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An Archeological Evaluation of  
the Pate Site (41PR22)

**AN ARCHEOLOGICAL EVALUATION OF  
THE PATE SITE (41PR22),  
PARKER COUNTY, NORTH CENTRAL TEXAS**

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## **ABSTRACT**

In January of 1990, a preliminary investigation of the Pate site (41PR22) was performed by the North Texas Archeological Society (NTAS), at the time called the Tarrant County Archeological Society (TCAS). Investigation of this site, a prehistoric hunter-gatherer campsite, was undertaken to ascertain if any intact archeological deposits remained at the site and if so, to gain as much information as possible about the site. Testing of the site revealed cultural material dating to the Middle Archaic, Late Archaic, and the Late Prehistoric time periods. It is very likely that additional archeological sites similar to this one may be present in the terrace deposits nearby. In this report, we document our activities at the site and describe the artifacts recovered.



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In January of 1990, while on a week-end camp-out at the Pate Museum, the author observed burned rock and lithic debris eroding out of the cut bank of a raised wooded terrace on the west side of Dickeys Branch, a small creek that flows into the South Bear Creek in Parker County.

In addition to the burned rock and lithic debris, animal bone fragments and mussel shell were observed along with two small arrow points and a small pottery sherd. With permission from the landowner, a Texas Archeological Site Data Form was completed and filed with the Texas Archeological Research Laboratory (TARL) at the University of Texas at Austin. A trinomial designation of 41PR22 was then assigned to the site.

In March of 1990, with permission from the landowner, TCAS initiated an investigation of this site to ascertain if any intact archeological deposits remained and to gain as much information as possible about the site.

**SITE SETTING**

The Pate site 41PR22 is located in southeast Parker County on the Pate Ranch and Museum property which is located approximately ten miles southwest of Benbrook, Texas. The site is situated adjacent to the confluence of South Bear Creek and Dickeys Branch (Figure 1). From the confluence with Dickeys Branch, South Bear Creek flows into Bear Creek which flows into the Clear Fork of the Trinity River. The majority of the site lies on a raised wooded terrace on the west side of Dickeys Branch (Figure 2). Additional cultural deposits are located on the east side of Dickeys Branch. The elevation across the site ranges from 840 to 850 feet above sea level.

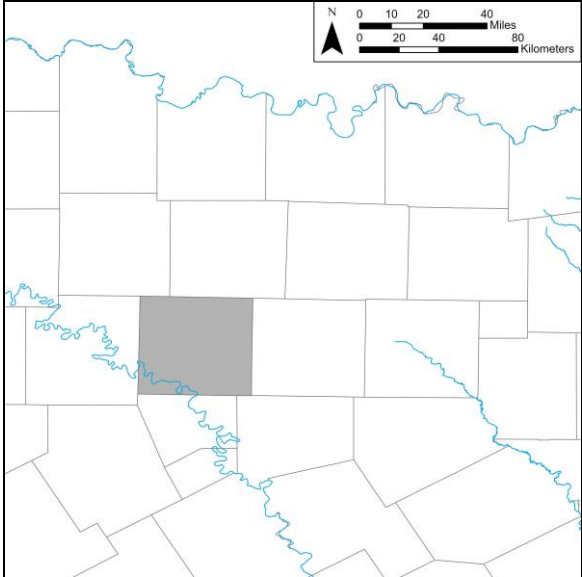


Figure 1. Parker County shown in north-central Texas.

**SOILS**

The soils here are classified as the Venus Series and the Brackett Series. The Venus Series consists of deep, gently sloping to sloping, calcareous loamy soils on uplands. These soils formed in thick beds of unconsolidated calcareous loamy sediments. The upper 9 inches of the surface layer is brown calcareous clay loam. The lower 7 inches of the surface layer is a very dark grayish brown, calcareous clay loam. Below this is 34 inches of light brown, calcareous clay loam containing common films and threads of calcium carbonate (Greenwade et al. 1977: 37-38).

The Brackett Series consists of shallow, gently sloping to steep, calcareous loamy soils on uplands. These soils formed in material weathered from interbedded limestone and calcareous clay loam. The upper 4 inches of the surface layer is a light brownish-gray, calcareous clay loam. The next 10 inches is a light-gray calcareous loam. The underlying material is weakly cemented limestone and calcareous pale-yellow clay loam (Greenwade et al. 1977: 15-16).



Figure 2. View looking east of the wooded terrace on the west side of Dickey's Branch.

## GEOLOGY & PHYSIOGRAPHY

The Pate site (41PR22) is located within the western portion of the upper Trinity River drainage system in north-central Texas. This landscape developed over Lower Cretaceous carbonate and siliciclastic sedimentary rocks which exhibited differential resistance to erosion resulting in a more varied and rugged topography. These beds dip gently to the southeast and run north-south resulting in broad bands of sedimentary rock, some of which are exposed on the surface (Byers 2003:2; Hill 1887, 1901; Blair 1950).

Within north-central Texas, four major physiographic subdivisions are recognized. From west to east, these are the Western Cross-Timbers, the Fort Worth Prairie (defined by Hill as the central portion of the Grand Prairie north of the Brazos River), the Eastern Cross-Timbers, and the Blackland Prairie (Byers 2003:2; Hill 1901; Fenneman 1938). The Pate site is located within the Fort Worth Prairie subdivision near the Clear Fork of the Trinity. The headwaters of the Clear Fork originate in the Western Cross Timbers and flow south southeast across the Fort Worth Prairie before reaching its confluence with the West Fork of the Trinity.

Hill (1901) defined the Fort Worth Prairie as a physiographic subdivision that is underlain by a series of Lower Cretaceous limestones and marls beginning with the Walnut Formation to the west and ending with the Grayson Marl to the east and is characterized by gently sloping to level dip plains that are broken only by stream drainages. (Byers 2003:4).

At Mosque Point in Fort Worth, adjacent to the Lake Worth Reservoir and the West Fork of the Trinity, the Lower Cretaceous-age bedrock includes the Walnut Formation, consisting of interbedded fossiliferous limestone and yellow claystone, and the Paluxy Formation, which is marked by a change of lithology to a sandy shale (mudstone) unit (Nielson 2021:21).

Historically, the Fort Worth Prairie supported a vast grassland along with a variety of trees and woody vegetation that were confined to hilltops or areas adjacent to rivers and creeks. The grassland consisted of a variety of tall, mid-size and short grasses, dominated by little bluestem (*Andropogon scoparius*), along with a wide variety of forbs. (Byers 2003:4; Dyksterhuis 1946, 1948).

## CULTURAL CHRONOLOGY OF THE UPPER TRINITY RIVER BASIN

### **Paleoindian: 15,500 – 8,500 BP**

Evidence of Paleoindian occupation is documented at the Aubrey site (41DN479) in north-central Texas with a re-calibrated date of 13,516 BP (Bousman et al. 2004:50). However, in Central Texas, the Debra L. Friedkin site (41BL1239) has deposits that have yielded dates of 13,500 – 15,500 BP (Waters et al. 2018:9).

Surface collections from the Lower Elm Fork region in north-central Texas include Clovis, Dalton, Golondrina, Midland, Plainview, and Scottsbluff projectile point types. The most common point types consist of Plainview and Dalton suggesting that this region was utilized by both the western Plainview culture and the Dalton culture to the east (Prikryl 1990:49-50).

At the Dickie Carr site (41PR26), located on the border between the Western Cross-Timbers and the Grand Prairie (Fort Worth Prairie), the most common Paleoindian point types were Dalton and Plainview with Dalton dominating the assemblage (Byers 2007:120).

Paleoindian subsistence is characterized as a broad range of generalized hunting and gathering, as the Aubrey faunal assemblage suggests (Ferring 2001:239). The Aubrey site Paleoindians were also highly mobile, having traveled to the escarpment of the Llano Estacado for stone material (Ferring 2001:223).

### **Early Archaic: 8,500 – 6,000 BP**

This period is recognized primarily from surface collections. The most numerous diagnostic projectile point types are the Angostura and the Early Split-Stemmed groups, consisting of Gower-like,

Martindale-like and Uvalde-like dart points (Prikryl 1990:51). Although specific subsistence data is lacking, a continuation of a wide range of generalized hunting and gathering, similar to Paleoindian strategies, is assumed for the Early Archaic (Prikryl 1990:69). Wetter climates appear to characterize the earlier portion of this period with the climate becoming generally drier later on (Ferring 1995:33). Ferring also notes that Early Archaic sites may not be visible due to these sites being deeply buried and that human population densities may have been low during this time period. “In general, site preservation and site detection potentials decrease in proportion to the age of the sites” (Ferring 1995:33).

### **Middle Archaic: 6,000 – 3,500 BP**

As with the previous time period, Middle Archaic sites are rare. The sparse archeological record for this time period reflects a combination of factors consisting of a low probability of site discovery coupled with poor site preservation and the likely low population and density of sites in the region (Ferring 1995:33). The only documented in-situ Middle Archaic site in the Trinity River drainage basin is the Calvert site (41DN102). Intense exploitation of local resources is evident in the Middle Archaic component of this site. The faunal assemblage reveals a broad-range subsistence strategy and 50% of the lithic artifacts recovered were made from local materials (Ferring and Yates 1997, 1998:36). This time period is also recognized primarily from surface collections. The most numerous projectile points consist of Wells, Carrollton and Morrill, along with a group of Basal-Notched points consisting of Bell and Andice (Prikryl 1990:52).

### **Late Archaic: 3,500 – 1,250 BP**

Late Archaic sites dominate the archeological record of north-central Texas



which suggests a dramatic increase in population density. Sites of this time period are very common along the Trinity River and are easier to detect as a result of shallow burial below floodplains (Ferring and Yates 1997:6).

Within the Lower Elm Fork region, Prikryl notes that Late Archaic sites and artifacts are over three times more common than in the Middle Archaic time period (1990:74). A greater diversity of dart points is also present. The Gary point is the most common dart point, but other dart points are present and include Dallas, Edgewood, Elam, Ellis, Godley, Trinity and Yarbrough. (Prikryl 1990:74) also suggests that these dart point types have cultural ties with areas to the north in Oklahoma and into east Texas. Within the Elm Fork basin, the majority of these projectile points are made from local Ogallala quartzite found in the Uvalde Gravels suggesting territorial restrictions (Prikryl 1990:76). An analysis of surface collections by Prikryl (1990), focusing on the relative percentages of quartzite and chert used in the manufacture of projectile points, found that the percentages of local Ogallala quartzite used in the manufacture of projectile points increased significantly during the Late Archaic time period. A comparison of Prikryl's data with the excavation data from sites at Lake Ray Roberts and Lewisville supports Prikryl's analysis of surface collections (Byers 2003:27). This suggests that raw material acquisition by Late Archaic groups was conditioned by location rather than preference (Ferring and Yates 1998:149).

Several factors have been suggested for the dramatic increase in population density. Development of the West Fork Paleosol during the latter part of the Late Archaic time period may be viewed as evidence for a more favorable and wetter environment

(Ferring 1986:112). A wetter environment would have resulted in the expansion of the Eastern Cross Timbers, creating a larger mast crop for consumption by humans and game animals such as deer (Prikryl 1990:74). Story (1981:146) has suggested that as population densities increased, groups became less mobile and new subsistence practices were required which allowed the environment to be more effectively exploited (Prikryl 1990:74; Byers 2003:26).

### **Late Prehistoric: 1,250 – 350 BP**

The Late Prehistoric time period in north-central Texas was a period distinguished by changes in technology and subsistence-settlement patterns. Ceramics and the bow and arrow are encountered in the archeological record for the first time (Prikryl 1990:77). It was also a time of increased interaction with horticultural neighbors to the east and north. Prikryl (1990:77) notes that corn was recovered at the Cobb-Pool site (Peter and McGregor 1988:165) and excavations at this site have uncovered the remains of what appears to be houses (Peter and McGregor 1988:179-183). In regard to projectile points, Prikryl (1990:77-82) divides the Late Prehistoric into two phases based upon arrow point types and changes in raw material preferences used in the manufacture of arrow points. In north-central Texas, Prikryl defines the Late Prehistoric I timeframe as 1250 – 750 BP and the Late Prehistoric II timeframe as 750 – 250 BP.

During the latter part of the Late Prehistoric time period, bison bone is more common in the faunal assemblages and Late Prehistoric bison kills have been documented at sites on Denton Creek and White Rock Creek (Morris and Morris 1970; Harris and Harris 1970; Prikryl 1990:79-80).

## ARCHEOLOGICAL INVESTIGATIONS IN THE UPPER TRINITY RIVER DRAINAGE BASIN

Over the course of 30 years, limited archeological investigations have been conducted on the West Fork of the Trinity River. Seven excavated sites are summarized here.

The River Bend site (41TR68), located on the north side of the West Fork, was excavated by the University of Texas at Arlington (Peter 1987) and is an example of a specialized foraging camp that was repeatedly occupied between AD 850 – AD 1350.

In 1990, the Tarrant County Archeological Society conducted excavations at the Chambers site (41TR114) (TCAS 1990). This small site produced Late Archaic dart points, arrow points, ceramics and burned rock features. Testing revealed that the most intensive occupation of the site occurred throughout the Late Prehistoric time period.

In 1994, site (41TR142) was discovered and recorded by the Archaeology Research Program (ARP) of Mercyhurst College (Skinner et al. 1999:7). In 1996, this site was tested by Geoarch Consultants (Ferring and Byers 1996). The site is located in the West Fork floodplain adjacent to an abandoned meander belt. Testing revealed a Late Archaic deposit covering an area of 20,500 square meters and is considered to be the largest such site on the West Fork below Lake Bridgeport (Byers 2003:23-24).

The Rough Green site (41TR162), located on the south side of the West Fork, was excavated by AR Consultants (Skinner et al. 1999). Excavations documented seasonal floodplain occupations during the Middle and Late Archaic extending into the Late

Prehistoric time period. Skinner et al. suggest that this site served as an extended seasonal family camp from which bur oak (*Quercus macrocarpa*) acorns were collected (1999:66).

The Fountain site (41TR136) is located on a high terrace on the east side of Village Creek, a tributary of the West Fork. The University of Texas at Arlington conducted extensive excavations at the site (Hanson and Kvernes 1997). Terrace deposits containing extensive lithic scatters, hearths, postholes, and faunal remains including deer and bison were documented. Testing revealed that this site was utilized from the Late Archaic to the Late Prehistoric time periods with the most intensive occupation occurring between AD 1000 and AD 1400.

The Dickey Carr site (41PR26) is an upland site located in northeastern Parker County in the Mill Creek Valley, a tributary of Silver Creek within the West Fork Trinity River Drainage Basin. The site was excavated by the Tarrant County Archeological Society (Byers 2007). Excavations documented the presence of a Paleoindian campsite that contained Dalton and Plainview points.

The Fort Worth Nature Center Gravel Quarry site (41TR113) was excavated by the Tarrant County Archeological Society (Jameson and Macaulley-Jameson 2016). The site is located on the south side of Cottonwood Creek, a tributary of the West Fork. Excavations documented the presence of a multi-component prehistoric campsite that may have been occupied from the Early Archaic through the Late Prehistoric II time periods with the most intensive occupation occurring during the Late Archaic through the Late Prehistoric I time periods.

## METHODOLOGY

Investigation of the Pate site was carried out in two phases. The first phase consisted of documenting the location of surface artifacts. This was accomplished by establishing a primary horizontal datum of (N200 W200) and then with the use of a north/south and an east/west base line originating at the primary datum, each diagnostic artifact and tool observed on the surface was assigned a unique item number and was then plotted on a large horizontal plan view map.

The second phase consisted of testing for intact cultural deposits within the site. With a primary datum established, a transit was used to map the site. An arbitrary elevation of 100 meters was established for the primary datum. Testing of the site was accomplished with the excavation of a series of 1x1-meter test units placed at different locations within this site. The test units were laid out and identified by the coordinates representing the horizontal distance of the southwest corner of the unit from the primary horizontal datum (N200 W200). The test units were excavated in arbitrary ten-centimeter levels. To maintain vertical control, a sub-datum was established in the southwest corner of each test unit and a transit was used to establish starting elevations. All significant artifacts and features were measured from the sub-datum. All of the excavated sediments were dry screened through ¼-inch mesh hardware cloth and excavation was accomplished by shovel skimming and with the use of hand trowels. All of the excavated materials were bagged by level and all formal artifacts were assigned a unique item number and catalogued separately.

## FIELDWORK

During the surface collection process, three discrete areas were identified and assigned area designations of Area A, Area B and Area C (Figure 3). From this activity, a total of 102 artifacts, consisting of 3 freshwater mussel, 3 ground and polished stone, 18 pottery sherds, 37 arrow points including arrow point fragments, 11 dart points including dart point fragments, 12 modified flakes, 2 drills, 1 scraper, 12 bifaces including biface fragments and 3 hammerstones were observed and collected and their horizontal provenience plotted. Of the 37 arrow points collected off the surface, eight were identified as Perdiz, six were identified as Clifton, seven were identified as Scallorn and three were identified as Bonham. Of the 11 dart points collected off the surface, one was identified as a Carrollton, one was identified as a Bulverde, one was identified as a Gary, one was identified as an Elam, one was identified as an Ellis and one was untyped.

A total of twelve 1x1 meter test units were randomly placed at different locations within the main area (Area A) of the site to test for intact archeological deposits (Figure 4). Archeological testing confirmed that the Pate site (41PR22) is a multi-component prehistoric campsite that may have been occupied from the Middle Archaic through the Late Prehistoric II time periods. Excavation activities revealed an intense occupation of the site during the Late Prehistoric I and Late Prehistoric II time periods with the majority of the cultural material being recovered within the upper 40 cm of the site. The arrow point types recovered during the investigation of this site consisted of Scallorn, Bonham, Clifton, Perdiz and Cuney. Table 1 contains a summary of the cultural material recovered by level from this site.

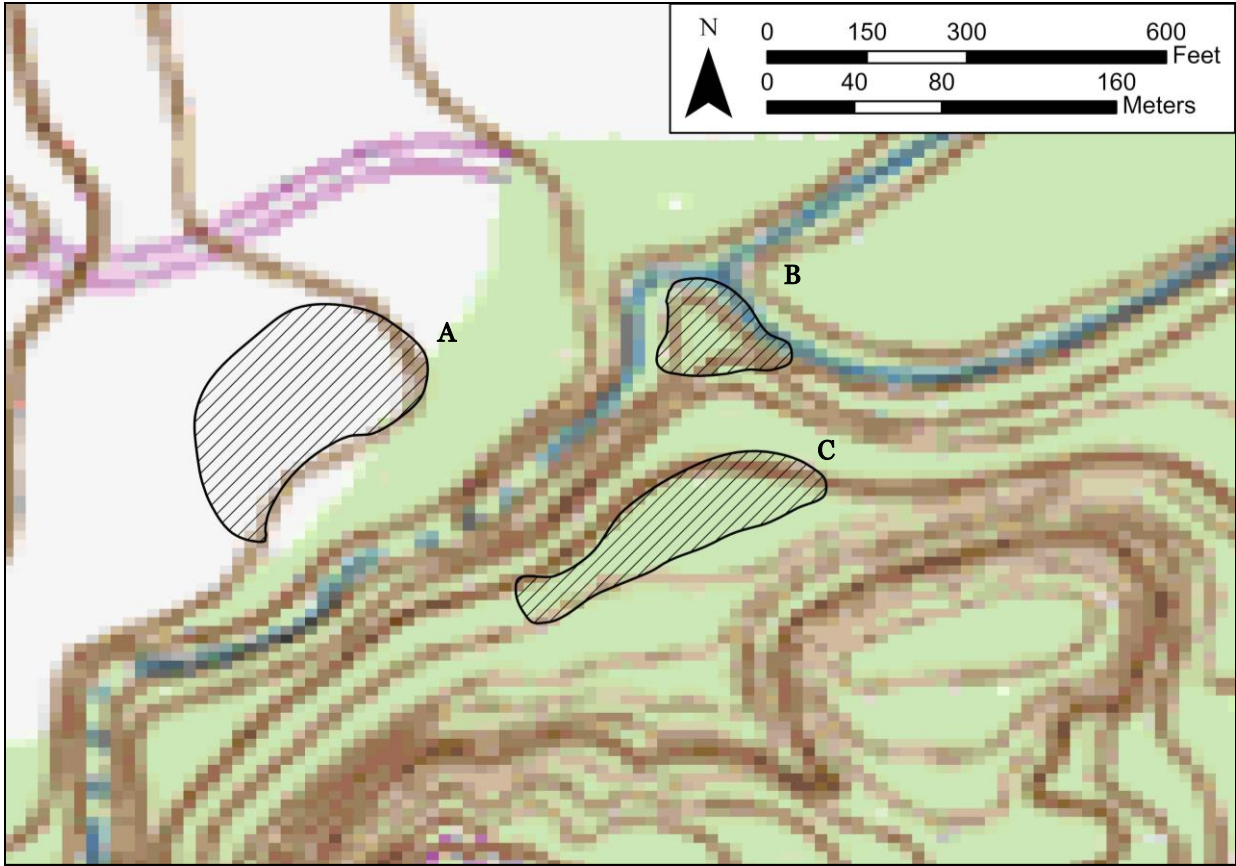


Figure 3. Plan view map of the Pate site with the areas labeled.

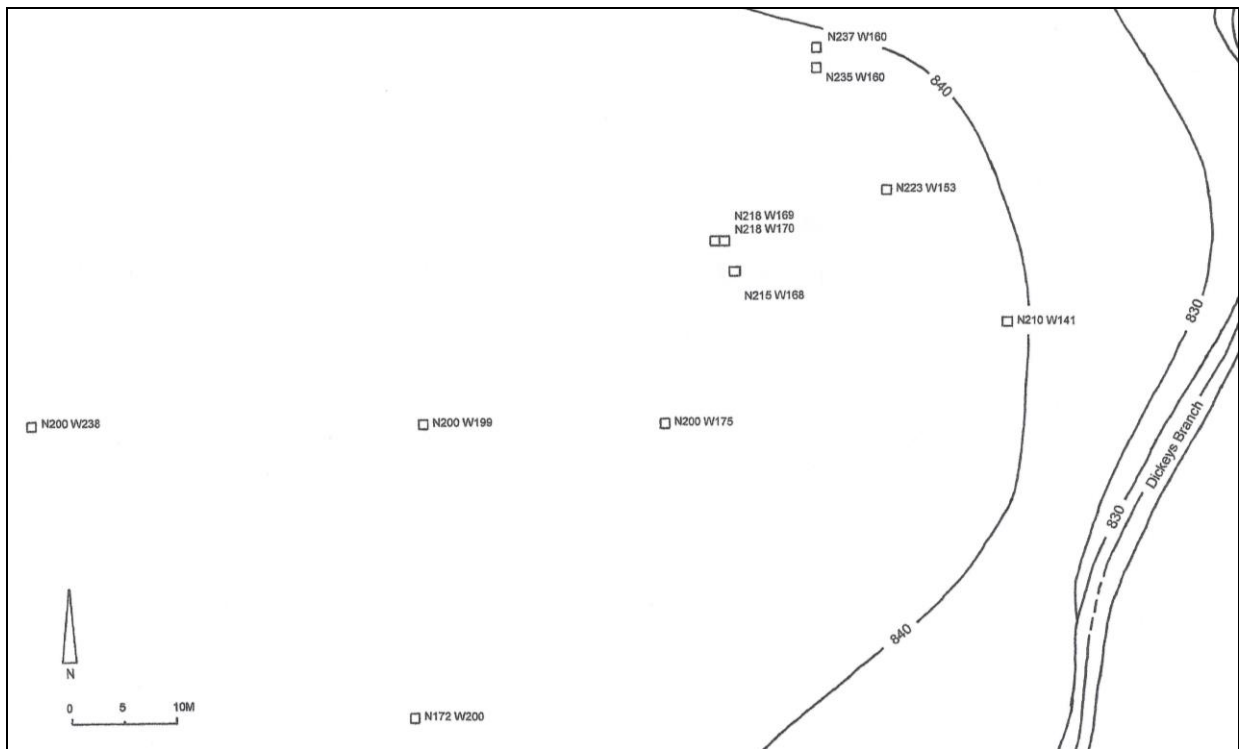


Figure 4. Planview map of Area A of the Pate site 41PR22.

Table 1. Summary of Cultural Material Recovered by Level from the Pate Site 41PR22 Area A.

Level	1	2	3	4	5	6	7	8
Lithic debris	1,037	1,006	412	185	21	3	2	1
Arrow points and arrow point fragments	8	13	1	-	-	-	-	-
Dart points and dart point fragments	-	-	-	-	-	-	-	-
Bifaces	5	2	5	-	-	-	-	-
Drills	-	-	-	-	-	-	-	-
Modified flakes	11	15	2	3	-	-	-	-
Hammerstones	-	-	-	-	-	-	-	-
Scrapers	-	1	-	-	-	-	-	-
Ground and polished stone	1	-	-	-	-	-	-	-
Ceramics-prehistoric	5	6	3	-	-	-	-	-
Animal bone	125	118	87	5	1	-	-	2
Mussel	5	8	8	2	-	-	-	-

The rationale for the location of the test units in Area A was based entirely upon the density of cultural material that was observed on the present-day surface. Testing also revealed two stratified intact hearth features (Feature 1 and Feature 2) with well-preserved organic remains and associated diagnostic artifacts (Figure 7 and Figure 8). Feature 1 was located at approximately 20 cm below the surface and Feature 2 was located at approximately 40 cm below the surface.

Field work in Area B of the site (Figure 3) consisted of the documentation of two hearth features that were observed in the cut bank of Dickey's Branch at the confluence of South Bear Creek. Both hearth features (Figure 9), representing two discrete living surfaces, contained burned rock and wood-charcoal. The upper hearth

(Feature 3) was located at approximately 150 cm below the surface and the lower hearth (Feature 4) was located at approximately 220 cm below surface.

Field work in Area C consisted of a survey of the cut bank on the eastern side of Dickey's Branch to the south of Area B (Figure 3). Investigation of the terrace above the creek was extremely limited due to a dense cover of vegetation in the form of trees, greenbrier and leaves. However, a survey of the cut bank revealed a Late Prehistoric II component eroding out of the terrace. Several Perdiz arrow points along with a small drill and an Ellis dart point were recovered from the cut bank (Figure 5). A broken antler tine, which exhibited use wear, (Figure 6) along with two pottery sherds were also recovered from the cut bank of the terrace.



Figure 5. Stone tools recovered from Area C of the Pate site 41PR22.



Figure 6. Broken antler tine with use wear recovered from Area C of the Pate site 41PR22.

## Excavation of Test Units

### AREA A - TEST UNIT N135 W225

This 1x1 meter unit was excavated to a depth of 30 cm below surface. This unit (Figure 4) was opened to better define the southern extent of the site. The unit was placed in an area where a small quantity of lithic debris and a mussel shell fragment were observed on the surface. Level one was sterile but levels two and three produced lithic debris which indicated that the site was extending further to the south.

### AREA A - TEST UNIT N172 W200

This 1x1 meter unit was excavated to a depth of 80 cm below surface. This unit (Figure 4) was also opened to better define the southern extent of the site. This unit was placed in an area of the site where cultural material in the form of a small quantity of lithic debris was observed on the surface. Lithic debris was encountered in levels 1 through level 6 which indicated that the site was extending further to the south.

### AREA A - TEST UNIT N200 W175

This 1x1 meter unit was excavated to a depth of 50 cm below surface. This unit (Figure 4) was placed in an area of the site where cultural material in the form of a

hammerstone, a dart point, an arrow point and lithic debris were observed on the surface. Lithic debris was encountered through five levels and a small quantity of animal bone fragments were encountered in levels 1, 2 and 3. In regard to chipped stone tools, level 2 produced the medial section of an arrow point along with three modified flakes and level 4 produced an additional modified flake.

### AREA A - TEST UNIT N200 W199

This 1x1 meter unit was excavated to a depth of 40 cm below surface. This unit (Figure 4) was placed in an area of the site where cultural material in the form of two arrow points, two pottery sherds, a dart point, a modified flake and lithic debris were observed on the surface. This unit produced a small quantity of animal bone fragments and mussel shell fragments and lithic debris was encountered in all four levels. In regard to chipped stone tools, level one produced the proximal end of a Clifton arrow point along with two modified flakes and level two of this unit also produced the proximal end of a Clifton arrow point. In regard to cultural features, a scatter of burned rock was encountered in level four of this unit. This scatter of rocks was located in the southwest and northwest quadrants of the unit and extended horizontally into the west wall of the unit. To determine if this feature represented a hearth or a scatter of burned rocks associated with a hearth, additional excavations adjacent to this unit would have been required. This task was prevented when we were informed by the landowner that the property had been leased to someone else and excavation activities would have to be terminated.

### AREA A - TEST UNIT N200 W238

This 1x1 meter unit was excavated to a depth of 80 cm below surface. This unit (Figure 4) was opened to better define the western

extent of the site. Lithic debris was encountered in levels one through four which indicated that the site was extending further to the west. This unit was excavated an additional 40 cm to see if any additional cultural material might be encountered. These four levels were essentially sterile. Level seven did produce two chert flakes and level eight produced one additional chert flake. In regard to chipped stone tools, levels one and two produced one modified flake each.

#### AREA A - TEST UNIT N210 W141

This 1x1 meter unit was excavated to a depth of 40 cm below surface. This unit (Figure 4) was placed in an area where a pottery sherd, a piece of ground stone and lithic debris were observed on the surface. A very small quantity of lithic debris was encountered in all four levels. This unit also produced a very small quantity of animal bone fragments and mussel shell fragments.

#### AREA A - TEST UNIT N215 W168

This 1x1 meter unit was excavated to a depth of 20 cm below surface. Only the northeast and southeast quadrants of this unit were excavated. This unit (Figure 4) was placed in an area of the site where cultural material in the form of a modified flake, two arrow points, a pottery sherd, two mussel shell fragments and lithic debris were observed on the surface. Both levels produced lithic debris. Level one also produced one modified flake along with a piece of ground stone. In regard to cultural features, a scatter of burned rock was encountered at the bottom of level one and extended vertically into level two. This scatter of rocks was located in the southeast quadrant of the unit and extended into the south and east walls of the unit. To determine if this feature represented a hearth or a scatter of burned rocks associated with a hearth, additional excavations adjacent to this unit would have

been required. This task was prevented when we were informed that the property had been leased to someone else and excavation activities would have to be terminated.

#### AREA A - TEST UNIT N218 W169

This 1x1 meter unit was excavated to a depth of 20 cm below surface. This unit (Figure 4) was placed in an area of the site where cultural material in the form of pottery sherds, arrow points, a scraper, a modified flake and lithic debris were observed on the surface. Both levels produced a large quantity of lithic debris. Level two produced a large increase in the quantity of lithic debris as compared with level one. Level two also produced a large quantity of animal bone fragments along with mussel shell fragments. Level one produced a pottery sherd along with two bifaces and level two produced five arrow point fragments, five modified flakes and a small end scraper (thumb-nail scraper). In regard to one of the modified flakes recovered in level two, it appears that it was also used as a small end scraper (thumb-nail scraper). The two very small scrapers recovered in this unit suggests that possibly some specialized activity was taking place in this area of the site.

#### AREA A - TEST UNIT N218 W170

This 1x1 meter unit was excavated to a depth of approximately 50 cm below surface. This unit (Figure 4) was placed adjacent to test unit N218 W169 due to a dense quantity of cultural material that was being encountered in level 2. Levels one, two, and three produced an extremely large quantity of lithic debris and animal bone fragments. In levels four and five, a significant decrease in lithic debris and animal bone fragments was observed. Numerous mussel shell fragments were also encountered in levels two and three of this unit. In regard to

ceramics, level one produced two pottery sherds, level two produced five pottery sherds and level three produced an additional three pottery sherds. In regard to chipped stone tools, level one produced the medial section of an arrow point, the proximal end of a Clifton arrow point and one modified flake. Level two produced a Perdiz arrow point, the proximal end of a Clifton arrow point, two modified flakes and the distal end of a biface and level three produced a Perdiz arrow point, the distal section of a biface, the proximal section of a biface and the distal section of a second biface.

In regard to cultural features, the top of a thermal feature was encountered in level four of this unit and a feature number (Feature 2) was assigned. The excavation of level four revealed a dense scatter of burned rocks that extended vertically into level five (Figure 8). Horizontally, this feature extended into all four walls of this unit. Level five was only partially excavated, and all of the burned rock was pedestaled and left in place. The only cultural material encountered in this level, in association with this feature, consisted of a very small quantity of lithic debris and animal bone fragments. Further excavation of this feature was prevented when we were informed that the property had been leased to someone else and that excavation activities would have to be terminated.

#### AREA A - TEST UNIT N223 W153

This 1x1 meter unit was excavated to a depth of 40 cm below surface. This unit (Figure 4) was placed in an area where two arrow points, a broken biface, a hammerstone, a pottery sherd and lithic debris were observed on the surface. Lithic debris was encountered in all four levels. Level one produced an extremely large quantity of lithic debris with a significant decrease observed in levels two and three. Level four

produced an increase in lithic debris that suggested the presence of a lower living surface associated with an earlier occupation event. Level one also produced several small animal bone fragments. In regard to chipped stone tools, level one produced the distal end of a beveled knife and level two produced the proximal end of a Perdiz arrow point, the proximal end of an untyped arrow point and one modified flake.

#### AREA A - TEST UNIT N235 W160

This 1x1 meter unit was excavated to a depth of 30 cm below surface. Only the northeast and southeast quadrants of this unit were excavated. This unit (Figure 4) was placed in an area where a large quantity of cultural material consisting of a scraper, a hammerstone, three pottery sherds, two arrow point fragments, a Perdiz arrow point, the proximal end of a Clifton arrow point, a Scallorn arrow point, an Edgewood dart point and lithic debris were observed on the surface. Levels one and two produced a large quantity of lithic debris. Level one produced the highest quantity of lithic debris and in level three, a dramatic decrease in lithic debris was observed. Levels one and two also produced a large quantity of small animal bone fragments. Level one also produced a small quantity of mussel shell fragments including one umbo and one freshwater mussel that was identified as to genus and species. This specimen (Figure 41) was identified as a Three-Ridged Mussel, *Amblema plicata* (Howells et al. 1996:33). Level one also produced one pottery sherd, a Perdiz arrow point, the distal end of an arrow point and three modified flakes. Level two produced one pottery sherd, the medial section of an arrow point, the distal end of a biface and one modified flake.

In regard to cultural features, at the bottom of level two, the top of a hearth feature was



encountered, and a feature number (Feature 1) was assigned to this unit. The excavation of level three revealed a well-defined circular cluster of burned rocks that extended horizontally into the northwest and southwest quadrants of this unit (Figure 7). The only cultural material encountered in level 3, in association with this feature, consisted of a small quantity of lithic debris. Further excavation of this feature was prevented when we were informed that the property had been leased to someone else and that excavation activities would have to be terminated.

#### AREA A - TEST UNIT N237 W160

This 1x1 meter unit was excavated to a depth of 60 cm below surface. This unit (Figure 4) was placed adjacent to unit N235 W160 due to the dense quantity of cultural material that was observed on the surface in the area of these two units. Lithic debris was encountered in all six levels. Levels one and two produced a large quantity of lithic debris with level three producing a significant decrease in lithic debris. Levels four through six produced a steady decrease in lithic debris as compared with level three. Levels one and two also produced a small quantity of animal bone fragments. In regard to chipped stone tools, level one produced the medial section of an arrow point, a biface and the distal section of a biface. Level two produced the proximal end of a Clifton arrow point, a Cuney arrow point, an arrow point that exhibited damage to the stem and three modified flakes. Level three produced an Elam dart point, the proximal end of a biface and the proximal end of a biface that might represent a dart point.

Tables 2 through 11 contain a summary, by unit level, of the cultural material recovered from the twelve excavation test units in Area A of the site.

Table 2. Arrow Points (Including Fragments)  
Recovered from Test Units by 10-cm Level.

Test Unit	S	1	2	3	4	5	6	7	8
N135W225	-	-	-	-					
N172W200	-	-	-	-	-	-	-	-	-
N200W175	-	-	1	-	-	-			
N200W199	-	1	1	-	-				
N200W238	-	-	-	-	-	-	-	-	-
N210W141	-	-	-	-	-				
N215W168	-	-	-						
N218W169	-	-	5						
N218W170	-	1	2	1	-	-			
N223W153	-	2	-	-	-				
N235W160	-	2	1	-					
N237W160	1	1	3	-	-	-	-		
<b>Total</b>	<b>1</b>	<b>7</b>	<b>13</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

*S = surface; Gray = unexcavated*

Table 3. Dart Points (Including Fragments)  
Recovered from Test Units by 10-cm Level.

Test Unit	S	1	2	3	4	5	6	7	8
N135W225	-	-	-	-					
N172W200	-	-	-	-	-	-	-	-	-
N200W175	-	-	-	-	-	-			
N200W199	-	-	-	-	-				
N200W238	-	-	-	-	-	-	-	-	-
N210W141	-	-	-	-	-				
N215W168	-	-	-						
N218W169	-	-	-						
N218W170	-	-	-	-	-	-			
N223W153	-	-	-	-	-				
N235W160	-	-	-	-					
N237W160	-	-	-	1	-	-	-		
<b>Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

*S = surface; Gray = unexcavated*

Table 4. Modified Flakes  
Recovered from Test Units by 10-cm Level.

Test Unit	S	1	2	3	4	5	6	7	8
N135W225	-	-	-	-					
N172W200	-	1	1	-	2	-	-	-	-
N200W175	-	1	2	-	1	-			
N200W199	-	1	-	-	-				
N200W238	-	-	1	-	-	-	-	-	-
N210W141	-	-	-	-	-				
N215W168	-	1	-						
N218W169	-	-	5						
N218W170	-	1	2	2	-	-			
N223W153	-	1	-	-	-				
N235W160	-	3	1	-					
N237W160	2	-	3	-	-	-	-		
<b>Total</b>	<b>2</b>	<b>9</b>	<b>15</b>	<b>2</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

*S = surface; Gray = unexcavated*

Table 5. Bifaces (including Fragments)  
Recovered from Test Units by 10-cm Level.

Test Unit	S	1	2	3	4	5	6	7	8
N135W225	-	-	-	-	Gray	Gray	Gray	Gray	Gray
N172W200	-	-	-	-	-	-	-	-	-
N200W175	-	-	-	-	-	-	Gray	Gray	Gray
N200W199	-	-	-	-	-	Gray	Gray	Gray	Gray
N200W238	-	-	-	-	-	-	-	-	-
N210W141	-	-	-	-	-	Gray	Gray	Gray	Gray
N215W168	-	-	-	Gray	Gray	Gray	Gray	Gray	Gray
N218W169	-	2	-	Gray	Gray	Gray	Gray	Gray	Gray
N218W170	-	-	1	3	-	-	Gray	Gray	Gray
N223W153	-	1	-	-	-	Gray	Gray	Gray	Gray
N235W160	-	-	1	-	Gray	Gray	Gray	Gray	Gray
N237W160	-	2	-	2	-	-	-	Gray	Gray
<b>Total</b>	-	<b>5</b>	<b>2</b>	<b>5</b>	-	-	-	-	-

S = surface; Gray = unexcavated

Table 6. Scrapers  
Recovered from Test Units by 10-cm Level.

Test Unit	S	1	2	3	4	5	6	7	8
N135W225	-	-	-	-	Gray	Gray	Gray	Gray	Gray
N172W200	-	-	-	-	-	-	-	-	-
N200W175	-	-	-	-	-	-	Gray	Gray	Gray
N200W199	-	-	-	-	-	Gray	Gray	Gray	Gray
N200W238	-	-	-	-	-	-	-	-	-
N210W141	-	-	-	-	-	Gray	Gray	Gray	Gray
N215W168	-	-	-	Gray	Gray	Gray	Gray	Gray	Gray
N218W169	-	-	1	Gray	Gray	Gray	Gray	Gray	Gray
N218W170	-	-	-	-	-	-	Gray	Gray	Gray
N223W153	-	-	-	-	-	Gray	Gray	Gray	Gray
N235W160	-	-	-	-	Gray	Gray	Gray	Gray	Gray
N237W160	-	-	-	-	-	-	-	Gray	Gray
<b>Total</b>	-	-	<b>1</b>	-	-	-	-	-	-

S = surface; Gray = unexcavated

Table 7. Polished Stone Fragment  
Recovered from Test Units by 10-cm Level.

Test Unit	S	1	2	3	4	5	6	7	8
N135W225	-	-	-	-	Gray	Gray	Gray	Gray	Gray
N172W200	-	-	-	-	-	-	-	-	-
N200W175	-	-	-	-	-	-	Gray	Gray	Gray
N200W199	-	-	-	-	-	Gray	Gray	Gray	Gray
N200W238	-	-	-	-	-	-	-	-	-
N210W141	-	-	-	-	-	Gray	Gray	Gray	Gray
N215W168	-	1	-	Gray	Gray	Gray	Gray	Gray	Gray
N218W169	-	-	-	Gray	Gray	Gray	Gray	Gray	Gray
N218W170	-	-	-	-	-	-	Gray	Gray	Gray
N223W153	-	-	-	-	-	Gray	Gray	Gray	Gray
N235W160	-	-	-	-	Gray	Gray	Gray	Gray	Gray
N237W160	-	-	-	-	-	-	-	Gray	Gray
<b>Total</b>	-	<b>1</b>	-	-	-	-	-	-	-

S = surface; Gray = unexcavated

Table 8. Lithic Debitage  
Recovered from Test Units by 10-cm Level.

Test Unit	S	1	2	3	4	5	6	7	8
N135W225	3	-	30	6	Gray	Gray	Gray	Gray	Gray
N172W200	-	9	21	6	27	4	1	-	-
N200W175	-	10	36	14	2	5	Gray	Gray	Gray
N200W199	-	51	82	31	5	Gray	Gray	Gray	Gray
N200W238	-	14	18	15	7	-	-	2	1
N210W141	-	2	6	3	4	Gray	Gray	Gray	Gray
N215W168	12	28	23	Gray	Gray	Gray	Gray	Gray	Gray
N218W169	12	57	202	Gray	Gray	Gray	Gray	Gray	Gray
N218W170	-	233	314	233	69	9	Gray	Gray	Gray
N223W153	4	181	1	27	52	Gray	Gray	Gray	Gray
N235W160	24	232	129	16	Gray	Gray	Gray	Gray	Gray
N237W160	62	103	144	61	19	3	2	Gray	Gray
<b>Total</b>	<b>117</b>	<b>920</b>	<b>1,006</b>	<b>412</b>	<b>185</b>	<b>21</b>	<b>3</b>	<b>2</b>	<b>1</b>

S = surface; Gray = unexcavated

Table 9. Bone (Including Fragments)  
Recovered from Test Units by 10-cm Level.

Test Unit	S	1	2	3	4	5	6	7	8
N135W225	-	-	-	-	Gray	Gray	Gray	Gray	Gray
N172W200	-	1	1	-	-	-	-	-	-
N200W175	-	-	7	2	-	-	Gray	Gray	Gray
N200W199	-	3	-	4	-	Gray	Gray	Gray	Gray
N200W238	-	-	-	-	-	-	-	-	2
N210W141	-	-	1	-	-	Gray	Gray	Gray	Gray
N215W168	-	9	-	Gray	Gray	Gray	Gray	Gray	Gray
N218W169	-	6	22	Gray	Gray	Gray	Gray	Gray	Gray
N218W170	-	17	45	75	2	1	Gray	Gray	Gray
N223W153	-	15	1	-	2	Gray	Gray	Gray	Gray
N235W160	-	52	32	-	Gray	Gray	Gray	Gray	Gray
N237W160	-	22	9	6	1	-	-	Gray	Gray
<b>Total</b>	-	<b>125</b>	<b>118</b>	<b>87</b>	<b>5</b>	<b>1</b>	-	-	<b>2</b>

S = surface; Gray = unexcavated

Table 10. Mussel Shell (Including Fragments)  
Recovered from Test Units by 10-cm Level.

Test Unit	S	1	2	3	4	5	6	7	8
N135W225	-	-	-	-	Gray	Gray	Gray	Gray	Gray
N172W200	-	-	-	2	-	-	-	-	-
N200W175	-	-	-	-	1	-	Gray	Gray	Gray
N200W199	-	2	-	1	1	Gray	Gray	Gray	Gray
N200W238	-	-	-	-	-	-	-	-	-
N210W141	-	-	1	-	-	Gray	Gray	Gray	Gray
N215W168	-	-	-	Gray	Gray	Gray	Gray	Gray	Gray
N218W169	-	-	2	Gray	Gray	Gray	Gray	Gray	Gray
N218W170	-	-	3	4	-	-	Gray	Gray	Gray
N223W153	-	-	-	1	-	Gray	Gray	Gray	Gray
N235W160	-	2	-	-	Gray	Gray	Gray	Gray	Gray
N237W160	-	1	2	-	-	-	-	Gray	Gray
<b>Total</b>	-	<b>5</b>	<b>8</b>	<b>8</b>	<b>2</b>	-	-	-	-

S = surface; Gray = unexcavated

Table 11. Ceramics - Prehistoric (Including Fragments)  
Recovered from Test Units by 10-cm Level.

Test Unit	S	1	2	3	4	5	6	7	8
N135W225	-	-	-	-	-	-	-	-	-
N172W200	-	-	-	-	-	-	-	-	-
N200W175	-	-	-	-	-	-	-	-	-
N200W199	-	-	-	-	-	-	-	-	-
N200W238	-	-	-	-	-	-	-	-	-
N210W141	-	-	-	-	-	-	-	-	-
N215W168	-	-	-	-	-	-	-	-	-
N218W169	-	1	-	-	-	-	-	-	-
N218W170	-	2	5	3	-	-	-	-	-
N223W153	-	-	-	-	-	-	-	-	-
N235W160	-	1	1	-	-	-	-	-	-
N237W160	-	1	-	-	-	-	-	-	-
<b>Total</b>	-	<b>5</b>	<b>6</b>	<b>3</b>	-	-	-	-	-

*S = surface; Gray = unexcavated*

## Features

### FEATURE 1

A hearth was identified in test unit N235 W160, in Area A of the site, at a depth of approximately 20 cm below the surface (Figure 7). This feature consisted of a large tight circular cluster of burned and fire-cracked limestone rocks that extended vertically into level three. The rocks ranged in width from approximately 5 to 15 cm. Further investigation and excavation of this feature was prevented when we were informed by the landowner that the property had been leased to someone else and that excavation activities would have to be terminated.

In regard to cultural material encountered above this feature, level one produced a large quantity of lithic debris and animal bone fragments along with a small quantity of mussel shell fragments, one pottery sherd, a Perdiz arrow point, the distal end of an arrow point and three modified flakes.

Level two, immediately above this feature, produced a large quantity of lithic debris and animal bone fragments along with one pottery sherd, the medial section of an

arrow point, the distal end of a biface and one modified flake.



Figure 7. View of Feature 1 in Area A of the Pate site 41PR22.

### FEATURE 2

A large thermal feature was identified in test unit N218 W170, in Area A of the site, at a depth of approximately 40 cm below the surface (Figure 8). The excavation of level four revealed a dense scatter of burned rocks that extended vertically into level five. Horizontally, this feature extended into all four walls of this unit. This feature consisted of a dense scatter of burned limestone rock associated with a hearth or earth oven. Some of the rocks within this feature were clearly fire-cracked. The rocks ranged in width from approximately 5 to 20 cm. To determine whether this feature was part of a hearth or an earth oven, additional excavations within and adjacent to this test

unit would have been required. Further excavation of this feature was prevented when we were informed by the landowner that the property had been leased to someone else and that excavation activities would have to be terminated.

In regard to cultural material encountered immediately above this feature, level three produced a large quantity of lithic debris and animal bone fragments along with a small quantity of mussel shell fragments. Three pottery sherds, a Perdiz arrow point, two modified flakes, the distal section of a biface, the proximal section of a second biface and the distal section of a third biface were also recovered in this level.

Level four produced a significant decrease in lithic debris and animal bone fragments along with no mussel shell. No other cultural material, in the form of chipped stone tools or ceramics, were encountered.



Figure 8. View of Feature 2 in Area A of the Pate site 41PR22.

### FEATURE 3

Two hearth features were identified in the cut bank, on the eastern side of Dickey's Branch in Area B of the site. (Feature 3) represents the upper hearth in the cut bank (Figure 9). This feature consisted of a layer of burned limestone rock and charcoal that was located at approximately 150 cm below the surface of the cut bank and extended horizontally into the terrace of the cut bank. The feature measured approximately 70 cm in width and approximately 20 cm in thickness. The rocks ranged from approximately 5 to 10 cm in width to approximately 5 to 10 cm in thickness. A large majority of this feature was missing due to erosion of the cut bank. A vertical profile of the cut bank adjacent to this feature produced the base of a pottery vessel (Figure 10). Due to time constraints, the excavation of this feature was not accomplished. However, wood-charcoal samples were collected from this feature and produced a calibrated radiocarbon date of AD 1561 which falls well within the accepted date range for the Late Prehistoric II, Toyah phase time frame.



Figure 9. View showing upper and lower hearths from Area B of the Pate site 41PR22.



Figure 10. Base of pottery vessel recovered from Area B of the Pate site 41PR22.

#### FEATURE 4

This feature represents the lower hearth in the cut bank (Figure 9). This feature consisted of a layer of burned limestone rock and charcoal that was located at approximately 220 cm below the surface of the cut bank and extended horizontally into the terrace of the cut bank. The feature measured approximately 70 cm in width and approximately 20 cm in thickness. The

rocks ranged from approximately 5 to 20 cm in width to approximately 5 to 10 cm in thickness. No diagnostic chipped stone tools were observed or recovered in association with this feature. Due to time constraints, the excavation of this feature was not accomplished. However, wood-charcoal samples were collected from this feature and produced a calibrated radiocarbon date of AD 1457 which falls well within the

accepted date range for the Late Prehistoric, Toyah phase time frame. Also of note, at the bottom of the cut bank and below the lower hearth, a Scallorn arrow point was observed and collected (Figure 11). Due to the erosion of the cut bank, the vertical provenience of this specimen could not be determined.



Figure 11. Scallorn arrow point recovered from Area B of the Pate site 41PR22.

## ARTIFACT DESCRIPTIONS

### Lithic Artifacts

The largest assemblage of artifacts recovered from this site consisted of lithic debris. A total of 2,667 pieces were recovered and this material consisted of tested cobbles, cores, flakes and chips created from the manufacture of stone tools.

Of the 2,667 pieces of lithic debris recovered, 2649 pieces were identified as chert and 18 pieces were identified as quartzite. The flakes and chips from this assemblage were sorted into three categories which reflected the reduction process carried out in tool manufacture. The first category consisted of primary flakes which represented the initial removal of the cortex from a cobble. Therefore, 100% of the dorsal surface of these flakes was covered with cortex. The second category consisted of secondary flakes which retained some cortex on the dorsal surface and represented the further reduction of a core or a preform. The third category consisted of tertiary

(interior) flakes which retained no cortex on the dorsal surface and indicated further reduction from the interior of a core or a biface. With the lithic debris identified and sorted into their respective categories, (6%) represented primary flakes, (37%) represented secondary flakes and 57% represented tertiary flakes.

A total of 149 ground and chipped stone tools were also recovered from this site. These stone tools consisted of 59 arrow points including fragments, 12 dart points including fragments, 43 modified flakes, 2 drills, 24 bifaces including fragments, 3 hammerstones, 2 scrapers, and 4 ground and polished stones. These counts are depicted in Table 12.

Based upon a visual inspection, a majority of the lithic artifacts recovered from this site appeared to be Edwards Plateau cherts and locally obtained cobbles consisting of quartzite from the Trinity River Basin area. These local cobbles are part of the Uvalde Gravels, which occur on the upland slopes and terraces of this region (Banks 1990). The majority of these gravels consist of quartzite and are called Ogallala quartzite. Even though the major resource for lithic material in the Trinity Basin is typically quartzite, very little quartzite was used in the manufacture of chipped stone tools at this site. The predominate use of quartzite was in the form of hammerstones. Chert was the primary raw material in this assemblage of lithic debris and chipped stone tools. Chert comprised approximately 97% of the lithic debris. Quartzite comprised approximately (3%).

The ground and chipped stone tools recovered from this site are described as follows.

Table 12. Inventory of Artifacts Recovered from the Pate Site 41PR22.

Artifact Type	Area A	Area B	Area C	Total Surface	Total Excavated	Total
Lithic debris	-	-	-	-	2,667	2,667
Arrow points and arrow point fragments	31	-	6	37	22	59
Dart points and dart point fragments	10	-	1	11	1	12
Bifaces and biface fragments	7	-	5	12	12	24
Drills	1	-	1	2	-	2
Modified flakes	12	-	-	12	31	43
Hammerstones	3	-	-	3	-	3
Scrapers	1	-	-	1	1	2
Ground and polished stone	3	-	-	3	1	4
Ceramics-prehistoric	14	2	2	18	14	32
Animal bone	-	-	-	-	338	338
Mussel	3	-	-	3	23	26

## DART POINTS

A total of 12 dart points including dart point fragments were recovered. Out of this assemblage, 6 of the dart points consisted of intact specimens or proximal sections with intact stems which made point type identification possible. The remaining specimens consisted of 2 untyped points and 4 proximal fragments consisting of 3 stems and 1 barb.

Out of this collection, 6 dart point types were identified (Figure 12 through Figure 17). Two dart points representing the Middle Archaic time period were identified and consisted of a Bulverde point and a Carrollton point. The remaining four dart points, representing the Late Archaic and the Transitional Archaic time periods, consisted of 1 Gary, 1 Elam, 1 Ellis and 1 Edgewood.

Chronological placement, regional distribution and description of the dart points recovered from this site was derived from *A Field Guide to Stone Artifacts of Texas Indians* (Turner and Hester 1999) and *Stone Artifacts of Texas Indians* (Turner and Hester 2011) and are listed below in alphabetical order. Prewitt (1995)

offers a more refined distribution of projectile point types by county in Texas.

### *Bulverde*

A Bulverde point is a strong-shouldered to barbed point that has a long rectangular to slightly contracting stem that has been thinned by a broad flake or by two or three contiguous flakes. Most distinctive, however, is a thin, finely chipped stem base that is wedge shaped in cross section. Bulverde points are principally a central Texas point but are occasionally found in south and east Texas. Chronological placement for this point type is Middle Archaic, ca. 1500 - 2000 BC (Turner and Hester 2011:67).

One Bulverde dart point was recovered from this site and this specimen is described as follows (Figure 12).

Specimen Surface A-32 consists of the proximal section only. The medial and distal sections are missing possibly due to breakage during manufacture. The stem edges are parallel, and the basal edge is straight. The stem base is wedge shaped in cross section. The stem base is finely chipped and exhibits thinning by the removal of several flakes. This specimen

also exhibits strong shoulders. Workmanship is very good, and the material is heat-treated Edwards chert.



Figure 12. Bulverde dart point recovered from 41PR22. Specimen Surface A-32.

### *Carrollton*

A Carrollton point has a triangular body with prominent shoulders that are squared or barbed and is accompanied with a long rectangular stem. While some are crudely flaked, others are well made. The stem and basal edges are sometimes smoothed. Carrollton points are commonly resharpened with the end result being a stem about as long as the distal end. These points are found in the Dallas area along the terraces of the Trinity River. Chronological placement for this point type is Middle Archaic (Turner and Hester 2011:70).

One Carrollton dart point was recovered from this site and this specimen is described as follows (Figure 13).



Figure 13. Carrollton dart point recovered from 41PR22. Specimen Surface A-74.

Specimen Surface A-74 is very slender and lanceolate in shape and has been reworked extensively. The stem edges are slightly expanding, and the base is straight to slightly convex. The distal end is missing, possibly due to an impact fracture. Material is Edwards chert.

### *Edgewood*

An Edgewood dart point is a short triangular corner-notched point that has prominent to well-barbed shoulders and a widely expanding stem. The basal edge of the stem is concave to straight which distinguishes it from Ellis points. This point is common in northeast Texas but is also found in central and south Texas, including the coast. Chronological placement for this point type is Transitional Archaic (Turner and Hester 2011:91).

One Edgewood dart point was recovered from this site and this specimen is described as follows (Figure 14).





Figure 14. Edgewood dart point recovered from 41PR22. Specimen Surface A-53.

Specimen Surface A-53 exhibits extensive reshaping of the lateral edges. Only slight shouldering remains along one of the lateral edges. One of the shoulders is missing due to breakage. The stem edges are expanding toward the base and the base is slightly concave. Workmanship is good. Material is Edwards chert.

### *Elam*

Elam dart points are small and have slight to prominent shoulders and a parallel stem that is approximately one-third to one-half the length of the point. The stem edges are sometimes ground. This stubby form exhibits heavily resharpened distal ends, and it may well be that many of these points are actually other point types such as Ellis and Trinity. This point is common in north central Texas but is also found in east Texas. Chronological placement for this point type is Late Archaic (Turner and Hester 2011:92).

One Elam dart point was recovered from this site and this specimen is described as follows (Figure 15).



Figure 15. Elam dart point recovered from 41PR22. Specimen N237 W160 L3.

Specimen N237 W160 L3 exhibits a heavily resharpened distal end which creates a very stubby form. Only slight shouldering remains along the lateral edges. The stem edges expand slightly toward the base and the base is slightly convex. The stem is more than one-half the length of the point. Workmanship is fair. Material is Edwards chert.

### *Ellis*

Ellis dart points have a short thick body, shallow corner notches or side notches, barbs and expanding stems. It is often difficult to distinguish morphologically from Edgewood and Ensor. These points are found primarily in north central and northeast Texas and into Oklahoma. Points typed as Ellis are occasionally found in south and central Texas, the Panhandle, west Texas, and also in adjoining areas of Louisiana and Arkansas. Chronological placement for this point type is Late to Transitional Archaic, ca. 1000 BC (Turner and Hester 2011:93).

One Ellis dart point was recovered from this site and this specimen is described as follows (Figure 16).



Figure 16. Ellis dart point recovered from 41PR22. Specimen Surface C-16.

Specimen Surface C-16 exhibits damage to the distal end due to an impact fracture. The stem edges expand slightly toward the base and the basal edge is slightly convex and exhibits smoothing. Workmanship is very good, and the material is heat-treated Edwards chert.

### *Gary*

A Gary dart point is usually a relatively crude and thick point but has a wide range of variation. Diagnostic traits include a triangular body, indistinct to squared shoulders and a contracting stem. The distal portion of a Gary is often heavily reworked. The variability within this type includes points that have been typed as Dawson. This point is very common in the Trinity River drainage, east Texas, and Louisiana. Chronological placement for this point type is Late Archaic (Turner and Hester 2011:107).

One Gary dart point was recovered from this site and this specimen is described as follows (Figure 17).



Figure 17. Gary dart point recovered from 41PR22. Specimen Surface A-4.

Specimen Surface A-4 is a thick and extremely crude point. Extensive resharpening is visible along the lateral edges. The shoulders are weak and the stem contracts toward the base. The stem and the base also exhibit damage. Workmanship is poor. Material is Edwards chert.

### ARROW POINTS

A total of 59 arrow points including arrow point fragments were recovered from this site. Out of this assemblage, 33 of the arrow points consisted of intact specimens or proximal fragments with intact stems, which made point type identification possible. The remaining specimens consisted of 7 untyped points and 19 distal or medial fragments or proximal sections with the stem missing or damaged to such an extent that identification was not possible. Twelve of the arrow points were classified as being unifacially flaked.

Out of this collection, the following arrow point types, representing the Late Prehistoric I and Late Prehistoric II time periods, were identified and consisted of 7 Scallorn, 3 Bonham, 10 Clifton, 12 Perdiz, and 1 Cuney (Figure 18 through Figure 22).

Chronological placement, regional distribution and description of the arrow points recovered from this site was derived from *A Field Guide to Stone Artifacts of Texas Indians* (Turner and Hester 1999) and *Stone Artifacts of Texas Indians* (Turner and Hester 2011) and are listed below in alphabetical order. Prewitt (1995) offers a more refined distribution of projectile point types by county in Texas.

### *Bonham*

The Bonham arrow point type is a narrow, triangular point with straight to slightly recurved lateral edges, barbs and a narrow, parallel-sided stem with a flat or rounded base. Most specimens are fully bifacial and have lenticular cross sections. Harry Shafer (2006) has proposed a Bonham-Alba classification that encompasses specimens dating around AD1100, from central Texas into east Texas, suggesting they are linked to the Caddo of the George C. Davis site. These points are found in north central and northeast Texas. Chronological placement for this point type is Late Prehistoric (Turner and Hester 2011:180).

Three Bonham arrow points were recovered from this site and these specimens are described as follows (Figure 18).



Figure 18. Bonham arrow points recovered from 41PR22 (L to R): specimens Surface A-10, A-38, A-69.

Specimen Surface A-10 exhibits damage to the distal end due to an impact fracture. The stem is straight (parallel sided), and the base is flat to slightly rounded. One barb is missing due to breakage. This specimen is bifacially flaked. Workmanship is good. Material is Edwards chert.

Specimen Surface A-38 consists of the proximal/medial sections only. The stem is straight (parallel sided), and the base is rounded. The distal end is missing due to a transverse fracture. It is uncertain as to whether the fracture is use-related or represents a manufacturing failure. This specimen also exhibits bifacial flaking. Workmanship is very good. Material is Edwards chert.

Specimen Surface A-69 consists of the proximal/medial sections only. The stem and both barbs of this specimen are slightly damaged. The stem is straight (parallel sided), and the base is rounded. The distal end is missing due to a transverse fracture. As to whether the fracture is use-related or represents a manufacturing failure is uncertain. This specimen also exhibits bifacial flaking. Workmanship is very good. Material is Edwards chert.

### *Clifton*

This roughly triangular and crudely chipped point was originally defined as a type, but studies suggest that it is an unfinished Perdiz point (Turner and Hester 1999:208). However, in this report, the Clifton point is separated from the Perdiz type. Chronological placement for this point type is Late Prehistoric, ca. AD 1200 – A. D. 1,700 (Turner and Hester 2011:206).

Ten Clifton arrow points were recovered from this site and these specimens are described as follows (Figure 19).



Figure 19. Clifffton arrow points recovered from 41PR22. Top row (L to R): specimens N218 W170 L2, N237 W160 L2, Surface A-57, A-48, A-73. Bottom row (L to R): specimens N200 W199 L2, N200 W199 L1, Surface A-28, A-46, A-67.

Specimen N218 W170 L2 is roughly triangular in shape and is crudely chipped. The stem is barely defined and contracts to a rounded base. The distal section is missing possibly due to breakage during manufacture. This specimen also exhibits bifacial flaking. Material is Edwards chert.

Specimen N237 W160 L2 is roughly triangular in shape and crudely chipped. The stem is slightly defined and contracts to a rounded base. The distal section is missing possibly due to breakage during manufacture. Minimal flaking is present on the ventral surface of this specimen and consists of edge trimming in the stem and shoulder areas only. Material is Edwards chert.

Specimen Surface A-57 is roughly triangular in shape and crudely chipped. The stem is slightly defined and contracts to a pointed base. The distal section is missing possibly due to breakage during manufacture. Cortex is visible on the body of this specimen and on one of the shoulders. Minimal flaking is present on the ventral surface of this specimen and consists of edge trimming in

the stem and shoulder areas only. Material is Edwards chert.

Specimen Surface A-48 is roughly triangular in shape and is crudely chipped. The stem is slightly defined and contracts to a rounded base. The distal section is missing possibly due to breakage during manufacture. Minimal flaking is present on the ventral surface of this specimen and consists of edge trimming in the stem and shoulder areas only. Material is Edwards chert.

Specimen Surface A3-73 is very small and roughly triangular in shape. It is crudely chipped. The stem is slightly defined and contracts to a pointed base. Minimal flaking is present on both surfaces of this specimen and consists of edge trimming along the lateral edges and the stem only. Material is Edwards chert.

Specimen N200 W199 L2 is roughly triangular in shape and crudely chipped. The stem is barely defined and contracts to a rounded base. The distal section is missing possibly due to breakage during manufacture. The stem and one shoulder

exhibits slight damage. Minimal flaking is present on the ventral surface of this specimen and consists of edge trimming in the stem and shoulder areas only. Material is Edwards chert.

Specimen N200 W199 L1 is roughly triangular in shape. The stem is slightly defined and contracts to a slightly rounded base. The distal section is missing possibly due to breakage during manufacture. This specimen exhibits bifacial flaking. Material is Edwards chert.

Specimen Surface A-28 is roughly triangular in shape and is crudely chipped. The stem is slightly defined and contracts toward the base. The stem also exhibits damage at the base. The distal end and one lateral edge exhibit extreme damage possibly due to an impact fracture which suggests that this arrow point was used. This specimen also exhibits bifacial flaking. Material is Edwards chert.

Specimen Surface A-46 is roughly triangular in shape and crudely chipped. The stem is slightly defined and contracts to a rounded base. The distal section is missing possibly due to breakage during manufacture. This specimen exhibits bifacial flaking. Material is Edwards chert.

Specimen Surface A-67 is roughly triangular in shape and is crudely chipped. The stem is slightly defined and contracts to a pointed base. The distal section is missing possibly due to breakage during manufacture. This specimen also exhibits bifacial flaking. Material is Edwards chert.

### *Cuney*

The Cuney arrow point is a narrow triangular point with straight or recurved lateral edges with barbs that extend downward or flare outward. The stem is parallel-edged or slightly expanding, and

the base is notched or concave. These points are found in the Central part of east Texas and occasionally into central and south Texas. Chronological placement for this point type is Late Prehistoric into Historic. (Turner and Hester 2011:187).

One Cuney arrow point was recovered from this site and this specimen is described as follows (Figure 20).



Figure 20. Cuney arrow point recovered from 41PR22. Specimen N237 W160 L2.

Specimen N237 W160 L2 is a very small arrow point. The stem expands toward the base and the base is extremely concave. This specimen is very similar in form to a Scallorn point except for the extremely concave base. The basal edges of this specimen are also sloping downward and not outward as observed on a Scallorn point. Both shoulders exhibit damage. The distal end is damaged and one lateral edge exhibits rework. This specimen is bifacially flaked. Workmanship is very good. Material is chert.

### *Perdiz*

Perdiz points are distinctive contracting stem arrow points, usually with pointed barbs. There is much variation in size and proportions. Occasionally specimens may be worked on one side only and are typically made on flakes or blades. Workmanship is generally good, sometimes exceedingly fine with minutely serrated blade edges. These points are found throughout most of Texas

and Louisiana. They are also found in the border area of the lower Rio Grande and into northern Chihuahua. Chronological placement for this point type is Late Prehistoric, ca. AD 1200 – AD 1700 (Turner and Hester 2011:206).

Twelve Perdiz arrow points were recovered from this site and these specimens are described as follows (Figure 21).



Figure 21. Perdiz arrow points recovered from 41PR22. Top row (L to R): specimens Surface A-58, N223 W153 L1, Surface C-9, A-62, N235 W160 L1. Bottom row (L to R): specimens Surface C-6, C-5, C-4, N218 W170 L3, N218 W170 L2, Surface A-1, C-11.

Specimen Surface A-58 consists of the proximal/medial sections only. The stem of this specimen is contracting toward the base and the base is rounded. The shoulders are strong and well-barbed, and the lateral edges are straight. The distal end is missing due to a transverse fracture. It is uncertain as to whether this fracture is use-related or represents a manufacturing failure. This specimen is very thin, and the workmanship is good. Minimal flaking is present on the ventral surface of this specimen and consists of edge trimming in the stem and shoulder areas and along the lateral edges. Material is Edwards chert.

Specimen N223 W153 L1 consists of the proximal section only. The stem of this specimen is contracting toward the base and the base is rounded. The shoulders are strong and well-barbed, and the lateral edges are straight. The distal end is missing due to a transverse fracture. It is uncertain as to whether the fracture is use-related or represents a manufacturing failure. This specimen is very thin, and the workmanship is good. Minimal flaking is present on the ventral surface of this specimen and consists of edge trimming in the stem and shoulder areas and along the lateral edges. Material is Edwards chert.

Specimen Surface C-9 consists of the proximal/medial sections only. The stem of this specimen is contracting toward the base and the base is rounded. The shoulders are strong and well-barbed, and the lateral edges are straight. The distal end is missing due to a horizontal fracture. It is uncertain as to whether this fracture is use-related or represents a manufacturing failure. This specimen is bifacially flaked. Workmanship is very good. Material is Edwards chert.

Specimen A-62 Surface, the stem of this specimen is contracting toward the base and the base exhibits slight damage. One shoulder is missing. The distal end and one of the lateral edges exhibit damage due to an impact fracture. The intact shoulder is strong and well-barbed. This specimen is small as compared to other examples representing a Perdiz point. This specimen is bifacially flaked. The workmanship is good. Material is Edwards chert.

Specimen N235 W160 L1, the stem of this specimen is contracting toward the base and the base is damaged. One of the barbs is slightly damaged and the distal end exhibits damage due to a possible impact fracture. The lateral edges are straight. This specimen is bifacially flaked. Workmanship is good. Material is Edwards chert.

Specimen Surface C-6 represents a fully intact and undamaged arrow point. The stem of this specimen is contracting toward the base and the base is rounded. The shoulders are strong and extremely well-barbed. The barbs have been formed by deep V-shaped corner notching. The lateral edges are straight and extremely serrated. The lateral edges at the distal end exhibit rework which has formed a very pointed tip. Cortex is also visible on the distal tip. This specimen is bifacially flaked. This specimen is very thin, and the workmanship is excellent. Material is Edwards chert.

Specimen Surface C-5, the stem of this specimen is missing. The shoulders are strong and extremely well-barbed. One barb exhibits slight damage. The barbs have been formed by deep V-shaped corner notching. The lateral edges are very straight and form an extremely sharp pointed tip. This specimen is bifacially flaked. This specimen is very thin, and the workmanship is excellent. Material is Edwards chert.

Specimen Surface C-4, the stem and one barb of this specimen are missing. The intact shoulder is strong and extremely well-barbed. The barbs have been formed by deep V-shaped corner notching. The lateral edges are straight and form a sharp pointed tip. This specimen is bifacially flaked. This specimen is very thin, and the workmanship is excellent. Material is Edwards chert. Because of the excellent workmanship of specimens C-4, C-5 and C-6, it is possible that all three of these arrow points were made by the same individual.

Specimen N218 W170 L3 represents an intact arrow point except for slight damage on the stem. The stem of this specimen is contracting toward the base and the shoulders are strong. The lateral edges at the distal end exhibit rework which has formed a very pointed tip. This rework has created a beveling of the blade at the distal end which has created a slight corkscrew twist of the blade. This specimen also exhibits bifacial flaking. Workmanship is very good. Material is Edwards chert.

Specimen N218 W170 L2, the stem of this specimen is contracting toward the base and the base is slightly rounded. This specimen is broken, possibly due to an impact fracture. The distal end is damaged, and one shoulder is missing. The intact shoulder is strong and well-barbed, and the lateral edges are straight. Minimal flaking is present on the ventral surface of this

specimen and consists of edge trimming in the stem and shoulder areas and along the lateral edges. Workmanship is good. Material is chert.

Specimen Surface A-1 exhibits extreme rework possibly due to breakage. The rework of the lateral edges has created a very thick and stubby form. The stem of this specimen is contracting toward the base and the basal edge is slightly damaged. Both shoulders are strong, however one shoulder exhibits slight damage. This specimen is bifacially flaked. Workmanship is good. Material is Edwards chert.

Specimen Surface C-11, the stem of this specimen is contracting toward the base and the base is flat to slightly rounded. The stem on this specimen is not as pointed at the base as observed on most Perdiz points. The stem on this specimen is similar to the stem of a Bonham arrow point. The shoulders of this specimen are strong and well-barbed. The distal end exhibits damage due to an impact fracture. The lateral edges have been reworked after breakage which has shortened the blade length considerably. This specimen also exhibits bifacial flaking. Workmanship is very good. Material is Edwards chert.

### *Scallorn*

Scallorn arrow points are triangular, corner-notched points with straight to convex lateral edges and well-barbed shoulders. The expanding stem varies from a broad wedge shape to extremities as wide as the shoulders. The base may be straight, convex or concave. During the Austin Phase, of which Scallorn points are chronological

hallmarks, they are often found with burials (grave goods) and in burials (as cause of death). The best evidence for warfare among ancient groups in central, south and coastal Texas comes from Scallorn-related woundings and deaths. These points are found over much of Texas. Chronological placement for this point type is Late Prehistoric, ca. AD 750 to AD 1,200 (Turner and Hester 2011:209).

Seven Scallorn arrow points were recovered from this site and these specimens are described as follows (Figure 22).

Specimen Surface B-3 is intact except for slight damage to one shoulder. The stem of this specimen expands toward the base forming a broad wedge. The base is straight. The shoulders are strong and well-barbed, and the lateral edges are straight. Minimal flaking is present on the ventral surface of this specimen and consists of edge trimming in the stem and shoulder areas and along the lateral edges. This specimen is very thin, and the workmanship is good. Material is Edwards chert.

Specimen Surface A-60, the stem of this specimen is expanding toward the base and the base is slightly concave and almost as wide as the shoulders. One shoulder is missing, and the other shoulder is slightly damaged. The distal end is missing, possibly due to an impact fracture. Minimal flaking is present on the ventral surface of this specimen and consists of edge trimming in the stem and shoulder areas and along the lateral edges. Workmanship is good. Material is Edwards chert.





Figure 22. Scallorn arrow points recovered from 41PR22 (L to R): specimens Surface B-3, A-60, A-79, A-2, A-65, A-93, A-52.

Specimen Surface A-79, the stem of this specimen expands slightly toward the base and the base is straight. The distal end is missing due to a transverse fracture. It is uncertain as to whether this fracture is use-related or represents a manufacturing failure. One shoulder is also missing. The intact shoulder is strong. This specimen is bifacially flaked. Workmanship is very good. Material is Edwards chert.

Specimen Surface A-2, the stem of this specimen expands toward the base and the base is slightly convex. Both sides of the stem are damaged, and the distal end is missing, possibly due to an impact fracture. Both shoulders are also missing. This specimen also exhibits bifacial flaking. Workmanship is very good. Material is Edwards chert.

Specimen Surface A-65, the stem of this specimen exhibits damage and expands toward the base. This specimen has been exposed to extreme heat. Heat damage in the form of pot lids is visible on the dorsal and ventral sides and extreme fracturing is visible on the dorsal side which accounts for the destruction of the medial and distal sections. Minimal flaking is present on the ventral surface of this specimen and consists of edge trimming in the stem and shoulder areas. Material is Edwards chert.

Specimen Surface A-93 is also a fairly small arrow point. The stem of this specimen is expanding toward the base and the base is

essentially straight and almost as wide as the shoulders. One side of the stem and the basal edge exhibits damage. Both shoulders are also missing. Workmanship is good. Material is quartzite.

Specimen Surface A-52 is very small as compared to other examples representing a Scallorn point. The stem of this specimen expands toward the base and the base is straight and almost as wide as the shoulders. Both sides of the stem and the basal edge exhibits damage. Both shoulders exhibit damage. The distal tip is also damaged and both lateral edges of the blade have been reworked. This specimen also exhibits bifacial flaking. Workmanship is good. Material is Edwards chert.

#### SCRAPERS

Two scrapers were recovered from the Pate site 41PR22 and are described as follows (Figure 23 and Figure 24).



Figure 23. Scraper recovered from 41PR22. Specimen Surface A-14.

Specimen Surface A-14 is an end scraper. It is made on a thick primary flake which has allowed for the creation of long steep angled flaking scars on the dorsal face and on the distal end of the flake which has formed a large semicircular tool edge. Cortex is visible over the entire dorsal surface except along the lateral edges. Workmanship is good. Material is Edwards chert.



Figure 24. Thumb-nail scraper recovered from 41PR22. Specimen N218 W169 L2.

Specimen N218 W169 L2 is made on a tertiary flake and represents a thumb-nail scraper. Steep angled flaking scars located on the dorsal face and on the distal end of the flake have formed a small semicircular tool edge. This specimen is similar to the “thumb-nail” scrapers associated with the Late Prehistoric Toyah horizon (Black 1986:78-79) of Central and South Texas.

Workmanship is very good. Material is Edwards chert.

#### EDGE-MODIFIED FLAKES

A total of 43 modified flakes were recovered from the Pate site 41PR22. The specimens within this collection consist of trimmed flakes that exhibit intentional retouch along one or more lateral edges and edge-damaged flakes that exhibit areas of use-wear along one or more lateral edges. These specimens consist of 1 primary flake, 15 secondary flakes and 27 tertiary flakes. A representative sample of these artifacts is shown in Figure 25 and is described as follows. (Figure 25 consists of hand drawn illustrations in place of a digital image so that the flaking scars of each specimen can be better displayed).

Specimen N172 W200 L4 represents a tertiary flake that exhibits unifacial retouch along the lateral edges of the dorsal surface. This flake has been used in some form of cutting and scraping activities.

Some use-wear is visible amid the flaking scars. Material is Edwards chert.

Specimen N200 W175 L4 represents a secondary flake that exhibits unifacial retouch along the lateral edges of the dorsal surface. Cortex is visible on approximately 10% of the dorsal surface. This flake has been used in some form of cutting and scraping activities. Some use-wear is visible amid the flaking scars. Material is Edwards chert.

Specimen N218 W169 L2 represents a tertiary flake that exhibits unifacial retouch along two of the lateral edges of the dorsal surface. This flake has been used as a very small scraper. Steep angled flaking scars, on the dorsal surface, have created a semicircular tool edge that is ideal for scraping. Material is Edwards chert.

Specimen N235 W160 L1 represents a secondary flake. Cortex is visible on the dorsal surface. Two very small and deeply concave notches have been cut into one of the lateral edges on the dorsal surface. These notches were created by pressure flaking. These two small notches have been used for a very small and detailed scraping

activity. Moderate use-wear is visible amid the flaking scars in both of these notches. Material is Edwards chert.

Specimen N237 W160 L1 represents a tertiary flake that exhibits unifacial retouch along the lateral edges of the dorsal surface. This flake has been used in some form of cutting and scraping activities.

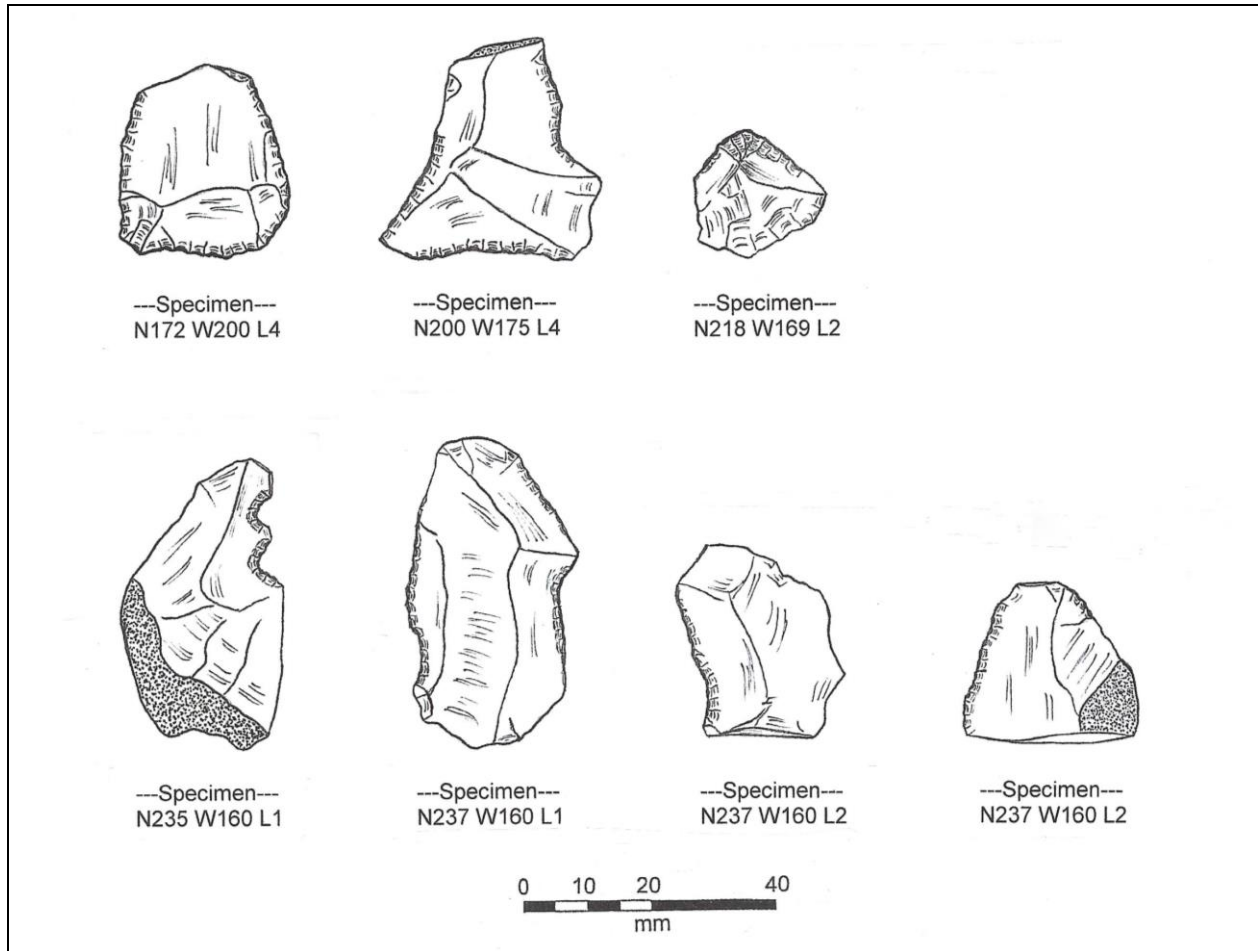


Figure 25. Modified flakes recovered from 41PR22. Top row (L to R): specimens N172 W200 L4, N200 W175 L4, N218 W169 L2. Bottom row (L to R): specimens N235 W160 L1, N237 W160 L1, N237 W160 L2, N237 W160 L2.

Some use-wear is visible amid the flaking scars. Material is Edwards chert.

Specimen N237 W160 L2 represents a tertiary flake that exhibits unifacial retouch along two lateral edges of the dorsal surface. This flake has been used in some form of cutting and scraping activities. Some use-

wear is visible amid the flaking scars. Material is Edwards chert.

Specimen N237 W160 L2 represents a secondary flake that exhibits unifacial retouch along one of the lateral edges of the dorsal surface. Cortex is visible on approximately 20% of the dorsal surface

This flake has been used in some form of cutting and scraping activities. Some use-wear is visible amid the flaking scars. Material is Edwards chert.

#### BIFACES

A total of 24 biface and biface fragments were recovered from the Pate site 41PR22. These specimens represent all stages of manufacture. One specimen (Figure 26) was identified as a beveled knife. This knife and a representative sample of the bifaces (Figure 27) are described as follows.

Specimen N223 W153 L1 represents the distal end of a beveled knife. Extensive rework is present along the lateral edges of this artifact. This rework has created steep alternate beveling of the lateral edges. The workmanship of this specimen is excellent. Material is Edwards chert.

Specimen N237 W160 L1 is an early-stage biface or preform. This specimen exhibits percussion flaking only. Workmanship is good. Material is Edwards chert.

Specimen Surface C-12 represents the medial/distal end of an early-stage biface.

Workmanship is fair. Material is Edwards chert.

Specimen Surface A-33 represents the medial section of a biface. One of the lateral edges is damaged which gives the impression that this specimen represents the medial section of a dart point. Workmanship is good. Material is heat treated Edwards chert.

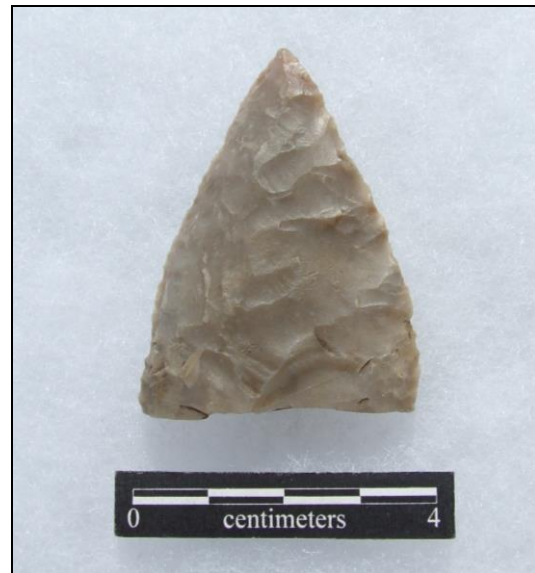


Figure 26. Beveled knife recovered from 41PR22. Specimen N223 W153 L1.



Figure 27. Bifaces recovered from 41PR22 (L to R): specimens N237W160 L1, Surface C-12, Surface A-33, N237W160 L3.

Specimen N237 W160 L3 represents the proximal section of a biface. This specimen exhibits percussion flaking only. Use wear is visible along the lateral edges. Workmanship is good. Material is Edwards chert.

#### DRILLS/PERFORATORS

One drill and one perforator were recovered from the Pate site 41PR22 and are described as follows (Figure 28 and Figure 29).



Figure 28. Drill recovered from 41PR22. Specimen Surface C-8.

Specimen Surface C-8 represents a small flake drill. This specimen consists of the proximal section only with the distal end/bit missing. The distal end is missing, possibly due to use. Workmanship is very good. Material is Edwards chert.



Figure 29. Perforator recovered from 41PR22. Specimen Surface A-80.

Specimen Surface A-80 represents a small perforator. The proximal end of this specimen is missing, possibly broken during use. This specimen is made on a flake. Minimal retouch is present along the lateral edges, on the ventral and dorsal surfaces, and extends to the distal end. This retouch has created a very sharp and pointed tip. Cortex is also visible on the distal tip. Workmanship is good. Material is heat-treated Edwards chert.

#### HAMMERSTONES

A total of 3 hammerstones were recovered from the Pate site 41PR22. Two of these specimens were locally obtained quartzite cobbles from the Trinity River Basin and one was made of Edwards chert. These three specimens are described as follows (Figure 30 and Figure 31).

Specimen Surface A-91 is made from a quartzite cobble. Use wear in the form of battering is visible along the ends and edges of this specimen. The size of this hammerstone is 54 mm in length by 48 mm in width and 49 mm in thickness. The weight of this specimen is 159.9 grams.

Specimen Surface A-22 is made from a chert cobble. Extreme use wear in the form of battering is visible along the ends and edges of this specimen. The size of this hammerstone is 48 mm in length by 41 mm in width and 42 mm in thickness. The weight of this specimen is 101.5 grams.

Specimen Surface A-92 is made from a quartzite cobble. Use wear in the form of battering is visible along one side of this specimen. The size of this hammerstone is 69 mm in length by 74 mm in width and 44 mm in thickness. The weight of this specimen is 274.5 grams.

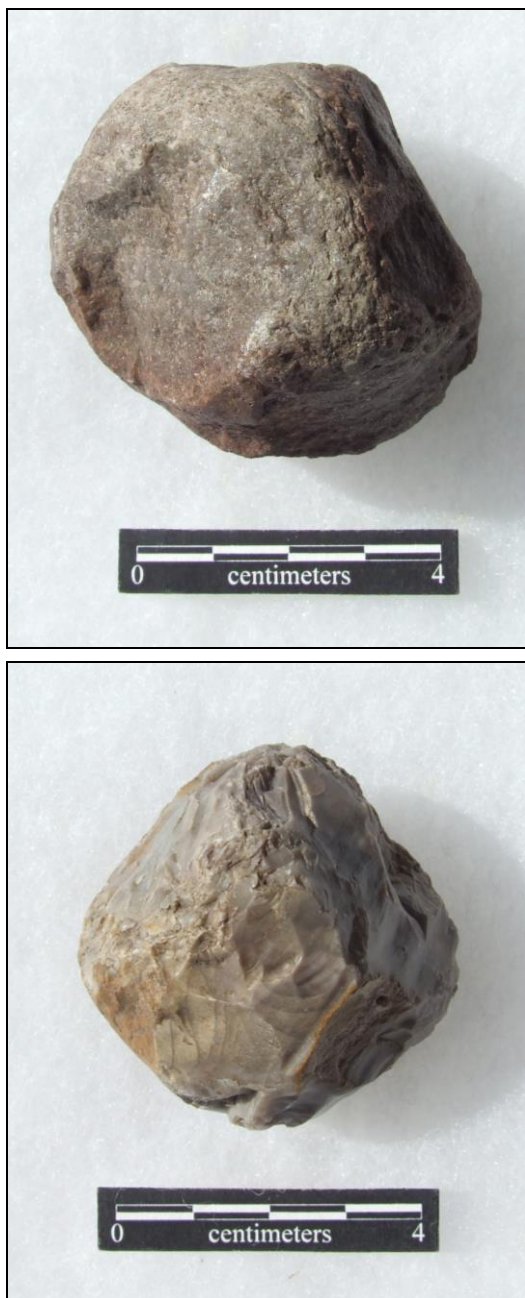


Figure 30. Hammerstones recovered from 41PR22. Top: specimen Surface A-91. Bottom: specimen Surface A-22.



Figure 31. Hammerstone recovered from 41PR22. Specimen Surface A-92.

#### CORES

Two cores were recovered during the investigation of the Pate site. These specimens were cobbles that were reduced to produce small tool flake blanks (Figure 32). One of the cores, specimen N200 W175 L3, is considered exhausted based on its small size and the number of flake scars present. Specimen Surface A-18 may have also been used as a hammerstone. Use wear in the form of battering is visible along one of edges of this specimen.

#### GROUND AND POLISHED STONE

A total of 3 specimens, representing thin grinding slabs or manos and 1 specimen representing a polished stone were recovered from the Pate site 41PR22. These four specimens are described as follows (Figure 33 and Figure 34).



Figure 32. Cores recovered from 41PR22. Specimens N200 W175 L3, Surface A-18, L to R.



Figure 33. Ground stone recovered from 41PR22. Top row: specimen Surface A-82. Bottom row (L to R): specimen Surface A-89, Surface A-94.

Specimen Surface A-82 is made from sandstone and may represent a thin grinding slab. This specimen measures 25

mm in thickness and exhibits an artificially smoothed surface. The opposing surface is

uneven and exhibits no evidence of use wear.

Specimen Surface A-89 is made from sandstone and may represent a mano or grinding slab. This specimen measures 18 mm in thickness and exhibits an artificially smoothed surface on both sides.

Specimen Surface A-94 is made from sandstone and may represent a mano. This specimen measures 16 mm in thickness and exhibits an artificially smoothed surface on both sides.



Figure 34. Polished stone recovered from 41PR22. Specimen N215 W168 L1.

Specimen N215 W168 L1 is made from quartzite and may represent a mano. This

specimen measures 41 mm in thickness and exhibits an artificially smoothed surface on both sides.

### Prehistoric Ceramics

A total of 32 prehistoric pottery sherds were recovered from the Pate site 41PR22 (Figure 35 through Figure 40). Two of the sherds from Area B represent approximately 60% of the base of a pottery vessel. The sherds from this site represent affiliations with the Caddo to the east along with affiliations with Southern Plains cultures to the north in Texas and Oklahoma. An analysis of the ceramics was accomplished by Dr. Timothy Pertulla and the results of his analysis are discussed in Appendix 1.



Figure 35. Prehistoric ceramics recovered from 41PR22. Specimens Surface A-40, A-42, L to R.





Figure 36. Prehistoric ceramics recovered from 41PR22. Top row (L to R): specimens N218 W170 L3, N218 W170 L2. Bottom row (L to R): specimens Surface C-7, C-10, N218 W170 L2.



Figure 37. Prehistoric ceramics recovered from 41PR22. Top row (L to R): specimens N218 W170 L1. Bottom row (L to R): specimens Surface A-63, Surface A-83, N218 W170 L3.



Figure 38. Prehistoric ceramics recovered from 41PR22. Top row (L to R): specimens Surface A-68, A-84, N235 W160 L1, Surface A-45. Bottom row (L to R): specimens N218 W169 L1, Surface A-11, N218 W170 L2.



Figure 39. Prehistoric ceramics recovered from 41PR22. Top row (L to R): specimens N218 W170 L2, N218 W170 L2, N218 W170 L3, Surface A-3, A-47. Middle row (L to R): specimens Surface A-9, N237 W160 L1. Bottom row (L to R): specimens Surface A-41, N218 W170 L1, Surface A-49, A-50, N235 W160 L2.



Figure 40. Base of pottery vessel recovered from 41PR22. Specimens B-1, B-2.

### Faunal Remains

A total of 338 animal bone fragments were recovered from the site. The majority of the bones consisted of very small fragments, 3 cm or less, suggesting that the bones were being broken up for bone grease extraction. Elements assigned to species or family included white tailed deer, turtle, bird and rodent. Analysis of the faunal material shows that the inhabitants of this site utilized not only animals from the upland prairies and woodlands surrounding the site, but they also exploited the creek and riverine environment adjacent to the site. An analysis of the faunal material was accomplished by Art Tawater and the results of his analysis are discussed in Appendix 2.

### FRESHWATER MOLLUSCA

A total of 26 freshwater mussel shell, consisting mostly of umbos and shell fragments, were recovered from the site. One mussel shell was identified as to genus and species. This specimen (Figure 41) was

identified as a Three-Ridged Mussel, *Amblema plicata* (Howells et al. 1996:33). Based upon the low quantity of mussel shell encountered, suggests that their role as a food resource was only slightly exploited by the site's inhabitants.



Figure 41. Freshwater mussel shell (*Amblema plicata*) recovered from 41PR22. Specimen N235 W160 L1.

## SUMMARY & CONCLUSIONS

Archeological testing confirmed that the Pate site (41PR22) is a multi-component prehistoric campsite that may have been occupied from the Middle Archaic through the Late Prehistoric II time periods. Based upon the quantity and types of diagnostic projectile points recovered, the most intensive occupation at this site occurred during the Late Prehistoric time periods.

Based upon the diagnostic dart points recovered at this site, a very minimal presence during the Middle, Late and Transitional Archaic time periods was observed. A total of 12 dart points including dart point fragments were recovered. The Middle Archaic time period is represented by the recovery of only two projectile points consisting of one Bulverde point and one Carrollton point. The Late Archaic time period is represented by the recovery of only two projectile points consisting of one Gary point and one Elam point and the Transitional Archaic time period is represented by the recovery of two projectile points consisting of one Ellis point and one Edgewood point. A significant occupation of this site was noted in the Late Prehistoric time period with the recovery of 59 arrow points including arrow point fragments. The arrow point types recovered consisted of Scallorn, Bonham, Clifton, Perdiz and Cuney. In the Late Prehistoric time period, the arrow point types are dominated by Clifton and Perdiz.

The most intensive time period of occupation at the Pate Site coincides with six other sites investigated on the West Fork of the Trinity River. These six sites, the Fort Worth Nature Center Gravel Quarry site (41TR113), the Chambers site (41TR114), the Rough Green site (41TR162), the Fountain site (41TR136), the River Bend site

(41TR68) and site (41TR142) all date to the Late Archaic and Late Prehistoric time periods.

The basis for interpreting the Pate site as a relatively permanent prehistoric campsite is based upon the presence of freshwater mussel, animal bone, chipped stone tools, ceramics, ground stone and associated hearth features. Regarding the faunal remains recovered at this site, a heavy reliance on deer, rabbit and turtle was observed. Based on the ceramic analysis, Pertulla suggests affiliations with the Caddo to the east and the Southern Plains cultures to the north in Texas and Oklahoma.

Even though only a limited amount of testing for intact archeological deposits was accomplished, these activities were sufficient to demonstrate that intact cultural deposits, including hearth features and well-preserved organic remains, are present at this site. Testing of the site revealed four buried hearth features with well-preserved organic remains. Two hearths were encountered in Area A of the site and two hearths were encountered in Area B.

In Area B of the site, wood-charcoal samples collected from Features 3 and 4 produced calibrated radiocarbon dates of AD 1561 and AD 1457 which fall well within the accepted date range for the Toyah phase time period.

It is very likely that continued testing of this site would have revealed additional intact features and well-preserved living surfaces.

In regard to the preservation of this site, it has been greatly impacted by a residential housing project. The area that contains the site has been heavily impacted by the presence of numerous residential houses.

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## APPENDIX 1

### ANALYSIS OF THE PREHISTORIC CERAMIC VESSEL SHERDS FROM THE PATE SITE (41PR22), PARKER COUNTY, TEXAS

*Timothy K. Perttula*

In this report, I analyze a small assemblage of ceramic vessel sherds from the Pate site in Parker County, Texas, in North Central Texas (Figure 1). The work done at this Late Prehistoric site was led by Bryan Jameson, who requested these analyses. The ceramic sherd assemblage includes 23 sherds and six sherdlets, almost all from Area A (n=20 sherds and all six sherdlets). There is one large, conjoined body-base sherd from Area B, and two body sherds in Area C.

#### Analytical Methods

A number of attributes have been employed in this study of the aboriginal ceramic vessel sherds (greater than 1.5 cm in length and width) from the Pate site; sherdlets (less than 1.5 cm in length and width) in the assemblage have been counted (n=6) but not further analyzed in detail for this study. The attributes discussed below are commonly employed in the analysis of aboriginal ceramics of prehistoric and historic age in Texas, as well as assemblages in North Central Texas (Arnn et al. 2010; Ellis and Perttula 2010; Ellis et al. 2015);).

*Temper inclusions or Non-plastics:* Deliberate and indeterminate materials in the paste (Rice 1987:411), including a variety of tempers (i.e., grog or crushed sherds, bone, and shell, etc.) and “particulate matter of some size.” The burned mussel shell, grog, and bone non-plastics in the wares at the Pate site appear to have been deliberately added to the paste as tempers. The mussel shell and bone used for temper by potters has likely been burned and calcined, then crushed, before it was

added to the paste. Sherd cross-sections were inspected macroscopically and with a 10X hand lens to determine the character of the paste and its inclusions.

Clays used for vessel manufacture were probably gathered from nearby alluvial settings, but almost certainly they were gathered within a short (1-7 km away, at most) distance from a settlement or a temporary camp (e.g., Arnold 2000:343; Arthur 2006:52), so that an inordinate amount of time and energy was not expended by potters in hauling clay back to the site. Arthur (2006:52) points out that potters would be likely to select lower quality clays for vessel manufacture than high quality clays if the latter were farther away.

Natural Regions of Texas

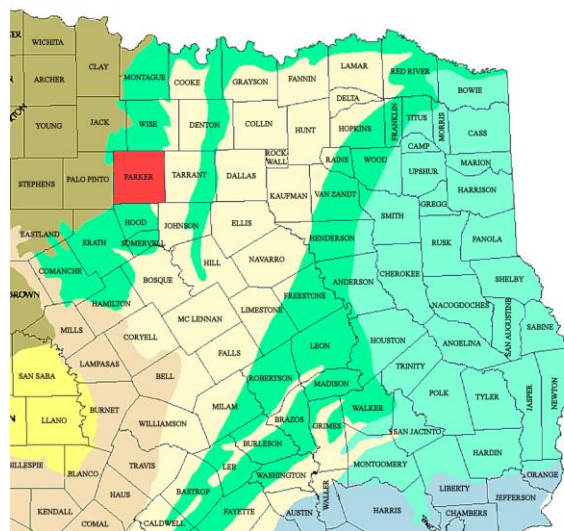


Figure 1 - 1. Location of Parker County in North Central Texas.



## VESSEL FORM

The principal vessel form category is the restricted container, namely jars. As restricted containers, jars allow access by hand. There are also a few sherds from bowls and bottles.

Additional form attributes that are recorded on rim sherds include the rim profile (e.g., outflaring or everted, direct, vertical or standing, and inverted), lip profile (rolled to the exterior, rounded, flat, or thinned), and attributes for base sherds include base shape (flat or rounded) and base diameter.

## CORE COLORS

Observations on ceramic sherd cross-section colors permit consideration of oxidation patterns (Teltser 1993:Figure 2a-h; Perttula 2005:Figure 5-30i-l), and thus the conditions under which a vessel was fired and then cooled after firing (Figure 2). None of the sherds had any charred organic remains or apparent residues.

Vessels tend to be fired in a variety of different ways, presumably reflecting personal preferences in firing, the desired vessel color, the kind of clays and their pastes that were used, and the functional and technological requirements of the kinds of vessel forms that were being manufactured at a specific site. Vessels were likely fired in an open fire, with the vessels either set atop the fire or nestled in the coals and ash.

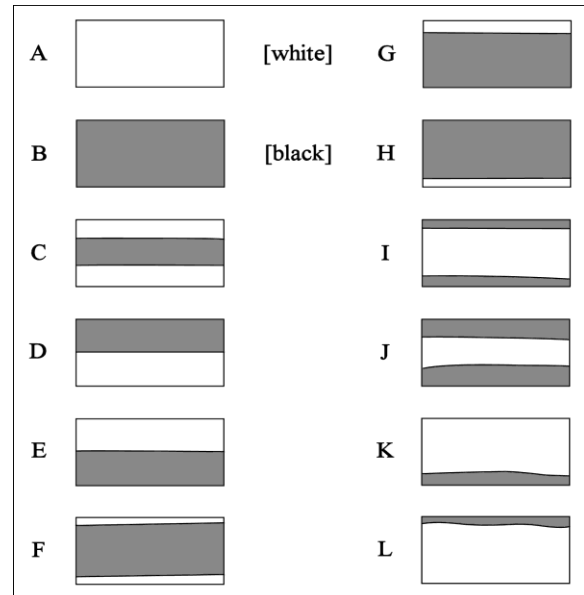


Figure 1 - 2. Firing conditions in sherd cross-sections: a, oxidized; b, reduced; c-e, incompletely oxidized during firing; f-h, fired in a reducing environment and cooled in the open air; i-l, sooted or smudged; the exterior sherd surface is at the top of each cross-section. Figure prepared by Lance Trask.

## WALL THICKNESS

Thickness is recorded in millimeters for each sherd, using a vernier caliper. These variations in vessel wall thickness are likely related to functional and technological decisions made by potters in how these different wares were intended to be used in local encampments or households, as well as the fact that vessels were likely built from the thick base upwards to the rim, with progressively thinner walls proceeding from the body to the rim (Krause 2016:57). The less substantial vessel walls in some of the vessel sherds would be well suited to the cooking and heating of foods and liquids and, because heat would have been conducted efficiently while heating rapidly, would have contributed to their ability to withstand heat-related stresses. Much thicker vessel sherds (greater than 8 mm in thickness) would have created stronger and more stable vessels and would have been well suited for use as storage containers

(Rice 1987:227) or heavy-duty cooking tasks. Other wares may have also been intended for use in the serving of foods and liquids, and thinner and less porous vessel walls would have helped to maintain the temperature of served food and liquids; thinner and lighter vessels would have also contributed to the ease with which serving vessels could be handled, used, and transported.

#### INTERIOR AND EXTERIOR SURFACE TREATMENT

The primary methods of finishing the surface of ceramic vessels at the Pate site is smoothing (e.g., Rice 1987:138), either on one or both surfaces. Smoothing creates “a finer and more regular surface...[and] has a matte rather than a lustrous finish” (Rice 1987:138). Burnishing creates an irregular lustrous finish marked by parallel facets left by the burnishing tool (perhaps a pebble or bone).

*Decoration:* Decorative techniques present in the ceramic vessel sherds from the Pate site include brushing, brushed-incised, engraved, and red-slipped elements. These decorative techniques were executed by using frayed sticks or grass stems (brushing) dragged across the body surface; drawing a tool through the wet clay body (incising); after the vessel is leather-hard or fired, a sharp tool was used to engrave or cut lines in the vessel surface (engraving); red-slipped or red-washed. Distinctions between red washes and red-slipped sherds follow those made by Linda W. Ellis (personal communication 2018). A red wash is applied to a dry vessel surface after the initial surface finish has dried. The wash may be spotty and does not adhere very well to the vessel surface and may be easily flaked or worn off during vessel use. Red slips are distinguished by their color,

textural differences, and thickness on a leather-hard vessel surface compared to a red wash, and the slip adheres well to vessel surfaces; slipped vessels are commonly burnished on vessel surfaces. Slips are likely to be a different color from the body of the vessel; decorations can be cut into the slip when it is dry (i.e., incised lines) or after the vessel is fired (i.e., engraved lines).

#### TYPE

Named ceramic types follow the work of Krieger (1946) and Suhm and Jelks (1962).

#### Ceramic Wares at the Site

There are two principal ceramic wares in the sherd assemblage from the Pate site: ancestral Caddo grog-tempered (n=19) and shell-tempered (n=4) Nocona Plain. Two of the sherds from Area A are grog-tempered, two are bone-tempered (from the surface), and two are from shell-tempered vessels. In Area A, 90 percent of the sherds are from grog-tempered vessels and the remainder are shell-tempered; the one conjoined body-base sherd in Area B is grog-tempered. Both sherds in Area C are shell-tempered (Table 1).

The grog- (n=18) and grog-bone (n=1) tempered sherds from Area A and B are from ancestral Caddo ceramic vessels likely manufactured in East Texas. The sherds are from vessels that were primarily fired in a reducing environment, either left to cool in that environment (n=5, see Figure 2b) or pulled from the fire and left to cool in the open air (n=9, see Figure 2f-h). One utility ware sherd is from a vessel that has been sooted or smudged (see Figure 2k), two other sherds are from vessels that were fired and cooled in a high oxygen environment (see Figure 2a), and the remaining sherds are from vessels that were incompletely oxidized in the firing (see Figure 2e).

Table 1 - 1. Detailed Analysis of a Sample of the Ceramic Sherds by Unit-Level and Area from the Pate Site (41PR22).

Provenience	Sherd Type	Temper	Firing Condition*	Surface Treatment**	Thickness (mm)	Decoration/Rim-Lip Form
<b>AREA A</b>						
<b>Grog-Tempered Ware</b>						
Surface	body, bottle	Grog	G	E B	5.1	Engraved element
Surface	body	grog	H	I/E SM	7.7	Plain
Surface	body	grog	A	E SM	7.8	Plain
Surface	body	grog-bone	B	I/E SM	7.3	Plain
Surface	body	grog	G	I SM	6.6	Plain
Surface	body	grog	B	-	5.4	Engraved element
Surface	body	grog	E	-	7	Straight incised line
Surface	body, bottle	grog	B	E SM	4.1	Engraved element; red pigment in engraved lines
Surface	body	grog	F	-	6.7	Plain
Surface	body	grog	K	-	7.1	Brushed-incised element
N218-W169, lv. 1	body	grog	E	-	8.1	Plain
N218-W170, lv. 1	body	grog	G	-	7.8	Plain
N235-W160, lv. 1	body	grog	A	-	6	Plain
N237-W160, lv. 1	body	grog	B	I/E SM	8.1	Plain
N218-W170, lv. 2	body	grog	G	-	7.1	Plain
N218-W170, lv. 2	body, bottle	grog	G	E SM	6.3	Plain
N235-W160, lv. 2	body	grog	B	I/E SM	7.8	Plain
N218-W170, lv. 3	body	grog	G	E SM	6.7	Plain
<b>Shell-Tempered Ware</b>						
N218-W170, lv. 1	rim	shell	B	-	8.4	Plain; direct rim and rounded, interior beveled lip
N218-W170, lv. 2	base	shell	B	-	11	Plain
<b>AREA B</b>						
Cutbank	body-base	grog	G	I SM	7.4-10.8	Vertical brushed on the body
<b>AREA C</b>						
Surface	body	shell	B	-	5.9	Plain
Surface	body	shell	E	I SM	6.4	Plain

\*See Figure 1 - 2

\*\*I=interior, E=exterior, SM=smoothed, B=burnished

Almost 60 percent of the ancestral Caddo ceramic sherds have some form of surface treatment. Ten sherds (52.6 percent) have been smoothed on either one (n=6) or both (n=4) vessel surfaces, and one (5.3 percent) engraved bottle sherd has been burnished on its exterior surface. Those sherds smoothed on the interior only are likely from jars, and those smoothed only on the exterior may be from bowls. Those sherds with both interior and exterior smoothing may be from both vessel forms.

The plain grog-tempered body sherds are from vessels with moderately thick vessel walls:  $7.23 + 0.65$  (range, 6.0-8.1 mm), and the one flat base sherd (conjoined with vertical brushed body sherds) from Area B is 10.8 mm. Utility ware sherds from both Area A and B have a mean thickness of  $7.17 + 0.16$  mm (range, 7.0-7.4 mm), comparable to the plain body sherds, and suggesting that at least some of the plain body sherds are from the undecorated portions of utility ware vessels. The fine ware sherds are thin:

4.87 + 0.51 mm (range, 4.1-5.4 mm). Thin-walled Caddo bottle and bowl sherds are expected in ancestral Caddo ceramic assemblages.

There are five decorated grog-tempered sherds in the Area A assemblage: three engraved fine wares from bottles and a bowl and two utility ware sherds with incised or brushed-incised decorative elements. All three fine ware sherds are from the surface of Area A. The first is a bottle sherd with parallel and opposed curvilinear engraved

lines (Figure 3a). The second fine ware sherd is from a bowl with a hatched zone divided into narrow panels by several possible vertical engraved lines (Figure 3b), and the third Area A fine ware sherd is also from a bottle. It has closely spaced concentric circles filled with closely spaced diagonal hatched lines (Figure 3c). As is common on Caddo engraved bottles, a red ochre-rich clay pigment was rubbed in the engraved lines on this sherd.



Figure 1 - 3. Grog-tempered decorated sherds from Area A and B at the Pate site: a, engraved bottle sherd, Surface, Area A; b, engraved body sherd, Surface, Area A; c, engraved bottle sherd, Surface, Area A; d, brushed-incised body sherd, Surface, Area A; e, Bullard Brushed body-base sherd, Area B cutbank (Feature 3).

The first of the utility ware body sherds in Area A, from the surface, has a single straight incised line; the type is unknown. The second, also from the surface, has parallel incised lines with a zone of diagonal brushed marks between two of the lines (see Figure 3d).

Of note among the sherdlets from the surface in Area A are two bone-tempered rim and body sherds with interior red slips; none of the Area A sherds, or those from Areas B and C, are red-slipped. The use of a hematite-rich clay slip on grog- or bone-tempered vessels is a notable feature of ancestral Caddo ceramics in certain parts of East Texas (i.e., upper Red River, Sulphur River, and Sabine River) during the period from ca. AD 1200-1400, the Middle Caddo period (Perttula 2020), and this may hint at the source(s) and age of the red-slipped vessel sherdlets in Area A at the Pate site assemblage.

The one grog-tempered body-base sherd from Feature 3 (upper hearth) in Area B is part of a Bullard Brushed jar (see Suhm and Jelks 1962:21 and Plate 11). It has vertical brushing marks that extend to within 6 mm of the base (see Figure 3e). A calibrated radiocarbon date on Feature 3 has a median probability of AD 1561 (Bryan Jameson, personal communication 2020), indicating that this Bullard Brushed body-base sherd dates from Late Caddo period times (ca. AD 1400-1680).

The four shell-tempered sherds from Area A (n=2) and Area C (n=2) at the Pate site are from Nocona Plain vessels, and include one rim (Figure 4) from Area A, two body sherds from Area C, and a base sherd from Area A. The co-occurrence of shell-tempered and grog-tempered vessel sherds in Area A deposits may suggest that they were in use contemporaneously there. The age of the

Area C shell-tempered sherds after ca. AD 1250 is not known.

As defined first by Krieger (1946:109-111, Figure 5, and Plates 4-5), and codified by Suhm and Jelks (1962:115 and Plate 58), it is a shell-tempered ware of jars and bowls with everted rims, mainly plain-surfaced, but there are sherds with applied, punctated, or incised decorative elements. In this ware, coarse, crushed, and burned mussel shell temper is a principal constituent in the ceramic paste. It is the principal ceramic ware of the post-AD 1250 Late Prehistoric Henrietta focus or phase recovered on sites on the upper Red (in both Texas and Oklahoma), Brazos, and Trinity rivers (Drass and Martin 2010; Prikryl and Perttula 1995:192-193).

Three of the four shell-tempered sherds are from vessels fired in a reducing or low oxygen environment (see Figure 2b), and they have not been smoothed on either interior or exterior surfaces. The fourth sherd, from Area C, is from a vessel that was incompletely oxidized during firing (see Figure 2e). The rim sherd is direct or vertical in profile, with a rounded but interior beveled lip (see Figure 4). It is 8.4 mm thick; the body sherds range from 5.9-6.4 mm in thickness; and the flat base sherd is 11.0 mm thick.



Figure 1 - 4. Nocona Plain rim sherd from N218-W170, level 1, at the Pate site.

## Summary & Conclusions

Prehistoric ceramic vessel sherds have been recovered in Area A (n=20), Area B (n=1), and Area C (n=2) at the Pate site in North Central Texas. The principal ceramic ware represented at the site, most notably in Areas A and B, are from ancestral Caddo jars, bottles, and bowls that have grog temper (n=19). Several sherds in this ware have decorative elements, including engraved fine wares and incised, brushed, and brushed-incised utility wares; two grog-tempered sherdlets in Area A have an interior red slip. The one brushed sherd is from a ca. AD 1561 Bullard Brushed jar, based on its dated context in Feature 3, while none of the other decorated sherds can be identified to a defined ceramic type. Nevertheless, the occurrence of both brushed-incised, and red-slipped sherds from Area A at the Pate site suggests that the occupation there dates between ca. AD 1200-1400. The decorative elements on the engraved bottle and bowl sherds are consistent with that age in East Texas Middle Caddo period assemblages (see Perttula 2020).

The remainder of the sherds (n=4) from the Pate site are from Nocona Plain vessels in Area A and C. This shell-tempered ware is found on Late Prehistoric sites dating after ca. AD 1250 in the North Central Texas region, and thus they may be broadly contemporaneous with the grog-tempered wares in Areas A and B.

Based on the available evidence gathered from the grog-tempered and shell-tempered wares, as well as the few decorated grog-tempered sherds, from the Pate site, the ceramic assemblage from Areas A-C may be part of separate prehistoric occupations dating from as early as ca. AD 1200-1400 and as late as the mid-16<sup>th</sup> century AD. The density of ceramic sherds at the site suggests that the use of ceramic vessels by the aboriginal inhabitants was low at any one time, and it is likely that none of the ceramics were manufactured on the site, even though the range of vessel forms (i.e., jars, bottles, and bowls) is notable. Instrumental neutron activation analysis and ceramic petrographic analysis of a sample of the sherds would be needed to determine the manufacturing and production locales of the grog-tempered and shell-tempered vessels recovered from the Pate site, but the decorated grog-tempered wares appear to have been made by ancestral East Texas Caddo potters. The shell-tempered sherds at the site point to manufacture by Henrietta phase potters.

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**APPENDIX 2**  
**FAUNAL ANALYSIS OF 41PR22**  
*Art Tawater*

Three hundred and thirty-eight animal bones were recovered from test excavations at the Pate site (41PR22). All of the elements collected were analyzed using the author's comparative collection. The majority of the bones consisted of very small fragments, 3 cm or less, suggesting that the bones were being broken up for bone grease extraction. The majority (44.4%) of the faunal remains consisted of small fragments of bone identified only as to medium mammal.

### **Taxon**

Taxonomic identifications were made to the most specific level possible (Table 1). Elements that could not be identified to species or family were assigned to either large, medium or small mammal categories. Assignment of an element to these categories was primarily based on the relative size, density and morphology of the individual element.

Elements assigned to species or family included white tailed deer, turtle, bird and rodent.

Table 2 - 1. Taxa recovered from 41PR22.

<b>Taxa</b>	<b>Common Name or Description</b>	<b>Count</b>	<b>Percent</b>
<i>Odocoileus virginianus</i>	White-tailed deer	12	3.55
<i>Testudinata</i> sp.	Turtle	15	4.40
Large mammal	Cow to bison size	2	0.60
Medium mammal	Dog to deer size	150	44.38
Small mammal	Gopher to rabbit size	13	3.85
Small bird		1	0.30
Rodent		1	0.30
Unidentified		144	42.60
Total		338	100.00

### **Taphonomy**

Taphonomic processes assessed in this analysis included environmental (root etching, pitting), animal (carnivore and rodent gnawing) and human (burning, cut marks and modification for tools).

No pitting, root etching or carnivore damage was noted on any of the elements, and none had been modified as tools. There

was also no modification noted to any elements for ornaments in the assemblage.

Burning was the main taphonomic process noted. One hundred and thirty-three elements representing 39% of this collection exhibited burning. Elements showing partial burns totaled fifty-nine indicating possible roasting events. Elements showing dry burns totaled forty-one indicating burning after disposal when the bone was dry, and



thirty-three elements were charred or calcined.

Burning can occur either during the cooking process, when discarded into a fire, or after burial. The color of the burn can be a gauge of burn intensity. A light brown, reddish, or yellow color occurs when bones have been lightly heated. Dry burns are light on the surface and black at the core or blackened only on the exterior or interior indicating that the burn occurred after disposal, when the bone was dry. Charred or blackened bone becomes black as the collagen is carbonized and when the carbon is oxidized it becomes white or calcined. Uniform degrees of burning are possible only after the flesh has been removed (Lyman 1994:384-388) and indicates a disposal practice. Partial burns can indicate roasting, while complete charring or calcined bone does not (Lyman 1994:387).

### Taxa Recovered

White-tailed deer (*Odocoileus virginianus*) totaled (n=12) tooth fragments.

Turtle (*Testudinata* sp.) totaled (n=15) carapace fragments.

Small bird totaled (n=1) maxilla (beak).

Rodent totaled (n=1) partial mandible with teeth.

Large Mammal (Cow/Bison size) totaled (n=2) long bone shaft fragments.

Medium Mammal (Dog to Deer size) totaled (n=150) with skull fragment (n=1), phalange fragment (n=1), and long bone shaft fragments (n=148). Of the 148 long bone shaft fragments (n= 40) showed burning.

Small Mammal (Gopher to Rabbit size) totaled (n=13) with vertebra (n=1), and long bone shaft fragments (n=12). Of the 12 long

bone shaft fragments (n= 1) showed burning.

### Summary

Analysis of the faunal material from 41PR22 shows that the inhabitants of this site utilized not only animals from the upland prairies and woodlands of the cross timbers region surrounding the site but also exploited the creek and riverine environment adjacent to it.

No pitting, root etching or carnivore damage was noted on any of the elements. None of the elements had been modified as tools and there was no modification noted to any elements for ornaments in the assemblage. Due to the small size of the majority of the elements in the assemblage all of these taphonomic processes may not have been recognized. Burning was the main taphonomic process noted.

The elements placed in the large and medium mammal category were probably bison and deer but due to their small size could not be assigned to either species and may indicate that these animals were being utilized not only for their bone marrow but also for bone grease extraction.

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