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In This Issue:

**Making a Mountain:
The Reconstruction
of Text Fragments
from Palenque's
Palace Tablet**

by
DAVID STUART
PAGES 1-7

•
**A Linguistic
Approach to the
Classic Maya Term
*ximte'el kakaw***

by
**William Humberto
Mex-Albornoz**
PAGES 8-16

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Making a Mountain: The Reconstruction of Text Fragments from Palenque's Palace Tablet

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In memory of Guillermo Bernal Romero

Palenque's Palace Tablet commemorates the dedication of House A-D on August 11, 720 CE, using as a backdrop important events in the life history of the ruler K'inich K'an Joy Kitam II (Figure 1). Primordial time plays an important role in the tablet's narrative as well, in the upper figural scene of the tablet, where K'inich K'an Joy Kitam appears as reenactor of the mythologized ruler Ux Yop Huun on the day of his own accession in 702 (Stuart 2012). Ux Yop Huun was himself considered a personal embodiment of the Maya "crown," the *sak huun*, which was invested with important symbolism of ancestry and naming. One important thread woven into the long and complex narrative is the role of headband crowns themselves, placed on the heads of the king and his predecessors and possibly removed upon death. The main purpose of the tablet message is to highlight House A-D's function as a place of official crowning and initiation, crystallized in the name of the structure itself: the K'alhuun Naah, or "Headband-Raising House" (Zender 2016). Placed in the rear wall of the A-D gallery, atop a broad flight of stairs, the tablet served as a backdrop for an area where such crowning rites may have been performed, installing various court officials in Palenque's court and political sphere.

The dedication statement for the building appears in its final passage, centered on the ritual act known as *och k'ahk*, "fire entering." The final few glyphs are either missing or severely damaged. Enough details remain to show that the

lower right corner of the tablet provided a formulaic toponymic phrase, similar to ones we find in other Palenque texts of the Cross Group (Schele 1977). Here I would like to offer a reconstruction of the Palace Tablet's last few glyphs, and to briefly discuss the role of Palenque's sacred mountain in the rhetorical presentation of history and mythology.

When viewing the Palace Tablet today, on display in Palenque's site museum, we see that the final three glyph blocks at the lower right corner are completely missing. However, small fragments of these glyphs were collected during the excavation of the tablet in 1949 and remain in storage to this day. In fact, several telling details of these glyphs were included in the first very rough drawing of the Palace Tablet, published in the wake of its discovery (Figure 2a; Ruz Lhuillier 1952:Fig. 8), as well as in a finer drawing made by the artist Hipólito Sánchez not long after (Figure 2b). Field photographs from the time show some of these same details and even one or two fragments articulated with the tablet. Schele and Mathews (1979) photographed and drew these small sculpture pieces, most of which were left loose and unarticulated (Figure 3).

Based on the earlier drawings from Ruz's project, Schele and Robertson each included partial reconstructions of the final glyph block (R19). We can easily read this as **LAKAM-HA'-CHAN-CH'EEN**, a familiar combination that includes the ancient place name of Palenque, Lakamha' (Stuart and Houston 1994: 30-31). Surrounding glyphs were shown as



Figure 1. The Palace Tablet. Photograph by Jorge Pérez de Lara.

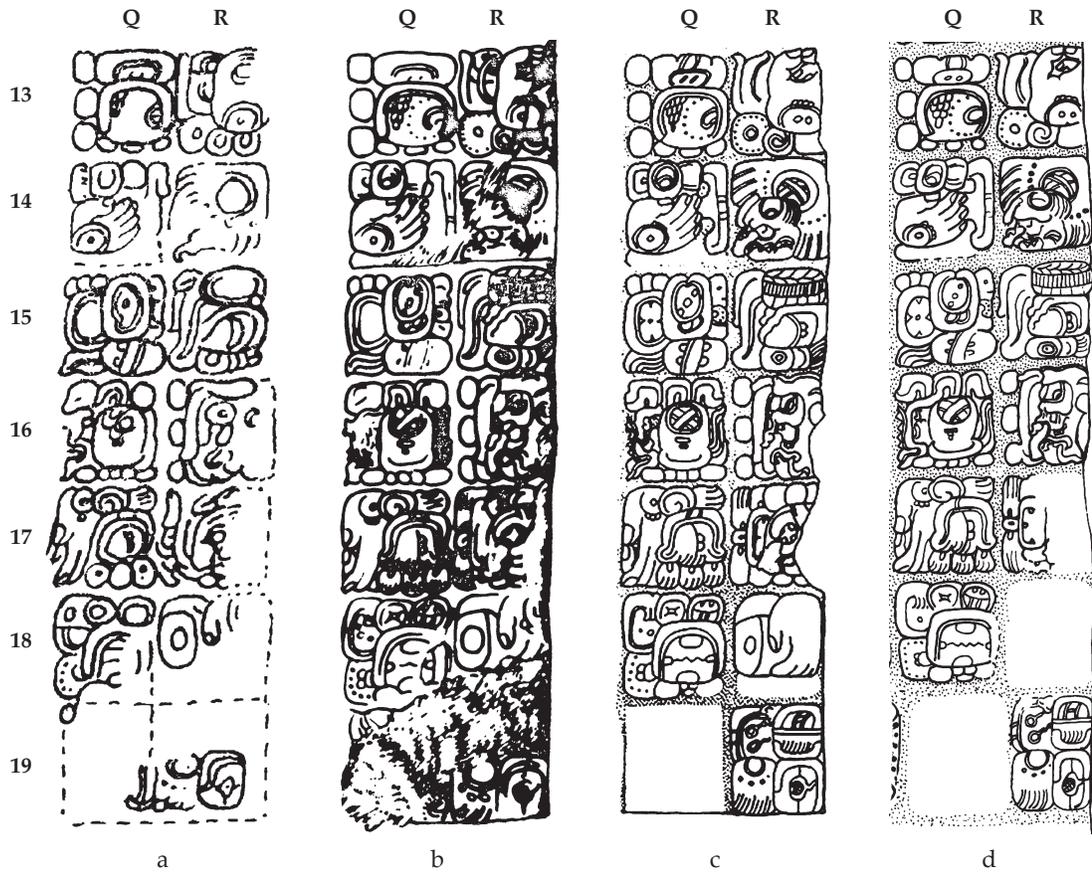


Figure 2. Comparison of drawings of the final passage of the Palace Tablet: (a) artist unknown; (b) Hipólito Sánchez; (c) Linda Schele; (d) Merle Greene Robertson.

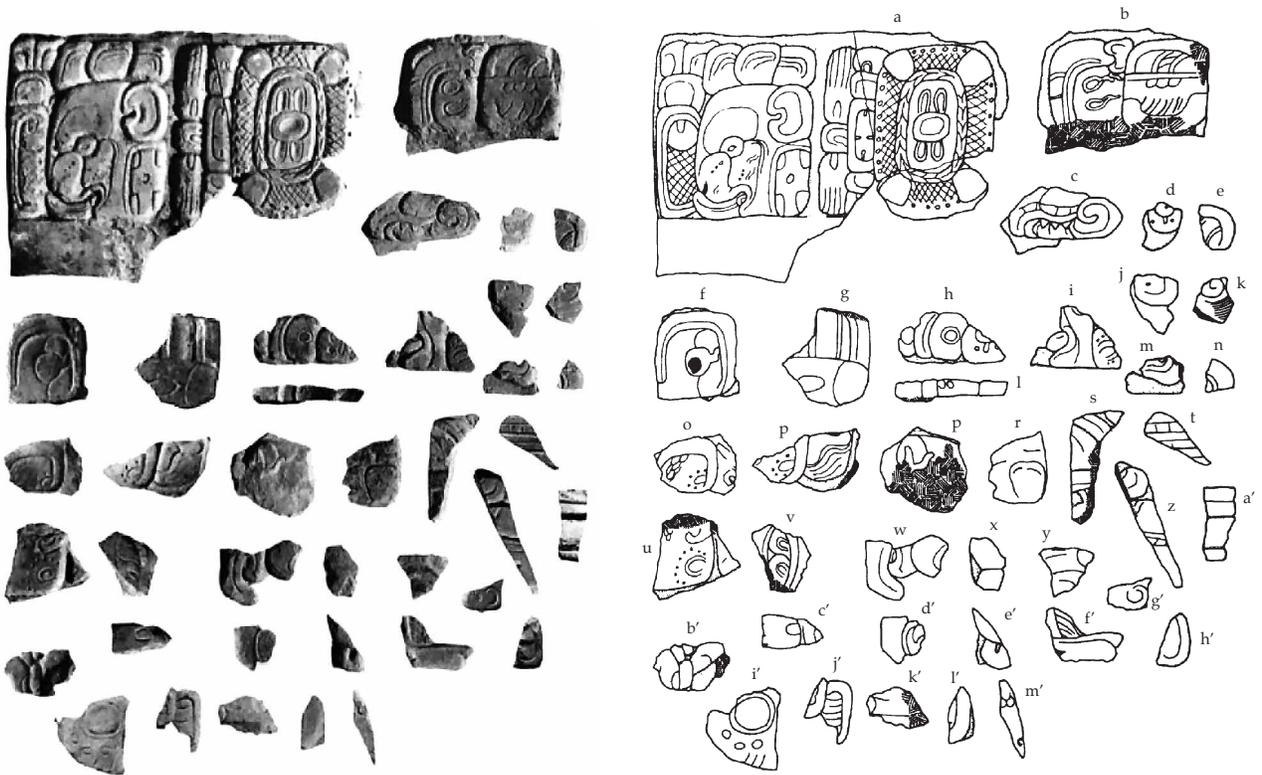


Figure 3. Fragments of the Palace Tablet as published by Schele and Mathews. From Schele and Mathews (1979:No. 38).

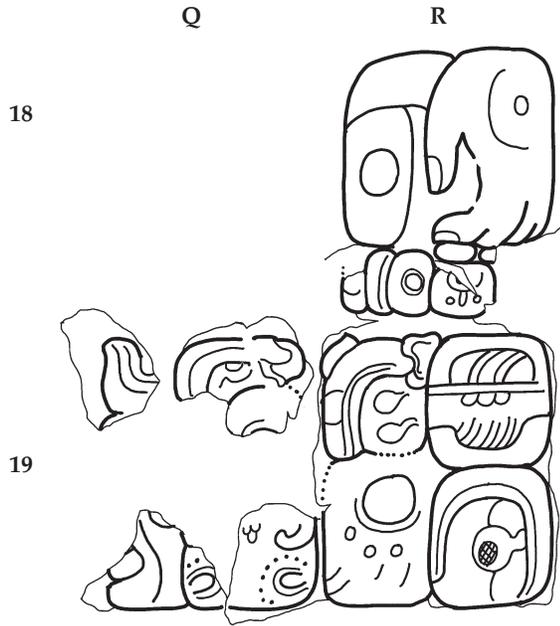
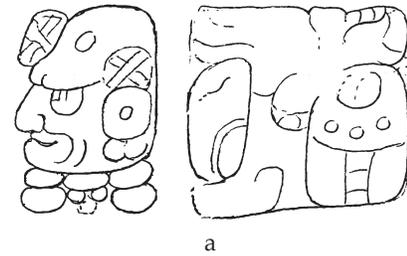
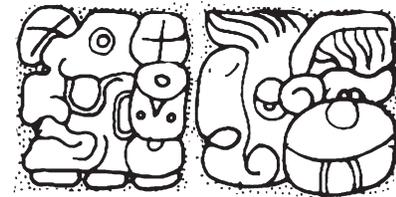


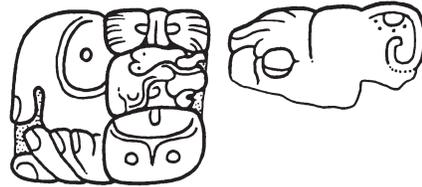
Figure 4. New reconstruction of fragments, showing final three blocks of the Palace Tablet.



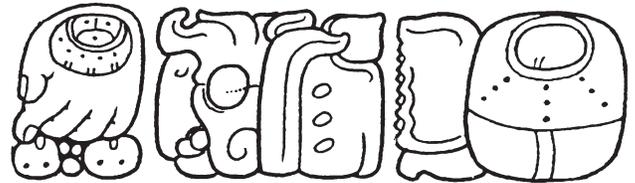
a



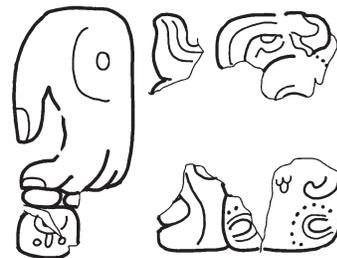
b



c



d



e

Figure 5. Comparison of toponymic phrases for *Yehmal K'uk' Lakam Witz*: (a) Tablet of the Sun, sanctuary jamb; (b) Tablet of the Sun, main tablet; (c) Temple XVIII stucco glyphs; (d) Temple XVIII jamb; (e) Palace Tablet. Drawings by David Stuart, except *b* by Linda Schele.

blank or incomplete (Figure 2c, d). Schele also included details of block R18 in her drawing, an incomplete combination that includes the signs **u** and **ye**. She seems to have copied these elements from the older INAH drawings, although Roberston omitted them altogether.

We can surmise that the first part of R18 is the start of the closing toponymic phrase, **u-ti**, spelling the intransitive verb *uht*, “to happen,” a standard element in such ending phrases.

In fact, playing with the catalogued fragments, it is possible to reconstruct the fuller toponymic phrase and identify some of the missing elements (Figure 4). For example, the **ti** of **u-ti** on the fragment labelled as *h* by Schele and Mathews, where a part of a **la** sign is also visible. This fits with fragment *b'* to give us **ye-ma-la**, a sequence familiar as a spelling found in a number of other Palenque texts, part of the fuller locational expression *yehmal k'uk' lakam witz* (Stuart and Houston 1994:31, 84) (Figure 5).

Although the first segment has sometimes been translated as “descending,” I believe it more accurate to analyze it as *y-ehmal*, a relational noun that means “under, beneath” (cf. Proto-Ch'olan *ehm-äl*, “under” [Kaufman and Norman 1984]; Ch'orti' *ejmar*, “abajo” [Hull 2016]; Ch'orti' *uyehmar e kohn*, “the down[stream] current of a stream” [Wisdom 1950]). *Y-ehmal* is probably not part of the toponym but rather a preposition that comes before the name *K'uk' Lakam Witz*, perhaps the “Quetzal Banner Hill.” As I and others have suggested, this almost surely refers to the prominent hill known as *Mirador*, which rises behind the Temple of the Foliated Cross and dominates the landscape of central Palenque (Stuart and Houston 1994:84; Houston 1996; Stuart 2006).

In the missing block we can reconstruct nearly the whole

u-ti ye-ma-la K'UK'-LAKAM-WITZ LAKAM-HA'-CHAN-CH'EEN
uhti yehmal k'uk' lakam witz lakam ha' chan ch'een
 "It happened below the Quetzal Banner Hill, (at) the Wide Waters, the Sky-and-Cave."

Table 1. Reconstructed reading of final three blocks of the Palace Tablet.

glyph from the surviving fragments. In the original photos, the piece of stone catalogued by Schele and Mathews as *m* is shown in its original position, articulating just to the right of the name of K'inich Janab Pakal in the adjacent column, as the upper left corner of Q19. This is clearly the frontal crest of the **K'UK'** head. Fragment *i* clearly shows the beak of the quetzal bird combined with part of the **WITZ** logogram, while fragment *w* somewhat less clearly preserves **LAKAM** articulated with **WITZ**. Still another part of **WITZ** is preserved as fragment *u*. Other portions of the text are somewhat difficult to identify among the published fragments. Figure 5e offers a tentative reconstruction of the original glyphs. With these and the intact block R19 we see the full phrase that appears elsewhere in Palenque's texts (Table 1).

I tentatively prefer to translate K'uk' Lakam Witz as "Quetzal Banner Hill," rather than "Quetzal Wide Hill" as it has sometimes been translated, for a couple of reasons. It seems unlikely to me that both *k'uk'* and *lakam* would function as individual modifiers on *witz*, in that particular order. Furthermore, a representation of an actual quetzal banner (*k'uk' lakam*) appears on Stela 5 of Piedras Negras, as part of the headdress of K'inich Yo'nal Ahk (Figure 6). While tentative, it seems probable that "quetzal banner" is a compound modifier, perhaps describing a prominent architectural adornment that once stood atop the hill.

The name Quetzal Banner Hill may relate to the name of a temple cited in the inscriptions of the Cross Group, K'uk' Naah, or "Quetzal House." This does not refer to any of the Cross Group temples but rather to a building associated with events a day after the burning in a kiln or sweatbath, cited in the Tablets of the Foliated Cross and Sun (Houston 1996; Stuart 2006). The relevant passages note that on 2 Cib 14 Mol the deities of the Triad were "burned in the kiln," perhaps referring to the creation of ceramic effigy figures. One day later, on 3 Caban 15 Mol,

the deity effigies "ascended" to the Quetzal House where they were activated and consecrated by K'inich Kan Bahlam II and his temple priest, Nuk(?) Yajaw Chan. A short time later these same effigies were housed within the temple shrines below, on 5 Eb 5 Kayab. As a working hypothesis, I suspect that Quetzal House refers to the ruined structure atop the Quetzal Banner Hill, directly behind the Cross Group.

This close proximity between the hill and the Cross Group temples goes far in explaining the many mentions of the phrase *yehmal k'uk' lakam witz* in the temples at the foot of the mountain. We find the phrase in texts from the Temples of the Foliated Cross and the Sun, as well as in two inscriptions from nearby Temple XVIII—a small spatial cluster of mentions all "below Quetzal Banner Hill" (Figure 7). The specific description of the location of these shrines at the foot of the mountain immediately recalls the contemporary practice among the Tzotzil Maya of putting cross shrines at the base of sacred hills (Vogt 1965, 1976). The appearance of the place name in the tiny fragments at the end of the Palace Tablet therefore stands out as unusual. Why would House A-D, at the front of the Palace, be described in relationship to the hill?

The answer may lie in the Triad deities. In designing House A-D, K'inich K'an Joy Kitam II and his architects took pains to evoke certain earlier buildings and themes, including those in the Cross Group. The line of doorways and painted stucco piers, all destroyed today, intentionally echoed the facades of his father's buildings to either side, Houses A and D. And the inscriptions that once decorated the walls of House A-D make direct reference to the Triad in several ways. One of the fragmented door jambs from House A-D, partially reconstructed by Schele and Mathews (1979:No. 40), contains a direct reference to the dedication date of the Cross Group temples and the explicit "housing" of the Triad gods in their shrines, even though

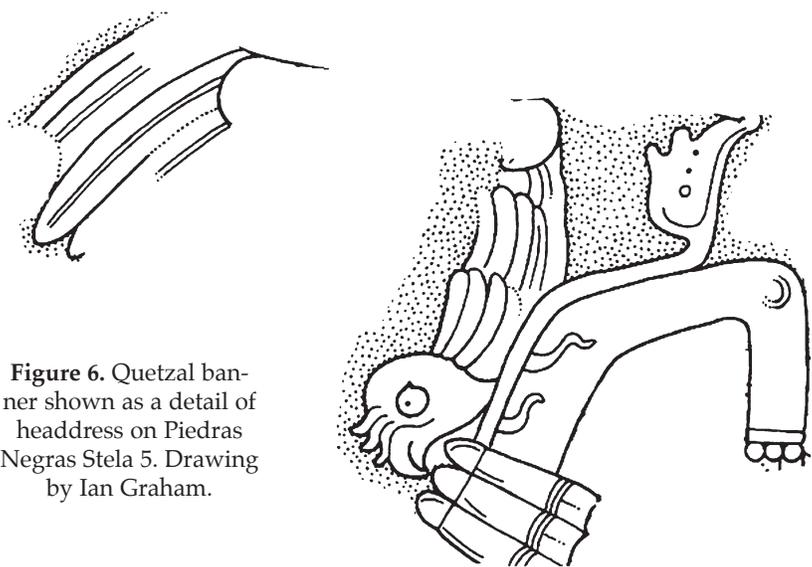


Figure 6. Quetzal banner shown as a detail of headdress on Piedras Negras Stela 5. Drawing by Ian Graham.

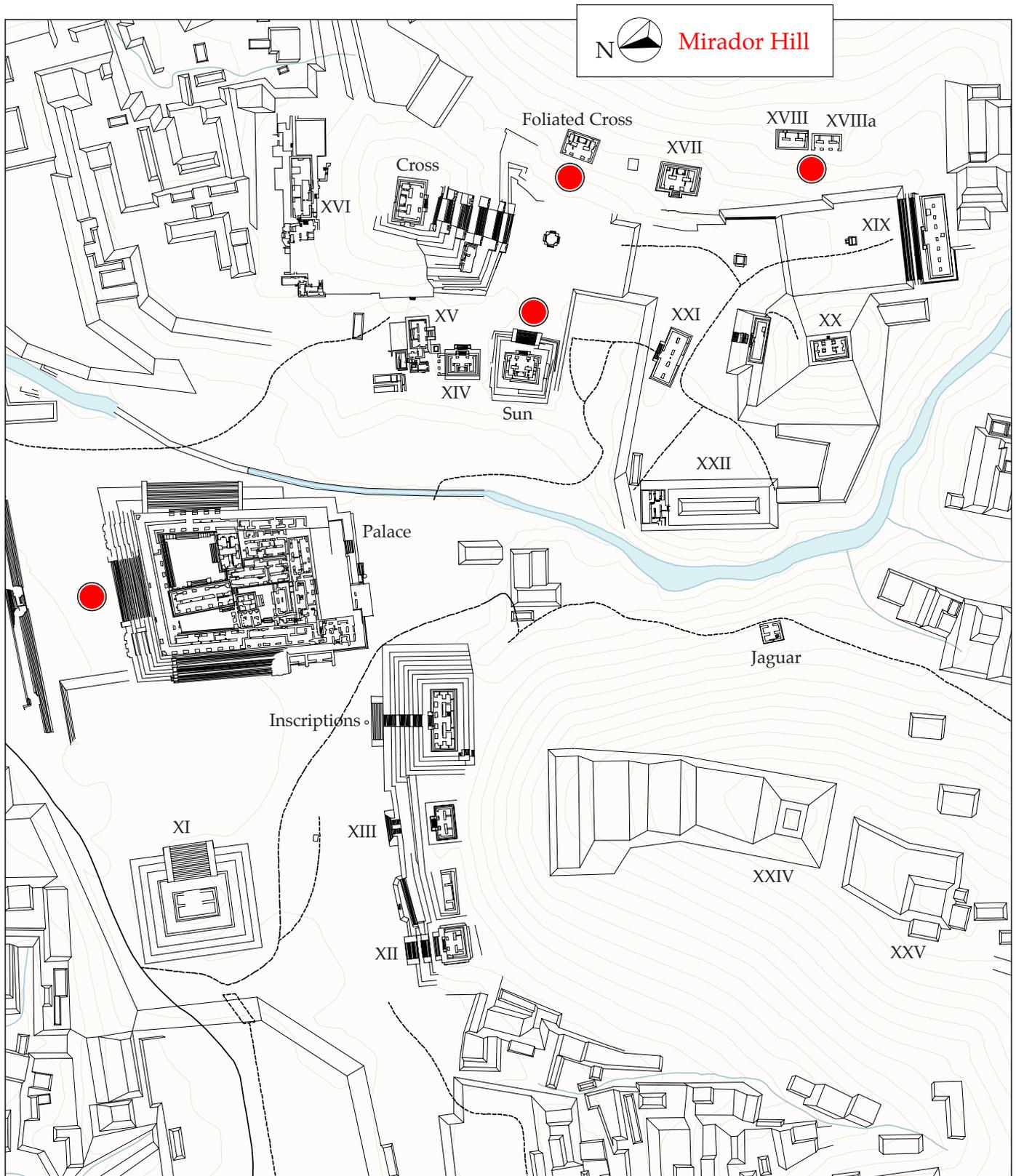


Figure 7. Map of central Palenque, showing locations of the “Quetzal Banner Hill” place name in texts of the Temples of the Foliated Cross and the Sun, Temple XVIII, and House A-D of the Palace (modified after Ed Barnhart, Palenque Mapping Project).

these are not a part of the Palace. The Triad deities are also prominently cited in two passages of the Palace Tablet itself, recounting early events in the life of K'inich K'an Joy Kitam II. When he turned seven years old, he performed his first bloodletting (*k'al mayij*) before (*y-ichnal*) the Triad gods, and they were present as well when as a young man of twenty "he received the snake-rope (*chan ch'ajan*)." Clearly rites of crowning and investiture often necessitated the "presence" of patron deities such as the Triad gods, who oversee and sanction these events. Another explicit mention of this dynamic appears on La Mar Stela 1, where the local ruler receives his paper-cloth headband "before his gods" (*y-ichnal u k'uhuul*).

The many mentions of the Triad gods in House A-D therefore may pertain to the function of the building as a *k'alhuun naah*, a "Crowning House," where the three deities had a similar role as patrons and witnesses. And this may also help to explain the reconstructed place name on the Palace Tablet, so familiar from the Cross Group. House A-D's designation as being "under Quetzal Banner Hill" may be a deliberate rhetorical means of creating proximity between the Palace's northward-facing front and the sacred hill behind and to its left. When built, the K'alhuun Naah might have been conceived as a spatial "extension" of the Cross Group at the base of the sacred mountain, making the Triad deities present for the ceremonies conducted there, probably in a more public and open setting.

Note

Early field photographs of the Palace Tablet are archived at INAH. Catalog numbers of the photos most relevant for this note are 318823, 318586, 318587, and 318588. These can now be accessed online as low resolution images at http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A289083

References

- Houston, Stephen D.
1996 Symbolic Sweatbaths of the Maya: Architectural Meaning in the Cross Group at Palenque, Mexico. *Latin American Antiquity* 7(2):132-151.
- Hull, Kerry
2016 *A Dictionary of Ch'orti' Mayan-Spanish-English*. University of Utah Press, Salt Lake City.
- Kaufman, Terrence S., and William M. Norman
1984 An Outline of Proto-Cholan Phonology, Morphology and Vocabulary. In *Phoneticism in Mayan Hieroglyphic Writing*, edited by John S. Justeson and Lyle Campbell, pp. 77-166. Publication 9. Institute for Mesoamerican Studies, State University of New York, Albany.

- Ruz Lhuillier, Alberto
1952 Exploraciones arqueológicas en Palenque: 1949. *Anales del Instituto Nacional de Antropología e Historia* 4(32):49-60. Instituto Nacional de Antropología e Historia, Mexico City.
- Schele, Linda
1977 Post-Emblem Glyph and Directional Titles from Classic Maya Nominal Phrases. Paper presented at a conference on Copan, University of California at Los Angeles.
- Schele, Linda, and Peter Mathews
1979 *The Bodega of Palenque, Chiapas, Mexico*. Dumbarton Oaks, Washington, D.C.
- Stuart, David
2006 The Palenque Mythology. In *Sourcebook for the 30th Maya Meetings, March 14-19, 2006*, pp. 85-194. Mesoamerican Center; Department of Art and Art History, University of Texas, Austin.
2012 The Name of Paper: The Mythology of Crowning and Royal Nomenclature on Palenque's Palace Tablet. In *Maya Archaeology 2*, edited by Charles Golden, Stephen Houston, and Joel Skidmore, pp. 116-142. Precolumbia Mesoweb Press, San Francisco.
- Stuart, David, and Stephen Houston
1994 *Classic Maya Place Names*. Studies in Pre-Columbian Art and Archaeology 33. Dumbarton Oaks, Washington, D.C.
- Vogt, Evon Z.
1965 Ceremonial Organization in Zinacantan. *Ethnology* 4(1):39-52.
1976 *Tortillas for the Gods: A Symbolic Analysis of Zinacanteco Rituals*. Harvard University Press, Cambridge, MA.
- Wisdom, Charles
1950 *Materials in the Chorti Language*. University of Chicago Microfilm Collection of Manuscript Materials in American Indian Cultural Anthropology, no. 28. University of Chicago, Chicago.
- Zender, Marc
2016 "The Crown Was Held Above Him": Rethinking Classic Maya Coronation Ceremonies. Paper presented at the Maya Meetings Symposium, Austin, Texas.

A Linguistic Approach to the Classic Maya Term *iximte'el kakaw*

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This article presents a proposal for the translation and interpretation of the Classic term *iximte'el kakaw*, based on a review of Mayan lexical sources from the sixteenth and seventeenth centuries. Although in the past several scholars have proposed interpretations of the term largely based on epigraphy, iconography, and/or linguistics, this review presents a slightly different vision. It is my hope that this approach will help deepen understandings of the Classic Maya economy with regard to the names of beverages and foods—especially that of cacao.

Antecedents and State of the Issue

It is well known that, among ancient Mesoamericans, the cacao bean was considered a type of “currency” or “money” that was used for the exchange of products (see Thompson 1956; Rojas 1987:77; Thiemer-Sachse 2000). Antonio de Ciudad Real mentioned that cacao served “as a small coin in all New Spain, as in Castile the copper one; they buy with cacao all the things that money would buy” (García and Castillo 1976:1:182; Spanish: “de moneda menuda en toda la Nueva España, como en Castilla la de cobre; cómpranse con el cacao todas las cosas que con el dinero se comprarían”).¹

The *Relación de Mama y Kantemo* recounts that in the Yucatan region “the contracts they have are salt and cotton mantles; cacao, which is a grain like almonds, is a currency that has worth among them” (Garza et al. 1983:1:115, Spanish: “los contratos que tienen son sal y mantas de algodón; cacao, que es un grano a manera de almendra el cual es moneda que entre ellos vale”). The *Relación de la provincia de Tabasco* emphasized that cacao was considered to be “the greatest wealth of this land,” and the *Relación de la Villa de Santa María de la Victoria* also mentions that the tribute collected by Motecuzoma was specifically cacao (Garza et al. 1983:2:371, 427).

A section of the *Relación de las cosas de Yucatán* relates that the merchants who came to Ulúa and Tabasco

exchanged salt, clothing, and slaves for cacao and stone beads (Rivera 1985:78). Among the Nahuas of Central Mexico, Bernardino de Sahagún recorded “heart-blood” as a diphrasism used for cacao. Cacao was considered a drink for “brave lords and senators, noble and generous men,” because “it was worth a lot and there was very little.” Sahagún also commented that, “if some of the popular ones drank it, if they drank it without a license, it cost them their lives. That is why it was called *yollotli eztli*: price of blood and heart” (Garibay 1969:2:247, Spanish: “si alguno de los populares lo bebía, si sin licencia lo bebían, costábale la vida. Por esto se llamaba *yollotli eztli*: precio de sangre y de corazón”).

Since the second half of the last century, with the decipherment of *kakaw* (see Lounsbury 1973:114, 138; Stuart 1988), it has been known that this was one of the favorite beverages and one of the most valuable products among the Classic Maya.² Thus it has been

¹ This is also reflected in the Xinka language, where *tuwa* means both “cacao” and “money” (Kaufman and Justeson 2007:194).

² Here I consider the Classic period from AD 250 to 900, the Postclassic period from 900 to 1521, and the Colonial period from 1521 to 1821. In this text I transcribe non-English words in italics, but I have chosen to write Colonial Mayan words in angle brackets <>. The Colonial Yucatec and Kaqchikel Maya orthography did not always represent long, rearticulated vowels or glottal stops. The digraph / dz / represents the modern / ts' / or / tz' /, the / chh / represents the modern / ch' /, the / c / corresponds to the / k / and the / k / to / k' /, while / u / is equivalent to the current / w /. The spelling / h / can represent the velar fricative or glottal fricative sound, sometimes represented in current spelling with / h / or / j /. In old Spanish, the cedilla was equivalent to the sound / s / or / z /. The elements in brackets [] represent reconstructed sounds or words. I opt for a broad transcription of the Maya logograms, which are represented in capital letters, while the syllabograms are represented in lowercase (both in bold). Although I am aware of the proposals for disharmonic spellings accepted and used by various authors, in this work I have decided to simply transcribe the term as *iximte'el*.

possible to document epigraphically drinks such as *tzi(h)il kakaw* perhaps “pure/fresh cacao,” *tzihte'el kakaw* “cacao of *tzihte*,” *yutal kakaw* “fruity cacao” or “seeds of cacao,” *ach' kakaw* “fresh/new cacao,” *k'an kakaw* probably “ripe cacao,” *chabil kakaw* “cacao with honey” or “honeyed cacao,” *tzah kakaw* “sweet cacao,” *sa'al kakaw* “gruelish cacao,” among other combinations (see MacLeod 1990:391-392; Stuart 2005:133-135, 2006:191-199; Beliaev et al. 2010; Hull 2010:237-244).³ We note that an extensive review of the literature—in both English and Spanish—related to cacao and chocolate has been produced in recent years, among which are the texts published or edited by Coe and Coe (1996), McNeil (2006), Grivetti and Shapiro (2009), Staller and Carrasco (2010), Ruz (2016), and Ardren (2020). These works deal with practically every aspect related to those products; therefore only a linguistic review of the term *iximte'el kakaw* and its relationship with the Classic Maya economy will be made here.

As most researchers agree, the first part of the term has been confirmed based on the presence of an *i*-syllabogram before the **IXIM** logogram, leading to a secure reading of *ixim* “grain maize/corn.” On the other hand, the transliteration *te'el* is based on the appearance of the logogram **TE'** read as “tree,” the syllable *e* and the syllable *le*, but sometimes also **TE'-le**, or simply **TE'** (García 1994; Stuart 1995:116, 2006:196; see also Zender 2014) (Figure 1).⁴

Two translations for *iximte'el* are among the more widely accepted ones.⁵ Simon Martin, in his 2006 article (see also Martin 2005) first proposed the translation of *iximte'el kakaw* as “Maize Tree-like cacao” or “Maize Tree cacao” referencing the mythological origin of cacao fruit and corn. His proposal derives from iconographic depictions of the Maize God with cacao pods on his body and the **IXIM-TE'** label directly referencing that god. Martin also considered episodes of Mesoamerican mythology related to the growth of various fruits from the body of the Maize God. His epigraphic and iconographic analysis led him to propose that

equally clearly, cacao was but one among many products of the Maize God's “death,” an event of universal fruitfulness with greater implications for human sustenance than corn or cacao alone. As such, he is the provider of all food plants and the center of wider concepts of fecundity and abundance. (Martin 2006:163)

More recently, on the basis of linguistic data alone, Kaufman and Justeson (2007:224) have proposed the translation “(a drink made from) maize (and) tree cacao” and emphasized that *ixim* and *te'el* could be two different elements (though this does not explain the *iximte'* label for the Maize God).

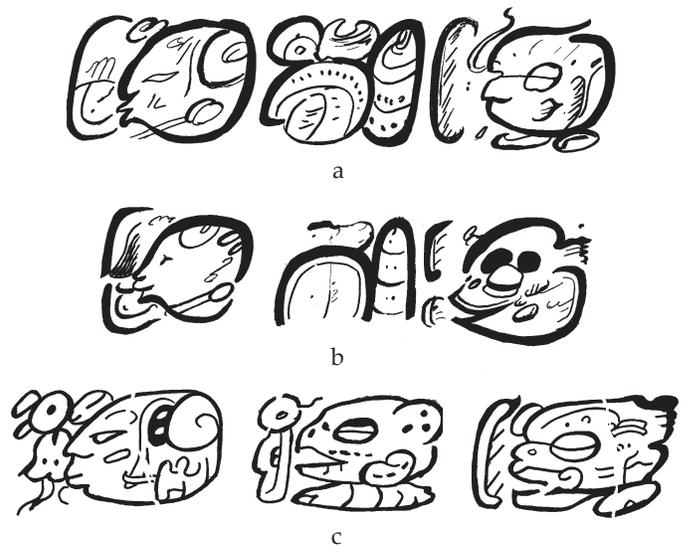


Figure 1 Examples of the *iximte'el kakaw* term in the PSS on Classic Maya pottery: (a) *i-IXIM TE'-le ka-ka-wa*, detail of K791; (b) *i-IXIM TE'-le ka-ka*, detail of a photograph by Inga Calvin of the Cylinder Vessel from Altar de Sacrificios; (c) *IXIM TE'-e-le ka-ka-wa*, detail of K8008 (drawings by William Mex).

iximte'el kakaw was so important and transcendent that, as Stuart (2006:197, 121) has remarked, it was among the predominant types of cacao during the Classic period. According to Carter and Matsumoto (2020:110-113), *iximte'el* (with its variants) is the third most common modifier or qualifier applied to *kakaw* in the Primary Standard Sequence (PSS) during the Classic period, since it appears at least 28 times in ceramics from different regions, particularly in those related to the Holmul and Naranjo style and with Codex-style ceramics.⁶ The term seems to be sufficiently important to merit ongoing review.

³ I am aware that some of the proposed transcriptions and translations are still under discussion.

⁴ See vessels K791, K3120, and K9115 in Justin Kerr's ceramic database at www.mayavase.com. It is worth noting that Stuart (1995) connected *iximte'el* to the potentially cognate form *iximche'el*. A complete reading of *i-xi-ma ixim* appears in the murals of Chik Nahb, Calakmul (see Martin 2012:16).

⁵ Stuart (1995:116, 2006:198, 199) has considered the possibility that *iximte'* or *iximche'* refers not to corn, but to another type of plant, such as *guiligiuste* or *Cascaria nitida*. Also, Martin (2006:180, Note 3) has also noted that *iximte'~iximche'* refers to plants not related to corn, such as *ramón*.

⁶ The authors also suggest that terms such as *yutal*, *tzi(h)il*, and *iximte'el* (the three most common in the Classic period) might not refer to prepared drinks, but to some type of cacao “in a broad sense that included dry beans (perhaps stored or presented in decorated cylinders) and drinks made from them” (Carter and Matsumoto 2020:111). At this moment, I do not have all the material consulted by them for their analysis.

The Terms <iximte> and <ximte> in Colonial Yucatec

The most valuable source for this analysis is undoubtedly the *Bocabulario de maya than*, a manuscript compiled in the Mani region (Yucatan). It contains words and descriptions mainly from the sixteenth and seventeenth centuries (see Acuña 1993:18). The first two entries that interest us are <ixim> and <te>, given that both were recorded as “cacao, quenta para ello (cacao, account for it)” (Acuña 1993: 160).⁷ Here, we have expressions such as <ho te> and <ho xim u tulul cuchi>, both translated as “balfía cinco cacaos (it was worth five cacaos)” (Acuña 1993:161).

We need to clarify that in general the cognates for *ixim* in the Mayan languages have the meanings of “corn” (*Zea mays*), “corn grain,” “corn ready to be shelled,” or “corn in grain” (see Acuña 1993:458; Kaufman 2003:1034-1035). In Southern Mayan (SM), the word is **ixi'm* “maize kernels on or off the cob,” related to the proto-Mayan stem **ix(i)* “shelling corn” (Kaufman 2017:87).⁸ In both Colonial and modern Yucatec Mayan, the word for “(grain of) corn” appears with some dialect variants and has been registered as *ixim*, *ixi'im*, *xim*, or *xi'im* (see Barrera Vásquez 1980:275).⁹ The fact that the word *xim* or *ixim* “grain of corn” was used to account for cacao seems to imply that, in some parts of the Maya zone (or perhaps originally), *ixim* designated a type of valuable grain or seed.¹⁰

When we review in detail, it is revealed that *ximte'* or *iximte'* denotes an economic action related to the gathering up of products. Thus, we have in the same *Bocabulario*:

<xim te> “*escote*, each one contributing among many” (Acuña 1993:327; Spanish: “*escote*, contribuyendo cada uno entre muchos”);¹¹

<mol ixim te> “to collect *derrama*” (Acuña 1993:181; Spanish: “*coger derrama*”);¹²

<mol xim te> “to gather or put together *derrama*” (Acuña 1993:249; Spanish: “*derrama hechar [allegar] o jun[t]ar*”);

<xim te, tah> “contribute all” (Acuña 1993:202; Spanish: “*contribuir todos*”);

<u dzaabob u chhehob, u ximteob> “they gave or paid for the *escote* this way” (Acuña 1993:327; Spanish: “*dieron o pagaron el escote assi*”);

<xim, ximil[a]> “*arras*, money, others that were given to women in marriage” (Acuña 1993:114; Spanish: “*arras, otras que daban en casamiento a las mujeres*”);¹³

<tac ximila> “to invite, giving a gift or present to marry the daughter” (Acuña 1993:187; Spanish: “*conbidar, dando algún don o presente para casar la hija*”);

<ximila> “present or gift of cacao, money or *cuzcas*, and to make them” (Acuña 1993:138; Spanish: “*presente o don de cacao, dineros o cuzcas, y haçerlos*”).¹⁴

Some important observations are obvious with respect to *iximte* or *ximte*. The first is that both terms

refer to “*derrama*, *escote*, contribution” and to “*arras*, present, gift, treat.” That is, they refer to what has been collected or gathered by several people, voluntarily or through coercion; this suggests that it is related to tribute collection. The second observation is that this term was employed during negotiation of such events as marriages among the ancient Maya. This surely has to do with the idea that cacao was a type of “money” or “currency” (as with *cuzcas*) in ancient Mesoamerica.

The relationship between the corn seed/grain and the cacao bean, implied by the terms <ixim> and <xim>, is reaffirmed by the *Calepino maya de Motul*, a text from the Motul region (Yucatan) that collects words from the sixteenth and seventeenth centuries (see Acuña 2001:19-20). The manuscript explicitly records that <xim> is the “account for cacaos” and thus <hun xim, ca xim> was “one or two cacaos” (Acuña 2001:589; Spanish: “*cuenta*”).

⁷ The translations from Mayan to English or from Spanish to English of the Colonial glosses are my own. It should be mentioned that Acuña (1993:160, Note 11) transcribes <ixim> as <xim>, apparently believing that it is an error by the copyist of the manuscript. However, later he does not make any correction with the term <mol ixim te> “to take *derrama*.” As has been expressed, in this case <xim> is a variation (with the elision of the first vowel) of the <ixim> stem. A review of the facsimile of the manuscript helped me to confirm that in both cases it is <ixim>, and Prager (1988-1989:114, 136) also transcribes the words in the same way. Some authors, such as Vail (2009:22) and Tokovinine (2019:290) have also noted the existence of the *ximte'* classifier but have not linked it to *iximte'el kakaw*.

⁸ From the transitive verb **ixi* derives the word **ixi'm* (participle), which also refers to what has been “shelled like corn” (Terrence Kaufman, personal communication 2021).

⁹ In Maya hieroglyphic writing, only the *ixim* variant has been deciphered.

¹⁰ I thank Martin Sobrino for having suggested this idea to me.

¹¹ In Old Spanish *escote* means “part or quota that corresponds to each one for the expense made in common by several people. Each one paying the part that corresponds to him in a common expense” (RAE 2021). The manuscript also registers <chheh>, with the same meaning.

¹² The *derrama* is the “distribution of an eventual expense, and more specifically of a contribution” and the “temporary or extraordinary contribution” (RAE 2021). The manuscript also collects <mol chheh, mol lot>, with the same meaning.

¹³ The word *arras* refers to the “pledge or signal given as a guarantee in a contract or concert,” to some “coins that the bride and groom give each other as a symbol of their union” (like wedding coins), or to the “presentation of a part of the price or consignment of an amount with which the fulfillment of an obligation is guaranteed” (RAE 2021).

¹⁴ The word *cuzcas*, of Nahuatl origin, can be considered equivalent to <kan> “stones that served to the Indians as currency and ornaments around the neck” (Acuña 2001:325; Spanish: “*cuzcas, o piedras que servían a los indios de moneda y de adorno al cuello*”), and we also have <u kan> “necklace of *cuzcas* or stones of value” (Acuña 1993:185; Spanish: “*collar de cuzcas o piedras de valor*”). The manuscript also contains phrases such as <yan ua a kamic u ximila ah kat justicia teche?> “Have you, by any chance, received a present like this from the one who asks you for justice?” (Acuña 1993:138; Spanish: “*has, por bentura, r[ecibi]do presente así del que te pide just[icia]?*”).

para cacaos" and "uno o dos cacaos").¹⁵ Other entries that interest us are:

<xim> "account for the corn cobs that are saved for seed" (Acuña 2001:589; Spanish: "cuenta para las maçorcas de maíz q[ue] guardan para semilla");

<hun xim> "there are two cobs, because, for one cacao, which is *hun xim*, they give two cobs" (Acuña 2001:589; Spanish: "son dos maçorcas, porque, por vn cacao, que es hun xim, dan dos maçorcas");

<ca xim> "there are four cobs" (Acuña 2001:589; Spanish: "son quatro maçorcas").

These entries reveal that <hun ixim>, literally "one (corn) seed" was also what stored corn was called, and that one cacao bean was equivalent to two corncobs. I will mention the equivalence between cacao and corn among the ancient Mesoamericans below.¹⁶ The meaning of "derrama, escote, arras" and "present" are also found in the *Calepino*:

<ximte> "the *derrama* or *escote* or contribution of cacao, or money, between principals and non-principals" (Acuña 2001:589; Spanish: "la derrama o escote o contribución de cacao, o de dineros, entre principales y no principales");

<ximila> "present or gift of cacao, or money or *cuzcas*, that one offers" (Acuña 2001:589; Spanish: "presente o don de cacao, o de dinero o cuzcas, q[ue] uno ofrece");

<ximila> "the *arras* they gave to women at their weddings" (Acuña 2001:589; Spanish: "las arras que daban a las mujeres en sus casamientos");

<ximil,tah,te> "to make these presents or offer them" (Acuña 2001:589; Spanish: "hazer estos presentes o ofrecerlos");

<ximte,tah,te> "give to such *derrama* or contribution" (Acuña 2001:589; Spanish: "dar a tal derrama o contribución");

<ximte tex; ximte nenex cacau> "contribute with cacao" (Acuña 2001:589; Spanish: "contribuid [con] cacao");

<ximtean> "thing contributed by way of *derrama*" (Acuña 2001:589; Spanish: "cosa contribuida por vía de derrama");

<mol ximte> "to take, gather *derrama*" (Acuña 2001:410; Spanish: "coger o allegar derrama").¹⁷

In summary, Colonial Yucatec clearly had recourse to a term (*iximte'* meaning "present, gift, contribution" and, by extension, "tribute." In some Mayan languages the suffix -*VI* derives relative adjectives from nouns (Houston et al. 2001:7-8; Meléndez 2007:39). Thus *iximte'el* could conceivably be translated as "contribution/tributary cacao" or as "contribution/tributary cacao-beans," and by extension it could also designate the drink prepared with this type of cacao.¹⁸

It has already been mentioned that *te'* seems to be a classifier, and furthermore in both Colonial Yucatec and Classic Mayan we have examples of *te'* and *-te'el* in

words related to tribute. The best-known term is *yubte'*, translated as "tribute mantle," a product that served as a type of payment (Houston cited in Stuart 1995:358-359; Tokovinine and Beliaev 2013:175-176). The *Calepino* has the terms:

<yub te> "tribute mantle or leg of these mantles, which are three *cuartas* wide and four *varas* long" (Acuña 2001:298; Spanish: "manta de tributo o pierna de estas mantas, que son de tres cuartas en ancho y de quatro varas de largo");

<yub teel [kuch]; yub teil kuch> "yarn/thread to make these mantles" (Acuña 2001:298; Spanish: "hilaza para hacer estas mantas").¹⁹

The *Bocabulario* also records the following related entries:

<yub te> "tribute mantle paid for by the Indians" (Acuña 1993:463; Spanish: "manta de tributo que pagan los indios");

<yub teil kuch> "very thin cotton thread, as for tribute mantles" (Acuña 1993:401; Spanish: "hilo de algodón muy delgado, como para mantas de tributo").

Thus it is possible that <(i)ximte> is related to <yubte>, both involving a classifier *te'* used to designate this type of merchandise, selected for tribute or as a product of tribute. Other Colonial documents also emphasize that cacao was used for marriage arrangements and other similar types of payments. In the *Vocabulario* of the Kaqchikel language by Thomas de Coto, it was recorded that among the different types of "presents" they used to make, there was one that included:

"Those from a Chinamital to the father of the girl with whom the boy of such Chinamital is to be married, and to this present, which they usually put together (that the ordinary thing is cacao to drink at the wedding) they

¹⁵ The manuscript also compiles <xim> as a "count of the yndias for the threads of its fabrics, which are from four to four" (Acuña 2001:589; Spanish: "cuenta de las yndias para los hilos de sus telas, que van de cuatro en cuatro"). However, this <xim>, although orthographically the same, appears to have a different origin than the term <ixim>. Another Colonial source registers <xim che> and <ximib che> as "bastidor" (see Bolles 2018:95). This <xim> for the threads of clothes is related to the proto-Mayan **xim* that originates in words of many Mayan languages (mainly from the Guatemalan highlands) related to "tie up" or "knot" (see Kaufman 2003:1001).

¹⁶ It may be relevant that *Jun Ixim* is one of the names of the Maya Maize God (see Taube 1985:172-174 and Zender 2014:2).

¹⁷ The *Calepino* also records <mol chheh, mol lot> with the same meaning.

¹⁸ I thank Martin Sobrino for suggesting this last translation to me.

¹⁹ Among other terms, the *Vocabulario* also records <u holmal yub te> "tribute from one *real*, which the Indians give in addition to their mantles" (Acuña 1993:623; Spanish: "tributo de un real, que dan los indios demás de sus mantas"). In Classic Mayan inscriptions, another word for "tribute" is *patan*, and *ihkatz* "load, bundle" also appears, with special reference to jade (see Stross 1988; Stuart 1995:361; Speal 2014).

call <nut> or <cuchuh>” (Acuña 1983:438; Spanish: “los de vn chinamital al padre de la muchacha con quien a de casar el muchacho del tal chinamital, y a este presente, q[ue] suelen juntar entre ellos (q[ue] lo ordinario es de cacao para beber en la boda) llaman <nut> o <cuchuh>”).²⁰

Another entry registers that <nut> was the “cacao collected among them” but it could also have another function, such as, “when in each chinamital [they asked] in each house ten or twenty cacaos to help to release someone from jail, or for the marriage of someone” (Acuña 1983:80; Spanish: “quando en cada chinamital [pedían] en cada casa a diez o veinte cacaos para ayudar a sacar a alguno de la cárcel, o para el casamiento de alguno”). And <nut> was also recorded as the “derrama of cacao that each one gives, ten or twenty [grains], or more, for a dispute or to help to arrange marriage” (Acuña 1983:23; Spanish: “derrama de cacao q[ue] cada vno da, diez o veinte [granos], o más, para pleito o para ayuda a casamiento”).

A Colonial Pokom source records <nut> as, “the contribution, the *escote*, the *derrama*, *stipendium*” and it is specified that it could consist of coins or cacao for the wedding (Feldman 2000:279).²¹ Among the Lacandon Ch’ol it was recorded that the exchange of five cacao beans and a bench—by the bride—and five cacao beans and clothing—by the groom—helped to arrange the marriage (Thompson 1938:602). And among the modern Awakatek, it has been recorded that the customs to conclude the marriage contract are named *kyikyuj* “cacao” or “chocolate” (McArthur and McArthur 1966:209).²²

With the evidence already considered, it is suggested that *iximte’el kakaw* could include at least three types of product: cacao collected through tribute, cacao collected to arrange marriages, or cacao as payment for another person (who possibly has been captured).

An Observation about the *ixim* Grain

A reconsideration of some entries in the *Bocabulario maya than* indicates that *ixim* referred to a valuable type of grain/seed or a corn-like grain. Thus, we have <u pucçikal yxym> as “heart of the corn grain, almond, cacao” (Spanish: “corazón del grano de maíz, alme[n]dra, cacao”), <kaxal bat; kaxal ixim bat> as “stoning, falling stones or hail” (Spanish: “apedrear, caer piedras o graniço”), and <ixim ocçabil cebollaob> as “chives to transplant” (Spanish: “çebollino para trasponer”) (Acuña 1993:204, 104, 224).²³ The first entry is explainable if we consider that *ixim* not only referred to corn seed, but also to almond, cacao, and other seeds.²⁴ The second entry is explained if we consider that *ixim* refers to something that resembles a seed, like hail. The third description designates a seed that can be “sown” such as a grain of corn, so we should consider *ixim* as a “seed” or something that is used “to be sown” (like

chive roots).

These entries may also shed some light on the relationship between the Classic Maya Maize God, usually known as *Jun Ixim*, and other types of valuable seeds. In addition to the link between the Maize God and cacao—as Simon Martin (2006) emphasized some time ago—this god is related to some type of bean, the *ib* (see Tokovinine 2014). The most logical inference is that *Jun Ixim* could refer (in certain contexts) to the “first seed” or to the “primordial seed” in general, and not exclusively to the maize seed. This is an idea that may be worth exploring in more detail.

Some scholars have noted that in Mayan languages there are a variety of trees or plants named *ixi(i)mche’* ~ *ixi(i)mte’* (see Stuart 1995:116, 2006:198-199; Martin 2006:180).²⁵ Based on the sources reviewed, it seems at least possible that they are so named because their fruits are like corn grains. It is also likely that *ixim* designated not only what is like corn seed, but also a group of small and valuable grains or seeds. That would explain why, on K4331, *iximte’* is the tag for the Maya Maize God with cacao pods on his body (see Martin 2006:155, Fig. 8.1). In that context, *iximte’* should be translated as “grain/seed tree” as a reference to the cacao beans tree (and not as “contribution”).

Some Observations Regarding the Cacao Bean

It is well known that among the Postclassic Mexica, cotton mantles and cacao beans (in their four varieties, *cacahuatl*, *mecacahuatl*, *xochicahuatl*, and *tlalcacahuatl*) were among the most valuable products and, in some sense, the most fundamental part of the tribute collected and in the exchange of products. Both those who owned cacao plantations, and those who prepared and

²⁰ The same *Vocabulario* records <cuchuh> as “present,” although the same linguistic root is the origin of words related to “cover, shelter, gather” (Acuña 1983:CV). Also, <nut> was registered as “*alcabala*,” a word that refers to a type of tax or tribute (Acuña 1983:CLXXIV).

²¹ The *stipendium* could be defined as the “payment or remuneration that is given to someone for a service” (RAE 2021).

²² See also Tedlock (2002:168-170). In Colonial Mixtec, a term equivalent to “*arras*, money for marriage” was also recorded: <ino dzehua>. Although it is translated as “*arras*, present, that occurs between lords in marriages; gift, *preseas* that they usually wear for ... weddings,” it is literally a diphraism that means “tobacco-cacao” (Jansen 1997:84; Jansen and Pérez 2009:45).

²³ In these examples <ixim> works as an adjective. The word <pucçikal> is “heart,” <bat> is “hail,” <kax> refers to a type of rain, and <ocçabil> means “sowable.”

²⁴ Jennifer Loughmiller-Cardinal (personal communication 2021) considers that it can also refer to the shape of the seed (“almond shaped cacao beans”) and not to almonds themselves.

²⁵ Kaufman (2017:84) reconstructs SM **ixi’mtye’* “ramón” (*Brosimum alicastrum*), literally “shelled corn tree.” Therefore, the name of these trees must refer to fruit that is shelled like corn.

sold cacao, had specific names, with the figure of the “importer” and the “retailer” being important (Hirth 2016:72, 112-118). Some written sources establish a certain equivalence between cacao, cotton mantles, and other products. For example, a small mantle was worth 65 cacao beans, a medium one was worth 80 beans, and a large one worth 100. A peacock was worth 200 beans, a turkey 100, and a slave for slaughter 3,000 to 4,000 beans (Hirth 2016:250-254). The load or sack of cacao (what one person could carry) consisted of approximately 24,000 beans (Aranda 2005:1443).

Due to the importance of cacao tribute, it is not surprising that *iximte'el kakaw* would be one of the most common classifications on Classic Maya vessels. The translation proposed here would help to resolve the question of why in the Classic Maya epigraphic or iconographic corpus there are no representations that explicitly refer to cacao as tribute.²⁶ Perhaps it was not necessary to explicitly mention this in other contexts because the cacao-tribute was already quite visible, as a part of the PSS in ceramic objects.

Another significant issue to address refers to the possibility that some ceramic containers (usually called “vessels,” “vases,” or “cylinders”) were used to deposit cacao beans, dried seeds, or some type of dry product. Many years ago, some authors suggested that the *uk'ib* / *uch'ib* were not necessarily used to drink something (see MacLeod 1990:13, 391-393).²⁷

A recent publication on chemical residue analyses of just these vessels by Loughmiller-Cardinal (2018; see also Loughmiller-Newman 2012; Loughmiller-Cardinal and Cardinal 2020), revealed that some cylindrical vessels in whose PSS the *kakaw* word is recorded, show no evidence to date of having contained it, at least as a liquid. Her proposal and results suggest that the content of the cylinders was not determined by the text or by the PSS and that these objects were not necessarily used for the consumption of any beverage or food that contained cacao (Loughmiller-Cardinal 2018:3).²⁸ These types of studies suggest that in many cases the mention of *kakaw* in the vessels served to:

- (1) reference one of the other aspects of the plant rather than a subsequent beverage;
- (2) as a symbolic reference to cacao use rather than the vessel's use; and/or
- (3) the text is commemorating an event where a specific cacao concoction was consumed (Loughmiller-Cardinal 2018:3).

In some cases, small areas of abrasion on the interior of the ceramic cylinders could indicate that they were used to store dried cacao beans, since there is archaeological evidence that some ceramics contained them. Furthermore, the fact that they did not necessarily contain liquids (and a label on a container was not necessary to drink chocolate), highlights the symbolic value of the piece and its display by elites (Loughmiller-

Cardinal 2018:7, 9). Another proposal to consider regarding the study is that

the vessel was used to present either dry content of *kakaw* or otherwise to signal that the owner/possessor of the vessel was permitted access to it and the PSS labeling used to sanctify or authorize that use as ritually correct. These data thereby narrow the possible range of potential purposes for both vessel and PSS. (Loughmiller-Cardinal 2018:14)

For several reasons, it is important that we consider the possibility that containers labeled with the word *kakaw* could contain a dry product. As mentioned at the beginning of this essay, sixteenth-century documents specify that the *iximte'el* ~ *ximte'* designated seeds or cobs, that is, dry products, not drinks. The second reason is that, if the *iximte'el kakaw* was tribute cacao, it is obvious that this was gathered dry, perhaps as cargo packages (and not as a drink). Whether indicated as *arras*, *derrama*, or *escote*, cacao had to be collected in seed or on the cob, so the linguistic data analyzed here support the archaeological evidence offered by Loughmiller-Cardinal and suggested by other academics on the topic.

Final Remarks

The analysis presented here supports the idea that *iximte'el kakaw* refers to the contribution of cacao beans/seeds, gathered or collected by many people,

²⁶ See Tokovinine and Beliaev (2013:174) for a review of Classic Maya terms related to tribute. The same authors consider that the representations of bundles with the word *kakaw* are ambiguous and do not necessarily refer to cacao as tribute, while other authors have also proposed that the bundles with the *pik* label could refer to cacao.

²⁷ Similarly, Alfonso Lacadena (personal communication, cited in Beliaev et al. 2010:258), proposed the translation of *yutal kakaw* as “the seeds of *kakaw*,” which would indicate that some vessels contained dry food. However, the same authors also mentioned that “this interpretation is not supported by the obvious function of the *yuch'ib* as a vessel for liquids nor the linguistic data. There is no doubt that *yuch'ib* vessels were used for liquids, not for seeds or other hard foods” (Beliaev et al. 2010:358). The problem is that an “obvious function” of objects cannot be established only by considering linguistic or epigraphic data. It is worth mentioning that Justin Kerr (personal communication, cited in LeCount 2001:948) had suggested that some vessels may have contained seeds or “corn kernels for the gods of the underworld.” His interpretation was based on the supposed reading of the word “seed” in a section of vessel K504. Some of the recently proposed readings for the label of some ceramics also suggest a dry product, as with a tripod from the Río Azul region, with the *y-uk'ib ta ibil kakaw* tag, given that *ib* is a type of bean (see Tokovinine 2014:12-13).

²⁸ The Loughmiller-Cardinal paper is based on the study of 70 cylindrical ceramics. Loughmiller-Cardinal (personal communication 2021) informed me that at present she has analyzed 128 pieces with the same results. I should mention that at the time of writing this article, I do not have access to the full database or all the information that Loughmiller-Cardinal worked with.

either for self-interest or as taxation/tribute. This term applies to what is kept as seed (to sow), and the translation of *iximte'el kakaw* has been offered as “cacao from the *derrama/escote/arras*,” “tribute cacao,” and as “contribution / tributary cacao-bean.” *Iximte'*, then, may be translated generally as “contribution” in some contexts and more narrowly as “tribute” in others. In still other cases, the *iximte'el kakaw* may have exclusively referred to cacao for marital agreements.

Although the “tributary cacao beans” could have been presented as a dry product in the Classic vessels, it cannot be ruled out that *iximte'el kakaw* was a drink prepared with this type of cacao. The proposal related to cacao as a dry product is supported by archaeological information and chemical analyses that have been carried out on some Classic ceramic pieces. If the *iximte'el kakaw* of the PSS was the cacao that was collected through tribute, this might help to explain why explicit mentions of cacao tribute have not been found, either in Maya iconography or in the epigraphic corpus. Also, if the term was more prominent during the Late Classic, this could indicate that the collection of tribute increased during that time.

The words *ixim* or *xim* refer in some contexts to grains or small pieces (such as precious stones) like corn kernels or “coins” that could belong to the category of “money” and did not necessarily refer to a drink, or to corn. This peculiarity must be analyzed in more detail.

I am aware that many contexts have not been addressed here, including other variants such as *yutal iximte'el kakaw*, *tzih iximte'el kakaw*, and *te'el kakaw*. It is still possible to delve into the etymology of *iximte'* and its semantic development. It would be interesting to find out what other uses the containers designated as *uk'ib* / *uch'ib* might have had. It is possible that they served as the method of cacao tribute in certain contexts, or that they served as objects of measurement of a certain amount of cacao beans, perhaps a product of the tribute or of some type of negotiation.²⁹ We need to analyze the archaeological context and the iconography of the objects that bear the label *iximte'el kakaw*, if possible. For example, pieces K0511, K6418, K8008, K8469, K1775, K2796, K7750, K2323, and K5847 show scenes of the royal court, some with representations of bundles that can be interpreted as some type of tribute or reward, or as products for negotiation. Surely a more extensive analysis of these cases will continue to reveal interesting findings.

²⁹ One possibility is that the polychrome ceramic vessels exchanged or offered during the Classic may have included cacao beans inside, as a part of the exchange.

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References

- Acuña, René, ed.
 1983 *Thesaurus verboru[m]: vocabulario de la lengua cakchiquel v[el] guatemalteca: nuevamente hecho y recopilado con summo estudio, trabajo y erudición* (by Tomás de Coto). Universidad Nacional Autónoma de México, Mexico City.
- 1993 *Bocabulario de maya than: Codex Vindobonensis N. S. 3833*. Universidad Nacional Autónoma de México, Mexico City.
- 2001 *Calepino maya de Motul* (by Antonio de Ciudad Real). Plaza y Valdés, Mexico City.
- Aranda Kilian, Lucía
 2005 El uso del cacao como moneda en la época prehispánica y su pervivencia en la época colonial. In *XIII Congreso Internacional de Numismática, Madrid, 2003*, coordinated by Carmen Alfaro Asins, Carmen Marcos Alonso, Paloma Otero Morán, vol. 2, pp. 1439-1450. Ministerio de Cultura, Madrid.
- Ardren, Tracy, ed.
 2020 *Her Cup for Sweet Cacao: Food in Ancient Maya Society*. University of Texas Press, Austin.
- Barrera Vásquez, Alfredo
 1980 *Diccionario maya Cordemex, maya-español, español-maya*. Alfredo Barrera Vásquez, director; Juan Ramón Bastarrachea Manzano and William Brito Sansores, editors; Refugio Vermont Salas, David Dzul Góngora, and Domingo Dzul Poot, collaborators. Ediciones Cordemex, Mérida.
- Beliaev, Dmitri, Albert Davletshin, and Alexandre Tokovinine
 2010 Sweet Cacao and Sour Atole: Mixed Drinks on Classic Maya Ceramic Vases. In *Pre-Columbian Foodways: Interdisciplinary Approaches to Food, Culture, and Markets in Ancient Mesoamerica*, edited by John E. Staller and Michael Carrasco, pp. 257-272. Springer, New York.
- Bolles, David, ed. and transcript.
 2018 *Vocabulario muy copioso en lengua española y maya de Yucatán, compuesto por Fr. Alonso de la Solana de la Orden de N.P.S. Francisco, Mérida, 1580*. Electronic document, available: www.famsi.org/reports/96072/dmmsolsrc.htm

- Carter, Nicholas, and Mallory E. Matsumoto
2020 The Epigraphy of Ancient Maya Food and Drink. In *Her Cup for Sweet Cacao: Food in Ancient Maya Society*, edited by Traci Ardren, pp. 87-123. University of Texas Press, Texas.
- Coe, Sophie D., and Michael D. Coe
1996 *The True History of Chocolate*. Thames and Hudson, London.
- Feldman, Lawrence
2000 *Pokom Maya and Their Colonial Dictionaries*. Report submitted to the Foundation for the Advancement of Mesoamerican Studies, Inc. Available: www.famsi.org/reports/97022/index.html
- García Campillo, José Miguel
1994 La "Planta del Cacao" en los textos glíficos sobre cerámica. *Mayab* 9:59-61.
- Garibay Kintana, Ángel María, ed.
1969 *Historia general de las cosas de la Nueva España* (by Fray Bernardino de Sahagún), Vol. 2. Editorial Porrúa, Mexico City.
- García Quintana, Josefina, and Víctor M. Castillo Farreras, eds.
1976 *Tratado curioso y docto de las grandezas de la Nueva España. Relación breve y verdadera de algunas cosas de las muchas que sucedieron al padre fray Alonso Ponce en las provincias de la Nueva España, siendo comisario general de aquellas partes* (by Antonio de Ciudad Real). 2 vols. Universidad Nacional Autónoma de México, Instituto de Investigaciones Históricas, Mexico City.
- Garza, Mercedes de la, Ana Luisa Izquierdo, Ma. Del Carmen León, and Tolita Figueroa, eds.
1983 *Relaciones histórico-geográficas de la Gobernación de Yucatán (Mérida, Valladolid y Tabasco)*. 2 vols. Universidad Nacional Autónoma de México, Instituto de Investigaciones Filológicas, Mexico City.
- Grivetti, Louis Evan, and Howard-Yana Shapiro, eds.
2009 *Chocolate: History, Culture, and Heritage*. Wiley, Hoboken.
- Hirth, Kenneth G.
2016 *The Aztec Economic World: Merchants and Markets in Ancient Mesoamerica*. Cambridge University Press, New York.
- Houston, Stephen D., David Stuart, and John Robertson
2001 *Quality and Quantity in Glyphic Nouns and Adjectives*. Research Reports on Ancient Maya Writing 47. Center for Maya Research, Washington, D.C.
- Hull, Kerry
2010 An Epigraphic Analysis of Classic-Period Maya Foodstuffs. In *Pre-Columbian Foodways: Interdisciplinary Approaches to Food, Culture, and Markets in Ancient Mesoamerica*, edited by John E. Staller and Michael Carrasco, pp. 235-256. Springer, New York.
- Jansen, Maarten
1997 Símbolos de poder en el México antiguo. In *Anales del Museo de América* 5:73-102.
- Jansen, Maarten E. R. G. N., and Gabina Aurora Pérez Jiménez
2009 *Voces del Dzaha Dzavui. Análisis y conversión del Vocabulario de Fray Francisco de Alvarado (1593)*. Colegio Superior para la Educación Integral Intercultural de Oaxaca, Oaxaca.
- Kaufman, Terrence
2003 *A Preliminary Maya Etymological Dictionary*. Report submitted to the Foundation for the Advancement of Mesoamerican Studies, Inc. Available: www.famsi.org/reports/01051/pmed.pdf
- 2017 Aspects of the Lexicon of Proto-Mayan and its Earliest Descendants. In *The Mayan Languages*, edited by Judith Aissen, Nora England, and Roberto Zavala Maldonado, pp. 62-111. Taylor and Francis, New York.
- Kaufman, Terrence and John Justeson
2007 The History of the Word for Cacao in Ancient Mesoamerica. *Ancient Mesoamerica* 18(2):193-237.
- LeCount, Lisa J.
2001 Like Water for Chocolate: Feasting and Political Ritual among the Late Classic Maya at Xunantunich, Belize. *American Anthropologist* 103(4):935-953.
- Loughmiller-Cardinal, Jennifer A.
2018 Distinguishing the Uses, Functions, and Purposes of Classic Maya "Chocolate" Containers: Not All Cups Are for Drinking. *Ancient Mesoamerica* 30(1):1-18.
- Loughmiller-Cardinal, Jennifer A., and J. Scott Cardinal
2020 Use, Purpose, and Function: Letting the Artifacts Speak. *Heritage* 3(3):587-605.
- Loughmiller-Newman, Jennifer A.
2012 *The Analytic Reconciliation of Classic Mayan Elite Pottery: Squaring Pottery Function with Form, Adornment, and Residual Contents*. Ph.D. dissertation, Department of Anthropology, State University of New York, Albany.
- Lounsbury, Floyd
1974 On the Derivation and Reading of the "Ben Ich" Prefix. In *Mesoamerican Writing Systems*, edited by Elizabeth P. Benson, pp. 99-144. Dumbarton Oaks, Washington, D.C.
- MacLeod, Barbara
1990 *Deciphering the Primary Standard Sequence*. Ph.D. dissertation, Department of Anthropology, University of Texas, Austin.
- Martin, Simon
2005 Metamorphosis in the Underworld: The Maize God and the Mythology of Cacao. In *Sourcebook for the 29th Maya Hieroglyph Forum, March 11-16, 2005*, pp. 175-197. Department of Art and Art History, University of Texas, Austin.

- Martin, Simon, continued
- 2006 Cacao in Ancient Maya Religion: First Fruit from the Maize Tree and Other Tales from the Underworld. In *Chocolate in Mesoamerica: A Cultural History of Cacao*, edited by Cameron L. McNeil, pp. 154-183. University Press of Florida, Gainesville.
- 2012 Hieroglyphs from the Painted Pyramid: The Epigraphy of Chiik Nahb Structure Sub 1-4, Calakmul, Mexico. In *Maya Archaeology 2*, edited by Charles Golden, Stephen Houston, and Joel Skidmore, pp. 60-81. Precolumbia Mesoweb Press, San Francisco.
- McArthur, Harry, and Lucille McArthur
- 1966 Aguacateca. In *Lenguas de Guatemala. Seminario de integración social guatemalteca*, pp. 201-236. Spanish version by Julio Vielman. Departamento editorial José de Pineda Ibarra, Guatemala.
- McNeil, Cameron L., ed.
- 2006 *Chocolate in Mesoamerica: A Cultural History of Cacao*. University Press of Florida, Gainesville.
- Meléndez Guadarrama, Lucero
- 2007 *La posesión lingüística en la lengua de las inscripciones mayas clásicas*. Tesis para optar por el grado de Maestra en Estudios Mesoamericanos. Facultad de Filosofía y Letras, Instituto de Investigaciones Filosóficas, Universidad Nacional Autónoma de México, Mexico City.
- Prager, Christian, transcript.
- 1988-1989 *Bocabulario de la lengua maya de Diego Rejón*.
- RAE (Real Academia Española)
- 2021 *Diccionario de la lengua española*, 23.^a ed. (versión 23.4 online). <https://dle.rae.es>
- Rivera Dorado, Miguel, ed.
- 1985 *Relación de las cosas de Yucatán* (by Diego de Landa). Alianza Editorial, Madrid.
- Rojas, José Luis de
- 1987 La moneda indígena en México. *Revista Española de Antropología Americana* 17:75-88.
- Ruz, Mario Humberto, ed.
- 2016 *Kakaw, oro aromado: de las cortes mayas a las europeas*. Universidad Nacional Autónoma de México, Instituto de Investigaciones Filológicas, Mexico City.
- Stuart, David
- 1988 The Rio Azul Cacao Pot: Epigraphic Observations on the Function of a Maya Ceramic Vessel. *Antiquity* 62(234):153-157.
- 1995 *A Study of Maya Inscriptions*. Ph.D. dissertation, Vanderbilt University.
- 2005 Glyphs on Pots: Decoding Classic Maya Ceramics. In *Sourcebook for the 29th Maya Hieroglyph Forum, March 11-16, 2005*, pp. 110-165. Department of Art and Art History, University of Texas, Austin.
- 2006 The Language of Chocolate: References to Cacao on Classic Maya Drinking Vessels. In *Chocolate in Mesoamerica: The Cultural History of Cacao*, edited by Cameron L. McNeil, pp. 184-201. University Press of Florida, Gainesville.
- Speal, Scott
- 2014 The Evolution of Ancient Maya Exchange Systems: An Etymological Study of Economic Vocabulary in the Mayan Language Family. *Ancient Mesoamerica* 25(1):69-113.
- Staller, John E., and Michael Carrasco, eds.
- 2010 *Pre-Columbian Foodways: Interdisciplinary Approaches to Food, Culture, and Markets in Ancient Mesoamerica*. Springer, New York.
- Stross, Brian
- 1988 The Burden of Office: A Reading. *Mexicon* 10(6):118-121.
- Taube, Karl A.
- 1985 The Classic Maya Maize God: A Reappraisal. In *Fifth Palenque Round Table, 1983*, edited by Merle Greene Robertson, pp. 171-181. Pre-Columbian Art Research Institute, San Francisco.
- Tedlock, Dennis
- 2002 How to Drink Chocolate from a Skull at a Wedding Banquet. *Res: Anthropology and Aesthetics* 42:166-179.
- Thiemer-Sachse, Ursula
- 2000 Wer war oder ist der Señor del Cacao? Kakaobohnen als Währung im Vizekönigreich Neuspanien. In *Dinero y negocios en la historia de América Latina: veinte ensayos dedicados a Reinhard Liehr*, edited by Nikolaus Böttcher and Bernd Hausberger, pp.39-58. Vervuert; Iberoamericana, Berlin.
- Thompson, J. Eric S.
- 1938 Sixteenth and Seventeenth Century Reports on the Chol Mayas. *American Anthropologist* 40(4):584-604.
- 1956 Notes on the Use of Cacao in Middle America. *Notes on Middle American Archeology and Ethnohistory* 128:95-116.
- Tokovinine, Alexandre
- 2014 Beans and Glyphs: A Possible IB Logogram in the Classic Maya Script. *The PARI Journal* 14(4):10-16.
- 2019 Fire in the Land: Landscapes of War in Classic Maya Narratives. In *Seeking Conflict in Mesoamerica: Operational, Cognitive, and Experiential Approaches*, edited by Shawn G. Morton and Meaghan M. Peuramaki-Brown, pp. 77-100. University of Colorado Press, Boulder.
- Tokovinine, Alexandre, and Dmitri Beliaev
- 2013 People of the Road: Traders and Travelers in Ancient Maya Worlds and Images. In *Merchants, Markets, and Exchange in the Pre-Columbian World*, edited by Kenneth G. Hirth and Joanne Pillsbury, pp. 169-200. Dumbarton Oaks, Washington, D.C.
- Vail, Gabrielle
- 2009 Cacao Use in Yucatán Among the Pre-Hispanic Maya. In *Chocolate: History, Culture, and Heritage*, edited by Louis Evan Grivetti and Howard-Yana Shapiro, pp. 3-15. Wiley, Hoboken.
- Zender, Marc
- 2014 On the Reading of Three Classic Maya Portrait Glyphs. *The PARI Journal* 15(2):1-14.