb Sherd (n)	Sand-. stone (n)	Sand-. stone (g)	Historic Artifacts (g)
TU10A										
J	4	1.3								
K	3	0.9								
L	4	1.3								
M	3	0.4								
N	2	0.3								
O	1	0.3								
TU10B										
A	4	7.0			1	2	10			
Subtotal	39	29.1	1	1	1	10	13			1.5
TU15										
Profile Cut	6	9.6	1	1		8	16			4.3
TU15A										
Profile Cut	9	18.4		1		4	5			3.0
A (Zone C)	1	0.2								
B (Zone D)								2	5.5	
C	1	0.3								
D	2	0.5								
E (Zone B)	1	0.3								
F	2	0.7		1				1	3.5	
G	1	0.3								
H	2	0.4								
H (Zone A)	4	1.7								
I	6	3.3						1	19.2	
J	1	0.1								
K	1	0.1								
L	1	1.2					1			

Table 5-8. continued.

Level	Lithic Flake (n)	Lithic Flake (g)	Utilized Flake (n)	Hafted Biface/ Biface (n)	Orange Plain Sherd (n)	St. Johns Plain Sherd (n)	Crumb Sherd (n)	Sand-. stone (n)	Sand-. stone (g)	Historic Artifacts (g)
TU15B										
Profile Cut						1				
Baulk S. Wall	3	1.9			5	6	8			
A	4	1.7		1		1	20			
B				1		4	6			
C	5	1.4								
Subtotal	50	42.1	1	5	5	24	56	4	28.2	7.3
Total	127	122.7	10	11	12	35	83	6	137.4	8.8

* plus one St. Johns Check Stamped sherd, 2.3 g; one polished stone bead fragment, 62. g
** plus one St. Johns Check Stamped sherd, 1.9 g

Table 5-9. Inventory of Marine Shell and Vertebrate Fauna Recovered from Level Excavation of Test Units 9, 10, and 15, 8LA1-West, Locus A.

Level	Marine Shell Fragment (n)	Modified Marine Shell Frag. (g)	Vertebrate Fauna (n)	Vertebrate Fauna (n)	Modified Vert. Fauna (n)	Modified Vert. Fauna (g)	Bone/Shell Concretion (g)
TU9							
Profile Cut	2		670	488.3			1.4
A (Zone A)			33	12.9			
A (Zone B)	1		18	13.3			
TU9A							
A (Zone A)	1		563	187.3			
B (Zone A)			48	23.5	1	1.2	
B (Zone B)			27	12.6			
C (Zone A)			38	37.6			
C (Zone B)			32	70.0			
D			79	56.9			
E	1		201	132.7			4.9
F			84	78.4			74.3
G	3		85	67.1	1	1.0	
H			86	52.0			2.7
I			82	65.5			0.8
J*			300	99.3	4	3.3	14.8
K			168	31.9			
L			254	79.4			18.8
M		1	117	25.9			18.3
N			30	10.5			4.8
Clean-up	1		12	8.6			
TU9B							
A	3		71	35.3			0.3
Subtotal	12	1	2998	1589.0	6	5.5	141.1
TU10							
Profile Cut	2		1585	725.7	7	14.9	3.3
TU10A							
A (Zone A)			149	64.0			

Table 5-9. continued.

Level	Marine Shell Fragment (n)	Modified Marine Shell Frag. (g)	Vertebrate Fauna (n)	Vertebrate Fauna (n)	Modified Vert. Fauna (n)	Modified Vert. Fauna (g)	Bone/Shell Concretion (g)
TU10A							
A (Zone B)			123	103.3			
B (Zone A)			54	25.8			
B (Zone B)			27	29.5			2.0
C (Zone A)			40	26.6			
C (Zone B)		1	1159	465.6			65.3
D		1	1207	409.7			34.5
E			792	180.3			7.6
F	1		1240	384.2			27.4
G			367	147.1			
H			217	110.4			14.5
I			503	254.2			5.4
J			147	113.0			9.3
K			308	142.7	1	0.7	11.0
L			194	130.1			7.1
M		1	182	212.2			9.9
N		1	95	28.9			7.6
O			42	27.8			0.8
P			6	7.4			
TU10B							
A			1057	364.7	3	8.0	3.8
B	1		493	154.6			9.8
C			601	193.9	2	7.6	24.2
Subtotal	4	4	10,588	4278.9	13	31.2	243.5
TU15							
Profile Cut	2		1415	888.3	4	5.7	10.2
TU15A							
Profile Cut	5		1805	1002.3	6	21.4	471.4
A (Zone A)			48	24.4			2.6
A (Zone B)			250	68.4			9.9

Table 5-9. continued.

Level	Marine Shell Fragment (n)	Modified Marine Shell Frag. (g)	Vertebrate Fauna (n)	Vertebrate Fauna (n)	Modified Vert. Fauna (n)	Modified Vert. Fauna (g)	Bone/Shell Concretion (g)
TU15A							
A (Zone C)			22	7.3			3.8
A (Zone D)		1	108	31.0			52.1
A (Zone E)			53	14.8			6.5
A (Feature 21)			62	18.3			11.1
B (Zone A)			7	1.6			1.8
B (Zone B)			186	53.7			9.8
B (Zone D)			375	133.1			122.4
B (Zone E)			19	4.2			3.0
B (Feature 21)			39	10.2			2.5
C			765	292.1			35.2
D			482	170.2			12.7
E (Zone A)			73	41.5			
E (Zone B)	8		227	147.5			
F	1		344	133.7	1	0.2	33.6
G	2		264	171.5			10.1
H	2		355	217.3			7.7
I			284	170.2			23.2
J			260	119.6			20.2
K			123	62.1			31.0
L			113	50.8			
TU15B							
Profile Cut			84	33.8			
A	3	1	914	410.4			
B	1		727	278.0	2	7.1	0.8
C	1		665	368.5	4	7.5	
Baulk South Wall			577	200.6	1	4.3	
Subtotal	25	2	10,646	5125.4	18	46.2	881.6
Total	41	7	24,232	10,993.3	37	82.9	1266.2

* plus 0.5 g paleofeces

returned an AMS age estimate of 5130 ± 40 BP. The three successive strata beneath Str. V are each separated buy a thin lens of crushed shell, the next (Str. VI) consisting of whole and crushed *Viviparus* and Unionid shell with minimal matrix, followed by (Str. VII) abundant crushed shell in a dark grayish brown sand, and then (Str. VIII) whole and crushed *Viviparus* and *Pomacea* shell with minimal matrix. A piece of charcoal pulled from a bulk sample of Str. VII returned an AMS age estimate of 5150 ± 50 BP, statistically identical to the age estimate of the charcoal two layers above.

The last four strata just described at the south end of the profile, ca. 157-180 cmbs, appear to represent rapidly successive deposition acts, each followed by activity that led to the crushing of shell at the surface (e.g., trampling). Charcoal is prevalent in two of these crushed shell lenses. A series of root casts interrupt the sequence in three places, but the larger subunit was not truncated by the central tree disturbance (Feature 21), as was apparently the overlying Str. IV.

The base of this mounded sequence of shell takes a dip upward to the north, against the dip of its upper strata. The base of Str. XIII is likewise underlain with a thin lense of finely crushed shell, which was truncated by the central tree disturbance, but continues on the north end of the profile, where its upward dip flattens. Below this crushed shell across the southern three-fourths of the profile is a thick stratum of shell. The southern subunit of this larger, deeper stratum (Str. IX) consists of crushed and whole *Pomacea* shell and occasional *Viviparus* shell with virtually no clastic matrix. Continuing northward the stratum becomes dominated by whole *Viviparus* shell in a trace of brownish yellow sand (Str. IXa). This stratum overlaps the south-dipping Str. X, consisting of yellowish brown fine ashy sand with abundant, whole *Viviparus* shell, occasional crushed Unionid shell and particulate charcoal throughout. Strata IX and X complement one another to form a 20-30 cm thick layer, with Str. X clearly emplaced first. Beneath this layer is yet another thin lens of crushed shell, this one extending across the entire profile at a flat grade. This deepest crushed shell lense, ~200 cmbs, marks the base of the second macrounit and the top of the third.

As described earlier for the other test units, the third macrounit of the ridge consists of laterally extensive and heterogeneous shell and sand layers with abundant charcoal, ash, and occasional concreted shell/sand, and with a vertebrate faunal assemblage that decreases with depth. All this applies to the third macrounit in the trench (Str. XI-XIII). However the trench deposits were far more concreted in places compared to those of TUs 5 and 6. Because of the concretion, it was not easy to distinguish between this macrounit and the basal unit, interpreted elsewhere as a sub-ridge midden, conformant with the ground surface on which sand and shell was emplaced in large quantities. Moreover, a series of pit-like features appears to extend beyond the base of the third macrounit, evident in the west profile as an undulating contact between Str. XIV (concreted ashy brown to grayish brown sand with shell) and Str. XV (light briowning gray sand lacking shell). A sample of charcoal pulled from the bulk sample of Str. XIIIa of the third macrounit returned an AMS age estimate of 5400 ± 40 BP, the oldest age estimate for the ridge, and indeed the entirety of 8LA1. Minimally, about two centuries separate the deposition of the second and third macrounits in the trench, while the age

estimates for the third macrounits in TU5 and the trench overlap statistically by a large margin.

The distribution of artifacts and vertebrate fauna in the trench provide insight on the processes resulting in differential deposition. Gross comparisons across the test units from north to south are instructive. The northernmost unit, TU9, had the lowest density of vertebrate fauna (n = 2998; 1589.0 g), while the units to the south (TUs 10 and 15) each had over three times the bone (TU10: n = 10,588; 4278.9 g. TU15: n = 10,646; 5125.4 g). Test Unit 9, however, had its share of arifacts including five bifaces/biface fragments, eight uiltized flakes, and 13 pieces of marine shell. The adjoining TU15 had a comparable artifact assemblage, but TU10, to the south, yielded only a few tools and less marine shell. Of course, these figures are not terribly indicative of variations within each test unit, and indeed there are measurable differences in the density of vertebrate fauna and artifacts from top to bottom within units. We noted already the diminished density of vertebrate fauna with depth in the third macrounit. The method of excavation did not permit nuanced comparisons of strata crosscut by excavation levels, that is, those with dipping profiles. Still, we can refine the comparison across at least one macrounit for levels within intact subunits. For instance, the combined faunal assemblage of Levels A-E in TU9 (the north half of the second macrounit, dominated by the thick sand-and-shell stratum, Str. X) amounts to 988 pieces weighing 520.6 g. In its counterpart at the south end of the profile, where thinly stacked shell layers are separated by crushed shell (Str. V-VIII), the frequency of bone is more than three times greater by count (n = 3551) and nearly three times by weight (1304.8 g). The contrast in tool frequency noted above holds as well, albeit among a small subset of the total assemblage from the trench. In all aspects, the stone, bone, and shell assemblage is consistent with the Mount Taylor estimates from AMS assays, as well as the material culture of the tradition found throughout 8LA1 and elsewhere in the region. Finally, we note that the trench actually yielded a relatively large assemblage of pottery (n = 130), although just under two-thirds (n = 83) are crumb sherds. The remaining inventory consists of 12 small Orange Plain sherds, and 35 small St. Johns Plain sherds. As with the other test units, sherds in the trench were concentrated in the scree deposits of the mining escarpment. In addition, the central tree disturbance accounted for a large fraction of the assemblage. On balance, the artifact inventory and AMS assays from the trench substantiate the inference that the entire shell ridge of Locus A, with the possible exception of its upper macrounit of "topsoil," formed during the Mount Taylor Period, ca. 5400-5150 BP, or 6300-5750 cal BP.

INTERPRETATION OF STRATIGRAPHY

Thus far we have available for observation three stratigraphic profiles of the shell ridge at Locus A that reached the pre-ridge surface: A 2 m-wide section at the eastern end of the ridge (TU5); a 2-m section near the western end of the ridge (TU6); and a 6-m-wide section in between (TUs 9, 10, 15). The shallowest profile (TU6) is a bit over 2 m tall; the other two are just over 3 m tall. The previous sections provided details on each of the stratigraphic sequences, artifact and vertebrate fauna distributions, and radiocarbon assays. In this section we provide an interpretive sketch of the stratigraphic sequences

observed to date. Although our sample is relatively small considering the large size of the total deposit, our test units were distributed widely across available escarpments, stretching nearly 100 m from east to west. Despite obvious variation in the composition of each profile, the similarities far outweigh the differences, and radiocarbon assays show that all accumulations are coeval.

Figure 5-16 is a schematic illustration of all profiles arranged in geographic order from west to east, and scaled for relative elevation using our arbitrary values from the site-wide grid (with Datum A at 10.00 m). At the base of each profile lies a pre-ridge surface stratum (i.e., buried A horizon) that has been organically enriched through the addition of vertebrate fauna, ash, charcoal, paleofeces, occasional shell, and related by-products of human activity. The density of artifacts and food remains is not especially great in this basal midden, and in many places it is partially concreted. Accumulated over this original ground surface/midden are a series of thin, lateral extensive and flat strata of shell and sand, again with abundant ash, some charcoal, and a tendency to be concreted in some places. A two-sigma calibrated age range of 6190-5940 cal BP from a charcoal sample in TU5 overlaps 70 years with the calibrated age range of a charcoal sample from a counterpart provenience in the trench (6290-6120 cal BP). More samples are needed to substantiate the inference that occupation of the landform at this time extended the full length of the shell ridge, but nothing in the stratigraphy and its dating thus far undermines that inference.

The tops of these accretional macrounits in all test units began to receive deposits of brown sand without delay and on the tops of sand strata some 20-40 cm thick shallow pits (basins?) were often dug and presumably used for functions involving heat (e.g., fire hearths). Only one such pit feature has been dated: Feature 6 in TU6, with a calibrated age range of 6190-5940 cal BP, again a 70-year overlap with the lower age estimates and thus all possibly coeval and not likely separated by more than a few decades.

What are the possible sources for the sand emplaced on accretional midden? Sand is hardly at a premium in the immediate vicinity, but if the three profiles we have observed truly reflect the emplacement of 20-40 cm of sand over midden across the entire extent of the shell ridge, then about 2000 cubic meters of sand are implicated. Remarkably, that is about the volume of the "sinkhole" that lies only 50 m south of the very center of the ridge (Figure 5-16 inset). Assumed to be a natural collapse feature, this ~2500 m^3 depression may actually be the borrow pit from which sand was excavated long ago. An effort to investigate this possibility is clearly warranted.

The presence of a ridge-wide stratum of emplaced sand implicates the excavation and transport of a large volume of fill 6000 years ago. Elsewhere in the region, Mount Taylor communities mounded sand, apparently as part of mortuary practice (e.g., Aten 1999). Sand may have been incidental to a larger program of shell mounding early on, but by the Thornhill Lake phase of the Mount Taylor period (ca. 5500 cal BP, a century or two after Locus A at 8LA1-West reached its full form), sand mounds were at least occasionally built expressly for mortuary purposes (Endonino 2010). The shell ridge at 8LA1-West was never expressly mortuary, and despite the presence of two subadults in

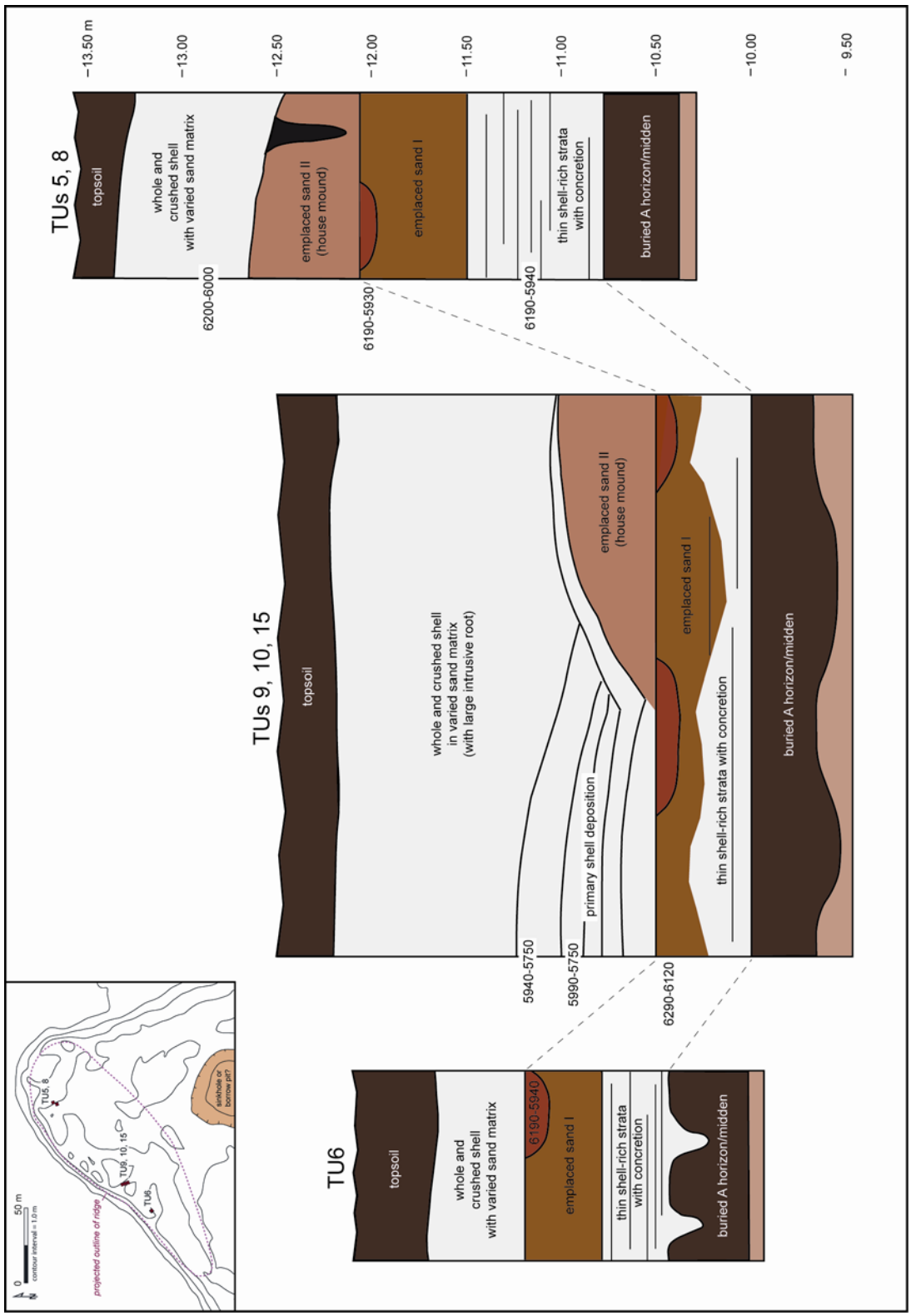

Figure 5-16. Schematic model of the stratigraphic sequences observed in test unit profiles of 8LA1-West, Locus A.

TU8 at the east end of the ridge, we have no indication that other burials exist in the ridge, let alone interred in dedicated cemeteries. Rather, the emplacement of sand may be more generally tied to traditions of renewal or rejuvenation, as in the "cleansing" of an extant living surface on which food remains and other debris had accumulated. Certainly such actions can be considered practical, but worthy of consideration is the possibility that the emplacement of sand was more a symbolic act that a practical affair.

The pattern of deposition changed markedly shortly after the accretional deposits were laid and after the first sand layers were put in place. Deposits of shell and sand thereafter accumulated in nodal fashion, presumably in low mounds no more than a few meters in diameter and about one-half meter high. We have not exposed enough of a profile to see one of these units in full cross-section, but we have a good sense of their form and internal structure from investigations at Hontoon Dead Creek Village (8VO215) to the south (Randall 2010). At this former field school site sand may not have been mobilized to build "house" mounds because of the prevalence of shell, but no matter the material used, the outcome is the same: a slightly elevated platform on which some sort of structures may have been built. We remain frustrated by the lack of direct evidence for architecture (e.g., postholes), or bona fide "house floors." We do, however, have ample evidence for activity surfaces in the form of crushed shell lenses. The stacked sequence of crushed shell lenses in the south half of the trench profile is perhaps a good example of the accretion of shell midden adjacent to houses sited on low sand mounds. If so, there would appear to have been a more spatially differentiated use of the ridge after the sand was emplaced that involved separations of different materials, perhaps under different material circumstances or new cultural preferences.

The emphasis of investigation at Locus A has been on the stratigraphic sequence of the mining escarpments. Little attention has been given thus far to the artifact and vertebrate fauna assemblages other than to note they are consistent with a Mount Taylor cultural affiliation. There is one other very important point to be made about the artifact assemblage recovered from our test units of the ridge. Figures 17-19 present respective samples of the lithic, modified bone/antler, and marine shell artifacts recovered from all test units. This may seem like a small assemblage for the amount of testing undertaken, it is far greater in density and diversity than the assemblage from Hontoon Dead Creek Mound (8VO214), whose excavated volume was more than twice that of Locus A. We have argued that mounding at this earlier Mount Taylor mound was ritualized, and that communities responsible for its accumulation did not live directly on the mound (Sassaman and Randall 2012). That would not seem to be the case at Locus A, the apparent dwelling of communities that built houses atop accretional ridge, and processed foods, burned fires, discarded inedible waste and broken tools, and all other tasks associated with domestic living. The contrast between Hontoon Dead Creek Mound and the ridge at Locus A reminds us that internal differences in what appear to be similar deposits (i.e., linear shell ridges) are to be expected, reflecting both the mudane and ritual aspects of Mount Taylor living. Moreover, the emplacement of sand at Locus A does to show that the line between ritual and mundane practice cannot be drawn too sharply for people who were not subject to the sensibilities of the modern distinction.

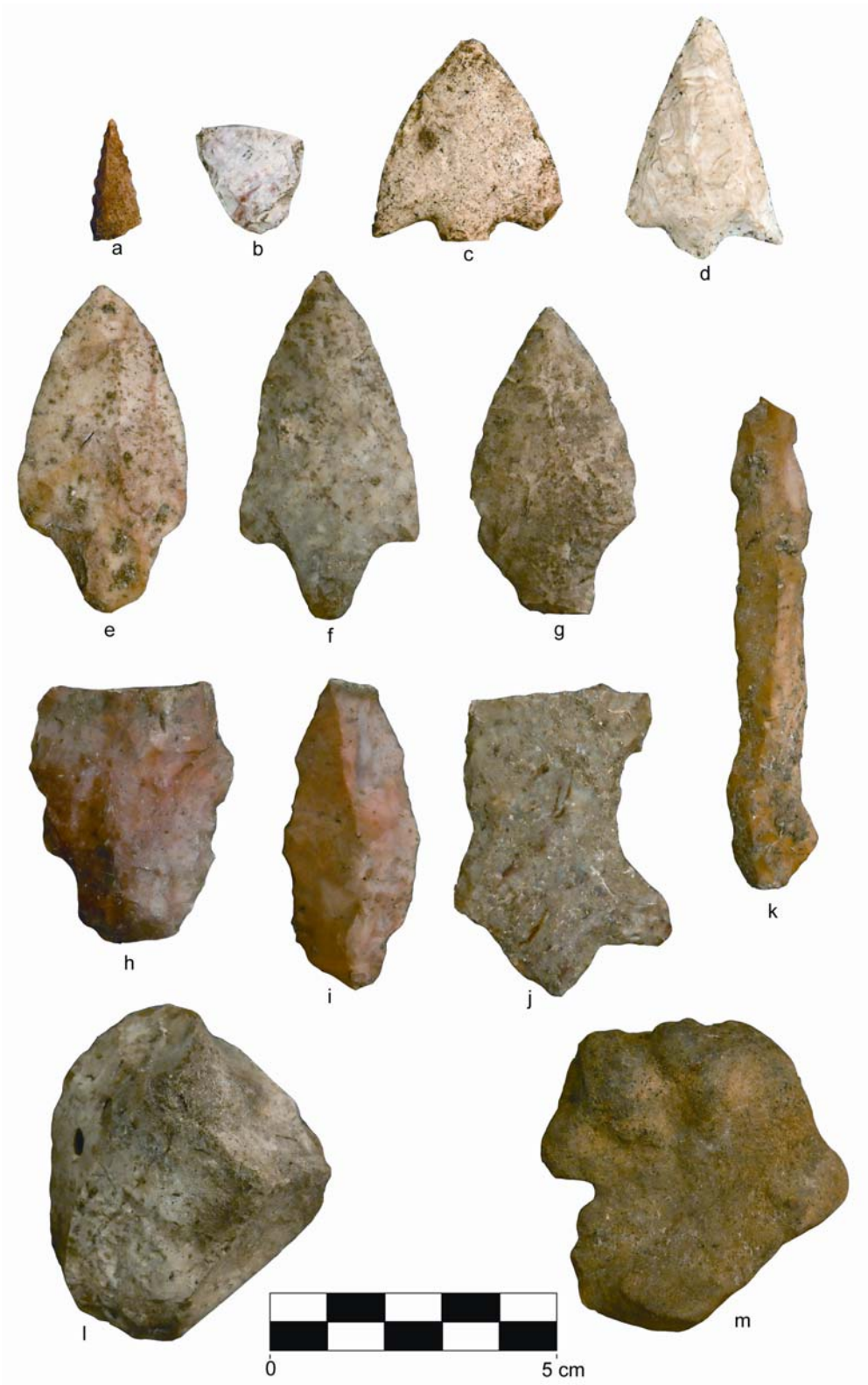

Figure 5-17. Select lithic artifacts from test units of Locus A. a. TU8-L-Zone A; b. TU15B-A-5; c. TU15A-profile cut; d. TU5-profile cut; e, f. TU9A-D; g. TU5 East-H-Zone C; h. TU5 East-J-Zone E; i. TU9A-H; j. TU6 South-B; k. TU9A-H; l. TU5 East-K-Zone E; m. TU9A-N.

Figure 5-18. Modified bone and antler from test units of Locus A. TU6-South: a. C-3; b. D-1; c. E-1. TU9A: d. J-1; e. G-1; f, g. B-Zone A-2. TU10B: h. C-1; i. A-7. TU10A: j-l. I-2. TU15A: m, t. profile cut, Zone B-1; r. profile cut-1. TU10: n-q. profile cut-1; TU15B: s. baulk Zone B-2; u. C-1; 10B: v. A-7; TU5: w, x, ff, gg. profile cut; TU5 East: y, z. D-Zone A-2; aa, bb. J-ZoneE-2; TU8: cc. D-2; dd, ee. D-1.

Figure 5-19. Marine shell artifacts from test units of Locus A. a. TU8-M-Zone A; b. TU9A-M; c. TU10A-D-1; d. TU8-K-Zone B; e. TU6 Surface.

Finally, the cap of earth on top of all the profiles begs explanation for the accumulation of upwards of 50 cm of clastic material on the landform apparently removed from significant sources of alluvial, colluvial, and aeolian deposition. We at first attributed the upper stratum ("topsoil" in Figure 5-16) to pedogenesis following mining, that is, soil development since 1928. Given the lack of a obvious source of natural deposition, this scenario seems unlikely, nor is it likely that this surface stratum was the "spoil" of mining, because it is too pervasive and uniform to have been merely happenstance. We suspect it was emplaced by humans, in a "capping" event not unlike the earlier caps of sands, and not unlike the shell capping of Locus B (see Chapter 6). There is certainly sufficient development of this stratum (organic enrichment and bioturbation with shell strata below) to suggest it has been in place for a long time. The occasional Orange and St. Johns period sherds in this stratum may signal a post-Mount Taylor activity, but it seems equally likely that Mount Taylor communities capped the ridge after abandoning it as a place of dwelling, and that later Orange and St. Johns period dwellers in the vicinity occasionally used the ridge for activities involving pottery.

CONCLUSION

Despite extensive damage from shell mining in 1923, the ridge at Locus A contains remnants of upwards of 3 m of stratified deposits with excellent archaeological potential. Six 2 x 2-m test units excavated in three locations of the ridge reveal a consistent sequence of basal midden, accretional shell and sand, house mounds and associated midden accumulation, and capping with sand, all elapsing over a three-to-five century period of the Mount Taylor phase, ca. 6300-5750 cal BP. All indications are that Mount Taylor communities actually resided on this ridge as it accumulated, eventually with but at first apparently without constructing house mounds and imposing a formal spatial order on the emplacement of sand, shell, and the outputs of daily living. This pattern of dwelling stands in contrast to Mount Taylor shell ridges that lack evidence for domestic activities, but compares favorably to the one known linear village (8VO215), which involved the use of small shell mounds, presumably for domestic dwelling.

Much remains of the shell ridge at Locus A, and further work is warranted. Before delving into additional mining escarpments, however, two other areas of inquiry demand attention. First, stratigraphic excavations at Locus A have emphasized the vertical record of Mount Taylor site use (i.e., change over time), and lacking have been data on the spatial structure of dwelling at any given moment of time. The trench profile shows good promise for locating evidence for spatial patterning in the siting of houses, middens of secondary deposition, and related domestic activities. Although most such evidence was carted away long ago by shell miners, mining stopped well short of the basal deposits, so good potential does exist for examining laterally extensive areas within a single stratum. A large block excavation in the mining pit will be needed, perhaps preceded by some remote sensing to detect subsurface features such as hearths and pits. The second pressing issue is the possible borrow pit to the south of the ridge. Some strategic coring and remote sensing may help to detect evidence that sand was removed from this depression 6000 years ago, but we can start by simply comparing the sand from the mound to a profile adjacent to the depression to see if it matches the texture and color

of the emplaced sand. Of course, pedogenic processes since the time of excavation and emplacement of sand may have obscured relevant evidence, so it may take broader sampling in the vicinity to know how much pedogenic variation can be expected under a range of edaphic and topographic conditions. Additional conclusions and recommendations for more work at Locus A are included in the concluding chapter of this report.