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**The Tututepec Archaeological Project (TAP): Residential Excavations  
at Yucu Dzaa, a Late Postclassic Mixtec Capital on the Coast of  
Oaxaca, México**



**Research Year:** 2005

**Culture:** Mixtec

**Chronology:** Late Postclassic

**Location:** Oaxaca, México

**Site:** Yucu Dzaa (Tututepec)

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## **Abstract**

Yucu Dzaa (Tututepec) was the capital of the most powerful polity in Late Postclassic (A.D. 1100-1522) Oaxaca, México. Prior to the Spanish entrada, the Yucu Dzaa Mixtec had conquered most of coastal Oaxaca and additional highland communities. This report provides the preliminary results of the Tututepec Archaeological Project (TAP), the first excavations to focus on Late Postclassic Yucu Dzaa. The excavations were carried out at three residential areas and the results are yielding new insights regarding the domestic and political economy of this important center and its relationship with other regions of Mesoamerica.

## **Resumen**

Yucu Dzaa (Tututepec) fue la capital del centro más poderoso en Oaxaca, México, durante el periodo Postclásico Tardío (1100-1522 d.C.). Antes de la llegada de los españoles, los mixtecos de Yucu Dzaa conquistaron la mayor parte de la costa oaxaqueña y algunas comunidades adicionales del altiplano de Oaxaca. El presente informe expone los resultados preliminares del Proyecto Arqueológico de Tututepec (PAT), las primeras excavaciones que se han concentrado en el Yucu Dzaa del periodo Postclásico Tardío. Las excavaciones se llevaron a cabo en tres áreas residenciales. Los resultados están produciendo visiones nuevas en referencia a la economía doméstica y política de este importante centro y su relación con otras regiones de Mesoamérica.

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## **Introduction**

The Tututepec Archaeological Project (TAP) excavations were carried out at the Late Postclassic (A.D. 1100-1522) Mixtec capital of Tututepec, located on the coast of Oaxaca, México ([Figure 1](#), shown below). The excavations focused on three residential areas to gather information on variability in domestic economy, including consumption patterns, production activities and participation in long distance exchange networks. Ongoing analyses of archaeological materials are providing insights regarding status/wealth differentiation at Tututepec and the nature of its political economy and long distance exchange relationships. Hereafter, the Late Postclassic (A.D. 1100-1522) settlement at Tututepec will be referred to by its Mixtec name, "Yucu Dzaa" (Hill of the Bird), and "Tututepec" will be used in reference to the modern town.

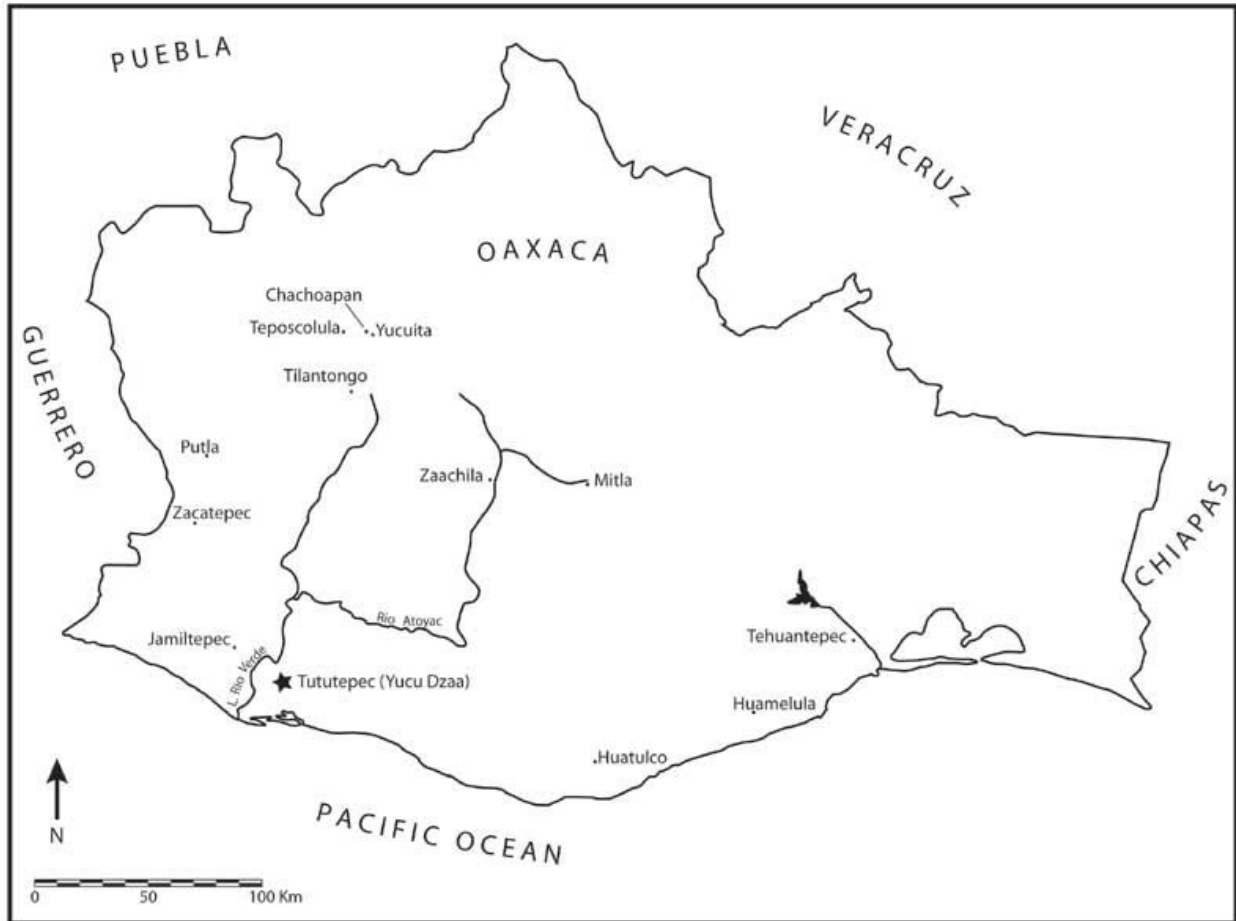


Figure 1. Map showing Late Postclassic Oaxaca.

## Background

Yucu Dzaa is located on the Pacific coast of Oaxaca, within the archaeologically defined lower Río Verde region (Joyce 1991). Nestled in the foothills of the Sierra Madre del Sur Mountains, Yucu Dzaa lies where the mountains meet the coastal plain. Ethnohistoric accounts from the Contact Era indicate that Yucu Dzaa was the capital of a Mixtec Empire that controlled a significant portion of coastal Oaxaca during the period immediately preceding the Spanish Conquest (Spores 1993). Dozens of subject communities of Mixtec, Chatino, Amuzgo, Nahuatl, and Zapotec speakers paid tribute in goods and services to the ruling elite of Yucu Dzaa (Spores 1993; Woensdregt 1996). Although much of Oaxaca was conquered by the Aztec Empire in the Late Postclassic, Yucu Dzaa appears to have remained independent.

As part of a long term regional survey project in the lower Río Verde Region, Joyce and colleagues (2004) defined the boundaries of Yucu Dzaa based on the distribution of

Yucudzaa Phase (A.D. 1100-1522) pottery ([Figure 2](#))<sup>1</sup>. Following the work of Joyce and associates, the TAP carried out excavations at three residences located 1.25 kilometers northwest of Yucu Dzaa's civic-ceremonial center.

Year	Phase	Period
1400 — 1200 —	Yucudzaa	Late Postclassic
1000 — 800 —	Yugüe	Early Postclassic
600 — 400 —	Yuta Tiyoo	Late Classic
200 — AD 0 — BC	Coyuche	Early Classic
200 — 0 —	Chacahua	Late Terminal Formative
200 — 0 —	Miniyua	Early Terminal Formative
200 — 0 —	Minizundo	Late Formative
400 — 600 —	Charco	Middle Formative

Figure 2. Lower Río Verde Region Ceramic Chronology.

<sup>1</sup> Illustrations of Yucudzaa Phase ceramics are found in O'Mack (1990), Joyce (1991) and Workinger (2002).

## Research Objectives

The goal of the TAP excavations was to collect baseline data regarding Yucu Dzaa residences, including variability in consumption patterns and the range of production activities that took place therein. Following the excavations, a comparative analysis of household architecture and associated material was undertaken to investigate status and/or wealth differences among houses, as well as the nature of political economy and exchange at Yucu Dzaa.

The comparative study of Yucu Dzaa residences considered variability in architectural characteristics and overall residential layout. The TAP also evaluated variability in artifact patterns that reflected activities associated with domestic production, consumption and exchange. It was hoped that a comparative analysis of activity patterns at the three households would facilitate a consideration of Yucu Dzaa's political economy. The project also documented the frequency of non-local artifacts and styles to chart the extent of Yucu Dzaa's participation in long distance exchange with other regions of Mesoamerica. In addition, the household data from Yucu Dzaa will facilitate interregional comparisons with residences excavated from semi-contemporaneous Mixtec households from other areas of Oaxaca (Lind 1979; Pérez Rodríguez 2002; 2003).

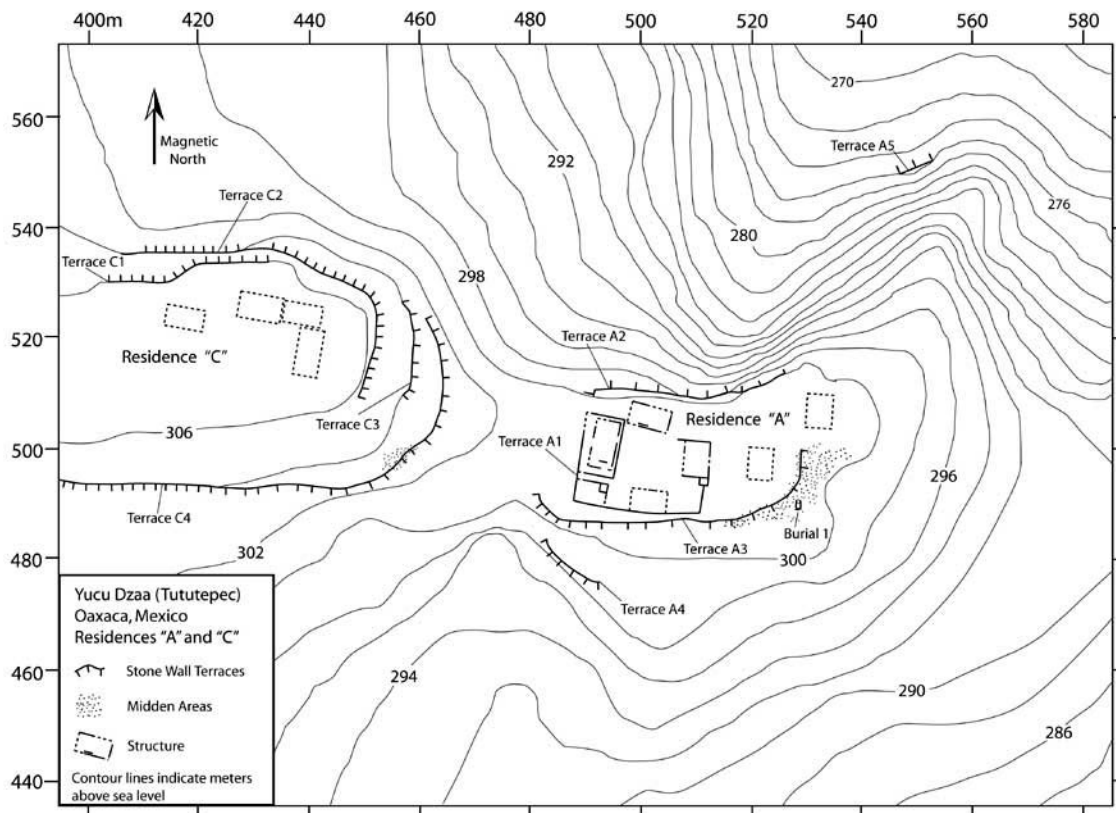


Figure 3. Overview Map of Yucu Dzaa Residences A and C.

## Residence A Excavations

Residence A sat atop a ridge with views of the Pacific Ocean and central Yucu Dzaa to the south (Figure 3). A residential terrace (Terrace A1) at the center of household area supported several structures arranged around a patio, referred to here as the Central Patio Group (Figure 4). Terraces A2 and A3 were retaining walls that limited erosion around the Central Patio Group and created an additional flat area to the east that supported two additional structures (6 and 7).

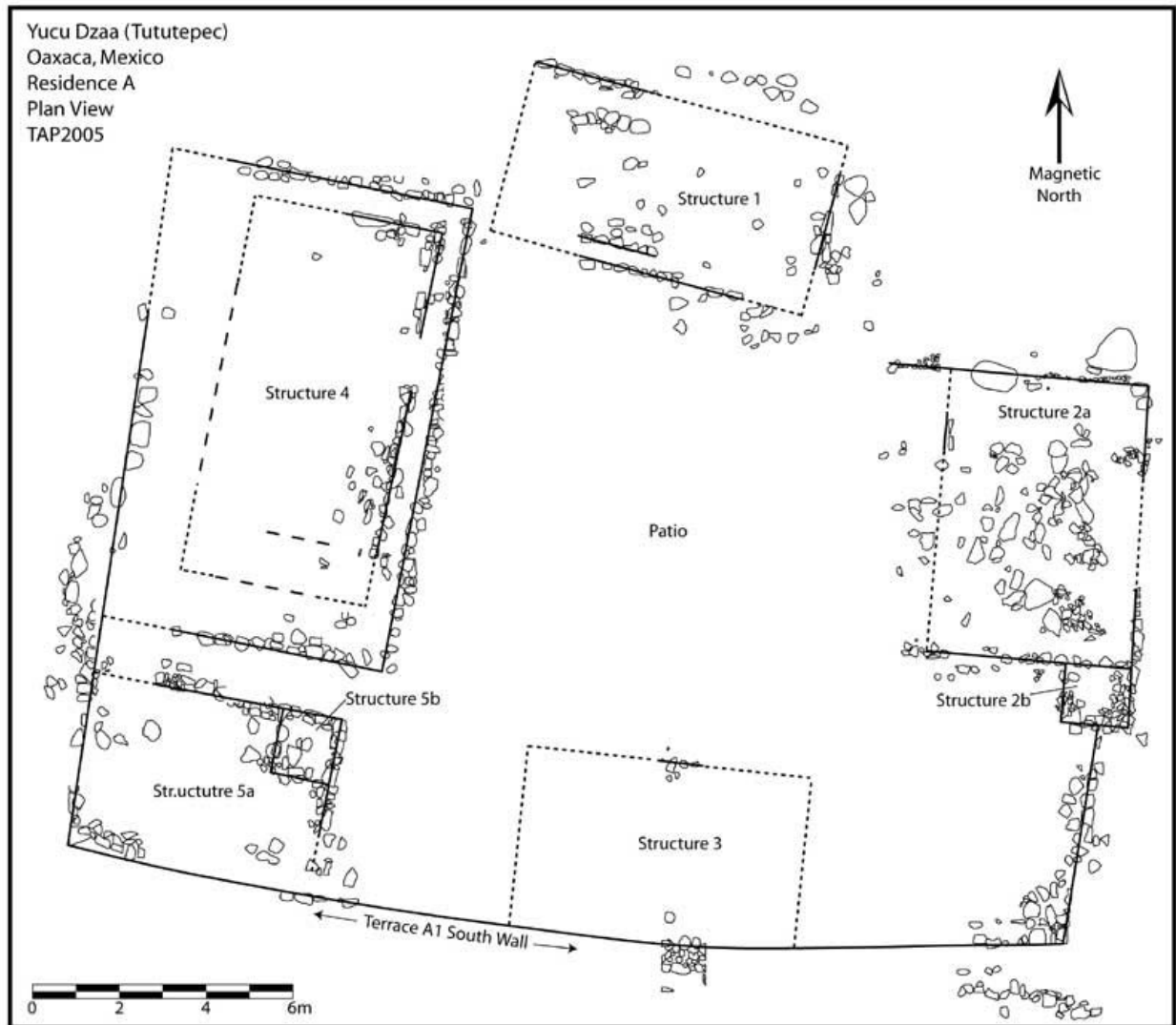


Figure 4. Plan Map of Yucu Dzaa Residence A.

Terrace A1 banked into the southern slope of the ridge and created a flat occupational area for the house structures. The terrace's southern wall was the most substantial, reaching a maximum height of 1 meter, although the east and west walls were much less substantial, consisting of only 1-3 courses of stone. Concentrated midden deposits were discovered inside, outside and below the east and southeastern segments of Terrace A3 (Figure 3). In addition, we found the remains of an adult female (Burial 1)

buried in a seated position without offerings in the midden just outside (east) of Terrace A3.

Structures 1 through 5 were rectangular in form and oriented roughly perpendicular to one another. The wall foundations consisted of 1 to 4 courses of roughly cut stone. Structure 4 was the largest construction at Residence A and was supported by Substructure 1, which rose approximately 0.25 m in height ([Table 1](#), shown below).

<b>Table 1. Estimated Area, Orientation, and Function of Residence A Structures</b>			
<b>Structure</b>	<b>Estimated Area (m<sup>2</sup>)</b>	<b>Orientation*</b>	<b>Function</b>
Structure 1	29.2	15°	Habitation/Kitchen
Structure 2a	29.25	5°	Habitation
Structure 2b	2.25	5°	Storage
Structure 3	14.06±	n/a	Undetermined
Structure 4	38.5	10°	Habitation
Substructure 1	67.50†	10°	House Platform
Structure 5a	20.35◇	10°	Habitation or Storage
Structure 5b	2.25	10°	Storage
Structure 6	25±	n/a	Undetermined
Structure 7	n/a	n/a	Undetermined
Patio	126.31	n/a	Enclosed Activity Area

\* Degrees east of magnetic north.

± Minimum estimated area assuming that the structure was square.

◇ Area of Structure 5a only, does not include the area of Structure 5b.

† The total area of Substructure 1 also includes all of Structure 4.

Structures 1, 2a, and 4 are interpreted as probable house dwellings, whereas Structures 3, 6 and 7 remain undetermined. Structures 5b and 2b were probably storage facilities while Structure 5a may have been a habitation or storage area.

Structure 1 is interpreted as a possible kitchen area based on its association with Feature 53, which was discovered in the northwest corner of the patio and overlapping the southwest corner of Structure 1. Feature 53 included a scatter of fist-sized stones with approximately one-third displaying signs of heat alteration<sup>2</sup>. The stones were mixed with sediment containing ash, charcoal, and a concentration of large uneroded potsherds. The potsherds were predominately *olla* (jar) cooking vessels, some displaying carbonized material on their interiors. The feature could represent the remains of an eroded "table hearth," similar to those used in present-day Tututepec and other regions of Oaxaca ([Figure 5](#), shown below).



Figure 5. Modern "Table Hearth" in Zimatlán, Oaxaca (2005).

Three very small fragments of plaster with traces of red, orange and black paint were found in the midden along Terrace A1. The fragments could have been part of a painted stucco mural that once adorned the inside or outside walls of one of the structures.

Apart from Feature 53, few well-defined activity areas were detected at Residence A. The structure floors and exterior areas were relatively free of artifacts. Only one possible offering was recovered at Residence A, which consisted of a complete cooking *olla* (jar) found on the floor of Structure 2a. The vast majority of material evidence of

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<sup>2</sup> Signs of heat alteration include angular breaks, reddish color through oxidation, and some black staining that is presumably from charcoal or ash.



crafting and other activities was recovered in the midden areas, which will be discussed in more depth below.

Residence A's occupation is dated to the Late Postclassic Period based on the almost exclusive presence of Yucudzaa Phase pottery. Mixteca-Puebla style polychrome pottery was ubiquitous at the residence and copper artifacts were also present in small numbers, the latter suggesting a Post A.D. 1200 date for the household occupation<sup>3</sup>. No diagnostic artifacts of the early Colonial Period were recovered, indicating that Residence A was abandoned sometime between A.D. 1200 and the Spanish conquest of Yucu Dzaa in A.D. 1522 or shortly thereafter (Cortés and Pagden 1986).

A close analysis of the Residence A stratigraphy indicates that it was not occupied for an extended period of time. None of the structures appeared to have been remodeled or enlarged through time. Likewise, only single floors without evidence for resurfacing were associated with the residential structures. There is evidence that the eastern portion of Residence A, including Terrace A3 postdated the construction of the Central Patio Group. Several of the Residence A midden deposits exceeded a meter in depth, suggesting that the occupation was at least a few generations or more.

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<sup>3</sup> Hosler (1999) argues that "metal production in Mesoamerica remained restricted to the west until 1200.... After approximately 1200, artifacts made from copper... also began to appear in northeastern, central, and southern Mesoamerica".

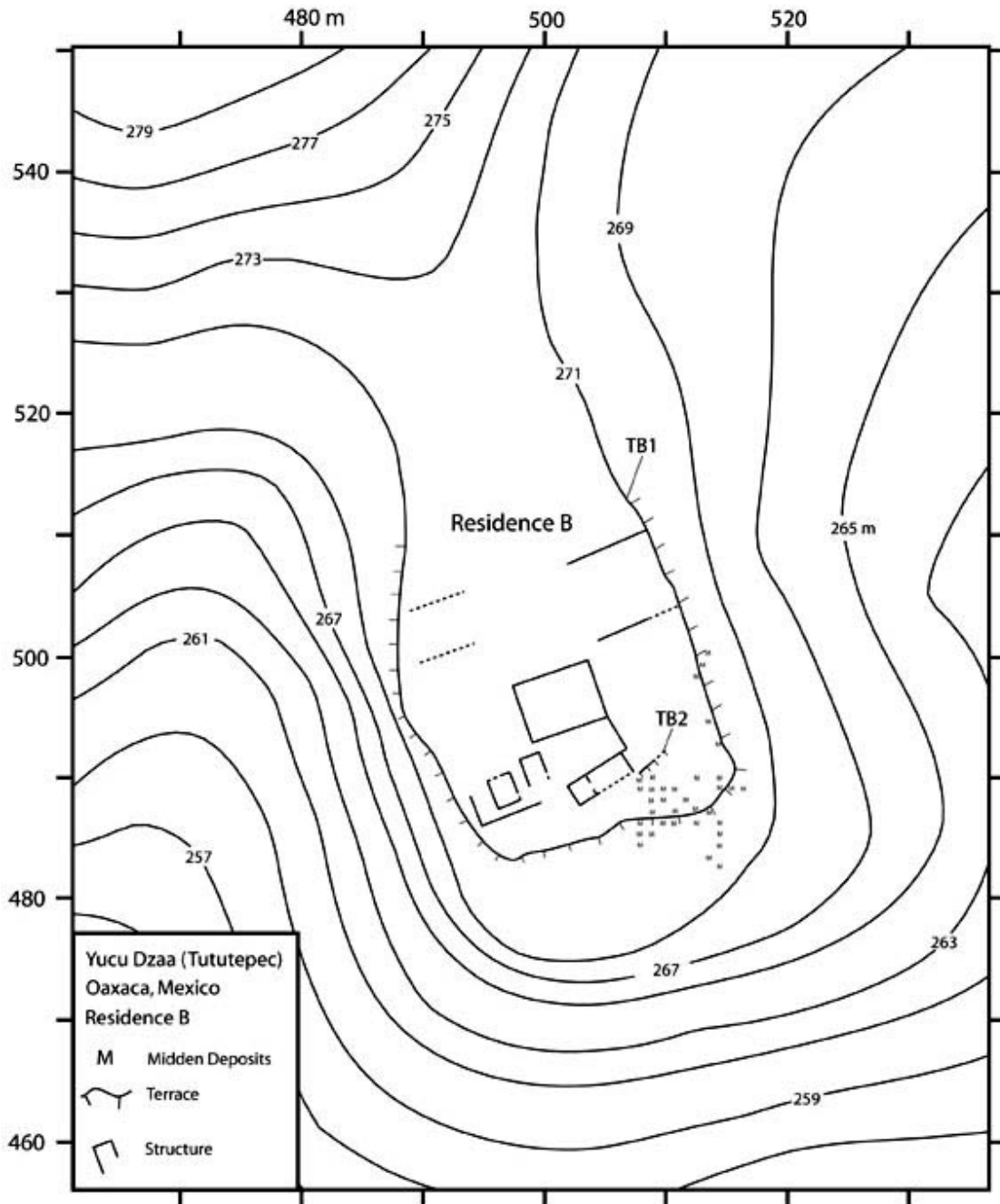


Figure 6. Overview Map of Yucu Dzaa Residence B.

### Residence B Excavations

Residence B was located on an artificially flattened hilltop approximately 230 meters southwest and downhill of Residence A (Figure 6). Several structures and an adjoining patio formed the core of the site (Figure 7). Terrace B1 reinforced the steep sides of the hilltop dwelling area. Structure 1 was the largest edifice and also probably the primary habitation (Table 2, shown below). A semi-enclosed patio was directly south of

Structure 1 and four smaller and fragmented structures were located to the south and west.

<b>Table 2. Estimated Area, Orientation, and Function of Residence B Structures</b>			
<b>Structure</b>	<b>Estimated Area (m2)</b>	<b>Orientation*</b>	<b>Function</b>
Structure 1	37.45	160°	Habitation
Structure 2a	7.5±	148°	Storage
Structure 2b	3.70	148°	Storage
Structure 3	4.63±	160°	Storage
Structure 4	5.67	160°	Storage
Structure 5	n/a	160°	Undetermined
Structure 6	35.53	160°	Undetermined
Patio	29.7	n/a	Enclosed Activity Area

\* Degrees east of magnetic north.

± Minimum estimated area assuming that the structure was square.

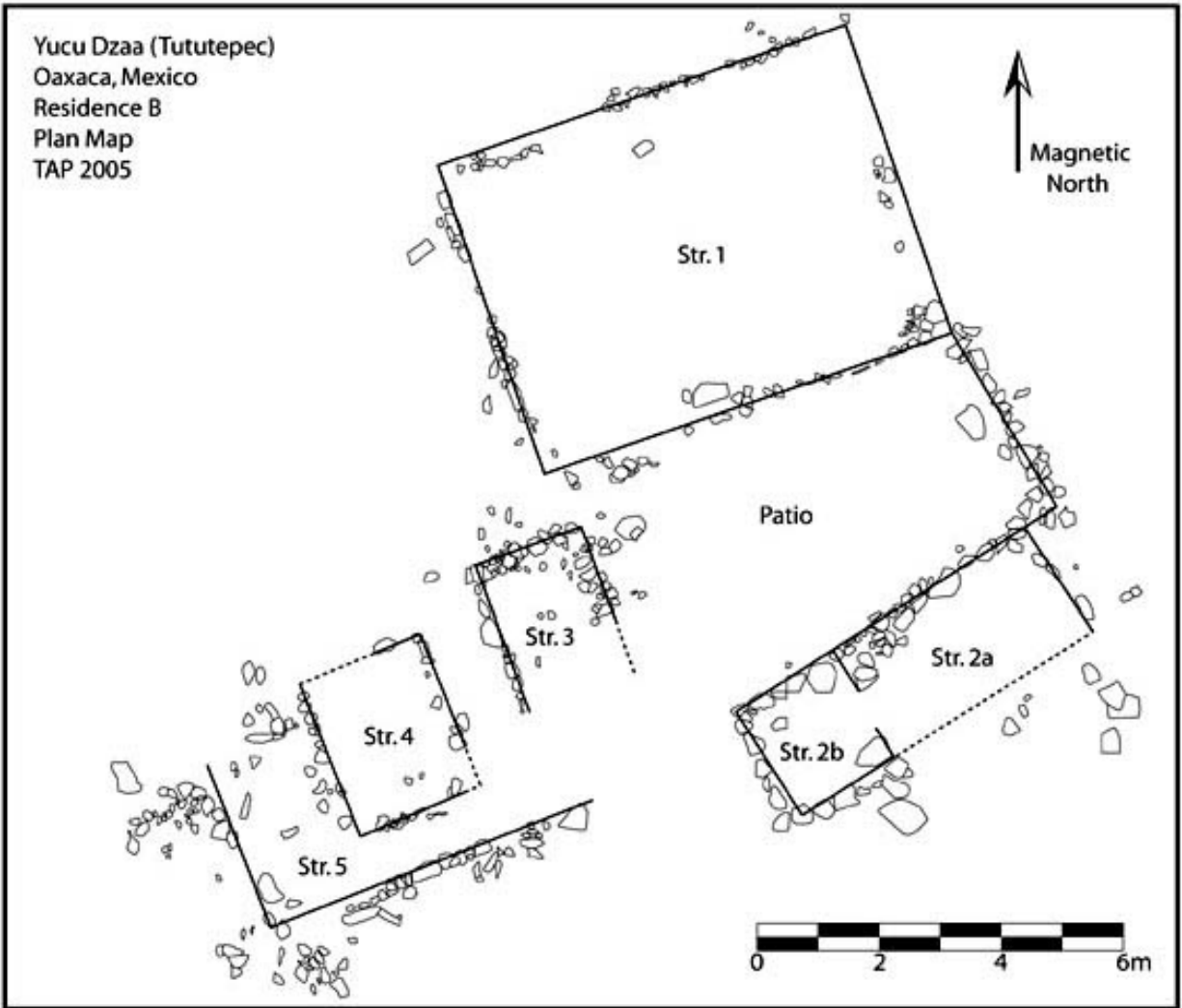


Figure 7. Plan Map of Yucu Dzaa Residence B.

Although few artifacts were found associated with the structures, a variety of items were recovered in association with the patio surface. These included a fully functional three-legged *metate* (Figure 8, shown below), which was found in the vicinity of a matching *mano*, a large mammal bone, and a spall from a greenstone axe. We also found a pestle, obsidian blade fragments, and spindle whorls associated with the patio surface. A very fine, bifacially flaked obsidian lancet or bloodletter was found just outside of the patio's southeast corner. These artifacts suggest that a variety of activities took place in the patio, including food preparation, spinning, other miscellaneous crafting, and possibly ritual bloodletting. The presence of well worn, but usable grinding tools left behind in the patio may suggest that the inhabitants abandoned the site relatively abruptly or that they intended to return at a later date (Cameron 1993:4-5).



**Figure 8. Metate from Residence B Patio.**

A medium concentration of scattered trash was discovered across a broad area (roughly 20 × 20 meters) southeast of the household structures ([Figure 6](#)). Intermittent deposits of trash were also found at several points along Terrace B1. No burials were discovered at Residence B.

The variety of artifacts recovered at Residences A and B, including chronologically sensitive diagnostics, were virtually the same. Thus, the Residence B occupation is also dated to between A.D. 1200 and 1522. As was the case at Residence A, there was no evidence for superimposed constructions, floors, or other remodeling found at Residence B. Assuming that the nature of trash deposits reflect the relative duration of occupation, the Residence B middens were much more shallow and less concentrated than those at Residence A, suggesting a more short lived occupation at Residence B.

### **Operation C Excavations**

Residence C was located on a ridge approximately 50 meters northwest of Residence A ([Figure 3](#)). Due to time constraints, we were unable to excavate the Residence C architecture, but the site was carefully cleared and the remains of at least four rectangular constructions were discovered. Three structures formed an "L" shape, which defined a probable adjacent patio ([Figure 9](#), shown below). Excavations were limited to an area along Terrace C4, where we discovered concentrated midden deposits.

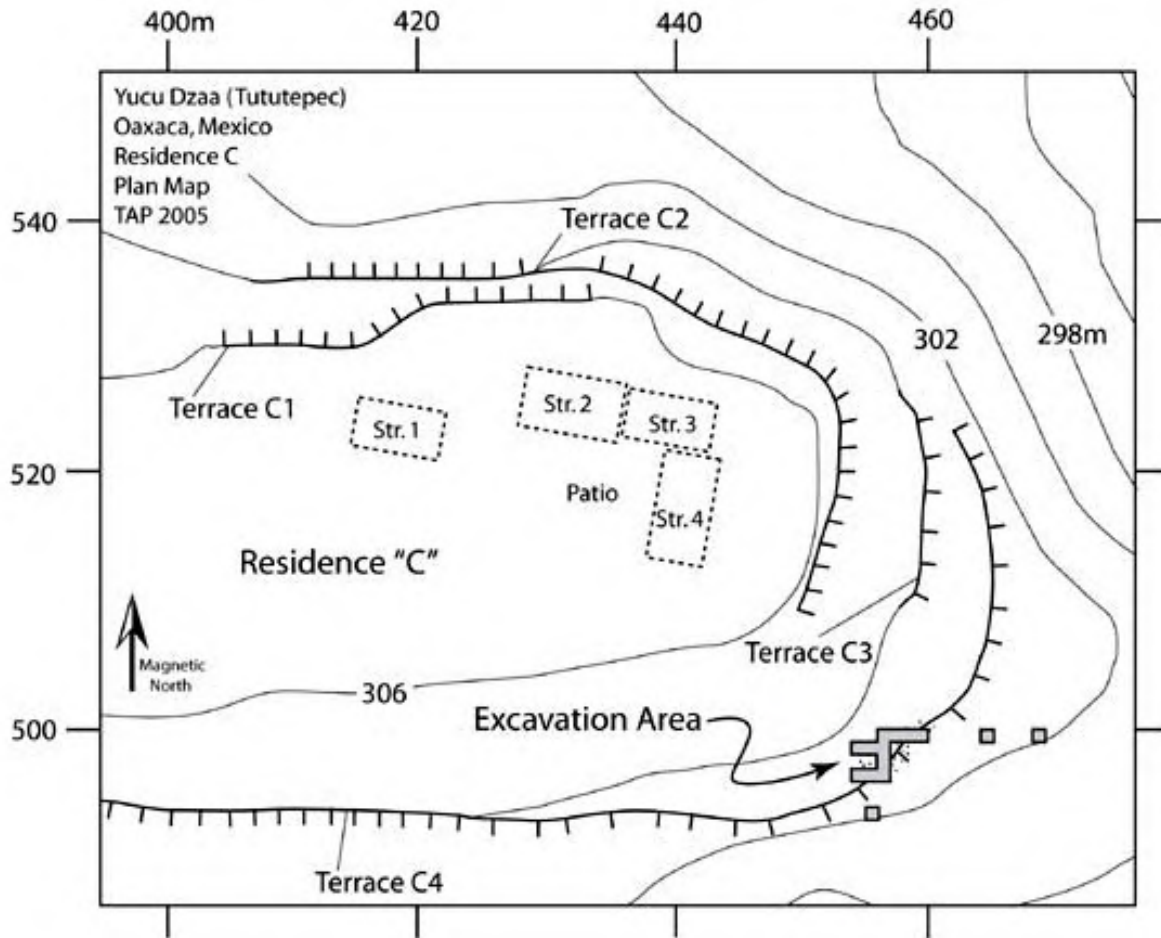


Figure 9. Overview Map of Yucu Dzaa Residence C.

The artifact assemblage at Residence C was very similar to that of Residences A and B, with the exception that no copper artifacts were found. Thus, Residence C is conservatively dated to a more broad time span corresponding to the whole of the Yucudzaa Phase (A.D. 1100-1522). The Residence C midden deposits were more concentrated than those at Residence B and more consistent with those found at Residence A. Nonetheless, without excavating the Residence C structures, it is difficult to accurately estimate the duration of the site's occupation.

### Discussion of Residential Architecture

Considering the scale and style of construction at Residences A and B, the similarities outweigh the differences. Nevertheless, there are some indications that the Residence A inhabitants had more resources to invest in their home. Perhaps most notable is the presence of a formal residential terrace (Terrace A1) at Residence A, whereas no analogous construction was present at Residences B or C. In addition, Residence A –

Structure 4 sat atop Substructure 1; none of the structures at Residence B were supported by equivalent house platforms. The presence of stucco fragments at Residence A raises the possibility that some of its structures could have been adorned with decorated plaster. Furthermore, the Residence A and B habitation structures were roughly similar in size, although the Residence A patio was substantially larger (c.f. [Table 1](#) and [Table 2](#)).

### **Material Culture and Consumption Patterns**

The materials recovered in the Yucu Dzaa excavations reflect a range of activities that are commonly associated with domestic areas. These artifacts included utilitarian and fine decorated pottery, animal bone, copper bells (*cascabeles*) and "axes," obsidian and chert tools and debitage, hammerstones, ceramic spindle whorls, figurines and whistles, stone axes, and groundstone (e.g. *manos* and *metates*). The majority of artifacts were recovered in concentrated midden deposits located along terraces to the south and east of the dwellings.

The comparative analysis of consumption patterns presented here demonstrates that both utilitarian objects and luxury items were widely available to residents at Yucu Dzaa; a similar range of artifacts was found at all three households. However, there is variability in the frequency of some artifact classes, which may suggest differences in status or wealth among households. In addition, the variability in artifact frequencies between residences reflects differences in the variety and level of involvement in household activities, especially those related to crafting and food preparation.



**Figure 10. Mixteca-Puebla Style Tripod Vessel with Bird Head Motif.**

Over 83,000 potsherds were recovered at the Yucu Dzaa residences, ranging from everyday cooking and storage wares to elaborately painted Mixteca-Puebla style polychrome serving vessels. The Yucu Dzaa Mixteca-Puebla style polychromes exhibit a variety of design elements, ranging from simple geometrics to composite glyphs and human figures similar to those found in the Mixtec Codices ([Figure 10](#), shown above, and [Figure 11](#), shown below). These fancy vessels were probably utilized during special occasions, such as religious rituals and life cycle events where food and drink were served (Lind 1987; Lind 1994; Pohl 2003a; Forde 2006).





**Figure 11. Mixteca-Puebla Polychrome with "Skull and Crossbones".**

The frequencies of polychromes at Residences A and C are significantly higher than that at Residence B ([Table 3](#), shown below). Similarly, decorated serving vessels comprise 23.2% of the pottery assemblage at Residence A and 16.2% and 24.9% at Residences B and C (respectively). The higher percentage of decorated serving wares found at Residences A and C suggest that special occasions were celebrated more often or on a grander scale at these households in comparison to Residence B.

A regional comparison of the frequency of Mixteca-Puebla polychrome pottery at Postclassic residences reveals much higher frequencies at Yucu Dzaa ([Table 3](#), below). All of the Yucu Dzaa houses have higher proportions of polychromes compared to commoner and elite residences excavated at Nicayuhu<sup>4</sup>, Chachoapan and Yucuita, in the Mixteca Alta region of Oaxaca. The more broad distribution of polychromes at Yucu Dzaa suggests that these items circulated in a less restricted manner and were used in different contexts in comparison to polychromes in the Mixteca Alta.

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<sup>4</sup> Nicayuhu is a village site located within the Postclassic Teposcolula cacicazgo in the Mixteca Alta (Pérez Rodríguez 2003).

<b>Table 3. Frequencies of Mixteca-Puebla Polychrome Pottery from Excavated Postclassic Residences in Oaxaca</b>			
<b>Commoner Residences</b>	<b>Total Mixteca-Puebla Polychrome Sherds</b>	<b>Total Sherds</b>	<b>Percentage of Assemblage Comprised by Mixteca-Puebla Polychrome Sherds</b>
Yucu Dzaa–Residence A♣	527**	6,297**	8.37%**
Yucu Dzaa–Residence B	85**	1,740**	4.88%**
Yucu Dzaa–Residence C	71**	639**	11.11%**
Nicayuhu "House 1"	26*	40,061*	.065%*
Nicayuhu "House 2"	18*	6,658*	.27%*
Yucuita Midden "N217B"	2*	2,448*	.082%*
<b>Noble Residences</b>			
Chachoapan Midden "F2-A" ±	127◇	4,966◇	2.56%◇
Yucuita Midden "F-10A" †	10◇	739◇	1.35%◇

♣ TAP Residence A is classified as a commoner residence, although its occupants appear to have been wealthier commoners or perhaps members of the lower nobility.

\*\* These totals include rim sherds only.

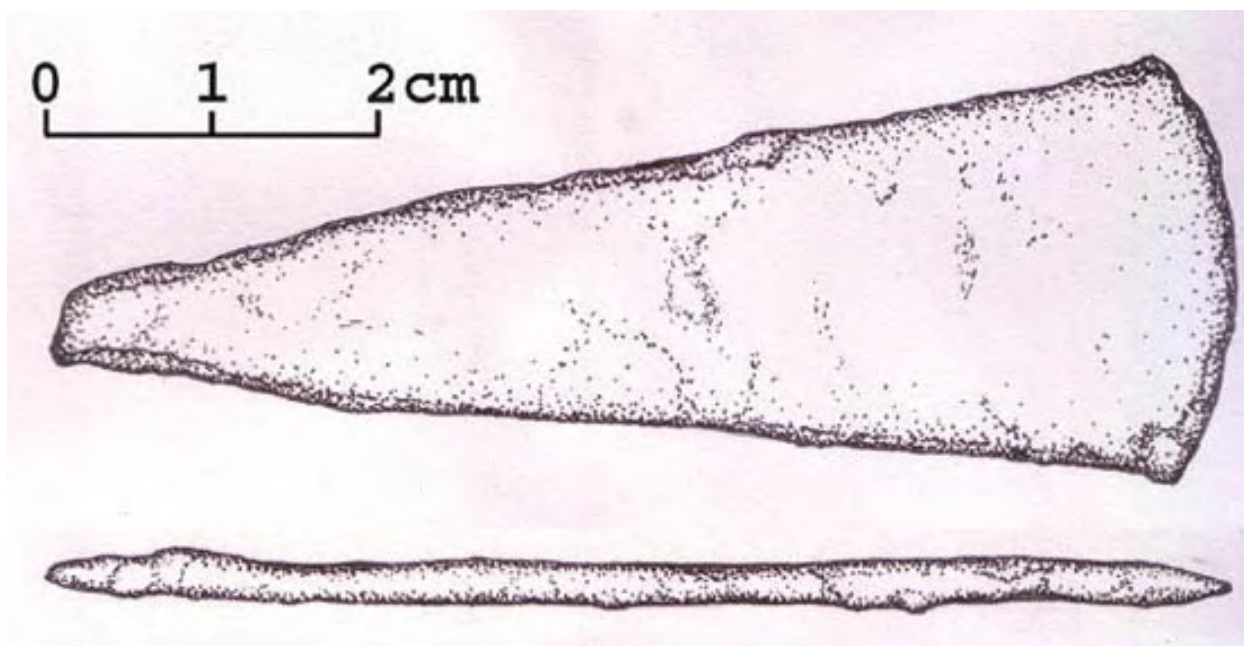
\* These totals include all sherds (rims, bodies, etc.), for Nicayuhu see Pérez Rodríguez (2003: Table 4.4), for Yucuita "N217B" see Spores (1974b cited in Lind 1987: Table 29).

± Chachoapan "F-2A" is associated with a noble house that dates to A.D. 1540 (Lind 1987: Table 36).

† Yucuita "F-10A" is associated with a noble house that dates to A.D. 1340 (Lind 1987: Table 36).

◇ These totals include rim sherds only and were calculated from data in Lind (1987: Tables 25 and 36).

Only a small number of luxury items were found at the Yucu Dzaa residences apart from the fancy polychrome pottery. Two greenstone beads and two possible ceramic earspool fragments were found at Operation A. One finely ground obsidian earspool fragment and one polished stone pendant were found at Residence B. Copper bells that would have been strung together or sewn into the fringes of clothing were found at Residences A and B. A relatively thick (3.1 mm) copper axe ([Figure 12](#), shown below), was found at Residence A, while a thinner (0.7 mm) copper artifact, possibly an awl or fine chisel was recovered at Residence B. A limited number of mold-made and hand-modeled figurines and whistles were also present at the residences.



**Figure 12. Copper Axe from Residence A (Illustration by Guy Hepp).**

Obsidian comprised more than 95% of the chipped stone recovered from the households and 90% of the obsidian artifacts were prismatic blade fragments ([Table 4](#), shown below; [Figure 13](#)). Yucu Dzaa residents depended on prismatic blades to carry out the majority of their cutting, sawing, scraping, and puncturing tasks. Obsidian bifaces and unifaces comprised only 1.2% of the assemblage. In addition, we found 20 obsidian projectile points, including side notched, basal notched, triple notched (most common) and notchless varieties ([Figure 14](#)). Two very fine, bifacially worked obsidian needles or lancets were recovered at Residence B. These fragile implements would have functioned as fine perforators and may have been used for bloodletting. The chert tools recovered at the residences included projectile points (4), blades (4), bifaces/unifaces (3), and bifacially worked disk shaped artifacts (4). The disks were very small (1.4 cm in diameter and 0.3 mm thick) and their specific function is uncertain.

<b>Table 4. Chipped Stone Artifact Counts from Yucu Dzaa</b>				
<b>Material</b>	<b>Yucu Dzaa Residences</b>			<b>Totals</b>
	<b>A</b>	<b>B</b>	<b>C</b>	
Obsidian	836	281	71	1,188
Chert	23	8	2	33
Quartz*	8	0	0	8
<b>Totals</b>	<b>867</b>	<b>289</b>	<b>73</b>	<b>1,229</b>

\* A natural vein of poor quality quartz courses through the bedrock beneath Residence A; it may have been used by residents in some capacity.

A variety of animal bone was found associated with the Yucu Dzaa residences, including that of deer, dog, rabbit – and to a lesser extent – fish, raptorial birds, lizards and terrestrial turtle (Juárez 2005). Both the overall number and variety of animal bone found at Residence A was greater than that found at Residences B and C.

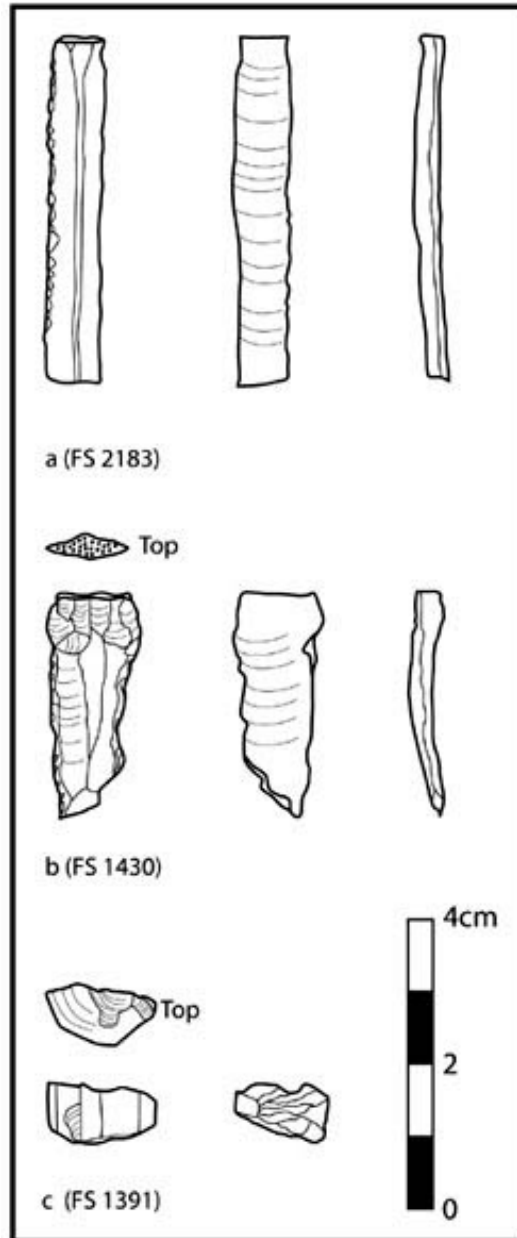
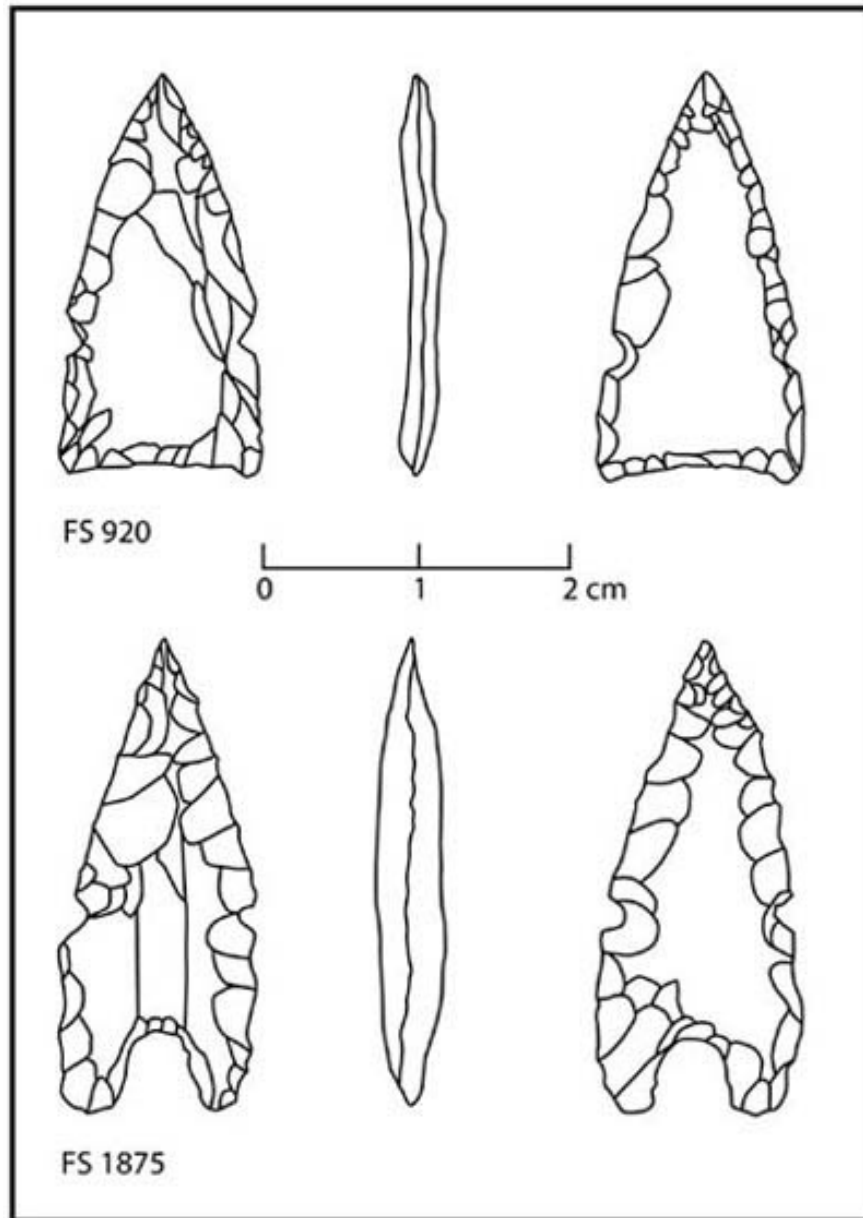


Figure 13. Obsidian from Yucu Dzaa Residence A.

The consumption data and architectural analysis indicate that Residence A was somewhat more affluent than the other Yucu Dzaa residences investigated. The high frequency of polychromes and decorated serving vessels at Residence A compared to B indicates that the heads of Residence A could afford a greater quantity of elegant pottery. Also, the higher quantity and variety of animal bone at Residence A provide strong evidence that they ate more meat than their neighbors. Taken together, the ceramic and faunal analyses may be interpreted as suggesting a greater regularity of "special" events at Residence A where meat and other foods and drinks were served in

extravagantly decorated serving wares. The high frequency of polychromes and serving vessels at Residence C, in light of its apparently humble architecture, is more difficult to account for. A possible explanation may lie in the close proximity of Residences A and C, which could suggest a close relationship between their inhabitants.



**Figure 14. Projectile Points from Residence A.**

Although there is variability in the artifact frequencies at the three residences, it is also important to highlight the remarkable similarity in the range of artifacts present at all of the households. Luxury items are present at all of the Yucu Dzaa commoner residences, suggesting that these items functioned differently than the prestige goods of the Classic Period, which were "trafficked" by elites and played a role in the creation

and maintenance of status differentiation (Blanton and Feinman 1984; DeMarrais 1996; Schortman and Urban 2004:190-192). At Yucu Dzaa, luxury items appear to have been available to those with the resources to acquire them.

### Craft and Food Production

Most of the evidence for craft production is inferred from artifacts recovered in midden deposits that were crafting tools or byproducts of these activities. Relatively small ceramic spindle whorls, used to produce cotton thread, were abundant at all three residences (Heijting n.d.). The relative quantity of spindle whorls from Residences B and C was greater than that at Residence A ([Table 5](#), shown below). The greater investment in thread production at Residences B and C may have been undertaken to peddle surplus thread in the marketplace or fulfill tribute obligations.

<b>Table 5. Spindle Whorl Frequencies from Late Postclassic Yucu Dzaa Residences</b>		
<b>Yucu Dzaa Residences</b>	<b>Spindle Whorls</b>	<b>Number of Whorls per 1000 Rim Sherds</b>
A	79	12.5
B	40	23.0
C	13	20.3

The formal analysis of obsidian from the excavations indicates that a limited amount of blade production occurred at Residence A. Six exhausted polyhedral core fragments and several core platform rejuvenation flakes were identified from Residence A ([Figure 13](#)). A blade specialist from Residence A probably acquired prepared macrocores and then "knocked off" the blades at home. Virtually all of the obsidian blades at Yucu Dzaa display ground platform surfaces. The small amount and formal characteristics of the obsidian debitage from Residence A do not suggest that large obsidian nodules or chunks were processed into polyhedral cores at the household. No obsidian core fragments were found at Residences B or C; these residents probably procured finished blades through trade or in the marketplace. There was no evidence for obsidian or chert biface manufacture at the Yucu Dzaa residences.

A variety of groundstone artifacts were recovered during the excavations, including axes, hammerstones/pecking stones, and abrader/smoothing tools. The tools were utilized in a variety of household tasks, including — but not limited to — woodworking,

masonry, finishing floor surfaces and walls, flintknapping, and chopping firewood. The axes could have also functioned as weapons.

Evidence for food preparation/production was common at the residences. *Manos* and *metates*, some probably imported, were used to grind corn and other foodstuffs. Fragments of cooking vessels were also common, especially *ollas* (jars) used for preparing stews and sauces, and *comales* for toasting tortillas. Interestingly, *comales* comprise a much higher percentage of all rim sherds at Residence B (26%) in comparison to that at Residences A (17.2%) and C (16.6%). The cooks at Residence B may have prepared extra tortillas to trade in the market or deliver as tribute payments.

The craft production data reveals that no single household was entirely self sufficient. There was no evidence for ceramic production of any type (vessels, figurines, spindle whorls, whistles, etc.) at the Yucu Dzaa houses. Furthermore, all three households bought or traded for the obsidian tools, finely hewn axes, *manos*, *metates*, and pestles that they used in crafting activities and food preparation. All houses spun their own thread, and likely produced surpluses, which may have been used to acquire items such as pottery, obsidian and exotic groundstone.

In sum, there is a great disjunct when we consider the amount of materials consumed versus those produced in the Yucu Dzaa houses. The vast majority of objects recovered were not produced in the Yucu Dzaa homes. Although some items may have been acquired through direct relationships with producers, the general pattern is consistent with the presence of a central marketplace.

### **Exchange at Yucu Dzaa**

Imported materials were found at all of the Yucu Dzaa residences demonstrating their ability to access exotic goods via long distance exchange networks. Obsidian was the most commonly recovered import, although no known sources of obsidian exist in Oaxaca. Preliminary visual analysis of the Yucu Dzaa obsidian demonstrates that just under half (43%) was a translucent green, imported from Sierra de las Navajas, Pachuca, Hidalgo (Pastrana 1998). The remaining obsidian could not be identified visually with certainty and thus will undergo XRF analysis. That such a high percentage of the residential lithic assemblage was obsidian (over 95%) suggests that Yucu Dzaa maintained robust trade relationships with distant regions where obsidian was mined, especially the Central Mexican *cordillera* (Cobean 2002:25).

The high percentage of Pachuca obsidian demonstrates that Yucu Dzaa maintained at least a moderate level of exchange with Central México. This corresponds with painted scenes in the Mixtec codices depicting Lord 8 Deer, the legendary founder of Yucu Dzaa, meeting important Tolteca-Chichimeca officials (Joyce *et al.* 2004). In addition, Tututepec Monument 6, which was found in the core of Yucu Dzaa, has been compared to the atlantid warriors of Tula because of its similar sculptural style and associated iconographic elements (Pohl 1999:184). Direct ties to Central México are evident in



early Colonial Period accounts that several formal vassals of Yucu Dzaa spoke Nahuatl, self identified as *chichimecs*, and worshipped *Itzpapalotl*, a Central Mexican deity (Acuña 1984; Joyce *et al.* 2004).

A stylistic analysis of the Yucu Dzaa pottery yielded a small number of suspected imports. Petrographic analysis and INAA are being combined to evaluate the origin of these potsherds. The Mixteca-Puebla polychrome pottery found at Yucu Dzaa is stylistically similar to polychromes reported from sites throughout Oaxaca and beyond in the Postclassic Period (Bernal 1948-1949; Bernal and Gamio 1974; Caso *et al.* 1967; Caso 1967; Forde 2006; Hernández Sánchez 2005; Lind 1987). Previous neutron activation studies indicate that at least some of the Yucu Dzaa polychromes were made in the coastal region (Workinger 2002). Based on the abundance of polychromes at Yucu Dzaa, both in the TAP excavations and observed on the surface throughout the site, it is unlikely that the majority were imported from other regions. Although most were probably made somewhere within the Yucu Dzaa realm, they are stylistically similar to those from the Oaxacan Highlands and thus suggests regular contact with Mixtec communities in greater Oaxaca and farther afield. This is consistent with ethnohistoric data demonstrating that Yucu Dzaa was bound to other Mixtec communities through marital alliances, trade and conflict (Pohl 2003b, Spores 1993; Joyce *et al.* 2004a).

Elemental analysis (PIXE) of metal artifacts from Yucu Dzaa reveals that their composition ranged from almost pure copper to a variety of bronze alloys (Ruvalcaba and Schulze 2005). At present, the origin of the ore and location where the artifacts were fashioned remain unknown. The copper axes and bells display broad formal similarities to metal artifacts from throughout Late Postclassic Mesoamerica and thus attest, in a general way, to Yucu Dzaa's participation in interregional exchange.

The majority of groundstone artifacts excavated at the Yucu Dzaa residences were fashioned from local granodiorite or stone cobbles found in river bottoms. However, a three legged *metate* ([Figure 8](#)) and a *mano* made of non-local vesicular basalt were recovered at the residences. We also found several axes made from fine-grained stone that was likely imported.

## Discussion

The results of the TAP excavations are providing valuable information regarding domestic and political economy, exchange, and social life at Yucu Dzaa. The architectural analysis reveals slight differences between the residences that may be attributed to variation in status and/or wealth. The comparative study of artifact frequencies demonstrates that Yucu Dzaa households consumed a similar range of utilitarian and luxury goods. The presence of luxury goods in commoner contexts indicates that the Yucu Dzaa elite did not exclusively rely on the control over luxury good distribution to establish or maintain their high status. Goods were probably available insofar as a person could "afford" them.

The artifact analysis makes clear that Yucu Dzaa commoners had much greater access to Mixteca-Puebla polychromes compared to their counterparts in the Mixteca Alta. While some (Pohl 2003a) argue that polychromes were reserved for elite feasts within the Mixteca Alta cacicazgos, the same does not hold true for Yucu Dzaa. Mixteca-Puebla polychromes were common at all of the Yucu Dzaa residences and probably utilized regularly for a variety of special occasions. Nonetheless, some of the Yucu Dzaa households, such as Residence A, had more resources at their disposal, which they invested in household architecture and in acquiring higher quantities of items such as fancy pottery and animal meat.

The investigation of craft production reveals variability in the presence and amount of production activities at each household. The abundance of spindle whorls at all residences demonstrates the importance of cotton thread production to Yucu Dzaa's local economy. One household (Residence A) produced a limited amount of obsidian blades, while the others had to acquire them directly from producers or in the marketplace. The variety of groundstone tools and obsidian blades recovered reflect a diversity of general crafting activities, as well as house construction and maintenance. Also notable is the evidence that Yucu Dzaa residents did not produce many of the tools and other items (e.g. pottery, spindle whorls, figurines) that they used on a daily basis. This is consistent with the presence of a local central marketplace where a diversity of items could be procured on a regular basis.

All of the Yucu Dzaa households acquired imported obsidian and some had non-local groundstone. Ongoing analyses will allow us to evaluate the possibility that some of the decorated pottery and copper recovered at the households was imported. The prevalence of Mixteca-Puebla pottery at Yucu Dzaa and its strong stylistic resemblance to examples from the Mixteca highlands, indicates that there was prolonged and regular contact between the two areas.

In sum, the TAP data suggest that Yucu Dzaa commoners were full participants in long distance exchange networks that coursed through Late Postclassic Mesoamerica. Yucu Dzaa exchange patterns reveal particularly strong ties to other regions of Oaxaca and Central México. The Yucu Dzaa economy also appears to have been somewhat commercialized, with indirect evidence for a centralized marketplace and no evidence for elite control over the distribution of luxury goods. Archaeometric analyses of materials from Yucu Dzaa will further refine our understanding of the chronology of the Yucu Dzaa households and the extent of their interregional exchange partners.

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