


ARTICLE

# Identification of a Terminal Classic Maya Fine Ware Production Center in the Upper Usumacinta River Drainage, Chiapas, Mexico

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## Abstract

The archaeological study of craft production investigates the role of household activities in broader social and political networks. In the Maya area, the production and distribution of ceramics, especially prestige ceramics including polychrome and fine ware pottery, relate to broader transformations in Maya society from the Classic to Terminal Classic periods. However, direct evidence for ceramic production in the form of kilns, workshops, or associated detritus can be elusive. We report the identification, excavation, and preliminary analysis of a large deposit of fine paste ceramics, including sherds representative of the Fine Orange and Fine Gray wares in the type-variety system of Maya ceramics, from a household group at the archaeological site of Benemérito de las Américas Primera Sección, located near the confluence of the Lacantún and Usumacinta Rivers. Discarded ceramics from this context exhibit several signs of overfiring consistent with pottery production. This deposit challenges notions of functional versus symbolic activity, as the members of this household used this deposit to dedicate a group of three burials accompanied by offerings including a figurine ensemble. We discuss the implications for this deposit in the context of economic shifts taking place across the Maya Lowlands during this period.

## Resumen

El estudio arqueológico de la producción artesanal investiga el papel de las actividades domésticas dentro de las redes sociales y políticas. En el área Maya, la producción y distribución de cerámica, especialmente cerámica de prestigio que incluye policromía y cerámica fina, se relaciona con transformaciones más amplias en la sociedad Maya desde el periodo Clásico hasta el periodo Clásico Terminal. Sin embargo, la evidencia directa de la producción de cerámica en forma de hornos, talleres o desechos asociados puede ser esquiva. En este artículo, informamos sobre la identificación, excavación y análisis preliminar de un gran depósito de cerámica de pasta fina, que incluye fragmentos representativos de las cerámicas de las categorías Anaranjado Fino y Gris Fino en el sistema de tipo-variedad de la cerámica Maya. Estos provienen de un grupo de hogares en el sitio arqueológico de Benemérito de las Américas Primera Sección, ubicado cerca de la confluencia de los ríos Lacantún y Usumacinta. La cerámica descartada de este contexto muestra varios signos de sobre-cocción consistentes con la producción de cerámica, lo que sugiere la presencia de un taller y horno de cerámica fina en el sitio durante el periodo Terminal Clásico. Este depósito desafía las nociones de actividad funcional versus simbólica, ya que los miembros de este hogar utilizaron este depósito para dedicar tres entierros acompañados de ofrendas que incluían un conjunto de figurillas. Discutimos las implicaciones de este depósito en el contexto de los cambios económicos que tuvieron lugar en las tierras bajas Mayas durante este periodo.

**Keywords:** Maya Lowlands; ceramics; craft production; ritual; refuse; Terminal Classic period

**Palabras clave:** Tierras Bajas Mayas; cerámica; producción artesanal; ritual; desechos; Clásico Terminal

One of the notable transformations in Maya society by the Terminal Classic period (AD 800–1000), often glossed as a political collapse in the Southern Lowlands, was a dramatic shift in ceramic technology, production, and distribution associated with the introduction and adoption of fine paste wares generally lacking temper (Fine Orange and Fine Gray) over the previously more common polychrome decorated ceramics of the Classic period (AD 250–800). Often linked to production centers along the Gulf Coast and “foreign” influence on the Lowland Maya (Martin 2020:285; Thompson 1970), fine ware pottery in fact describes several ceramic modes that were developed and used across several centuries and produced and distributed over extensive geographies (Smith 1958). Much of the challenge in interpreting this critical transition in Maya economies is that archaeologists have limited access to direct evidence from Maya potters and their refuse and instead must rely on indirect forms of analysis to reconstruct ceramic production. In this article, we report on an opportunity to address the production of Maya fine ware ceramics from the excavation of a pottery workshop dump at the site of Benemérito de las Américas Primera Sección along the Upper Usumacinta River in Chiapas, Mexico (Macedo et al. 2022). We contextualize the identification of this feature with current understandings of how fine ware ceramics were produced and distributed during the Terminal Classic period.

A cultural biographical approach to the study of material culture highlights the use life of objects through several phases, including the procurement of raw materials, production, use, reuse, and discard (Kopytoff 1986; Moholy-Nagy 1990; Schiffer 1972:158). The interpretation of archaeological contexts and their identification with each of these processes has been a focus of behavioral archaeologists in the reconstruction of past economic systems. Some researchers have sought to discern the intentionality of a deposit of discarded objects and the relative degree of disturbance or formation of such an archaeological context; whether the objects in said deposit can be considered in primary context (in direct association with an activity area) or in secondary context (relocated to a place of discard) (Moholy-Nagy 1990:270; Schiffer 1972, 1981). Others have challenged these rigid claims, proposing that objects and contexts are continually altered, reused, and reinterpreted through entropic processes to produce the archaeological record (Ascher 1962; Binford 1981; Schiffer 1972).

This debate manifests in the archaeology of craft production through the study of workshops, either directly in the identification of a production locus or indirectly in the discarded remains associated with the processes of procurement or production. In the context of craft production, a workshop can refer to any production center (Moholy-Nagy 1990:269), or in a more restrictive sense a workshop can be defined as a place where craftspeople produced a surplus of goods beyond those needed for their own use (Andrieu 2020:419; Moholy-Nagy 1997:294). Several typologies have been developed to interpret the scale of production in the context of a spectrum or continuum from the individual or household to more centralized organization, or as Timothy Earle (1981) proposed, “independent” to “attached,” or for Carla Sinopoli (1988), “independent,” “centralized,” and “administered” (Brumfiel and Earle 1987; Costin 1991). Other researchers have focused less on the degree of centralization of production and more on scale (Costin 1991:5; Peacock 1982; Rice 1981, 1984; Santley et al. 1989; Tosi 1984; van der Leeuw 1977). Cathy Costin (1991), in particular, outlined an eight-part typology for the organization of specialist production: (1) individual specialization, (2) dispersed workshops, (3) community specialization, (4) nucleated workshops, (5) dispersed corvée, (6) individual retainers, (7) nucleated corvée, and (8) retainer workshops, influenced by context (independent to attached), concentration (dispersed to nucleated), scale (small, kin-based to factory), and intensity (part-time to full-time).

Archaeologists rarely have access to a workshop location in primary context and instead more commonly rely on indirect remains, or discarded waste associated with a production center. Hattula Moholy-Nagy (1990) distinguished between such contexts as workshops and workshop dumps, or primary versus secondary workshops (Andrieu 2020:420). Because workshops were actively used and

sometimes linked to living spaces (Moholy-Nagy 1997:294), workshop detritus (especially potentially dangerous materials like lithic debitage) would have in most cases been removed periodically and discarded elsewhere; for instance, in trash mounds, middens, construction fill, special deposits, and random scatters produced through postdepositional processes. When documented in floors, smaller fragments of waste (e.g., microdebitage) could indicate a workshop locus as such remains are typically not entirely removed from primary context (Moholy-Nagy 1990:270–272). Still, “economy of effort” suggests that even hazardous discarded materials would have been moved a minimal distance from workshops (Hayden and Cannon 1983; Moholy-Nagy 1990:276). Ethnoarchaeological evidence also provides examples of artisans depositing workshop refuse in intermediate locations between production and final deposit as trash (Moholy-Nagy 1990:274).

Other researchers have challenged Moholy-Nagy’s simplified dichotomy between workshop locus and workshop dump. Dan Healan (1992), for example, responded that workshop dumps do not necessarily represent the final discard of objects; lithic dumps, in particular, can become sites of continual reuse of raw materials, essentially becoming production centers themselves after relocation. Thomas Hester and Harry Shafer (1992) also challenged the rigidity of Moholy-Nagy’s model, suggesting that waste deposits along the edge of house platforms could be interpreted as primary production loci. Finally, whether refuse is located at the precise workshop location or some small distance away, such deposits still provide important context to interpret production alongside regional settlement patterns and economies (Hester and Shafer 1992:243).

An additional consideration when interpreting workshops and their associated waste is that the practice of discarding trash was not merely a functional byproduct of the production process. Several researchers have observed that seemingly mundane practices can overlap with symbolic or ritual activity (Bell 1992; Bourdieu 1977; Brück 1999; Halperin and Foias 2016; McNiven 2013; Monaghan 1998; Needham and Spence 1997; Newman 2015, 2019). In the Maya area, this complication between understandings of trash deposits and ritual was acknowledged through the adoption of terms including “terminal” or “problematic” deposits (Coe 1959, 1965, 1990; Gonlin and Fowler 2020; Moholy-Nagy 2020) that typically involve some combination of whole or fragmented ceramic vessels alongside burned remains distinct from caches or burials, although the terms have never been applied consistently (Newman 2019). Some researchers have embraced the vagueness of the term as an advantage in detaching a deposit from its functions or the intentions of a community (Aimers et al. 2020). Other terms highlighting the ritual significance of certain deposits include “ritual refuse” or “ceremonial trash,” with an emphasis on the intentionality of such waste disposal (Halperin and Foias 2016; Needham and Spence 1997; Newman 2015:107; Walker 1995). Such interpretations rely on the presence of whole or terminated objects, intentionally deposited in a specialized context. However, the practice of leaving trash (even that which is not notable or meaningful to an outside observer) can in itself be ritualized (Halperin and Foias 2016:129). Archaeological categories must therefore remain flexible, serving a categorical purpose in the field but acknowledging their overlap in cultural context.

Keeping these issues in the interpretation of craft production and associated refuse in mind, we report on the identification of a large deposit of fine ware ceramics from the Maya site of Benemérito de las Américas Primera Sección, Chiapas, Mexico. This deposit was documented in surface finds during a pedestrian reconnaissance of house groups at the site, previously mapped with the GatorEye unoccupied aerial system (UAS) equipped with a lidar sensor (Schroder, Murtha, Broadbent, et al. 2021; Schroder, Murtha, Golden, et al. 2021), followed by excavation and horizontal exposure. During the course of its excavation, this deposit proved to be evidence of a workshop for the production of fine ware ceramics in secondary context, as well as a meaningful ritual deposit, including the buried human remains of three individuals alongside a ceramic figurine ensemble or scene, accompanied by other offerings, in primary context (Marcus 2009:26). Based on a preliminary analysis of this context, we discuss the significance of this finding for the reconstruction of the economic importance of the archaeological site, the production and distribution of emerging ceramic technologies, and the demographic and political changes taking place in the broader Maya Lowlands during the Terminal Classic period (AD 800–1000).

## Fine Paste Ceramics

Due to their appearance during the first half of the ninth century (AD 830–950), fine paste ceramics of the Altar (Fine Orange) and Tres Naciones (Fine Gray) groups have been linked to the larger socio-political processes surrounding the Terminal Classic period collapse of royal dynasties in the Southern Lowlands. The perceived introduction of foreign, imported fine ware ceramics, largely replacing polychrome styles, contributed to J. Eric Thompson's (1970) "Putun hypothesis" that Chontal Maya groups of the Gulf Coast region invaded the Southern Lowlands during this period (Ball 1977; Ball and Taschek 1989; Chase 1985; Chase and Chase 1982; Sabloff and Willey 1967). In reality, the production of fine paste ceramics, including the Chablekal Fine Gray group, Palenque fine black, and other fine pastes, can be traced to technologies developed in the Palenque and Tabasco regions by the middle of the eighth century AD, if not earlier in the middle sixth century AD at Comalcalco, Trinidad, and coastal Campeche and Yucatán (Armijo et al. 2010; Jiménez 2015; Jiménez et al. 2006; Rands 1967a, 1967b, 1974a, 1974b, 1987, 2007).

Research into ceramic production in the Maya area has largely involved indirect evidence through studies of paste, labor, diversity, standardization, use-wear, and experimental archaeology, among others (Halperin and Foias 2012:169; Lopez-Varela et al. 2002). Direct evidence for ceramic production, including the identification of kilns, wasters and other production debris, tools, and raw clay is generally elusive (Halperin and Foias 2012:170); however, examples of such direct evidence related to the production of polychrome ceramics have been identified at Tikal, Buenavista del Cayo, and Motul de San José (Becker 2003; Halperin and Foias 2012; Reents-Budet et al. 2000). Other direct evidence in the form of firing features, dense ceramic deposits, and tools have been described at Quirigua, Copan, K'axob, Uxbenka, and Laguna de On (Ashmore 2007; Freter 1996; Halperin and Foias 2012:170–173; Jordan and Prufer 2017; Lopez-Varela et al. 2001; Masson 2000).

Interpretations of the production of fine wares have relied almost entirely on indirect evidence. Classification and compositional analyses have focused on Fine Orange ceramics; in fact, Tres Naciones Fine Gray and Altar Fine Orange ceramics appear to be compositionally identical, as Fine Gray sherds have been shown to oxidize to orange when refired (Bishop 2003:84). Still, Fine Orange wares have been divided into a variety of ceramic groups, first assigned the final letters of the alphabet from earliest chronologically to most recent, Z, Y, X, V, U, corresponding to the now established groups Balancan, Altar, Silho, Matillas, and Cunduacán, respectively (Berlin 1956). Some Early Postclassic period (AD 1000–1200) ceramic assemblages include Fine Orange ceramics alongside, for example, Tohil Plumbate pottery, Zalal Gouged-Incised at Lamanai, and Augustine Red in the Belize Valley, forming a ceramic system of shared iconography and forms (Aimers 2014; Rice 2020).

Complementing the separation of Fine Orange ceramics into groups based on physical modes and attributes, compositional analysis has contributed to an understanding of the production, exchange, and distribution of these fine wares. The Maya Fine Paste Ceramics Project has investigated the production and sources of this pottery through neutron activation analysis of extensive samples across the Southern and Northern Maya Lowlands (Bishop and Rands 1982; Bishop et al. 1982; Harbottle and Sayre 1975; Rands et al. 1982; Sabloff 1982). The first analyses identified five clusters, or Chemical Paste Compositional Reference Units (CPCRU) that were later refined into three Paste Compositional Reference Units (PCRU; Foias 1996:132). These clusters correlated with production zones along and slightly outside of the Usumacinta-Pasión River drainage. The clearest distinction was a separation between "downstream" and "upstream" clusters across this drainage, with samples along the Pasión River tributary upstream from the confluence with the Usumacinta River lacking the minute particles of volcanic inclusions that originate from the Usumacinta River, which drains the volcanic Guatemala Highlands (Bishop 2003:87). The analysis is continually refined, with most recent modifications including the merging of PCRU 1 and 2 into a single cluster and the addition of an Aguacatal cluster, named for an archaeological site in the Usumacinta-Grijalva River delta. Simplified results of the Maya Fine Paste Ceramics Project are shown in Table 1.

Of note, each cluster includes characteristic assemblages of ceramic groups and types within the overarching Fine Orange ware. For example, Balancan and Silho ceramic groups are generally more

**Table 1.** Simplified Presentation of Results of the Maya Fine Paste Ceramics Project.

Paste Compositional Reference Units	Chemical Paste Compositional Reference Units	Fine Orange (FO) Core Group	Sources	Ceramic Groups (and Types) Represented
PCRU 1	CPCRU 2	Downstream, FO-north	Middle Usumacinta River	Silho Fine Orange
PCRU 2	CPCRU 2, 4, 5	Downstream, FO-south	Middle, Upper, Lower Usumacinta River	Balancan (highest), Altar, and Silho Fine Orange
PCRU 3	CPCRU 3	Upstream	Pasión River	Altar Fine Orange (Pabellon Modeled-carved, Cedro Gadrooned, Islas Gouged-incised)
	CPCRU 1	Downstream	Usumacinta-Grijalva Delta or Laguna de Términos	Silho Fine Orange
Aguacatal		FO-delta	Usumacinta-Grijalva Delta	Silho Fine Orange

Sources: Bishop 1994, 2003; Bishop and Rands 1982; Bishop et al.1982; Foias 1996:130–133.

highly represented along the Lower and Middle Usumacinta River, while the Altar Group, particularly with surface decoration associated with the Pabellon Modeled-carved type, is more evident along the Pasión River. These findings link the various ceramic groups to production centers along the Usumacinta-Pasión River drainage but also suggest restricted distribution, with Silho Fine Orange present in higher proportions at and downstream from Piedras Negras and Altar Fine Orange represented at and upstream from Yaxchilán (Foias 1996:75). Furthermore, recent studies have noted that fine paste ceramics from the Northern Maya Lowlands cluster into PCRU 2 from downstream sites (Bishop 1994:23). Based on results from the Maya Fine Paste Ceramics Project, fine wares developed during the Terminal Classic period were not imported from outside the Maya area, were not produced at a single center due to the chemical variability, and were not due to the movement of invading people but rather the spread of a technology with roots in the Palenque and Tabasco region during the Late Classic period (Foias 1996:132; Golden et al. 2020:415).

### Setting

The archaeological site of Benemérito de las Américas Primera Sección is located near the modern town of the same name in southeastern Chiapas, Mexico (Figure 1). The site henceforth referred to as Benemérito Primera Sección sits on a ridge at the center of a peninsula formed by the Lacantún River to the west and the Upper Usumacinta River to the east that meet at a confluence 4 km to the north of the site core. First reported by Alejandro Tovalín and Víctor Ortiz (2005) (see also Mayer 2006) and further investigated by the present Proyecto Arqueológico Bajo Lacantún (Lower Lacantún Archaeological Project), Benemérito Primera Sección represents the largest urban center so far identified along the lower course of the Lacantún River (Schroder, Murtha, Broadbent, et al. 2021), with occupation by the sixth century AD (if not earlier) extending at least to the tenth century. Due to the presence of abundant carved textual monuments, monumental architecture, and several ballcourts, the site represents the seat of a poorly understood royal court during the Late and Terminal Classic periods (Schroder et al. 2019).

Based on preliminary ceramic analysis from surface collections and excavations of household contexts, settlement at Benemérito Primera Sección experienced population growth during the Terminal Classic period while other centers in the Upper Usumacinta and Petexbatún regions experienced sharp declines (Demarest et al. 1997; Golden and Scherer 2013; Inomata 1997). The most diagnostic indicator of this occupation is the high density of fine ware ceramics in surface, floor, and construction fill



**Figure 1.** Map of the archaeological site of Benemérito Primera Sección highlighting the location of the Carrizal Group and Suboperation 5B, in relation to the palace and main plaza to the southwest (map by Whittaker Schroder).

contexts. Benemérito Primera Sección therefore offers an opportunity to examine the demographic changes across the region during the Terminal Classic period collapse of royal dynasties in the Southern Lowlands.

Mapping of the site revealed that settlement surrounds the elevated urban core and acropolis in all directions, clustering into Northern, Eastern, Southern, and Western districts (Figure 2). Each district

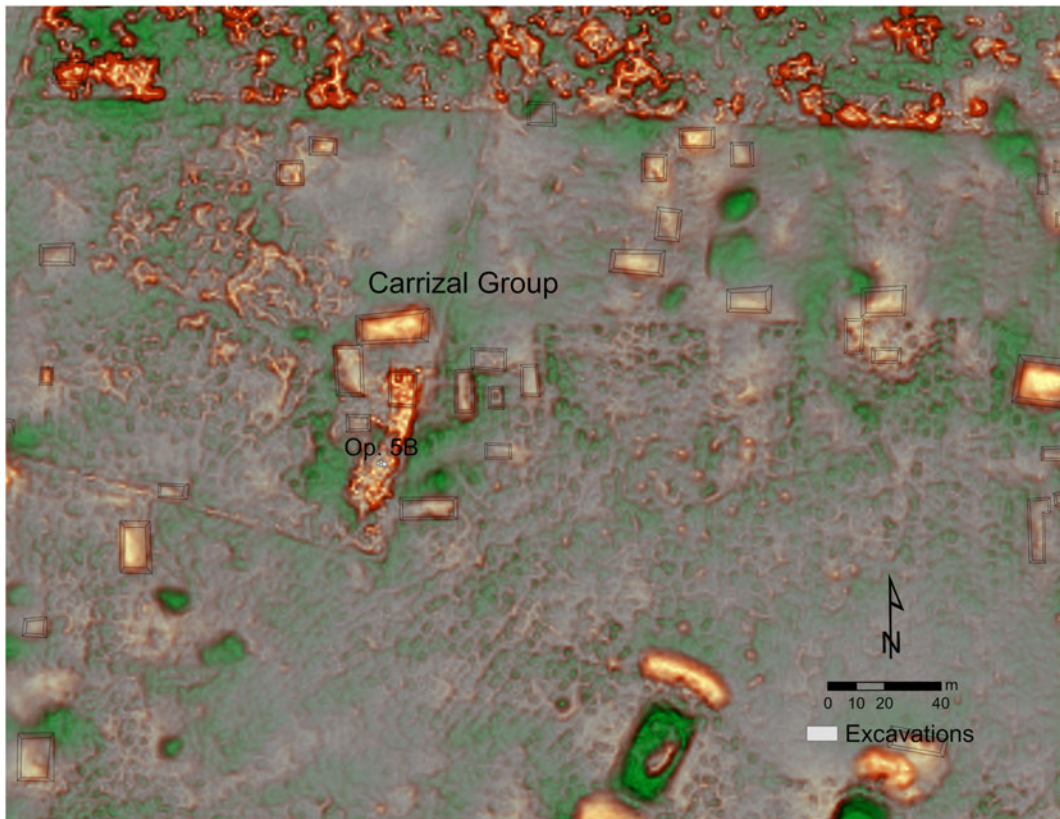


**Figure 2.** Map of the archaeological site of Benemerito Primera Sección highlighting the location of the Carrizal Group and Suboperation 5B, in relation to the palace and main plaza to the southwest (map by Whittaker Schroder).

is centered on a large household group, based on an analysis of plaza sizes (Schroder, Murtha, Broadbent, et al. 2021). We identified the largest household group in the Eastern District as the Carrizal Group, which consists of several low, mixed-fill earthen, limestone, sandstone, and siltstone house platforms surrounding two patios, each with a central square platform altar, likely representing a high status, extended household (Figure 3). These structures form a characteristic Terminal Classic period design seen across the site, with two or more house platforms surrounding a patio with a platform altar at its center, all oriented to magnetic north. Classic period architecture, in contrast, tends to be oriented slightly west ( $10^\circ$ ) of north. Central platform altars are known from sites elsewhere in the Maya Lowlands but are generally rare along the Usumacinta River, with examples known from the site cores of Palenque and Pomona (Schroder, Murtha, Broadbent, et al. 2021:15). Beginning in 2021, excavations at the northwestern corner of the larger and western patio of the Carrizal Group demonstrated a single Terminal Classic period construction phase composed of marl or siltstone fill without preserved floors. Returning in 2022, with the assistance of the landowner, Domingo Hernández Guillén, we identified a large surface deposit of fine paste ceramics at the southwestern end of the same larger patio that had been previously obscured by the presence of giant reed grass (*Arundo*) that had inspired the Carrizal Group's name (Figure 4).

### Deposit

Excavations in the southwestern side of the Carrizal Group defined the extent and nature of this ceramic deposit. A horizontal exposure of  $5.25\text{ m}^2$  excavated to a depth of 0.67 m below the surface recovered 235 kg of ceramics, with most sherds originating from the upper 0.4 m (Figures 5 and 6). A majority of sherds recovered can be assigned to Fine Orange and Fine Gray wares.



**Figure 3.** Modified Red Relief Image Map (RRIM) (Auld-Thomas 2022; Chiba et al. 2008) of the Carrizal Group based on 2019 UAS lidar (Schroder, Murtha, Broadbent, et al. 2021) showing structures with 50% transparency and excavations in light gray. The raised area running along the fence line from the center of the Carrizal Group to the southwest is the patch of giant reed grass that gave the architectural group its name (map by Whittaker Schroder). (Color online)

Sherds from this deposit additionally presented evident defects due to overfiring (Figure 7). The clearest sign of overfiring was overvitrification of the clay, producing the highly dense paste and characteristic ringing when fine paste sherds are struck together. In addition, the paste color consisted of a dull gray (7.5YR 5/1) that tends to be on the darker side of Tres Naciones Fine Gray examples, although such ceramics vary significantly in paste color (Sabloff 1975:210). Fire clouding was also common, with such sherds showing areas of orange and gray surface finishes. Several ceramicists have noted that some Fine Gray sherds when refired become Fine Orange (Adams 1971:26; Bishop 2003:84; Sabloff 1975:210). However, the majority of overfired sherds from the Carrizal Group deposit are gray, suggesting that when refired repeatedly to extreme temperatures, Fine Orange pastes can revert to a dark gray color. Crazeing was also apparent in some sherds due to overfiring.

Overvitrification, fire clouding, and crazeing are typical, especially when vessels are subjected to high temperatures in close proximity to the fuel source; however, these defects accompany other flaws from overfiring in the deposit from the Carrizal Group. The most dramatic firing defects identified include blistering (bloating), fracturing (dunting), and warping. Bubbles or blisters (blebbing) can form on the surface of ceramics when organic materials or carbonates are not properly burned off or when vessels are overfired or fired too quickly. Smaller blisters, or pinholing, can appear on glazed or slipped surfaces due to trapped gases. When large bubbles burst, especially at a vessel's rim, a form of cratering can occur where the interior paste is exposed and visible on the surface. Extreme temperatures can additionally cause the vessel to lose its form through pyroplasticity, distortion, and warping at the high end of the clay's firing range, when the ceramic softens to a level near its original plastic clay





**Figure 4.** Drone aerial photo of the Carrizal Group, taken in 2022 from above the southwest corner of the group looking to the northeast. Suboperation 5B is located under the tarp, surrounded by low house platforms and a small patch of partially cleared giant reed grass (photo by Whittaker Schroder). (Color online)



**Figure 5.** Photo of the southern and eastern excavation profiles showing the pit feature and ceramic deposit. Note the concentrations in the eastern profile (*top left*), southern profile (*top center*), and western profile (*bottom right*) (photo by Whittaker Schroder). (Color online)

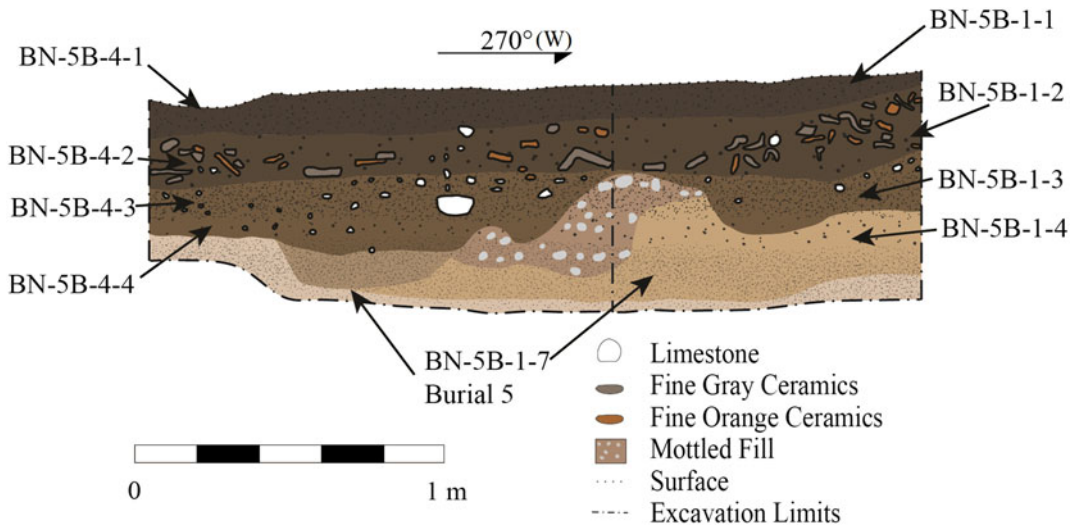


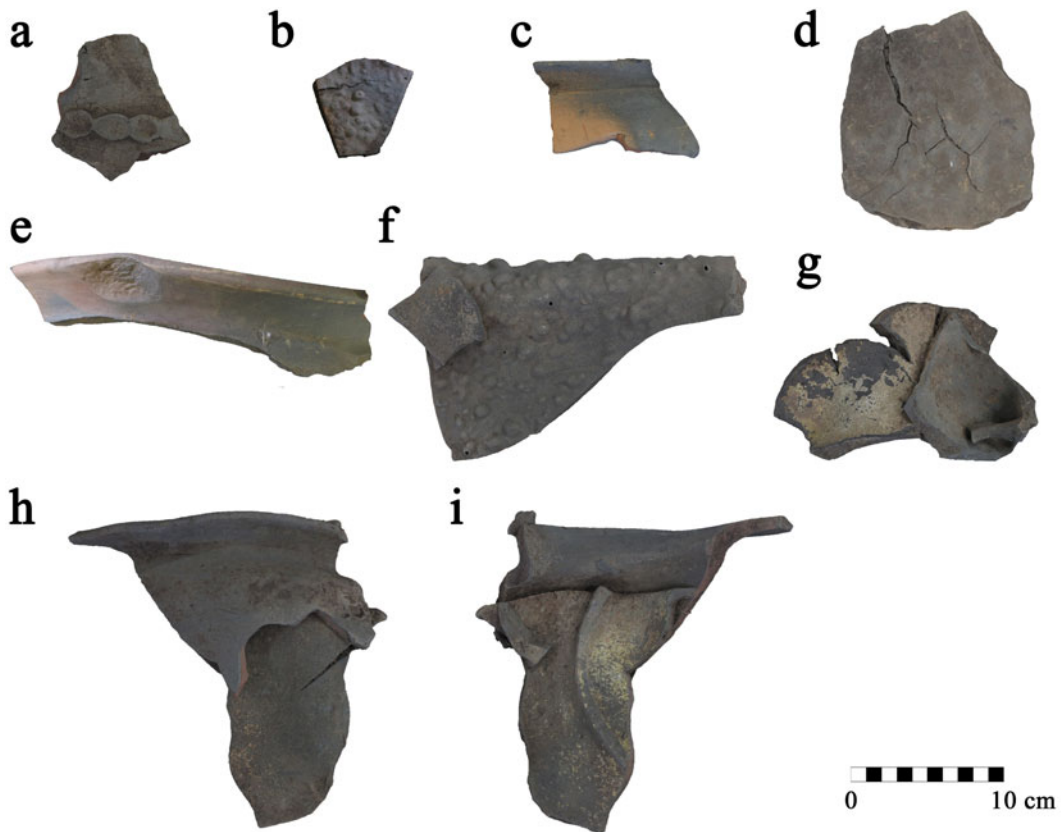
Figure 6. Profile drawing of the southern walls of excavation units BN-5B-1 and BN-5B-4 (see Figure 8 for a plan view) (drawing by Whittaker Schroder). (Color online)

state (Brierly 2014:118). Vessels in close proximity to each other can additionally fuse together under such conditions; for example, in saggar kilns in which fine vessels were fired inside of larger undecorated pots (Rice 2009). Fracturing, or dunting, in contrast, occurs when vessels are subjected to rapid fluctuations in temperature as the kiln is heated or cooled (Brierly 2014:113).

Signs of pyroplasticity are common in the assemblage from the Carrizal Group, especially along the rims of vessels, which are structurally weakest. Bubbling and fracturing are further common. Pinholing is present in some sherds—in these examples vessels may have been slipped or glazed (the latter categorized as Tohil plumbate). In the Carrizal Group deposit, a majority of sherds show some form of defects, signaling that these sherds were wasters, discarded during the production process. Another possibility is that such wasters were intentionally created as a means to maintain the high kiln temperatures necessary to produce fine ware ceramics. The presence of dunting and warping suggests that these sherds were subjected to sustained high temperatures alongside periods of rapid heating and cooling consistent with the process of controlling proper kiln temperature. Although no direct evidence of such a kiln has so far been documented in the Carrizal Group, the high density of ceramic wasters suggests that these sherds were deposited a short distance from the production site. The large amount of overfired fine ware sherds and the consistent appearance of such defects throughout the deposit point to their origin as part of the production process, rather than a postdepositional burning event. No other evidence of consistently burned soil, artifacts, or ecofacts was apparent. Aside from the signs of overfiring, no other evidence of production—for example, tools, raw materials, clay, or pigments—was documented. The deposit therefore represents a site of secondary disposal, rather than a locus of primary production.

### Burials

The documentation of human remains below the ceramic deposit indicates that the context was not merely a deposit of trash associated with production defects from a nearby kiln (Figure 8). Beneath the center of the deposit, defined by the densest portion of ceramics, excavations revealed remains associated with three individuals. The remains were highly fragmentary and in poor condition; however, the two more complete skeletons (northernmost [Burial 3] and southernmost [Burial 5]) were extended from west (superior) to east (inferior). Between these two individuals, the third individual was represented only by the cranium (Burial 4). The absence of additional remains associated with the third individual may have been intentional or due to the poor preservation of the context. A



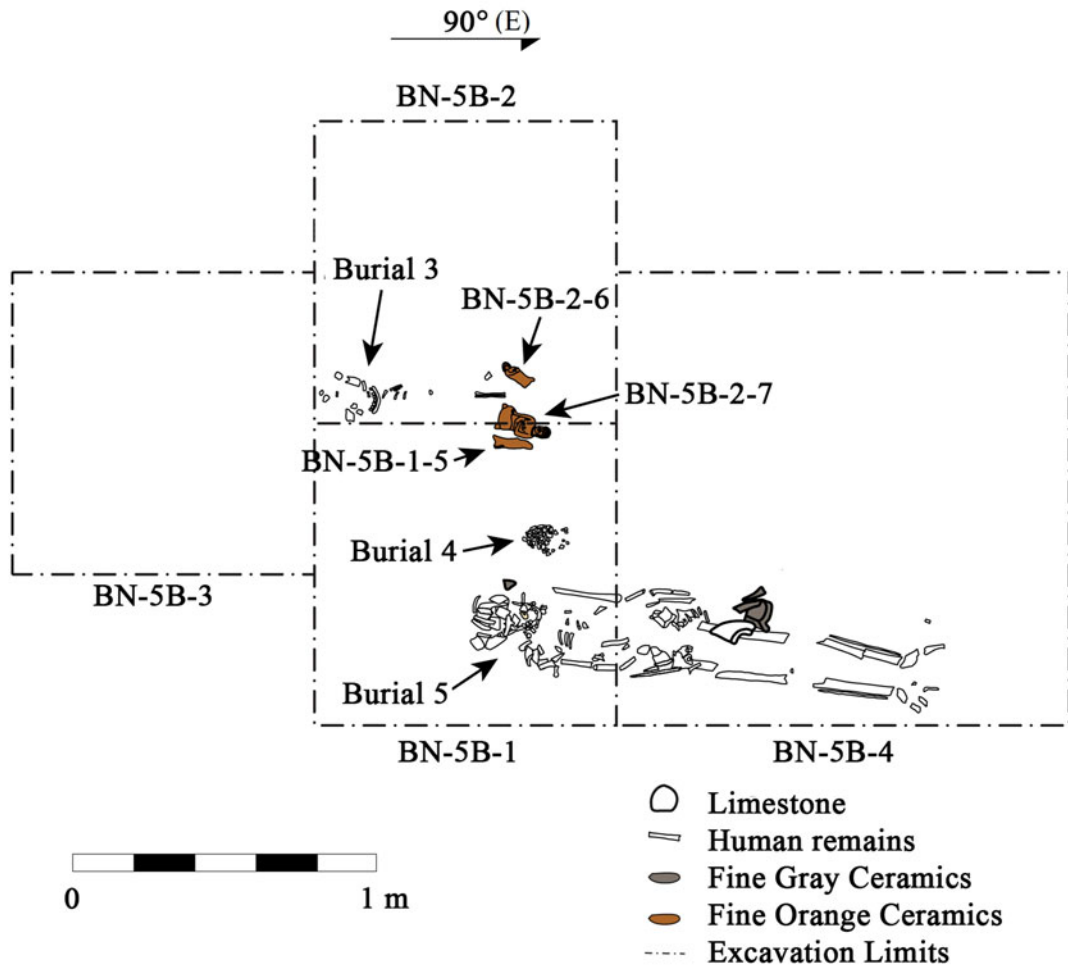
**Figure 7.** Examples of overfired ceramics from the Carrizal Group: (a) jar fragment with crazing and pinholing; (b) sherd with dunting and blistering; (c) jar fragment with signs of warping, pinholing, and fire clouding, showing a combination of surface finishes associated with Fine Orange and Fine Gray pottery; (d) sherd with extensive fracturing or dunting, blistering or bloating, and overvitrification producing a dull surface; (e) jar with signs of blistering and cratering along the rim, as well as fire clouding; (f) heavily blistered jar with burst bubbles on the interior, with another sherd fused to its surface; (g) fused sherds showing pyroplasticity and warping, as well as overvitrification of the slipped surface; (h) large fragment of a jar showing extreme warping and pyroplasticity, dunting, pinholing, and overvitrification, fused either to another sherd or to the base of the same vessel; and (i) the interior or reverse side of the same sherd labeled “h,” showing fusing with the basal ring of the same or a similar vessel (photos by Whittaker Schroder). (Color online)

more complete osteological analysis is necessary, but based on their size, the northernmost individual was likely a juvenile, while the southernmost individual may have been an adolescent or smaller adult.

The northernmost individual and the separate cranium were both placed immediately beneath the large ceramic deposit, at the transition to a highly compact C horizon. The largest individual, in contrast, had been placed in a simple excavated pit, made up of a silty clay loam, slightly deeper than the other two individuals. No formal burial architecture accompanied the deceased.

Alongside the southernmost Burial 5 (the adolescent or adult), burial offerings included a shell bead and two faunal cuspids that had likely formed a necklace. A small deposit of a broken Fine Gray jar and a fragment of a limestone carving were deposited over the individual’s legs. Accompanying the northernmost (juvenile) Burial 3, three Fine Orange ceramic figurines were placed, also over the inferior part of the skeleton (Figure 9). A small stone bead had been placed inside the juvenile individual’s mouth.

In the Maya area, with the exception of Jaina Island and few other sites, figurines were rarely placed in burial contexts (Halperin 2014:187, 194). The Carrizal Group offering included two figurines measuring approximately 12 cm long, with a third larger figurine measuring approximately 19 cm long. All figurines portray women, and they functioned as whistles, with the mouthpieces at the rear base acting



**Figure 8.** Plan view of the excavations in Suboperation 5B, showing Burials 3, 4, and 5 alongside the figurine ensemble offering (drawing by Whittaker Schroder). (Color online)

as a support. The two smaller figurines show women standing upright, and their bodies were produced from the same mold. The heads were produced separately, with one woman showing center-parted, shoulder-length hair and the other wearing a cloth head wrap tied at the front, a style of headdress commonly found in figurines from contexts associated with all social statuses (Halperin 2014:82). Both women wear large earrings and the same necklace or gorget. Both women hold ceramic jars or bowls with their left hands at their midsections, with their right hands inside the vessel, as if forming or cleaning the interior. Each figurine wears a dress, or *huipil*, with additional applied and incised textile decorations unique to each figurine.

The largest figurine, originally placed at the center of the ensemble, instead shows a seated woman. This woman wears her hair in the same center-parted, shoulder-length style as one of the smaller figurines; however, the hair of the larger figurine covers the ears. She wears a necklace of large beads and a long skirt. Unlike the other two women, the larger figurine is bare-breasted, although additional perishable clothing may have existed (Marcus 2009:45), with the left hand lifted to the chest in a trisected, elite gesture (Bishop and Cartmill 2021). The right hand rests on the right thigh. Some facial scarification is also visible, especially on the left cheek. The larger figurine whistle still produces a note when played, between G4 and A4.



**Figure 9.** The obverse and reverse sides of the figurines documented with Burial 3 in the Carrizal Group. A 3D model is available at <https://skfb.ly/oHAFT> (photos by Whittaker Schroder). (Color online)

The style of the larger figurine resembles those from Jaina Island or Jotuta; the latter a likely production center for many of the Jaina figurines (Torres et al. 1984). Similar to the Carrizal Group context, burials at Jaina tend to be relatively shallow and lack burial architecture (McVicker 2012:215; Piña Chan 2001). Figurines accompanying these burials often portray women engaging in domestic work, including weaving, food preparation, and childcare. Seated female figures, often nude from the waist up, sometimes accompany male or supernatural figures in an embrace. These figures have been interpreted in burial contexts as representing Goddess I, the young moon or earth goddess, or Ixik Kab, a symbol of death and rebirth in mortuary contexts (Benson 1979:99; Coe 1975:24–25; McVicker 2012:225). An older counterpart—Goddess O, Chak Chel, or Ix Chel—is also commonly portrayed in figurine media, sometimes with a headdress in the form of a coiled snake or a twisted cloth head wrap mimicking a serpent form, as well as skeletal imagery decorating the skirt (Halperin 2014:135–137; Taube 1992:64, 99). Of note, the smaller figurine with a head wrap (BN-5B-1-5) from the Carrizal Group has incised decoration on the skirt that implies skeletonized imagery, although this design could merely reflect a textile pattern. Without additional indexes, assigning these deities to the Carrizal Group figurines is not definite; however, the mortuary context would be appropriate for depictions of Goddesses I and O.

Donald McVicker (2012:229) has observed that figurines accompanying burials had prior social lives before their final deposit. The prior use of such figurines created meaning and significance that led to their importance as burial offerings. The two smaller figurines in the Carrizal Group deposit show women using or producing ceramics as examples of domestic life. These two figurines additionally show evidence of use-wear, each with their right legs broken, possibly intentionally or accidentally

through prolonged use where the objects are structurally weakest (Halperin 2014:201). In contrast, the larger figurine lacks the same apparent evidence of use-wear prior to its deposition. Perhaps the larger figurine was intentionally made as a burial object to accompany the deceased alongside the other smaller figurines that symbolized daily life. This biographical approach to interpreting figurines emphasizes the production and reproduction of meaning through the relational interactions between human and nonhuman agents (Joyce 2009:415; Lopiparo and Hendon 2009:67).

Although the presence of three female figurines alongside three burials encourages an interpretation that each figurine can be assigned in a one-to-one relationship to a particular interred individual, the evidence is ambiguous. Assuming limited postdepositional disturbance, the orientation of the figurines differs from the orientation of the individuals in that only one of the smaller figurines was oriented with its head to the west, while the other two figurines were oriented with their heads to the east. Furthermore, the largest figurine was placed at the center of the ensemble, while the largest buried individual was located furthest to the south. The figurines were intentionally placed above the juvenile burial; at Jaina, Goddess I figurines often accompany infant burials, as a symbol of rebirth (McVicker 2012:226). Jessica MacLellan and Daniela Triadan (2023) have also noted an association between figurines and child burials at Ceibal, Guatemala. In addition, figurines in burials at Jaina rarely determine the age, sex, and occupation of the deceased (McVicker 2012), despite some suggestions that certain examples can be considered as portraiture (Coe 1975:24). The figurine scene from the Carrizal Group therefore seems not to serve as a representation of the deceased individuals' counterparts nor a commemoration of a specific event; instead, the general purpose seems to sanctify the location through the symbolic importance of the whistles, as well as through the musical performance that could have accompanied the funeral (Marcus 2009:28, 45). Still, the Carrizal Group figurines seem to define a gendered space, and the presence of two figurines portraying women using or producing pottery in association with a large ceramic deposit consisting of sherds with production defects is clearly meaningful.

## Conclusion

The identification and documentation of evidence of Terminal Classic period fine ware production through the discard of overfired ceramics in the household centered on the Carrizal Group at the archaeological site of Benemérito Primera Sección, Chiapas is significant due to the general paucity of direct evidence of ceramic production across the Maya Lowlands. Not only will subsequent analyses of this context and its recovered materials shed light on local practices of ceramic production and craft specialization at this site, but findings will have consequences for understanding regional economic shifts during the critical transition from the Classic to Terminal Classic periods. Although interpreting this economic transition will require multifaceted methods, including modal classification, paste characterization, osteology, and further excavation in the Carrizal Group, we can begin to make several observations and conclusions about the nature of the deposit and its relationship to contemporaneous sites.

The Carrizal Group context underscores the complexity of trash deposits as not merely representing functional practices of discard but as forming relational and enduring experiences between people and waste (Halperin and Foias 2016; Harrison-Buck and Hendon 2018; Newman 2023; Watts 2013). This deposit does not neatly fit archaeological definitions; for example, "middens" that typically consist of rich, formalized refuse deposits caused by deliberate and sequential accumulation of diverse waste materials (Beck and Hill 2004:305; Needham and Spence 1997:80), nor does it fit the categories of "termination" or "peri-abandonment" rituals that serve to deanimate or ritually "kill" objects or places (MacLellan 2019; Tsukamoto 2017). In the typology offered by James Aimers and colleagues (2020), the Carrizal Group deposit best fits the category of "dedication or consecration deposits," including caches associated with architectural construction, complete ritual objects, and burials. The Carrizal Group deposit consists almost entirely of ceramic discard and likely reflects a relatively short-term process of excavation of a pit, the burial of three individuals with offerings, and finally backfilling with earth and ceramics. Members of the household, however, would have continually interacted with the deposit due to its visibility at surface level, with no evidence of preserved floors plastered over the

deposit. The location of the deposit inside living, patio space (near the southern end of the patio), rather than outside of the patio, behind its structures, centers the discarded objects within the household rather than separating or disposing the waste in a more distant location.

Still, the ceramics from the Carrizal Group deposit must have been stored or dumped elsewhere prior to their placement above the burial context. The clear evidence of production in the overfired ceramics suggests they originated in a kiln. The lack of evidence of burning or other indicators of a production center in the excavation indicates that the ceramics were not discarded at the kiln site. More likely, the craftspeople would have discarded ceramic debris at a temporary storage location near the kiln, followed by its relocation at a later date to its deposition in the Carrizal Group (Moholy-Nagy 1990:270). However, due to the density of the deposit, the ceramic waste was probably not moved far from the kiln. Thus, additional areas within and surrounding the Carrizal Group will need to be investigated to confirm any evidence of the workshop location.

The precise location of the workshop is critical to interpreting the nature of craft production at Benemérito Primera Sección and its relationship to broader regional economic systems (Halperin and Foias 2012:169). Although simplistic, the two-part or dualistic economic system of the Classic Maya economy that differentiates between the decentralized manufacture and distribution of utilitarian goods and a more centralized elite control of prestige and luxury goods serves as a reasonable model to begin to explore changes in craft production from the Classic to Terminal Classic periods (Halperin and Foias 2012:168; Scarborough and Valdez 2009). The manufacture of prestige ceramics—for example, polychrome-decorated vessels during the Classic period—has typically been attributed to attached specialists at elite-controlled production centers, or “palace schools” within royal or elite residences at the site cores of the largest Maya centers (Ball 1993; Halperin and Foias 2012:172). However, unresolved questions surround the production of fine ware ceramics during the transition to the Terminal Classic period alongside the collapse and transformation of political and economic systems across the Maya area. Some archaeologists have attributed the emergence of new prestige goods in the form of fine ware ceramics during the Terminal Classic period to mass production and commercialization, especially in the form of molded-carved ceramics (e.g., Pabellón) and molded figurines (Rathje et al. 1978; Rice 1987; Sabloff 1973; Sabloff and Rathje 1975). Furthermore, patterns of the distribution of fine ware ceramics during the Terminal Classic period suggest less centralized economic systems and perhaps a leveling of socioeconomic distinctions that contrast with the more restricted access to polychrome ceramics during the Classic period (LeMoine and Halperin 2021; LeMoine et al. 2022). In contrast, standardization studies of ceramics from the Petexbatún region have highlighted continuities in ceramic assemblages from the Classic to Terminal Classic period inconsistent with a shift toward commercialization (Foias and Bishop 1997; Ting 2018). Rosemary Joyce (2009:419) has also cautioned against the interpretation of molded figurines as evidence of mass production, instead identifying their importance in reproducing valued imagery through small-scale production in household contexts.

Assuming the workshop dump in the Carrizal Group was not far from the workshop itself, we can interpret the degree of royal control over the production of fine ware ceramics at Benemérito Primera Sección. Based on excavations, surface finds, and the documentation of looter’s pits within the site’s palace to the west of the Carrizal Group, a royal presence likely remained at the site with some significant construction and changes in architectural orientations of monumental buildings during the Terminal Classic period (Godos 2022; Schroder, Ramiro Talavera, and Simmons 2021). Although not far from Benemérito Primera Sección’s main plaza and palace (at approximately a distance of 500 m), the Carrizal Group does not appear to have been necessarily under direct supervision by the site’s royal elite. The Carrizal Group likely did not represent a palace school of attached specialists who produced goods solely for and under the control of a royal court (Brumfiel and Earle 1987). Nor did the ceramic artisans of the Carrizal Group act as independent specialists producing utilitarian goods for wide demand and consumption (Olausson 1993:2). Some researchers have proposed the use of the term “embedded” production that lies between completely independent and entirely controlled or attached specialization (Ames 1995; Janusek 1999). In this scenario, specialists are embedded in typically high status, kin-based households who produce prestige goods for their own use and for

circulation in a wider political economic network of elites (Costin 2001:300). Considering the spatial and political context of the Carrizal Group, physically removed from the site's palace and at a time of weakening royal dynasties across the Southern Maya Lowlands, we propose that the model of embedded specialists currently best fits the data, with the potters likely operating as a semiautonomous residential corporate group (Hayden and Cannon 1982). The presence of large household groups in addition to the Carrizal Group surrounding the site core of Benemérito Primera Sección points to several areas where production (whether of ceramics or other materials) could have been nucleated in neighborhoods or districts within the urban center, but further research is required to test this hypothesis.

A more detailed analysis of the ceramics from the Carrizal Group, especially surface finish and decoration alongside paste characterization, will further highlight the diversity of fine wares and their production centers along the Pasión and Usumacinta Rivers. The current study is preliminary, and we intentionally avoid reporting quantitative data until a larger sample of analyzed ceramics is available. Still, we anticipate our ongoing analyses will contribute to current understandings of the wider context of Maya Fine Ware ceramics. Findings from the Maya Fine Paste Ceramics Project have noted that modes of decoration and paste composition align with zones where fine ware ceramics were produced and distributed (Bishop 1994, 2003; Bishop and Rands 1982; Bishop et al. 1982; Foias 1996:130–133). For example, Pabellón Molded-Carved ceramics of the Altar Fine Orange ceramic group have been characterized as composed of upstream clays lacking volcanic materials from along the Pasión River. So far, we have only identified Pabellón Molded-Carved ceramics in low densities at Benemérito Primera Sección, which corresponds with the southern extent of the downstream (relative to the Pasión River confluence) portion of the Upper Usumacinta River. Instead, other styles of decoration (for example, Trapiche incised) are more common at Benemérito Primera Sección, suggesting that the production and distribution of certain types of decorated fine orange ceramics were restricted across the Usumacinta-Pasión watershed, as compositional studies through the Maya Fine Paste Ceramics Project have shown. We have also noted a relatively high density of plumbate ceramics at Benemérito Primera Sección, which differs from ceramic assemblages at sites downstream (for example Yaxchilán and Piedras Negras), which could be due to restricted distribution or the later chronology of Benemérito Primera Sección, which likely extends into the Early Postclassic period if not later (López Varela 1989; Muñoz 2006).

Finally, additional analyses of the Carrizal Group materials, alongside osteology and analysis of the burial context, will contribute to interpreting the composition of the household and an opportunity to “people the past.” Although we resist a literal interpretation of the burial context and its funerary items, the context appears to define a gendered space with three female figurines and a deposit of ceramic wasters that represent a form of craft production not necessarily but often attributed to women's labor. Furthermore, the presence of two mold-made figurines each showing a woman holding a ceramic jar uncannily relates to the deposit of overfired sherds placed above them. Evidence from other burials that are accompanied by figurines, such as those at Jaina, however, do not always represent direct one-to-one relationships between the genders or occupations depicted in figurines and those of the interred individuals alongside them (McVicker 2012).

The Carrizal Group deposit at Benemérito Primera Sección offers a rare opportunity to interpret ceramic production alongside burial practices and macroregional transformations during the Terminal Classic period. Additional investigation of this context will interpret the dramatic changes that took place across the Maya Lowlands at this time from the perspective of a resilient household that navigated the political and economic turmoil of this period.

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**Competing Interests.** The authors declare none.

## References Cited

- Adams, Richard E. W. 1971. *The Ceramics of Altar de Sacrificios*. Papers of the Peabody Museum of Archaeology and Ethnology Vol. 63, No. 1. Harvard University, Cambridge, Massachusetts.
- Aimers, James J. 2014. Follow the Leader: Fine Orange Pottery Systems in the Maya Lowlands. In *The Maya and Their Central American Neighbors: Settlement Patterns, Architecture, Hieroglyphic Texts, and Ceramics*, edited by Geoffrey E. Braswell, pp. 308–332. Routledge, New York.
- Aimers, James J., Julie A. Hoggarth, and Jaime J. Awe. 2020. Decoding the Archaeological Significance of Problematic Deposits in the Maya Lowlands. In “Special Section: Problematic “On-floor” Deposits in the Terminal Classic Eastern Maya Lowlands: Implications for the Maya Collapse,” edited by Nancy Gonlin and William R. Fowler. Special issue, *Ancient Mesoamerica* 31:67–75.
- Ames, Kenneth M. 1995. Chiefly Power and Household Production on the Northwest Coast. In *Foundations of Social Inequality*, edited by T. Douglas Price and Gary M. Feinman, pp. 155–187. Plenum, New York.
- Andrieu, Chloé. 2020. A Stone Duty? Flake Ritual Deposits and the Missing Workshops of the Maya Lowlands. In *The Real Business of Ancient Maya Economies: From Farmers’ Fields to Rulers’ Realms*, edited by Marilyn A. Masson, David A. Freidel, and Arthur A. Demarest, pp. 418–433. University Press of Florida, Gainesville.
- Armijo Torres, Ricardo, Socorro del Pilar Jiménez Álvarez, and Judith Gallegos Gomora. 2010. Las Cerámicas de Pasta Fina de Comalcalco, Tabasco, Estilos y Relaciones Culturales. In *La península de Yucatán investigaciones y cronologías alternativas*, edited by Antonio Benavides and Ernesto Vargas, pp. 263–278. Universidad Autónoma de Campeche, Campeche, Mexico.
- Ascher, Robert. 1962. Ethnography for Archaeology: A Case from the Seri Indians. *Ethnology* 1(3):360–369.
- Ashmore, Wendy. 2007. *Settlement Archaeology at Quiriguá, Guatemala*. University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia.
- Auld-Thomas, Luke. 2022. A Recipe for Simple Red Relief. *Ancient Maya Settlement* (blog), February 12. <https://ancientmaya.settlement.com/2022/02/12/a-recipe-for-simple-red-relief>, accessed May 13, 2024.
- Ball, Joseph W. 1977. *The Archaeological Ceramics of Becan, Campeche, Mexico*. Middle American Research Institute Publication 43. Tulane University, New Orleans, Louisiana.
- Ball, Joseph W. 1993. Pottery, Potters, Palaces, and Politics: Some Socioeconomic and Political Implications of Late Classic Maya Ceramic Industries. In *Lowland Maya Civilization in the Eighth Century A.D.*, edited by Jeremy A. Sabloff and John S. Henderson, pp. 243–272. Dumbarton Oaks, Washington, DC.
- Ball, Joseph W., and Jennifer T. Taschek. 1989. Teotihuacan’s Fall and Rise of the Itza: Realignments and Role Changes in the Terminal Classic Maya Lowlands. In *Mesoamerica after the Decline of Teotihuacan, A.D. 700–900*, edited by Richard A. Diehl and Janet C. Berlo, pp. 187–200. Dumbarton Oaks, Washington, DC.
- Beck, Margaret E. and Matthew E. Hill, Jr. 2004. Rubbish, Relatives, and Residence: The Family Use of Middens. *Journal of Archaeological Method and Theory* 11(3):297–333.
- Becker, Marshall J. 2003. A Classic Period Barrio Producing Fine Polychrome Ceramics at Tikal, Guatemala. *Ancient Mesoamerica* 38:396–406.
- Bell, Catherine. 1992. *Ritual Theory, Ritual Practice*. Oxford University Press, Oxford.
- Benson, Elizabeth P. 1979. From the Island of Jaina: A Maya Figurine. *Bulletin of the Detroit Institute of Arts* 57(3):94–103.
- Berlin, Heinrich. 1956. *Late Pottery Horizons of Tabasco, Mexico*. Contributions to American Anthropology and History No. 59. Carnegie Institution of Washington, Washington, DC.
- Binford, Lewis R. 1981. Behavioral Archaeology and the “Pompeii Premise.” *Journal of Anthropological Research* 37(3):195–208.
- Bishop, Anna, and Erica A. Cartmill. 2021. The Body of Hierarchy: Hand Gestures on Classic Maya Ceramics and Their Social Significance. *Ancient Mesoamerica* 32(2):269–283.
- Bishop, Ronald L. 1994. Pre-Columbian Pottery: Research in the Maya Region. In *Archaeometry of Pre-Columbian Sites and Artifacts*, edited by David A. Scott and Pieter Myers, pp. 15–65. Getty Conservation Institute, Los Angeles.
- Bishop, Ronald L. 2003. Five Decades of Maya Fine Orange Ceramic Investigation by INAA. In *Patterns and Process: A Festschrift in Honor of Dr. Edward V. Sayre*, edited by Lambertus van Zelst, pp. 81–91. Smithsonian Center for Materials Research and Education, Suitland, Maryland.
- Bishop, Ronald L., Garman Harbottle, and Edward V. Sayre. 1982. Chemical and Mathematical Procedures Employed in the Mayan Fine Paste Ceramics Project. In *Excavations at Seibal: Ceramics*, edited by Jeremy A. Sabloff, pp. 272–282. Memoirs of the Peabody Museum of Archaeology and Ethnology Vol. 15, No. 2. Harvard University, Cambridge, Massachusetts.

- Bishop, Ronald L., and Robert L. Rands. 1982. Maya Fine Paste Ceramics: A Compositional Perspective. In *Excavations at Seibal: Ceramics*, edited by Jeremy A. Sabloff, pp. 283–314. *Memoirs of the Peabody Museum of Archaeology and Ethnology* Vol. 15, No. 2. Harvard University, Cambridge, Massachusetts.
- Bourdieu, Pierre. 1977. *Outline of a Theory of Practice*. Cambridge University Press, Cambridge.
- Brierly, Benedict. 2014. *Firing Kilns*. Bloomsbury, London.
- Brück, Joanna. 1999. Ritual and Relationality: Some Problems of Interpretation in European Archaeology. *European Journal of Archaeology* 2(3):313–344.
- Brumfiel, Elizabeth, and Timothy Earle. 1987. Specialization, Exchange, and Complex Societies: An Introduction. In *Specialization, Exchange, and Complex Societies*, edited by Elizabeth Brumfiel and Timothy Earle, pp. 1–9. Cambridge University Press, Cambridge.
- Chase, Arlen F. 1985. Troubled Times: The Archaeology and Iconography of the Terminal Classic Southern Lowland Maya. In *Fifth Palenque Round Table, 1983, Vol. III*, edited by Merle G. Robertson and Virginia M. Fields, pp. 103–114. Pre-Columbian Art Research Institute, San Francisco.
- Chase, Diane Z., and Arlen F. Chase. 1982. Yucatec Influence in the Terminal Classic Northern Belize. *American Antiquity* 47(3): 596–614.
- Chiba, Tatsuro, Shin-ichi Kaneta, and Yusuke Suzuki. 2008. Red Relief Image Map: New Visualization Method for Three Dimensional Data. In *ISPRS Archives – Volume XXXVII Part B2*, edited by Jun Chen, Jie Jieng, and Wolfgang Kainz, pp. 1071–1076. International Society for Photogrammetry and Remote Sensing, Hanover, Germany. [https://www.isprs.org/proceedings/XXXVII/congress/2\\_pdf/11\\_ThS-6/08.pdf](https://www.isprs.org/proceedings/XXXVII/congress/2_pdf/11_ThS-6/08.pdf), accessed October 11, 2024.
- Coe, Michael D. 1975. Three Maya Figurines from Jaina Island. *Yale University Art Gallery Bulletin* 35(2):24–25.
- Coe, William R. 1959. *Piedras Negras Archaeology: Artifacts, Caches, and Burials*. University Museum, University of Pennsylvania, Philadelphia.
- Coe, William R. 1965. Caches and Offertory Practices of the Maya Lowlands. In *Handbook of Middle American Indians, Vol. 2*, edited by Robert Wauchope. University of Texas Press, Austin.
- Coe, William R. 1990. Excavations in the Great Plaza, North Terrace and North Acropolis of Tikal (Group 5D-2). *Tikal Reports No. 14*. University Museum, University of Pennsylvania, Philadelphia.
- Costin, Cathy Lynne. 1991. Craft Specialization: Issues in Defining, Documenting, and Explaining the Organization of Production. *Archaeological Method and Theory* 3:1–56.
- Costin, Cathy Lynne. 2001. Craft Production Systems. In *Archaeology at the Millennium: A Sourcebook*, edited by Gary M. Feinman and T. Douglas Price, pp. 273–327. Kluwer Academic/Plenum Publishers, New York.
- Demarest, Arthur A., Matt O'Mansky, Claudia Wolley, Dirk Van Turenhout, Takeshi Inomata, Joel Palka, and Héctor L. Escobedo. 1997. Classic Maya Defensive Systems and Warfare in the Petexbatun Region. *Ancient Mesoamerica* 8:229–253.
- Earle, Timothy. 1981. Comment on P. Rice, Evolution of Specialized Pottery Production: A Trial Model. *Current Anthropology* 22(3):230–231.
- Foias, Antonia E. 1996. Changing Ceramic Production and Exchange Systems and the Classic Maya Collapse in the Petexbatun Region. PhD dissertation, Department of Anthropology, Vanderbilt University, Nashville, Tennessee.
- Foias, Antonia E. and Ronald L. Bishop. 1997. Changing Ceramic Production and Exchange in the Petexbatun Region, Guatemala: Reconsidering the Maya Collapse. *Ancient Mesoamerica* 8:275–291.
- Freter, AnnCorinne. 1996. Rural Utilitarian Ceramic Production in the Late Classic Period Copan Maya State. In *Arqueología Mesoamericana: Homenaje a William T. Sanders, Vol. 2*, edited by Alba G. Mastache, M. C. Sera, Jeffrey Parsons, Robert Santley, and Richard Diehl, pp. 209–229. Instituto Nacional de Antropología e Historia, Mexico City.
- Godos González, Fernando. 2022. Benemérito Primera Sección: Registro y evaluación preliminar de daños por saqueo a la arquitectura del sitio. In *Proyecto Arqueológico Bajo Lacantún: Informe de la Segunda Temporada de Investigación Presentado Ante el Consejo de Arqueología del Instituto Nacional de Antropología e Historia*, edited by Whittaker Schroder, pp. 30–152. Submitted to the Instituto Nacional de Antropología e Historia, Mexico City.
- Golden, Charles, and Andrew K. Scherer. 2013. Territory, Trust, Growth, and Collapse in Classic Period Maya Kingdoms. *Current Anthropology* 54(4):397–417.
- Golden, Charles, Andrew Scherer, Whittaker Schroder, Clive Vella, and Alejandra Roche Recinos. 2020. Decentralizing the Economies of the Maya West. In *The Real Business of Ancient Maya Economies: From Farmers' Fields to Rulers' Realms*, edited by Marilyn A. Masson, David A. Freidel, and Arthur A. Demarest, pp. 403–417. University Press of Florida, Gainesville.
- Gonlin, Nancy and William R. Fowler. 2020. Introduction. In “Special Section: Problematic ‘On-floor’ Deposits in the Terminal Classic Eastern Maya Lowlands: Implications for the Maya Collapse,” edited by Nancy Gonlin and William R. Fowler. Special issue, *Ancient Mesoamerica* 31:65–66.
- Halperin, Christina T. 2014. *Maya Figurines: Intersections between State and Household*. University of Texas Press, Austin.
- Halperin, Christina T., and Antonia E. Foias. 2012. Motul de San José Palace Pottery Production: Reconstructions from Wasters and Debris. In *Motul de San José: Politics, History, and Economy in a Classic Maya Polity*, edited by Antonia E. Foias and Kitty F. Emery, pp. 167–193. University Press of Florida, Gainesville.
- Halperin, Christina T., and Antonia Foias. 2016. Household Garbage: Classic Period (ca. 300–900 CE) Maya Practices of Discard. In *Household Archaeology—A Transatlantic Comparative Approach*, edited by Claude Chapdelaine, Adrian L. Burke, and Karim Gernigon, pp. 126–145. *P@lethnology* 8. Proceedings of the International Symposium, October 24–25, 2014, Université de Montréal, Montreal.

- Harbottle, Garman, and Edward V. Sayre. 1975. Appendix: Current Status of Examination of Sherds of Fine Paste Ceramics from Altar de Sacrificios and Seibal and Their Comparison with Other Maya Fine Paste Ceramics. In *Excavations at Seibal, Department of Peten, Guatemala: Ceramics*, edited by Jeremy A. Sabloff, pp. 241–253. Memoirs of the Peabody Museum of Archaeology and Ethnology Vol. 13, No. 2. Harvard University, Cambridge, Massachusetts.
- Harrison-Buck, Eleanor and Julia A. Hendon. 2018. An Introduction to Relational Personhood and Other-than-human Agency in Archaeology. In *Relational Identities and Other-Than-Human-Agency in Archaeology*, edited by Eleanor Harrison-Buck and Julia A. Hendon, pp. 3–28. University Press of Colorado, Louisville.
- Hayden, Brian, and Aubrey Cannon. 1982. The Corporate Group as an Archaeological Unit. *Journal of Anthropological Archaeology* 1(2):132–158.
- Hayden, Brian, and Aubrey Cannon. 1983. Where the Garbage Goes: Refuse Disposal in the Maya Highlands. *Journal of Anthropological Archaeology* 2(2):117–163.
- Healan, Dan. 1992. A Comment on Moholy-Nagy's "The Misidentification of Lithic Workshops." *Latin American Antiquity* 3(3): 240–242.
- Hester, Thomas R., and Harry J. Shafer. 1992. Lithic Workshops Revisited: Comments on Moholy-Nagy. *Latin American Antiquity* 3(3):243–248.
- Inomata, Takeshi. 1997. The Last Day of a Fortified Classic Maya Center: Archaeological Investigations at Aguateca, Guatemala. *Ancient Mesoamerica* 8(2):337–351.
- Janusek, John Wayne. 1999. Craft and Local Power: Embedded Specialization in Tiwanaku Cities. *Latin American Antiquity* 10(2):107–131.
- Jiménez Alvarez, Socorro. 2015. Cultural Interchange Regarding the Distribution of Fine Paste Ceramics within Riverine Societies Along the Usumacinta's Mid to Low Basin of Various Gulf Coast's Communities. In *Archaeology and Bioarchaeology of Population Movement among the Prehispanic Maya*, edited by Andrea Cucina, pp. 25–36. Springer Briefs in Archaeology, New York.
- Jiménez Álvarez, Socorro del Pilar, Thelma Sierra Sosa, Heajoo Chung and Roberto Belmar Caso. 2006. El estudio tecnológico de la pasta fina "Chablekal" y "Pasta Fina" del sitio Costero de Xcambo, Yucatán. In *Encuentro Internacional de los Investigadores de la Cultura Maya Num. 14, Tomo II*, pp. 501–516. Universidad Autónoma de Campeche, Campeche, Mexico.
- Jordan, Jillian M., and Keith M. Prufer. 2017. Identifying Domestic Ceramic Production in the Maya Lowlands: A Case Study from Uxbenka, Belize. *Latin American Antiquity* 28(1):66–87.
- Joyce, Rosemary. 2009. Making a World of Their Own: Mesoamerican Figurines and Mesoamerica Figurine Analysis. In *Mesoamerican Figurines: Small-Scale Indices of Large-Scale Social Phenomena*, edited by Christina T. Halperin, Katherine A. Faust, Rhonda Taube, and Aurore Giguët, pp. 407–425. University Press of Florida, Gainesville.
- Kopytoff, Igor. 1986. The Cultural Biography of Things: Commoditization as Process. In *The Social Life of Things: Commodities in Cultural Perspective*, edited by Arjun Appadurai, pp. 64–94. Cambridge University Press, Cambridge.
- LeMoine, Jean-Baptiste and Christina T. Halperin. 2021. Shifting Social Relations during the Terminal Classic Period (ca. A.D. 810–950/1000): Ceramics from the Lowland Maya Site of Ucanal. *Ancient Mesoamerica* 32(3):396–413.
- LeMoine, Jean-Baptiste, Christina T. Halperin, and Miriam Salas. 2022. Maya Molded-Carved Ceramics as Boundary Objects: Terminal Classic Ceramic Production and the Forging of Political Relations in the Mopan Valley of Guatemala. *Journal of Anthropological Archaeology* 68:101463.
- López-Varela, Sandra L. 1989. *Análisis y Clasificación de la Cerámica de un Sitio Maya del Clásico: Yaxchilán, Mexico*. BAR International Series 535. British Archaeological Reports, Oxford.
- López-Varela, Sandra L., Patricia A. McAnany, and Kimberly A. Berry. 2001. Ceramics Technology at Late Classic K'axob, Belize. *Journal of Field Archaeology* 28(1–2):177–191.
- López-Varela, Sandra L., Annelou van Gijn, and Loe Jacobs. 2002. De-mystifying Pottery Production in the Maya Lowlands: Detection of Traces of Use-Wear on Pottery Sherds through Microscopic Analysis and Experimental Replication. *Journal of Archaeological Science* 29(10):1133–1147.
- Lopiparo, Jeanne, and Julia A. Hendon. 2009. Honduran Figurines and Whistles in Social Context: Production, Use, and Meaning in the Ulúa Valley. In *Mesoamerican Figurines: Small-Scale Indices of Large-Scale Social Phenomena*, edited by Christina T. Halperin, Katherine A. Faust, Rhonda Taube, and Aurore Giguët, pp. 51–74. University Press of Florida, Gainesville.
- Macedo Córdova, Brenda Fernanda, Whittaker Schroder, Guillermo Lara Bolaños, and Moisés Ramiro Talavera. 2022. Benemérito Primera Sección: Entierros y evidencia de un centro de producción de cerámica pasta fina en el Sector Este. In *Proyecto Arqueológico Bajo Lacantún: Informe de la Segunda Temporada de Investigación Presentado Ante el Consejo de Arqueología del Instituto Nacional de Antropología e Historia*, edited by Whittaker Schroder, pp. 240–294. Submitted to the Instituto Nacional de Antropología e Historia, Mexico City.
- MacLellan, Jessica. 2019. Preclassic Maya Caches in Residential Contexts: Variation and Transformation in Deposition Practices at Ceibal. *Antiquity* 93(371):1249–1265.
- MacLellan, Jessica and Daniela Triadan. 2023. Classic Maya Figurines as Materials of Socialization: Evidence from Ceibal, Guatemala. *Journal of Anthropological Archaeology* 72:101548.
- Marcus, Joyce. 2009. Rethinking Figurines. In *Mesoamerican Figurines: Small-Scale Indices of Large-Scale Social Phenomena*, edited by Christina T. Halperin, Katherine A. Faust, Rhonda Taube, and Aurore Giguët, pp. 25–50. University Press of Florida, Gainesville.
- Martin, Simon. 2020. *Ancient Maya Politics: A Political Anthropology of the Classic Period 150–900 CE*. Cambridge University Press, Cambridge.

- Masson, Marilyn A. 2000. *In the Realm of Nachan Kan: Postclassic Maya Archaeology at Laguna de On, Belize*. University Press of Colorado, Boulder.
- Mayer, Karl Herbert. 2006. The Maya Ruins of Primera Sección, Chiapas, Mexico. *Mexicon* 28:63–66.
- McNiven, Ian J. 2013. Ritualized Middening Practices. *Journal of Archaeological Method and Theory* 20:552–587.
- McVicker, Donald. 2012. Figurines Are Us? The Social Organization of Jaina Island, Campeche, Mexico. *Ancient Mesoamerica* 23:211–234.
- Moholy-Nagy, Hattula. 1990. The Misidentification of Mesoamerican Lithic Workshops. *Latin American Antiquity* 1(3): 268–279.
- Moholy-Nagy, Hattula. 1997. Middens, Construction Fill, and Offerings: Evidence for the Organization of Classic Period Craft Production at Tikal, Guatemala. *Journal of Field Archaeology* 24(3):292–313.
- Moholy-Nagy, Hattula. 2020. Problematical Deposits at Tikal, Guatemala: Content, Context, and Intent. *Ancient Mesoamerica* 31:47–63.
- Monaghan, John. 1998. Dedication: Ritual or Production? In *The Sowing and the Dawning: Termination, Dedication, and Transformation in the Archaeological and Ethnographic Record of Mesoamerica*, edited by Shirley Boteler Mock, pp. 47–56. University of New Mexico Press, Albuquerque.
- Muñoz, Arturo René. 2006. Power, Production, and Prestige: Technological Change in the Late Classic Ceramics of Piedras Negras, Guatemala. PhD dissertation, Department of Anthropology, University of Arizona, Tucson.
- Needham, Stuart and Tony Spence. 1997. Refuse and the Formation of Middens. *Antiquity* 71(271):77–90.
- Newman, Sarah E. 2015. Rethinking Refuse: A History of Maya Trash. PhD dissertation, Department of Anthropology, Brown University, Providence, Rhode Island.
- Newman, Sarah E. 2019. Rubbish, Reuse, and Ritual at the Ancient Maya Site of El Zotz, Guatemala. *Journal of Archaeological Method and Theory* 26:806–843.
- Newman, Sarah E. 2023. *Unmaking Waste: New Histories of Old Things*. University of Chicago Press, Chicago.
- Olausson, Deborah. 1993. Report on an Ongoing Research Project: Craft Specialization and Prehistoric Society. *Fornvännen* 88:1–8.
- Peacock, David P. S. 1982. *Pottery in the Roman World: An Ethnoarchaeological Approach*. Longman, London.
- Piña Chan, Román. 2001. *Breve estudio sobre la funeraria de Jaina, Campeche*. Gobierno del Estado de Campeche, INAH, Campeche, Mexico.
- Rands, Robert L. 1967a. Cerámica de la Región de Palenque, México. *Estudios de Cultura Maya* 6:111–147.
- Rands, Robert L. 1967b. Ceramic Technology and Trade in the Palenque Region, Mexico. In *American Historical Anthropology: Essays in Honor of Leslie Spier*, edited by Carroll L. Riley and Walter W. Taylor, pp. 137–150. Southern Illinois University Press, Carbondale.
- Rands, Robert L. 1974a. A Chronological Framework for Palenque. In *The Art, Iconography and Dynastic History of Palenque, Part 1. Primera Mesa Redonda de Palenque*, edited by Merle Green Robertson, pp. 35–40. Robert Louis Stevenson School, Pebble Beach, California.
- Rands, Robert L. 1974b. The Ceramic Sequence at Palenque, Chiapas. In *Mesoamerican Archaeology: New Approaches*, edited by Norman Hammond, pp. 51–75. Duckworth, London.
- Rands, Robert L. 1987. Ceramic Patterns and Traditions in the Palenque Area. In *Maya Ceramics: Papers from the 1985 Maya Ceramic Conference*, BAR International Series 345(1), edited by Prudence M. Rice and Robert J. Sharer, pp. 203–238. British Archaeological Reports, Oxford.
- Rands, Robert L. 2007. Chronological Chart and Overview of Ceramic Developments at Palenque. In *Palenque: Recent Investigations at the Classic Maya Center*, edited by Damien B. Marken, pp. 17–24. AltaMira Press, Lanham, Maryland.
- Rands, Robert L., Ronald L. Bishop, and Jeremy A. Sabloff. 1982. Maya Fine Paste Ceramics: An Archaeological Perspective. In *Analyses of Fine Paste Ceramics*, edited by Jeremy A. Sabloff. Memoirs of the Peabody Museum of Archaeology and Ethnology Vol. 15, No. 2. Harvard University Press, Cambridge, Massachusetts.
- Rathje, William L., David A. Gregory, and Frederick M. Wiseman. 1978. Trade Models and Archaeological Problems: Classic Maya Examples. In *Mesoamerican Communication Routes and Cultural Contacts*, Papers No. 40, edited by Thomas A. Lee Jr. and Carlos Navarrete, pp. 147–175. New World Archaeological Foundation, Brigham Young University, Provo, Utah.
- Reents-Budet, D., Ronald L. Bishop, Joseph W. Ball, and Jennifer T. Taschek. 2000. Out of the Palace Dumps: Ceramic Production and Use at Buenavista del Cayo. *Ancient Mesoamerica* 11:99–121.
- Rice, Prudence M. 1981. Evolution of Specialized Pottery Production: A Trial Model. *Current Anthropology* 22(3):219–240.
- Rice, Prudence M. 1984. *Pottery Analysis: A Sourcebook*. University of Chicago Press, Chicago.
- Rice, Prudence M. 1987. Economic Change in the Lowland Maya Late Classic Period. In *Specialization, Exchange, and Complex Societies*, edited by Elizabeth M. Brumfiel and Timothy K. Early, pp. 76–85. Cambridge University Press, Cambridge.
- Rice, Prudence M. 2009. Late Classic Maya Pottery Production: Review and Synthesis. *Journal of Archaeological Method and Theory* 16(2):117–156.
- Rice, Prudence M. 2020. Terminal Classic Interactions between the Western Petén Lakes Chain and the Western Lowlands. In *The Real Business of Ancient Maya Economies*, edited by Marilyn A. Masson, David A. Freidel, and Arthur A. Demarest, pp. 434–450. University Press of Florida, Gainesville.
- Sabloff, Jeremy A. 1973. Continuity and Disruption during Terminal Late Classic Times at Seibal: Ceramic and Other Evidence. In *The Classic Maya Collapse*, edited by T. Patrick Culbert, pp. 107–132. University of New Mexico Press, Albuquerque.
- Sabloff, Jeremy A. 1975. *Excavations at Seibal, Department of Peten, Guatemala, No. 2. Ceramics*. Peabody Museum of Archaeology and Ethnology, Cambridge, Massachusetts.

- Sabloff, Jeremy A. 1982. Analyses of Fine Paste Ceramics. In *Excavations at Seibal. Memoirs of the Peabody Museum of Archaeology and Ethnology Vol. 15, No. 2*. Harvard University Press, Cambridge, Massachusetts.
- Sabloff, Jeremy A., and William L. Rathje. 1975. The Rise of a Maya Merchant Class. *Scientific American* 233:72–82.
- Sabloff, Jeremy A., and Gordon R. Willey. 1967. The Collapse of Maya Civilization in the Southern Lowlands: A Consideration of History and Process. *Southwestern Journal of Anthropology* 23(4):311–356.
- Santley, Robert, Phillip Arnold III, and Christopher Pool. 1989. The Ceramic Production System at Maticapan, Veracruz, Mexico. *Journal of Field Archaeology* 16(1):107–132.
- Scarborough, Vernon L., and Fred Valdez Jr. 2009. An Alternative Order: The Dualistic Economies of the Ancient Maya. *Latin American Antiquity* 20(1):207–227.
- Schiffer, Michael B. 1972. Archaeological Context and Systemic Context. *American Antiquity* 37(2):156–165.
- Schiffer, Michael B. 1981. *Behavioral Archaeology*. Academic Press, New York.
- Schroder, Whittaker, Charles Golden, Andrew Scherer, Timothy Murtha, and Omar Alcover Firpi. 2019. Remote Sensing and Reconnaissance along the Lacantún River: The Lakamtun Dynasty and the Sites of El Palma and Benemérito de las Américas, Primera Sección. *Mexicon* 41(6):157–167.
- Schroder, Whittaker, Timothy Murtha, Eben N. Broadbent, and Angélica M. Almeyda Zambrano. 2021. A Confluence of Communities: Households and Land Use at the Junction of the Upper Usumacinta and Lacantún Rivers, Chiapas, Mexico. *World Archaeology* 53(4):688–715.
- Schroder, Whittaker, Timothy Murtha, Charles Golden, Andrew K. Scherer, Eben N. Broadbent, Angélica M. Almeyda Zambrano, Kelsey Herndon, and Robert Griffin. 2021. UAV LiDAR Survey for Archaeological Documentation in Chiapas, Mexico. *Remote Sensing* 13(23):4731.
- Schroder, Whittaker, Moisés Ramiro Talavera, and Jack Simmons. 2021. Benemérito de las Américas Primera Sección. In *Proyecto Arqueológico Bajo Lacantún: Informe de la Primera Temporada de Investigación Presentado Ante el Consejo de Arqueología del Instituto Nacional de Antropología e Historia*, edited by Whittaker Schroder, pp. 7–101. Submitted to the Instituto Nacional de Antropología e Historia, Mexico City.
- Sinopoli, Carla. 1988. The Organization of Craft Production at Vijayanagara, South India. *American Anthropologist* 90(3): 580–597.
- Smith, Robert E. 1958. The Place of Fine Orange Pottery in Mesoamerican Archaeology. *American Antiquity* 24(2):151–160.
- Taube, Karl. 1992. *The Major Gods of Ancient Yucatán*. Dumbarton Oaks, Washington, DC.
- Thompson, J. Eric S. 1970. *Maya History and Religion*. University of Oklahoma Press, Norman.
- Ting, Carmen. 2018. Continuity and Change in Fine-ware Production in the Eastern Maya Lowlands during the Classic to Postclassic Transition (AD 800–1250). *Archaeological and Anthropological Sciences* 10:1913–1931.
- Torres, Luis M., Ana W. Arie, and Beatriz Sandoval. 1984. Provenance Determination of Fine Orange Maya Ceramic Figurines by Flame Atomic Absorption Spectrometry: A Preliminary Study of Objects from Jaina (Campeche) and Jonuta (Tabasco), Mexico. In *Archaeological Chemistry–III, Advances in Chemistry Series 205*, edited by Joseph B. Lambert, pp. 193–213. American Chemical Society, Washington, DC.
- Tosi, Maurizio. 1984. The Notion of Craft Specialization and its Representations in the Archaeological Record of Early States in the Turanian Basin. In *Marxist Perspectives in Archaeology*, edited by Matthew Spriggs, pp. 22–52. Cambridge University Press, Cambridge.
- Tovalín, Alejandro, and Victor Ortiz. 2005. El Sitio Arqueológico de la Primera Sección de Benemérito de las Américas, Chiapas. *Arqueología* 35:33–49.
- Tsukamoto, Kenichiro. 2017. Reverential Abandonment: A Termination Ritual at the Ancient Maya Polity of El Palmar. *Antiquity* 91(360):1630–1646.
- van der Leeuw, Sander. 1977. Towards a Study of the Economics of Pottery Making. In *Ex Horreo: IPP 1951–1976*, edited by B. L. Beek, Role W. Brant, and Willy Groenman-van Waateringe, pp. 68–76. Albert Egges van Giffen Instituut voor Prae- en Protohistorie, University of Amsterdam, Amsterdam.
- Walker, William H. 1995. Ceremonial Trash? In *Expanding Archaeology*, edited by James M. Skibo, William H. Walker, and Axel E. Nielsen, pp. 67–79. University of Utah Press, Salt Lake City.
- Watts, Christopher. 2013. Relational Archaeologies: Roots and Routes. In *Relational Archaeologies: Humans, Animals, Things*, edited by Christopher Watts, pp. 1–20. Routledge, London.

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