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The Dayton Bone: Ethnic Intermarriage in the Ninth Century Maya Lowlands

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Figure 1. Detail of the Dayton Bone (photo courtesy of Sally Kurtz and the Dayton Institute of Art).

The Dayton Art Institute is home to an unusual and little-studied bone carved with a human figure and an accompanying Maya hieroglyphic text (#1973.5¹) (Figures 1 and 2). It is relatively large for this kind of object, standing just over 30 cm in height and 9.2 cm at its widest point. The material is the rarely seen mandible of a cetacean, a porpoise, or dolphin, which has been modified by filing in some areas. The flat portion of the *ramus* carries the image and the first four glyphs, while the *body* that once held the teeth—which is particularly narrow in these aquatic mammals—bears the remaining four glyphs.² The provenance is allegedly Jaina, Mexico, although even if true it was not necessarily made there (Von Winning 1968:294).

Image

The standing male figure wears a headdress featuring a decorated band surmounted by two rattlesnakes that are knotted together (Von Winning 1968:Figs. 487, 488) (Figure 2). Both of their heads have prominent crests which, as with the form of their rattles,

¹ <https://daytonart.emuseum.com/objects/868/ritual-object-with-ruler-as-warrior-holding-a-spear?ctx=318ffd723d4c1346a4e761b5c6c3a48b25ca9412&idx=2>

² On the reverse side of the *ramus* there is an isolated and crudely rendered “Ahau” glyph.

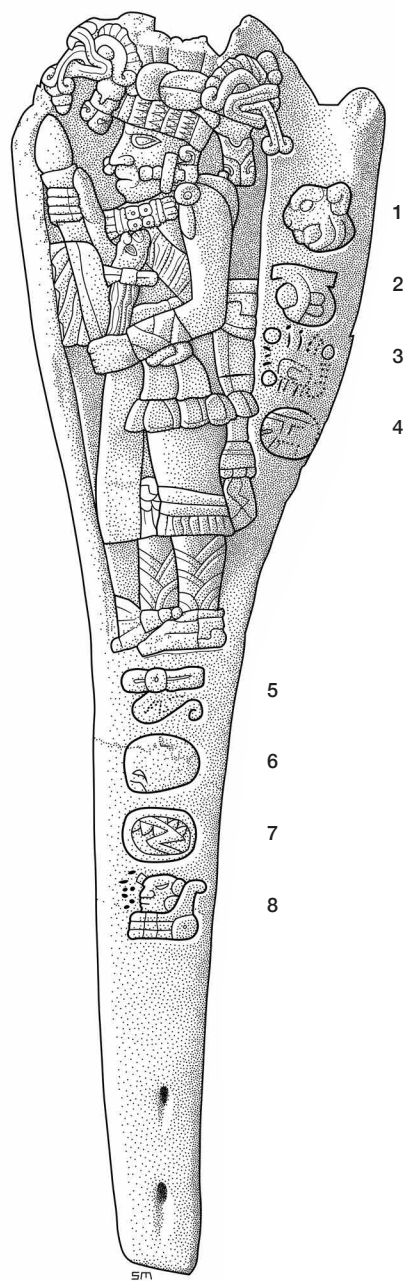


Figure 2. The Dayton Bone
(drawing by the author).

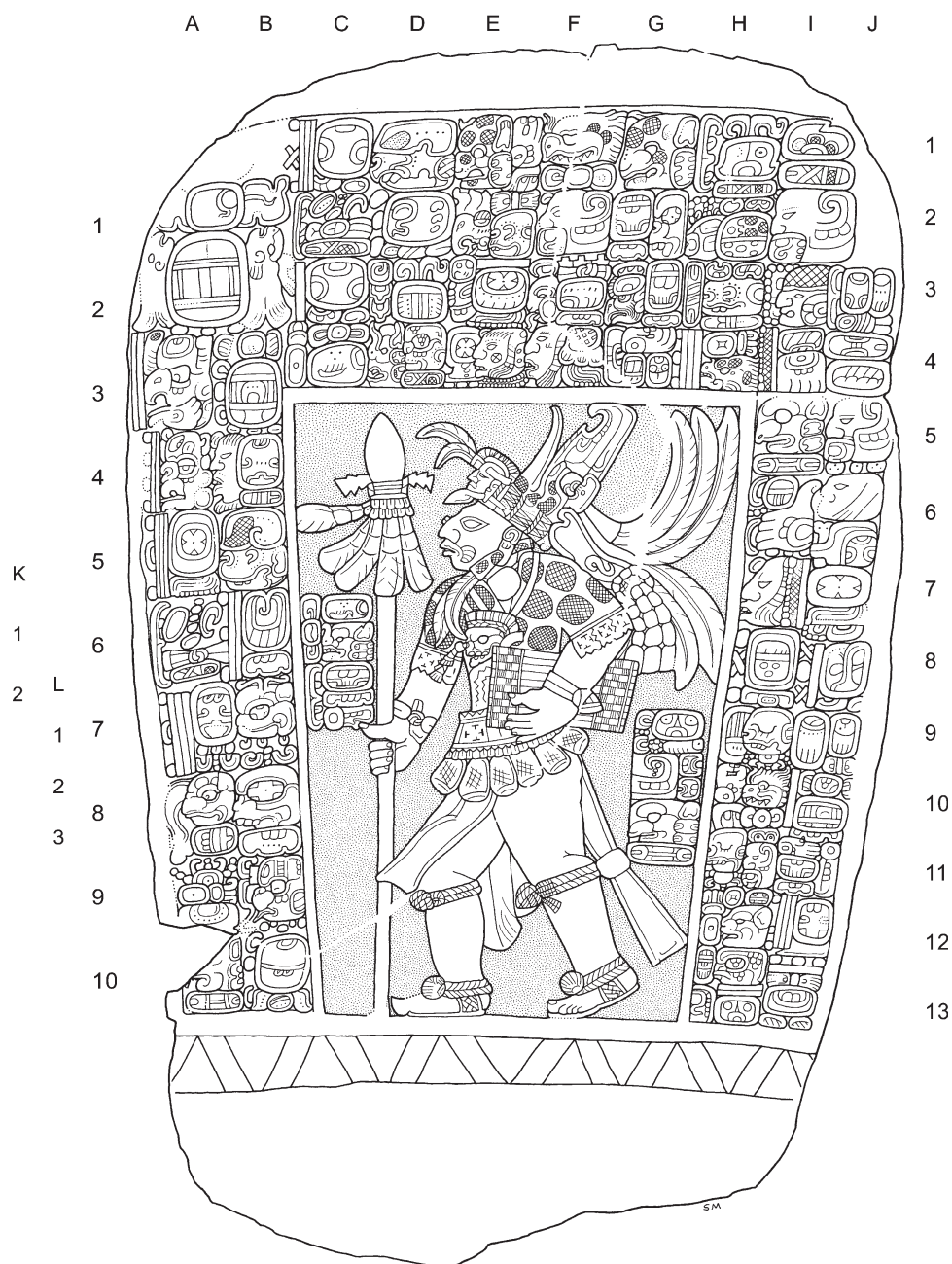


Figure 3. Unprovenanced stela from the Sak Tz'i' region (drawing by the author).

evinced clear Teotihuacan inspiration. The crests alone may be sufficient to identify them as representations of the god Quetzalcoatl. Around the neck of our pictured lord hangs an inverted human head, likely that of a war victim preserved in shrunken form. From his belt hang a row of *Oliva* shells, and he wears leggings and wristlets of bound cloth. In one hand he holds a stone knife with a handle, in the other what seems to be a fan or small banner in side view. A few items, such as the shells, were regular accoutrements of the Classic Maya elite, but the overall appearance of the figure is “non-Classic” and

suggests both a late timeframe and external cultural influences.

The closest comparison in terms of form comes on an unprovenanced stela (Figure 3). This diminutive monument, only a meter high, was created for a noble of the *sajal* rank, a client of the king of Sak Tz'i' “White Dog” polity (Miller and Martin 2004:190-191)—which was probably then based at Lacanja-Tzeltal in the Lacandon region (Golden et al. 2020). The patterned headband is closely similar to that on the Dayton Bone and we can also note the unusual ovoid shape of the blade shared

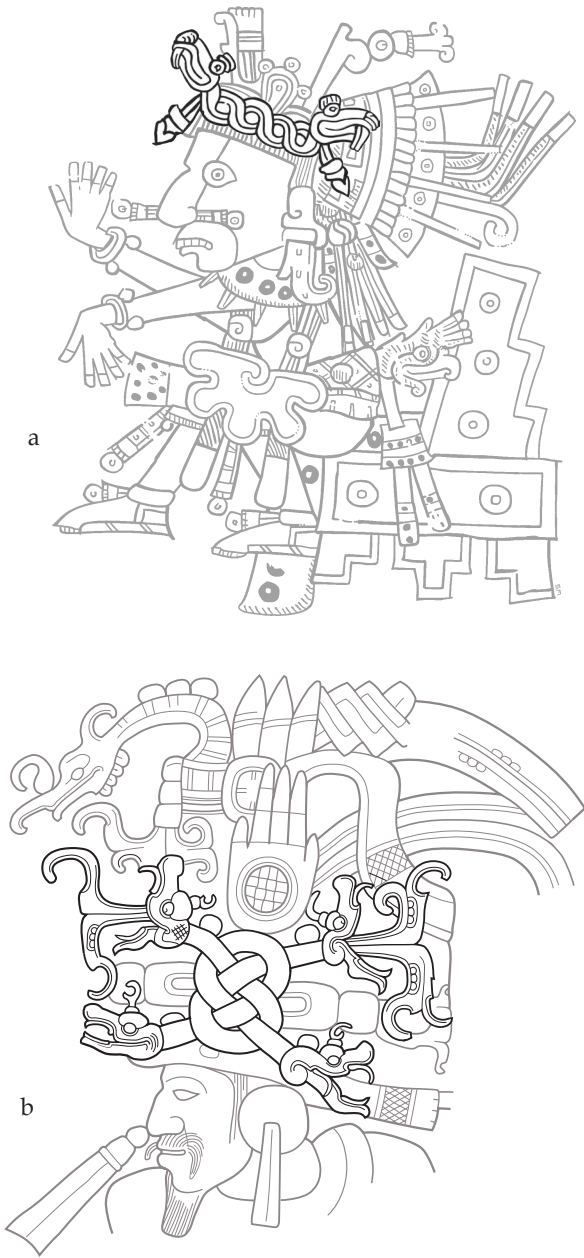


Figure 4. (a) Quetzalcoatl in the Codex Borgia (p. 62); (b) the headdress from Ceibal Stela 1 (drawings by the author).

by both. Equally, the renderings of their eyes, with a doubled outline, are a match and known to be a late feature from occurrences elsewhere. The lack of naturalistic body proportions and their somewhat awkward postures offer other parallels between stela and bone. There are even some similarities in the paleography of the two texts (Marc Zender, personal communication 2024), where one might note the flattened **yu** sign (compare #5 with C4 and K1) and the bent-back thumb of the **(Y)AL**

sign (compare #8 with I6).³ The stela is inscribed with the Long Count 10.1.14.9.17, falling in 864 CE, and this offers us a decent yardstick for the date of our carving, which might even be from the same Lacandon region.

The entwined serpents motif appears in 16th-century Central Mexico, where we see it within the headgear of the aforementioned Quetzalcoatl deity (Figure 4a). It is extremely rare in Classic Maya portraits but one case I am aware of is on Ceibal Stela 1 (Graham 1996:13) (Figure 4b). There we have two double-headed serpents, one of each breathing fire from its mouth, which are tangled in a complex knot. Although more naturalistic in form they are distinctly mythic, with the antlers on their heads identifying them as versions of the Maya *chij chan* “Deer-Snake.” The date of Stela 1 is fixed to the 10.2.0.0.0 Period Ending of 869 and, together with the parallels on the Sak Tz’i’ monument, we can estimate that the Dayton Bone was made in the mid- to late ninth century CE.

Text

The overall style of the bone’s hieroglyphic inscription is not inconsistent with that era. By then both paleography and spelling conventions were edging away from Classic Period norms, even though this text remains broadly legible (Figure 5). The initial section of four blocks close to the figure opens at #1 with the gopher head **BAAH**. Despite the lack of the required possessive pronoun **u-**, this is surely the familiar introductory statement for captions of *ubaah* “(it is) his image/self.” The omission of pronouns is an occasional feature of Maya writing, often used as a space-saving device.

Next comes the “water pot” version of the **u** sign, here filling its own glyph block. Grammatically, this possesses the object in #3, which is the logogram **PAKAL** “shield” in its central pendant variant. Names that include “The shield of” were popular during the Classic Period, usually followed by

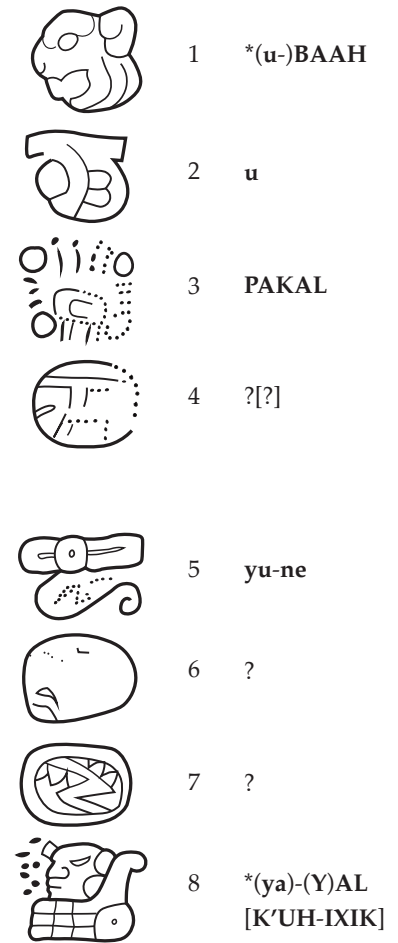


Figure 5. The Dayton Bone with text transliteration (drawing by the author)

³ For a discussion of this hieroglyph see Note 5.

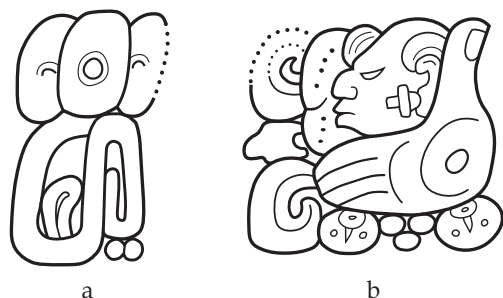


Figure 6. Parentage terms: (a) *yu-ne² yunen* “child of (father)” on La Naya Stela 1; (b) *ya-(Y)AL[K'UH-IXIK]-la yal k'uhul ixik* “child of (mother) holy woman” on an alfarda from the Temple of the Cross at Palenque (drawings by the author).

the sun deity K'inich (*upakal k'inich*) or, at Chichen Itza, in a longer formula that includes “Fire” and the personified lightning bolt K'awiil (*k'ahk' upakal k'awiil*). Neither is evident here and instead the poorly preserved glyph #4 somewhat resembles a conflation between **CHAN** “sky” and the shell of **AHK** “turtle”—though no great confidence can be placed in either identification. To momentarily accept these values, this whole phrase would read *ubaah upakal chan ahk* “It is the image/self of Shield of Sky Turtle.”

The text continues into the body of the mandible at #5 with **yu-ne**, the standard under-spelling of *yunen* “the child of (father)” (Stuart 1985, 1997:3; Zender 1999). There are some marks within the loop of the **ne** tail sign, but they do not appear to be the “doubler” diacritic that sometimes specifies that this syllable should be read twice (Figure 6a).

The first sign of the father's name at #6 has been damaged by a break, inexpertly repaired before it reached the Dayton Art Institute (see Von Winning 1968:Fig. 488). The rounded border is original but one or both of the diagonal lines seen today could be modern



Figure 7. Detail of the Dayton Bone showing the non-Maya glyph (photo courtesy of Sally Kurtz and the Dayton Institute of Art).

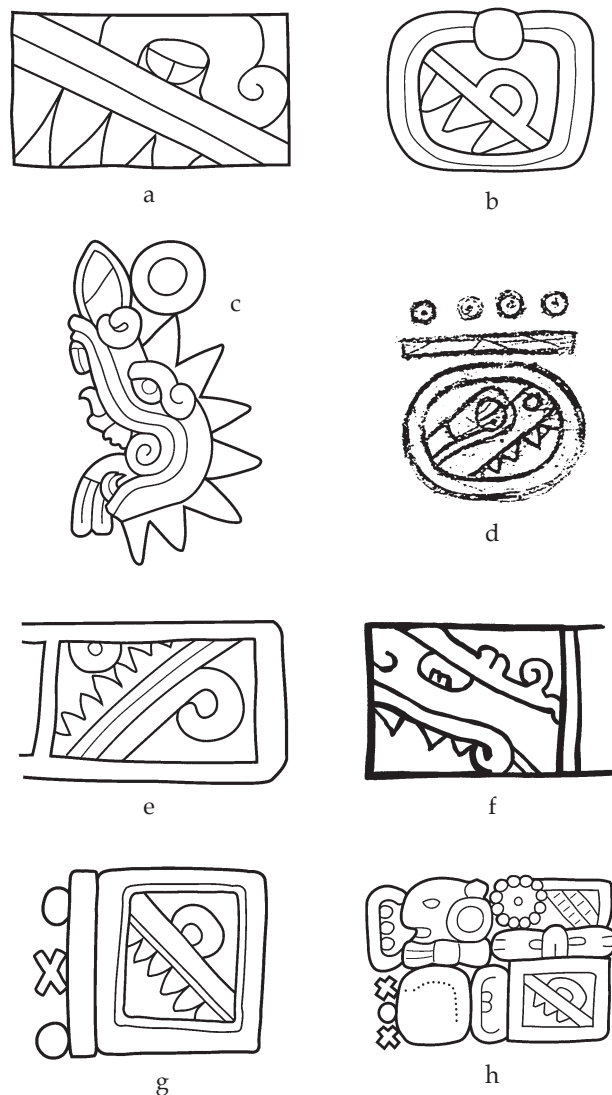


Figure 8. Reptilian signs in the tradition of Western Mesoamerica: (a) motif from a pillar at Tula; (b) day-sign on a sherd from El Tajin; (c) “1 Crocodile” on a stela from Castillo de Teayo; (d) day-sign on the vessel K319; (e) sky-band motif from the House of the Phalli at Chichen Itza; (f) sky-band motif in the Dresden Codex, page 52; (g) day-sign on Ceibal Stela 3 (A1); (h) female name on Jimbal Stela 1 (A8) (drawings by the author).

inventions (see Figure 1). Without a fresh examination by a conservator, it will be hard to know.

The next position, #7, is a strange sign consisting of an acute “z”-like shape whose upper portion sprouts sharp triangular elements (Figure 7). It has no good parallel in the Maya hieroglyphic inventory and, as far as one can tell, is not part of that system. Casting a wider net, it is reminiscent of a sign of western origin, one that shows an abstracted reptilian head that is oriented diagonally. This has sharp angular teeth and an

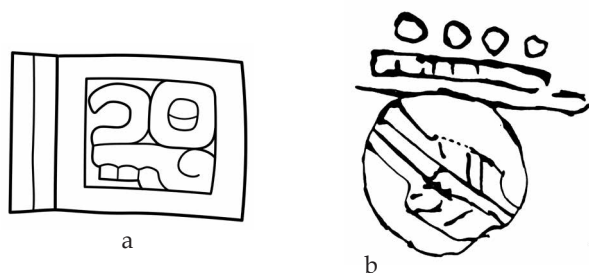


Figure 9. Foreign day-signs in the Maya area: (a) “10 Storm,” Jimbal Stela 1 (C2) (drawing by the author); (b) “9 Reed,” graffito from Tikal Str. 5E-58 (from Orrego and Larios 1983:Pl. 16b).

upper loop that the more elaborate versions show to be a simplified eye and brow-ridge (Figure 8a).

It has long been associated with the mythic crocodile that represents the first day in calendar systems spanning Highland Mexico and the Gulf Coast, known as Cipactli in Nahuatl (e.g., Proskouriakoff 1950:153; Kristan-Graham 1989:217-242). This linkage was initially inferential, since the Crocodile day-signs employed by the Mexica and other Late Postclassic cultures take a more naturalistic form. However, the abstracted reptilian was always likely to be a day-sign based on its partnering numerals, while convincing evidence that it was Crocodile emerged from sherds excavated at El Tajin. On these it carries the number “1” and joins versions of the days Serpent, Water, Reed, and Movement—a series in which each is set four days apart in the 20-day *tonalli* (Pascual Soto and Velásquez García 2012:209, Figs. 5, 6, 7, 9) (Figure 8b). “1 Crocodile” was especially important as the start-date of the 260-day *tonahpohualli* and served as the calendar-name of the mythic founder of that count, Cipactonal. We find this same date inscribed on a stela from Castillo de Teayo, a Huastec site, where we see the spiny skin so typical of the Late Postclassic representations of crocodiles (Figure 8c). Conceivably, these spines relate to the upper triangles on the Dayton Bone mystery sign.

The same crocodilian can be recognized on an incised travertine vase, K319, an object of Maya manufacture that depicts people who are decidedly non-Classic, where it again functions as a personal calendar-name (Figure 8d). During the Early Postclassic Period apparent variants of our spiny and toothy crocodile turn up in sky-bands at Chichen Itza and the Dresden Codex, where it might have replaced the curl-snouted “Zip Monster” in that role (Figure 8e, f).⁴ The crocodile day-sign appears on earlier monuments at the Classic Maya centers of Ceibal and Jimbal, again as components of personal names in the western Mesoamerican tradition (Figure 8g, h).⁵ Usually, such signs are paired with a numeral but, as the Jimbal example demonstrates, this was not always the case. These intrusive calendar signs are

part of wider ninth century phenomenon that appears not only on monuments but on ceramics and scratched graffiti. They are usually set within distinctive square frames, although they can appear within rounded ones as well (Figure 9a, b).⁶ Though it is hard to be sure, the mystery #7 sign is probably a Maya scribe’s effort to replicate a foreign day-sign within a lordly name.

The Dayton Bone inscription concludes at #8, where we might expect to find a reference to the subject’s mother. What we encounter is a conjoined form that includes a hand sign, surely the one we see in the **ya-(Y)AL yal** “the child of (mother)” expression. As in the case of #1 the required possessive pronoun, in this case *y-* in the form of **ya**, has been omitted and must be read by context.⁷ Comparable spellings of “child of (mother)” only emphasize the unusual deletion of the pronoun (Figure 6b).⁸

⁴ While Figure 8e might appear to be inverted, a recurrence of this motif within a longer sky-band sequence from the same structure demonstrates that this orientation is correct.

⁵ A rather similar sign appears in a drawing of Moral-Reforma Stela 5 (pA6) (Lizardi Ramos 1961:126). However, having examined unpublished photographs of this monument, I am confident that this is misdrawn and the sign is in fact a version of T586 **pa** suffixed by T126 **ya**.

⁶ My thanks go to Karl Taube (personal communication 2025) for pointing me to the latter example from Tikal Group G.

⁷ One might note that such an omission was not possible with the **yu** pronoun at #5, since there it contributes the opening vowel of the root *unen*.

⁸ Some more detailed discussion of the hand sign seems warranted here. Two related but separate logograms are used in the *y-al* “child of (mother)” formula based on *al* “child” (Kaufman 2003:97-100), its function first identified by Christopher Jones (1977:41-42) and later read phonetically by Schele, Mathews, and Lounsbury (1977). One logogram is now designated T1919 (“Ben-in-Hand”) and the other T1548 (“Curl-in-Hand”) (these revised Thompson numbers have been instituted by the Textdatenbank und Wörterbuch des klassischen Maya project <classicismayan.org>). Both consistently appear with **ya-** prefixes, are commonly suffixed with **-la** complements, and receive full syllabic substitutions with the pairing **ya-la**. With some frequency, **-la** is infixed into the hand, where it obscures the diagnostic that distinguishes T1919 from T1548.

Given these compositional patterns, both T1919 and T1548 have been read as **AL** “child,” with support for this coming from a single example of **ba-T1548** at Tonina that has been read as *baah al* “head child,” which seems to semantically stand in the place of **ch’o-ko ch’ok** “youth” on the same monument (Stuart 1997:2-3, Fig. 2). This **AL** interpretation works in another context, the homophonic *al* “to say (it)” (Kaufman 2003:762), as in *yaliijiy* “it is said (by),” which can be rendered in fully syllabic form as **ya-la-ji-ya** or as **ya-T1548-ji-ya**.

Yet, as Marc Zender (personal communication 2024) points out, T1548 is likely a pictogram showing a rubber ball in the act of being thrown, suggesting that it originated as **YAL yal** “to throw (something)” (Kaufman 2003:162). That it indeed had this value is demonstrated on the codex-style vessels K521 and K4013, where we see **ya-la** replacing the T1548 employed in matching contexts on K1152 and K2207. The same substitution occurs at Yaxchilan, where a name is given as **AJ-T1548** in one case and **AJ-ya-la-ni** in another (Christian Prager, personal communication 2025).

Reading T1548 as **YAL** conflicts with the Tonina example, since

The hand cradles two other logograms that obscure the diagnostic element that distinguishes different (Y)AL signs, just as infixed -*la* often does elsewhere. The infixes here are K'UH and IXIK, which spell *k'uhul ixik* "holy woman," a near-ubiquitous title or honorific associated with royal females. Normally this would introduce the personal name of the mother but here it stands alone, thus leaving the mother unidentified. Since there is room on the bone for at least one more glyph, this omission is plainly deliberate.

Discussion

The era of the Dayton Bone's carving was one of profound and irreversible change in the Maya lowlands. The monumental record shows that many major cities fell silent at the beginning of the ninth century, as the whole Classic Maya world experienced a crisis so serious that the majority of ruling regimes did not survive it. A number of the centers that did endure, or even thrive, begin to show cultural and stylistic shifts, with a wave of previously unseen developments in architecture, ceramics, costuming, personal nomenclature, and religious traditions. Many of these features have antecedents in Central Mexico and along the Gulf Coast, giving this period an increasingly "non-Classic," even "non-Maya" character.

In the 1960s a group of scholars saw these phenomena as linked, proposing that a violent intrusion from the west and/or north had a traumatic impact on Classic Maya society, sparking its demise (Adams 1964; Cowgill 1964; Vogt 1964). One center on the Río Pasión had a major influence on this scenario. Excavations at Altar de Sacrificios showed a sudden ninth century appearance of temperless fine paste ceramics traditionally associated with the Gulf Coast (Adams 1964, 1971). Their mold-made versions, a type dubbed Pabellon, were decorated with scenes whose style falls well outside Classic conventions, with individuals identified by

those same square day-signs used as names in various parts of western Mesoamerica. Similar finds of fine paste ceramics and "foreign" iconography were soon made at nearby Ceibal (Sabloff 1970, 1973). There, a rich corpus of ninth century monuments showed non-Maya themes and styles, including representations of non-Maya deities, "foreign" physiognomies, and more western day-signs (Graham 1971, 1973). Among new architectural features was a large circular, three-tiered platform, the substructure for a perishable building—a design that rapidly appeared at all of the most vibrant late centers. The excavators of Ceibal proposed their own, more comprehensive model for the destabilization and destruction of Classic Maya society by intruders (Sabloff and Willey 1967).

Yet, by the 1990s serious doubt had been cast on this scenario. Trace element analysis demonstrated that some fine paste wares in the Río Pasión region were not imports from the Gulf Coast but rather locally made (Rands et al. 1982). Moreover, the reading of one important Ceibal inscription strongly suggested that the site's late innovations came not from the west but from the east (Schele and Matthews 1994). These revelations fitted neatly into the theoretical currents of the time. The then-dominant processualist thinking in Americanist archaeology took a broadly skeptical view toward ancient population movements, preferring local evolution as the engine that drives cultural innovation. It was the meeting of new data with an existing paradigm that forged the modern, near-universal consensus that internal rather than external factors were responsible for late changes in Maya society. Elements of unquestioned external heritage, such as the western day-signs, were explained as a form of foreign emulation.

In recent years I've come to question this view. New data, and the reinterpretation of old data, demonstrates not only that anomalous "foreign" elements were more widely distributed than previously realized but that they were more politically significant (Martin 2020:277-299,

"head child" could only work if it were AL as well as YAL—which is to say that the scribes thought these values sufficiently similar that one could be swapped for the other. To date, instances of T1919 only occur in "child of (mother)" and not the "throw" or "say" contexts. This potentially leaves T1919 as AL and T1548 as YAL. But Zender suggests that T1919 is simply a variant form of T1548, where the ball has been replaced by the T584 Ben glyph that equates with "reed" and, by extension, "arrow" in analogous Mesoamerican calendar systems (Kaufman 1989:31-32). Ben would here represent a graphic version of "arrow/dart" and thus another object that could be thrown.

If T1548 could only be YAL then in the "child of (mother)" sense it would necessarily read *ya-YAL* or *ya-YAL-la*. Since the semi-vowel *y* sound required for the possession of *al* is part of the logogram there is a part-redundancy here. The normally ubiquitous *ya-* prefixes demonstrate that this *y* in the logogram was not seen as a functional element and that overt marking for possession was necessary. That said, Zender highlights underspellings in which the

initial *y* could well have been exploited, as on K8076, where two cases of T1548 with the sense of "it is said" lack the grammatically required *y-* pronoun.

One further example is relevant here. On the Tikal Marcador (H7) we find plain T1919 followed by K'UH-IXIK, in a similar sequence to that on the Dayton Bone. If this is a part of a regular parentage statement then the pronoun has been omitted, as it was on the Dayton Bone, whether as a space-saving device and/or to exploit the initial *y-* sound. However, David Stuart (2024:86, Fig. 60b) interprets this rather differently as AL K'UH IXIK *al k'uhul ixik*, with the meaning of "child (and) holy woman," thus maintaining T1919 as AL.

To conclude, there remains a debate about the precise values of T1919 and T1548 since, depending on their context, arguments can be made for both AL and YAL. Whether such specification is of greater concern to us than it was to the scribes working with near-homonyms—i.e., (Y)AL—is an interesting but perhaps unanswerable question.

2023:589-606, 2024a, 2024b). Of relevance to the present discussion, I've wondered if a more parsimonious interpretation of the late actors exclusively identified with western day-signs is that they are not Maya people appropriating foreign identities but, in fact, actual outsiders.

This is what brings us to consider the Dayton Bone. Its subject matter is unremarkable, since its lordly portrait captioned with a name and parentage statement is standard fare. However, one small detail of its text would seem to offer an unprecedented window into the dynastic reconfigurations of this last tumultuous century of the Classic Period. The strange glyph in the name of the protagonist's father remains unidentified, but its uniqueness in the Maya corpus, its uncharacteristically angular aesthetics, its similarity to a range of related glyphs and motifs from western Mesoamerica, and its appearance in an era where such signs are appearing in personal names in the Maya area for the first time, are together highly suggestive that this is a foreign hieroglyph.

Such a monicker would place this father within a group of politically ascendant actors in the ninth century Maya lowlands, each of whom uses hybridized, or at times entirely non-Classic identities. The former not only employ foreign day-signs but also regularly include previously unseen (and untranslatable) names that are spelled out in Maya syllables. I suspect that mixed names have less to do with foreign emulation and more to do with expressing mixed ancestry. This change in nomenclature was not a universal one, since these actors can be distinguished from a group of contemporaneous elites who continue to follow older, more traditional conventions—producing a complex, even confusing, heterogeneity in late political personas (Martin 2020:290-299).

The special contribution of the bone would be its evidence for a marriage between one of these outsiders (or his direct descendent) and a high-ranking Maya female. The absence of any name for her is unusual but revealing in its own way. The enthusiasm with which royal sons mention the names of their mothers likely reflects the kin relationships and status associations brought by them. In a system of elite polygyny—in which individual lords had multiple wives—such specification would be important, distinguishing an offspring from half-siblings who had been born to different mothers. But if this is an ethnically mixed marriage conducted at a time of special stress and upheaval, such connections

may have been of little relevance; it was enough to know that she was an elite Maya woman.

When it comes to their child, the commissioner of the Dayton Bone, it is notable that he does not carry an anomalous identity but rather one that conforms to regular Classic Maya naming practices. Here we would seem to witness the assimilation of mixed ethnicity offspring into late Maya culture, meaning that any parentage statement featuring our protagonist in the next generation would offer no clue to his western patriline.⁹ That said, I suspect that he could have borne other, more distinctively western, names that are not expressed here. Interestingly, it is only at mid-century that we begin to see lords whose nominal strings combine foreign and local identities, the earliest being the names of two lords on Ucanal Stela 4 from 849. The implication we could draw from this is that they represent the first generation of a binary bloodline, one conspicuously presented as a new unity.

Overall, new data from the Dayton Bone would fit within a wider body of material suggesting that ninth century cultural change in the Maya lowlands was not an autochthonous development, or a simple appropriation of foreign forms, but a phenomenon actively involving outsiders. How intermarriage with ethnic westerners would articulate with coeval processes of social, political, economic, and demographic breakdown in the Maya region has yet to be determined and will require further investigation.

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References

- Adams, Richard E. W.
1964 The Ceramic Sequence at Altar de Sacrificios and its Implications. *Actas del XXXV Congreso Internacional de Americanistas* 1:371-378.
1971 *The Ceramics of Altar de Sacrificios*. Papers 63(1). Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Mass.
Cowgill, George
1964 The End of Classic Maya Culture: A Review of Recent Evidence. *Southwestern Journal of Anthropology* 20:145-159.

⁹ The same process might be seen in much earlier times, in the case of Yax Nuun Ahiin I. The son of the foreign, presumed Teotihuacano ruler Spearthrower Owl (Stuart 2000:473), his mother was most probably Maya (Martin 2002:67). That the name we know the Tikal king by is fully Maya, despite the non-Maya origin of his father, is a clear example of a selective identity that eschews any outward connection to a foreign patriline.

- Golden, Charles W., Andrew K. Scherer, Stephen D. Houston, Whittaker Schroder, Shanti Morell-Hart, Socorro del Pilar Jiménez Álvarez, George Van Kollias, Moises Yerath Ramiro Talavera, Jeffrey Dobereiner, and Omar Alcover Firpi
2020 Centering the Classic Maya Kingdom of Sak Tz'i'. *Journal of Archaeological Science* 45(2):67-85.
- Graham, Ian
1996 *Corpus of Maya Hieroglyphic Inscriptions, Volume 7, Part 1: Seibal*. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Mass.
- Graham, John A.
1971 Non-Classic Inscriptions and Sculptures at Seibal. In *Papers on Olmec and Maya Archaeology. Contributions of the University of California Archaeological Research Facility* 13, pp. 143-153. University of California, Berkeley.
1973 Aspects of Non-Maya Presences in the Inscriptions and Sculptural Art of Seibal. In *The Classic Maya Collapse*, edited by T. Patrick Culbert, pp. 207-219. University of New Mexico Press, Albuquerque.
- Jones, Christopher
1977 Inauguration Dates of Three Late Classic Rulers of Tikal, Guatemala. *American Antiquity* 42:28-60.
- Kaufman, Terrance S.
1989 The Meso-American Calendar: The Day-Names. Paper presented at the Santa Barbara Conference on Mesoamerican Writing, Santa Barbara.
2003 *A Preliminary Mayan Etymological Dictionary*. FAMSI: www.famsi.org/reports/01051/pmed.pdf
- Kristan-Graham, Cynthia
1989 Art, Rulership, and the Mesoamerican Body Politic at Tula and Chichen Itza. Ph.D. dissertation, University of California, Los Angeles.
- Lizardi Ramos, César
1961 Las estelas 4 y 5 de Balancán Morales, Tabasco. In *Estudios de Cultura Maya* 1:107-130. Centro de Estudios Mayas, Universidad Nacional Autónoma de México, Mexico City.
- Martin, Simon
2002 The Baby Jaguar: An Exploration of its Identity and Origins in Maya Art and Writing. In *La organización social entre los mayas prehispánicos, coloniales y modernos. Memoria de la Tercera Mesa Redonda de Palenque*, edited by Vera Tiesler Blos, Rafael Cobos, and Merle Greene Robertson, v. 1, pp. 49-78. Consejo Nacional para la Cultura y las Artes, Mexico City.
2020 *Ancient Maya Politics: A Political Anthropology of the Classic Period 150-900 CE*. Cambridge University Press, Cambridge and New York.
2023 Ethnicity and Identity at Chichen Itza. In *When East Meets West: Chichen Itza, Tula, and Early Postclassic Mesoamerica*, edited by Travis W. Stanton, Karl A. Taube, Jeremy D. Coltman, and Nelda I. Marengo Camacho, pp. 585-634. British Archaeological Reports, Oxford.
2024a The Long Twilight of the Tikal Dynasty: What Ninth Century Tikal, Zacpeten, Ixlu, and Jimbal Tell Us About the Classic Maya Collapse. In *Substance of the Maya: Kingdoms and Communities, Objects and Beings*, edited by Andrew K. Scherer and Thomas G. Garrison, pp. 105-143. University of New Mexico Press, Albuquerque.*
2024b Strangers in the Land: Rethinking the Classic Maya Collapse. *Expedition* 66(2):22-35.
- Miller, Mary, and Simon Martin
2004 *Courtly Art of the Ancient Maya*. Thames and Hudson, London.
- Orrego, Miguel, and Rudy Larios
1983 *Tikal, Petén. Reporte de las investigaciones arqueológicas en el Grupo 5E-11*. Parque Nacional Tikal, Instituto de Antropología e Historia, Guatemala.
- Pascual Soto, Arturo, and Erik Velásquez García
2012 Relaciones y estrategias políticas entre El Tajín y diversas entidades mayas durante el siglo IX d.C. *Contributions to New World Archaeology* 4:205-227.
- Proskouriakoff, Tatiana
1950 *A Study of Classic Maya Sculpture*. Publication 593. Carnegie Institution of Washington, Washington, D.C.
- 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, pp. 315-338. Memoirs 15(2). Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Mass.
- Sabloff, Jeremy A.
1970 Type Descriptions of the Fine Paste Ceramics of the Bayal Boca Complex, Seibal, Peten, Guatemala. In *Monographs and Papers in Maya Archaeology*, edited by William R. Bullard, pp. 357-404. Peabody Museum of American Archaeology and Ethnology, Harvard University, Cambridge, Mass.
1973 Continuity and Disruption during Terminal Late Classic Times at Seibal: Ceramic and Other Evidence. *The Classic Maya Collapse*, edited by T. Patrick Culbert, pp. 107-163. University of New Mexico Press, Albuquerque.
- Schele, Linda, Peter Mathews, and Floyd Lounsbury
1977 Parentage Expressions from Classic Maya Inscriptions. Manuscript.
- Schele, Linda, and Paul Matthews
1994 The Last Lords of Seibal. *Texas Notes on Precolumbian Art, Writing, and Culture* 68. Center for the History and Art of Ancient American Culture, University of Texas at Austin.
- Stuart, David
1985 A New Child-Father Relationship Glyph. *Research Reports on Ancient Maya Writing* 2:7-8. Center for Maya Research, Washington, D.C.
1997 Kinship Terms in Mayan Inscriptions. In *The Language of Maya Hieroglyphs*, edited by Martha J. Macri and Anabel Ford, pp. 1-11. Pre-Columbian Art Research Institute, San Francisco.
2000 The Arrival of Strangers: Teotihuacan and Tollan in Classic Maya History. In *Mesoamerica's Classic Heritage*, edited by David Carrasco, Lindsay Jones, and Scott Sessions pp. 465-513. University Press of Colorado, Boulder.
2024 *Spearthrower Owl: A Teotihuacan Ruler in Maya History*. Dumbarton Oaks, Washington, D.C.
- Vogt, Evon Z.
1964 The Genetic Model and Maya Cultural Development. In *Desarrollo cultural de los mayas*, edited by Evon Vogt and Alberto Ruz, pp. 9-48. Universidad Autónoma de México, Mexico City.
- Von Winning, Hasso
1968 *Pre-Columbian Art of Mexico and Central America*. Abrams, New York.
- Zender, Marc Uwe
1999 Diacritical Marks and Underspelling in the Classic Maya Script: Implications for Decipherment. M.A. thesis, University of Calgary.

A Reconsideration of T1736 as the Numeral Six

Cheyenne Spetzler

The ancient Maya city of Palenque sits on a limestone ridge high above the floodplain of the Usumacinta River in Chiapas, Mexico. It first became known to the western world through the accounts of early European explorers in the mid-18th century. Over the next two centuries, increasingly sophisticated exploration and documentation of the site and its hieroglyphic inscriptions followed, including extremely accurate drawings by the artist Annie Hunter made from paper molds created by the Alfred Percival Maudsley expedition to Palenque in 1891. Palenque became world-famous when the tomb and sarcophagus of K'inich Janaab Pakal I was discovered in 1952 by Alberto Ruz Lhuillier (1958) in the Temple of the Inscriptions.¹

Maya epigraphers have long appreciated the well-preserved, expertly documented, and relatively complete inscriptions found on the limestone panels of the city's many temples. Discussing history, mythology, genealogy, and devotion to the local gods known as the Palenque Triad, the recovered texts open a window into the ancient Maya mind and political milieu.²

A notable exception to these orderly and well-preserved inscriptions can be found in the fallen stucco text once gracing the back wall of a small structure known

today as Temple XVIII, located near the Cross Group. It has a companion structure designated as Temple XVIIIa (Figure 1).³ While these collapsed structures were previously noted, and even mapped, the inscription in Temple XVIII was not documented until Frans Blom's visit in 1923 (Blom and La Farge 1926:175-176).

When discovered by Blom, the Temple XVIII panel consisted of several hieroglyphs that still clung tenaciously to the back wall of the ruined temple, along with the sparse remnants of what had once been an accompanying image. The remaining stucco glyphs from the inscription were scattered on the floor below the wall.⁴ The inscription discusses the family history and events leading to the accession of K'inich Ahkal Mo' Nahb III, the grandson of K'inich Janaab Pakal I. The scene, centered horizontally in the inscription, shows the great king of Palenque, K'inich Janaab Pakal I with his three sons in the scene to his left.⁵ Two or three additional figures were once in the scene to Pakal's right,⁶ and one of them, a priest (Zender 2004:310), is associated with a spoken text that relates the placement

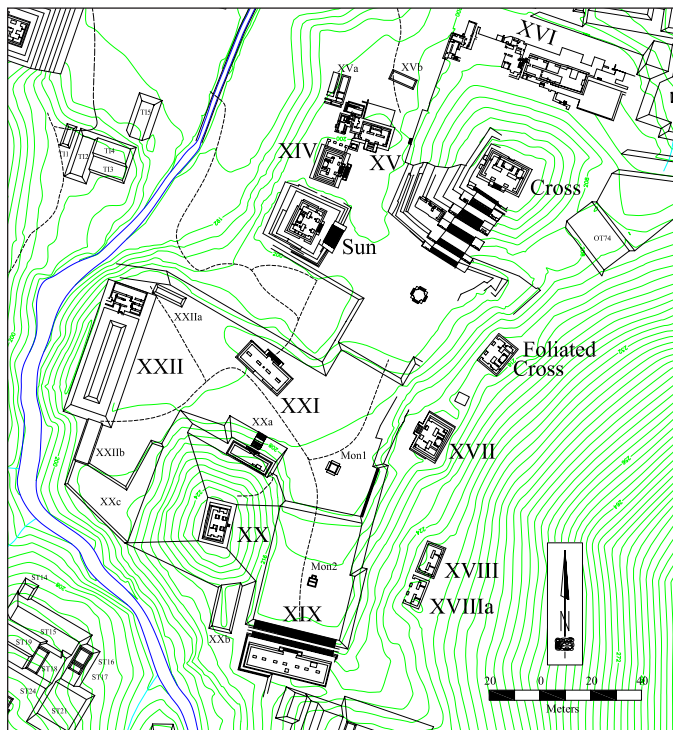


Figure 1. Location of Palenque Temple XVIII south of the Cross Group (lower right in the figure). Map by Ed Barnhart, 1998.

¹ See Stuart and Stuart (2008) for a comprehensive account of the early discovery, exploration, and documentation of the site.

² An excellent and concise discussion of the history and rulers of Palenque can be found in Martin and Grube (2008:154-175).

³ A recent presentation by David Stuart (2023) gives a thoroughly documented and engaging overview of Palenque Temple XVIII, including several suggestions for the reconstruction of its stucco inscription.

⁴ See the schematic provided by Ruz (1958:Fig. 17).

⁵ Ringle (1996:55) deduced that his Lord T231 must be the third son of Pakal, using several lines of evidence from the TXVIII Jamb and Temple of the Cross incensario stand texts. See Ringle (1996:56) and Stuart (2005:152-153) for the identification of the participants in the scene.

⁶ The figures to Pakal's left have name captions that identify them as three sons of Pakal, using their pre-accession names (Ringle 1996:56; Stuart 2005:152-153). There are no similarly-identified names associated with the figures to Pakal's right, although one individual is clearly depicted as a priest with miter headdress. Several stucco heads from Temple XVIII are published in archaeological reports. One (Moll 1985:315, Photo 4) is likely Pakal's head, as it is in direct association with the throne border sketched by Blom. Two other heads published by Moll (1985:319, Photo 5), likely show the heads of the priest and one of the three sons of Pakal, based on their orientation. Part of the priest's miter can be seen in the photo. Another stucco fragment illustrated by Ruz Lhuillier (1958:Fig. 23c), illustrates a head facing in the direction of Pakal from his right. The head has a rope around the neck. If this stucco head can be shown to belong on the wall scene to Pakal's right, it may depict the pre-accession rope-taking event of Tiwohl Chan Mat. Further evidence for this event is found in the proximate hieroglyphs for rope-taking (B409).

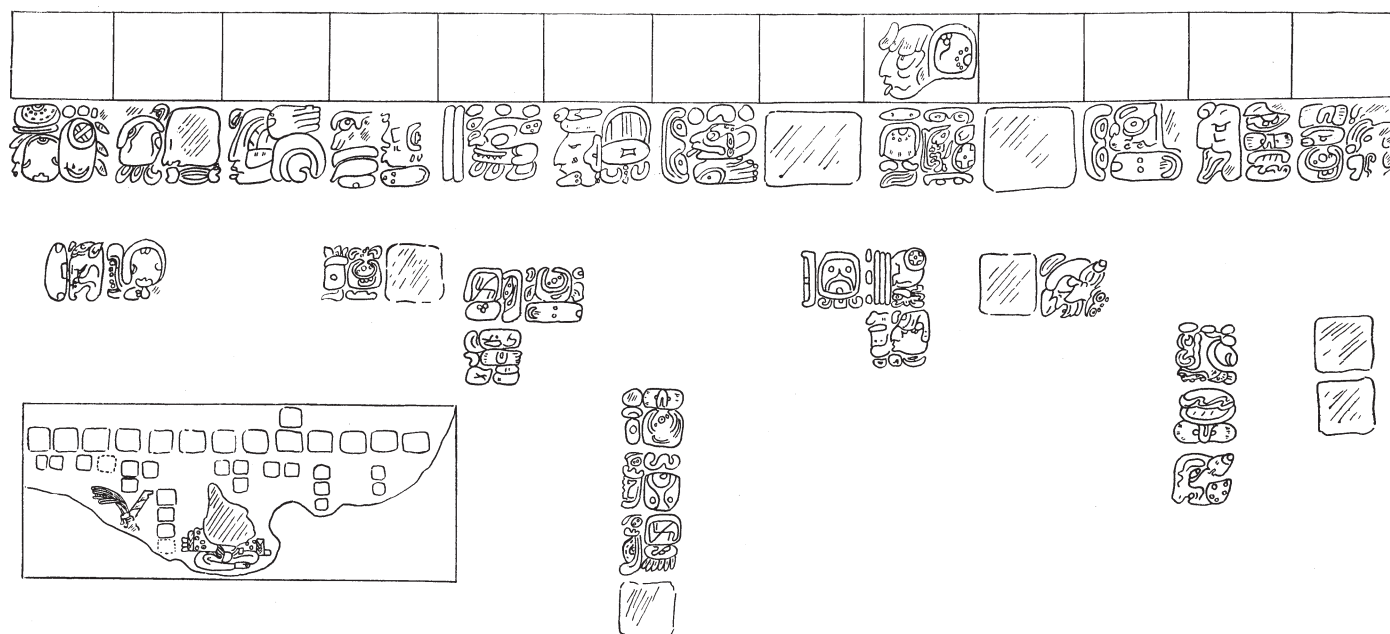


Figure 2. Illustration of the in situ stuccos from *Tribes and Temples* (Blom and La Farge 1926:Fig. 135).

of the sons, and presumably the grandson, in proper succession to the throne.⁷ The scene contains a calendar round date of 5 Ahau 18 Kayab that can be confidently dated to 9.12.6.12.0 (January 24, 679), a time when Pakal, his three sons depicted in the scene, and his grandson were all still alive.

When Frans Blom arrived at the ruins of Palenque's Temple XVIII in 1923, he documented the surviving stucco inscription and the stucco scene, with 28 in situ glyphs (Blom and La Farge 1926:Fig. 135) (Figure 2). Excavations by Heinrich Berlin in 1942 and César Sáenz in 1954 added an additional 98 hieroglyphs excavated from the floor of the temple. Today, Marc Zender documents a total of 178 glyphs and fragments in his essential compilation and concordance of the known stuccos of Temple XVIII (Zender 2007).⁸

In their respective analyses of the inscription, Heinrich Berlin (1944) and William Ringle (1996) identified a series of calendar round dates and one supplementary series included in the fallen stuccos. Ringle also realized that the inscription on a stone incensario stand found at the Temple of the Cross duplicates some of the dates and events on the stuccos and features the same protagonist.⁹ Ringle's "Lord T231"—now known as Tiwohl Chan Mat (Stuart 2005:25)—was the youngest known son of K'inich Janaab Pakal I and the father of K'inich Ahkal Mo' Nahb III. Further overlapping information can be found on the stone panels known as the Temple XVIII Jambs. From this combination of related inscriptions, Ringle reconstructed eleven probable dates found in the fallen stuccos (Ringle 1996:Table 1). An additional date, 9.14.10.12.19 4 Cauac 17 Yaxkin, can be confidently reconstructed using information provided by the in situ

glyphs.¹⁰ I noticed that Blom's drawing (Blom and La Farge 1926:Fig.135) (Figure 2), depicts a day name in the top row (his A9) (B402) that can clearly be identified as the day 4 Cauac.¹¹

The central event in the Temple XVIII stucco text can be reconstructed as 9.14.10.4.2 9 Ik 5 Kayab, the accession date of K'inich Ahkal Mo' Nahb III, by the associated lunar information found in glyphs adhering on the wall.¹² I found a distance number in the stucco scatter, 8.17 (B499), that links the accession of K'inich Ahkal Mo' Nahb III to the 4 Cauac 17 Yaxkin date (Table 1).

David Stuart (personal communication 2025) points out that the same 9.14.10.12.19 4 Cauac 17 Yax'in date can be extrapolated from the information on a fragmentary stone incensario stand recovered during the excavations

⁷ The text reads *tihmaj awohl atz'akbuji* "you are pleased (that) you put them in order" (Stuart 2005:153).

⁸ It can be demonstrated from missing calendrical information that 10-15% of the stucco glyphs may be absent from the record (Zender et al. 2025).

⁹ The incensario stand was discovered in 1945 and recorded by Schele and Mathews (1979:Bodega number 281). For an updated drawing and revision of some key dates see Stuart (2024).

¹⁰ All dates are presented using the 584286 correlation (Martin and Skidmore 2012), and have been calculated using Chac (Anderson 1999-2025).

¹¹ The letter "B" before a number indicates that it was recorded in the *Bodega* book (Schele and Mathews 1979), "F" indicates Fernández (1954), and "R" indicated Ruz (1958).

¹² Ringle (1996:50) was the first to note that the accession of K'inich Ahkal Mo' Nahb III was the central event on the stucco inscription based on the surviving supplementary series

9.14.10.04.02 + 08.17	9 Ik 5 Kayab	December 31, 721	Accession of K'inich Ahkal Mo' Nahb III
9.14.10.12.19	4 Cauac (17 Yaxkin)	June 26, 722	??

Table 1. Distance number linking the accession of K'inich Ahkal Mo' Nahb III to the 4 Cauac 17 Yaxkin date.

9.14.10.12.19 + (1). 3. 4	(4 Cauac 17 Yaxkin)	June 26, 722	
9.14.11.16. 3 + (16.15)	(12) Akbal 16 Yax	August 24, 723	
9.14.12.14.18 + 3. 2	(9 Edznab 6 Chen)	July 24, 724	Annular Eclipse
9.14.13. 0. 0	6 Ahau 8 Ceh	September 24, 724	PE

Table 2. Dates reconstructed by Stuart from the fragmentary incensario stand.

9.14.11.16. 3 + 16.15	12 Akbal 16 Yax	August 24, 723	
9.14.12.14.18	9 Edznab 6 Chen ¹⁷	July 24, 724	Annular Eclipse

Table 3. Dates reconstructed by Stuart from the fragmentary incensario stand.

of Temple XVIII.¹³ The fragment (Figure 3) records the following dates, from Stuart's 2025 reconstruction (Table 2).¹⁴

The confirmation of this new date—9.14.10.12.19 4 Cauac 17 Yaxkin—leads to the possibility of reconstructing additional dates using tzolkin, haab, and distance numbers from this area of the fallen stucco scatter.¹⁵ For example, a distance number of two days from this area of the text (B441) leads to 9.14.10.13.1 6 Imix 19 Yaxkin (F28). The following day, 9.14.10.13.0 potentially occurs also, as the haab position 0 Mol (B479) is also attested.¹⁶

9.14.10.12.19 + . 2	4 Cauac (17 Yaxkin)	June 15, 722	??
9.14.10.13. 1 + (. 1)	(6 Imix) 19 Yaxkin	June 17, 722	??
9.14.10.13. 2	(7 Ik) 0 Mol	June 18, 722	??

Another surviving distance number, 16.15 (B427), allows the reconstruction of still one more date from the incensario fragment, as the elements 12 Akbal (B489) and 16 Yax (B426) also appear in this section of the scatter (Table 3).

At this point, further reconstructions were facilitated by my recognition that T1736, long ago assigned the value “eleven” (Berlin 1944), was in need of revision and reconsideration as a glyph for “six.”¹⁸ In two collocations (B436 and B451) where the calendrics require a “six”—i.e., 6 Imix and 6 Chen—we find a rare head variant sign with two celts in the mouth. This sign, originally designated T1105 (Ringle and Smith-Stark

1996:330), and now assigned the number T1736 by the Idiom Project (Prager et al 2025), has been generally accepted as having the value of eleven since Berlin's initial identification.

¹³ César Sáenz records the discovery of this fragment in his report on the excavation of Temple XVIII conducted in 1954 (Ruz Lhuillier 1958:151).

¹⁴ The period-ending date (9.14.13.0.0) was identified by Sáenz (Ruz Lhuillier 1958:151) and the immediately preceding date (9.14.12.14.18) was reconstructed by Schele and Mathews (1979) during their work in recording the Temple XVIII stuccos in the Bodega at Palenque.

¹⁵ For my reconstruction, I am also considering the location of the elements as encountered on the wall by Blom (Blom and La Farge 1926:Fig. 135) and as excavated and documented by Fernández in 1942 and Sáenz in 1954. For now, I have restricted my reconstruction of the inscription to glyphs found proximate to the area of the back wall where they were excavated, while acknowledging that some could have moved farther or have been shifted in antiquity.

¹⁶ From other evidence we are expecting closely spaced dates. In addition to the 2-day distance number (B441) there is a distance number of 0 days 0 winal (B442) as well as the *sa'('miiy'* ‘earlier the same day’ collocation, addressed below.

¹⁷ The central event on the incensario fragment from Temple XVIII and the stuccos may be the 9 Edznab 6 Chen date. According to the Martin and Skidmore correlation, an annular eclipse took place on this date.

¹⁸ In their work on the inscriptions of Palenque, Ringle and Smith-Stark (1996) revised Thompson's catalog, eliminating duplicates and adding numbers to account for new glyphs. The head variant under discussion was assigned T1105 (Ringle and Smith-Stark 1996:330). The same element is now designated T1736 by the Idiom Project (Prager et al. 2025).

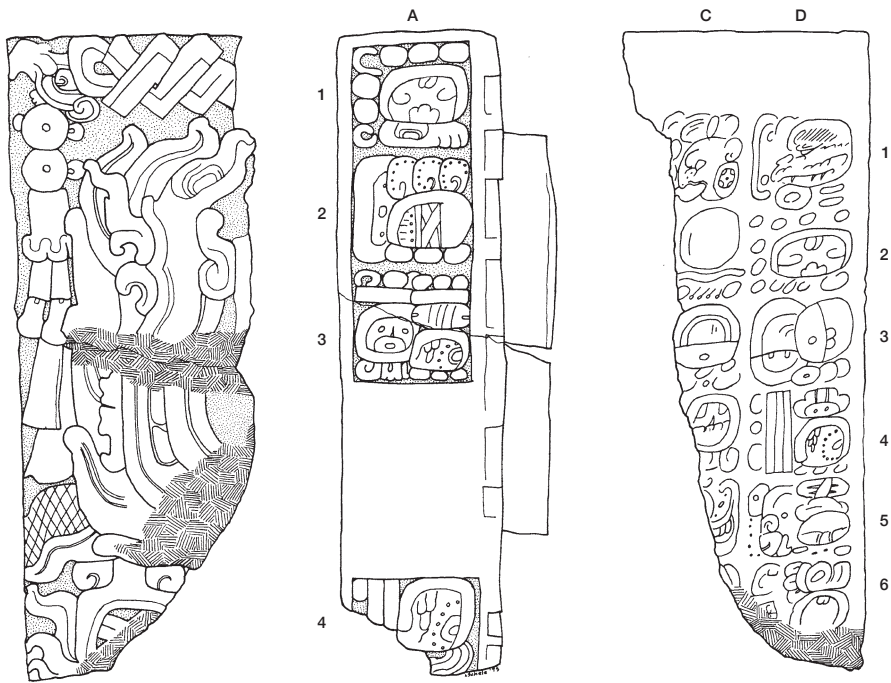


Figure 3. Incensario fragment excavated from TXVIII (Schele and Mathews 1979:B119).

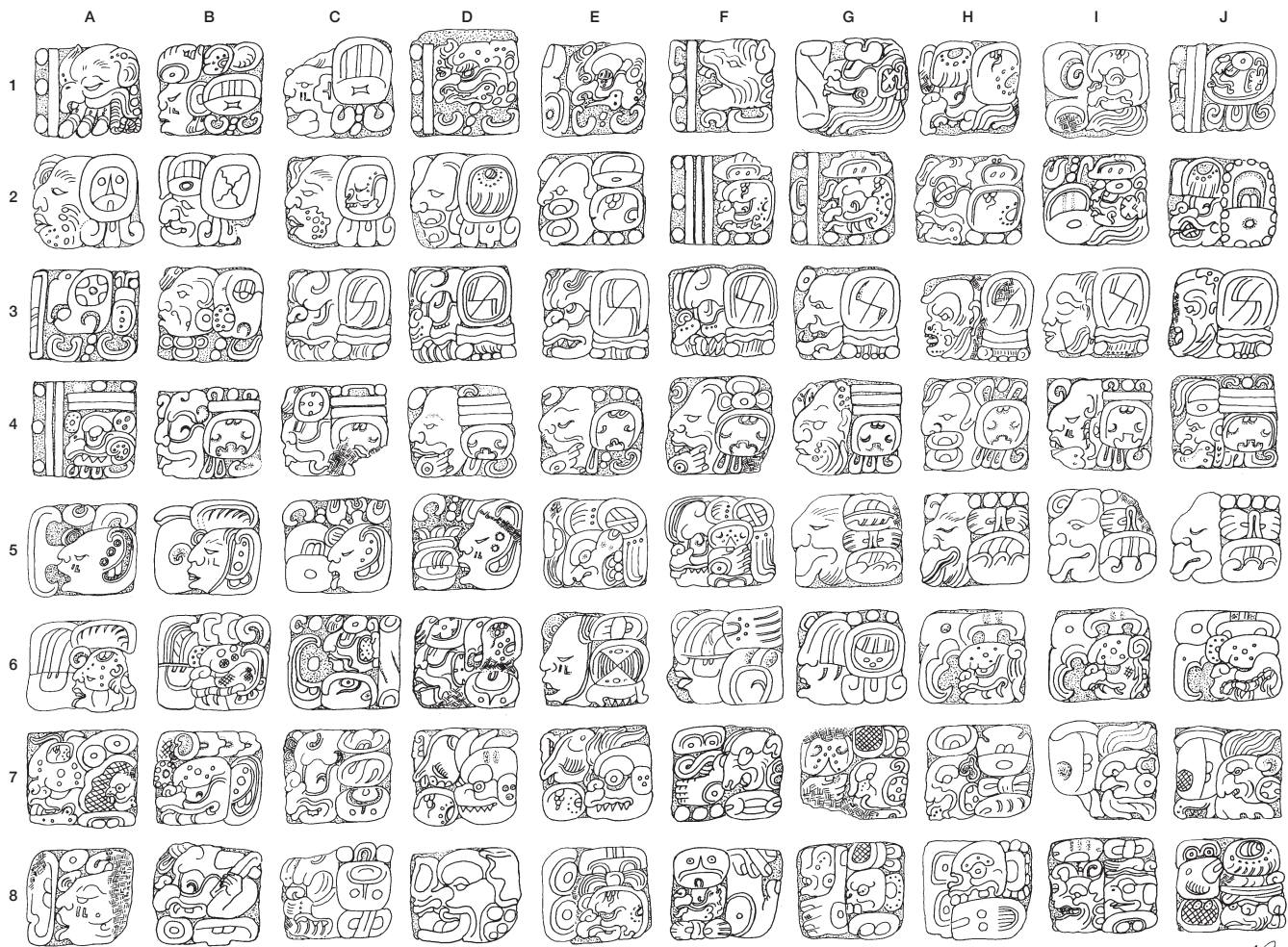


Figure 4. Instances of "two-celts" head variant from the TXVIII stuccos considered by Berlin: B436 [D2], B451 [E2], B513 [H4], and B440 [B3]]. Drawings by Merle Greene Robertson (1991:Pl. 275).

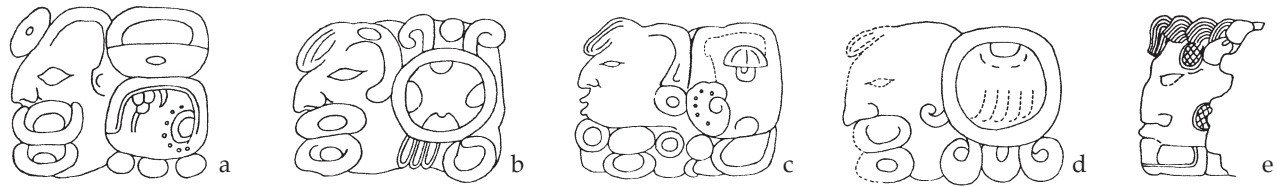


Figure 5. Berlin's illustration of the glyphs he considered before arriving at the determination of the value of eleven (Berlin 1944:20): (a) 6-IHK'-SIJOOM-ma, PAL T.XVIII stucco glyph, B451; (b) 6-1-WIN-ji[ya], PAL T.XVIII stucco glyph, B436; (c) sa-a-mi-ya, PAL T.XVIII stucco glyph, B440; (d) 6-'Imix,' PAL T.XVIII stucco glyph, B436; (e) 11[TE']-, Piedras Negras Panel 2, A6-B7.

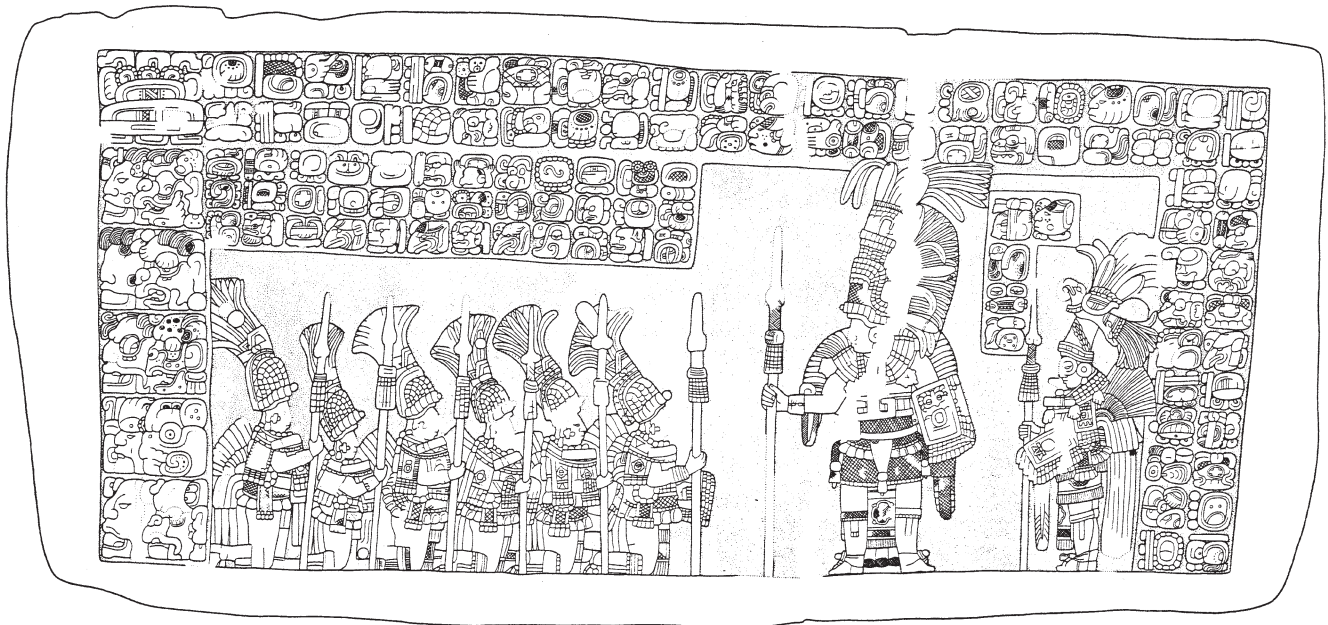


Figure 6. Initial series from Piedras Negras Panel 2. Drawing by David Stuart.

It was Berlin (1944:17-19) who first identified T1736 in four hieroglyphs from the Temple XVIII stuccos (B436, B451, B513, and B440) (Figures 4 and 5). He suggested that these were all variants of the number eleven based on their lack of similarity to other better-known head variant numbers, and due to a perceived similarity to the coefficient for eleven on the katun sign in the Long Count on Piedras Negras Panel 2 (Figure 6, A3a). Berlin later thought that he had confirmed this identification due to the infixed Caban element in B440 (Figure 4 B3) and Thompson's (1950:135) identification of this Caban element as diagnostic of the head variant of eleven (Fernández and Berlin 1954:40).

While Berlin had identified B440 as 11 Kayab, we now recognize it as the temporal adverb *sa-a-mi-ya*, *sa'miiy*, "earlier today."¹⁹ And as for the similarity with the 11 katun notation on Piedras Negras Panel 2, that is not a strong argument, as all of the coefficients in the initial series of Panel 2 (Figure 6) share the same infix in the mouth, representing the numerical classifier *TE'* (David Stuart, personal communication 2025). As such, both of the lines of evidence provided by Berlin for the "eleven" value are no longer tenable.

David Stuart (personal communication 2025) kindly pointed out another occurrence of T1736 in a distance number on Bonampak Sculptured Stone 1 (Figure 7). This inscription was previously discussed by Peter Mathews (1980), who arrived at the following calculation using the head variants at D1a and C2a as "8" and C1b as "11":

$$\begin{array}{r} 9.12.11.06.08 \quad 3 \text{ Lamat } 1 \text{ Zac } (4 \text{ Muluc } 2 \text{ Zac})^{20} \\ + \quad 8.11.12 \\ \hline 9.13.0.0.0 \quad 8 \text{ Ahau } (8 \text{ Uo}) \end{array}$$

¹⁹ David Stuart first recognized this term in two variant spellings at Palenque—*sa-mi-ya* on the Palace Tablet (Q10) and *sa-a-mi-ya* on B440—proposing that both had the meaning of "earlier today," referencing the first appearance of the moon (Stuart et al. 1999:35). In a later article, Stuart (2020) reviews the reading along with other short time counts found in Glyph D of the Lunar Series. More recently, Alfonso Lacadena and Albert Davletshin (2013:1) proposed the alternative transcription *sa'miiy* (2013:10). See also Ch'ol *sahm* 'today, part already past' (Attinasi 1973:312; <sa:m> in his orthography).

²⁰ Mathews addresses the one-day discrepancy as a scribal error in the distance number (Mathews 1980:72). The error affects both calculations equally.



Figure 7. Bonampak Sculptured Stone 1. Drawing by Peter Mathews.

In Marc Zender's (2014:Note 3) reanalysis on Bonampak Sculptured Stone 1, he came to the conclusion that the head variants at D1a and C2a represented not the Foliated Maize God (i.e., "8"), but rather the Tonsured Maize God (i.e., "1"). More recently, David Stuart (personal communication 2025) has also reassessed the inscription, this time incorporating the reconsideration of T1736 "6" proposed here.

9.09.18.11.08 3 Lamat 1 Zac (4 Muluc 2 Zac)
 + 1. 6.12
 9.10. 0. 0. 0 1 Ajaw (8 Kayab)

The revised value of T1736 as "6" secures the connection and narrative between the Temple XVIII stuccos and other artifacts excavated from the structure. It sets the stage for additional reconstructions and decipherments on the stucco panel. As one example, we can now propose that the dedication of the stone incensario stand—i.e., the *k'oj bah tuun* or 'image stone' (B404 and B510) (Stuart 2019), presumably the same one from the Temple of the Cross that highlights the life of Tiwohl Chan Mat—likely took place on 9.14.10.12.19 4 Cauac 17 Yaxkin.

Earlier this year, David Stuart (2025) presented on the concept of Temple XVIII as an ancient Maya oracular shrine, using B405 and B406 from the Temple XVIII stuccos to demonstrate the possibility of speech coming from the skull (or image) of Tiwohl Chan Mat. We may now also have the date of this event—9.14.12.14.18 9 Edznab 6 Chen—which was also recorded as the central event on the stone incensario fragment found in Temple XVIII (Ruz Lhuillier 1958).

Concluding Comments

There remain other dates and events yet to be placed in context. Many of these appear in the latter portions of the fallen stucco scatter, such as

the "earthquake" glyph (B439) previously isolated by David Stuart (2001; see also Zender 2010:10-12). There is potentially a reference to Chak Suutz', Palenque's famous eighth-century military commander (Martin 2008:173), with his banded bird title (B453). There is also a reference to *u-lu-k'u* "his stucco glyphs" (B454), followed by a *ba-* "head" banded bird title, and a reference to the *na-wa-ja* "display" (B446) of *u-wi-ni-BAAH* "his image" (B448), perhaps indicating that the stone incensario stand from the Temple of the Cross depicting Tiwohl Chan Mat was originally housed in the Temple XVIII shrine (David Stuart, personal communication 2025).²¹ Yet another collocation from the fallen stuccos describes the absence or taking of a god: *ma-cha-ja K'UH*, *machaj k'uh*, "there is/was no god" (B407) (see Helmke and Awe 2016:13-14).

This paper resulted from my participation in a BEARC workshop conducted by David Stuart early in 2024 that explored the fallen stuccos of Temple XVIII at Palenque. There are plans for a more expansive and detailed exploration of the TXVIII stucco text and a publication that will incorporate additional information beyond the scope of this paper and include the contributions of the other participants of the workshop. I am grateful to David Stuart, Joe Hamilton, and Charles Wortman for conceiving of this topic, and for the effort they extended in setting the stage for me and other participants of the workshop to approach the fallen plaster glyphs with some hope of discerning meaning. I am also grateful for the comments of the anonymous reviewers that encouraged further elaboration of the topic and more concise citations that greatly improved the final version.

²¹ Stuart (personal communication 2025) hypothesizes there were two similar stone incensario stands once displayed in Temple XVIII.

References

- Anderson, Warren
1999-2025 Chac Calendar Application, version 2.11.12. Available: www.chacapp.com/Chac.html
- Attinasi, John
1973 Lak T'an: A Grammar of the Chol (Mayan) Word. Ph.D. dissertation, Department of Anthropology, University of Chicago.
- Berlin, Heinrich
1944 A Tentative Identification of the Head Variant for Eleven. *Notes on Middle American Archaeology and Ethnology* 2(33):16-20. Carnegie Institution of Washington, Cambridge, MA.
1985 Edificio XVIII. In *Palenque 1926-1945*, compiled by Roberto García Moll, pp. 313-329. Instituto Nacional de Antropología e Historia, Mexico City.
- Blom, Franz, and Oliver La Farge
1926 *Tribes and Temples: A Record of the Expedition to Middle America Conducted by the Tulane University of Louisiana in 1925*, Volume 1 (of 2). Tulane University, New Orleans.
- Fernández, Miguel Angel, and Heinrich Berlin
1954 *Drawings of Glyphs of Structure XVIII, Palenque*. Notes of Middle American Archaeology and Ethnology, No. 119. Carnegie Institution of Washington, Cambridge, MA.
- García Moll, Roberto
1985 *Palenque 1926-1945*. Instituto Nacional de Antropología e Historia, Mexico City.
- Helmke, Christophe, and Jaime Awe
2016 Sharper than a Serpent's Tooth: A Tale of the Snake-head Dynasty as Recounted on Xunantunich Panel 4. *The PARI Journal* 17(2):1-22.
- Lacadena, Alfonso, and Albert Davletshin
2013 *Grammar of Hieroglyphic Maya*. Compendium for Advanced Workshop, 18th European Maya Conference, Brussels, October 29-31.
- Mathews, Peter
1980 Notes on the Dynastic Sequence of Bonampak, Part 1. In *Third Palenque Round Table, 1978, Part 2*, edited by Merle Greene Robertson, pp. 60-73. University of Texas Press, Austin.
- Martin, Simon, and Nikolai Grube
2008 *Chronicle of the Maya Kings and Queens: Deciphering the Dynasties of the Ancient Maya*. Rev. ed. Thames and Hudson, London.
- Martin, Simon, and Joel Skidmore
2012 Exploring the 584286 Correlation between the Maya and European Calendars. *The PARI Journal* 13(2):3-16.
- Prager, Christian, Elisabeth Wagner, Guido Krempel, Tobias Mercer, and Nikolai Grube
2025 A Digital Catalog of Maya Hieroglyphs. *Textdatenbank und Wörterbuch des Klassischen Maya*, Working Paper 5, August 1. Available: classicmayan.org
- Ringle, William M.
1996 Birds of a Feather: The Fallen Stucco Inscription of Temple XVIII, Palenque, Chiapas. In *Eighth Palenque Round Table, 1993*, edited by Merle Greene Robertson, Martha J. Macri, and Jan McHargue, pp. 45-61. Pre-Columbian Art Research Institute, San Francisco.
- Ringle, William M., and Thomas C. Smith-Stark
1996 *A Concordance to the Inscriptions of Palenque, Chiapas, Mexico*. Publication 62. Middle American Research Institute, Tulane University, New Orleans.
- Robertson, Merle Greene
1991 *The Sculpture of Palenque, Volume IV: The Cross Group, the North Group, the Olvidado, and Other Pieces*. Princeton University Press, Princeton.
- Ruz Lhullier, Alberto
1958 Exploraciones arqueológicas en Palenque: 1954. *Anales del Instituto Nacional de Antropología e Historia* 10(39):117-184.
- Schele, Linda, and Peter Mathews
1979 *The Bodega of Palenque, Chiapas, Mexico*. Dumbarton Oaks, Washington, D.C.
- Stuart, David
2001 Earthquake! *Mesoweb*: www.mesoweb.com/stuart/notes/Earthquake.pdf.
2005 *The Inscriptions from Temple XIX at Palenque: A Commentary*. Pre-Columbian Art Research Institute, San Francisco.
2019 A Possible Logogram for K'OJ or K'OJOB, "Mask, Image". Visual notes for a paper on a possible decipherment. Available: www.academia.edu/43840788/
2020 Yesterday's Moon: A Decipherment of the Classic Mayan Adverb ak'biiy. *Maya Decipherment*: mayadecipherment.com/2020/08/01/
2023 A Puzzle in Plaster: The Inscription of Temple XVIII at Palenque, Mexico. Paper presented at the Boundary End Archaeological Research Center, November 28, 2023. Available: www.youtube.com/watch?v=kX8RZ8T7hJw
2024 A New Drawing of the Inscription on the Cross Censer Stand from Palenque. *Maya Decipherment*: mayadecipherment.com/2024/03/16/
2025 Receiving the Words of the Dead: Palenque's Temple XVIII as an Ancient Maya Oracular Shrine. Paper presented at the symposium "Lineage and Ancestry: Power in the Past," The Mesoamerica Center, University of Texas at Austin.
- Stuart, David, Stephen Houston, and John Robertson
1999 Recovering the Past: Classic Mayan Language and Classic Maya Gods. In *Notebook for the XXIIIrd Maya Hieroglyphic Forum at Texas, March, 1999*, pt. 2. Department of Art and Art History, College of Fine Arts; Institute of Latin American Studies, University of Texas, Austin.
- Stuart, David, and George Stuart
2008 *Palenque: Eternal City of the Maya*. Thames and Hudson, London.
- Thompson, J. Eric S.
1950 *Maya Hieroglyphic Writing: Introduction*. Publication 589. Carnegie Institution of Washington, Washington, D.C.
- Zender, Marc
2004 *A Study of Classic Maya Priesthood*. Ph.D. dissertation, Department of Archaeology, University of Calgary.
2007 A Concordance of the Palenque Temple 18 Stucco Glyphs. *Mesoweb*: www.mesoweb.com/palenque/monuments/T18S/Palenque-T18S-Concordance.pdf
2010 Baj "Hammer" and Related Affective Verbs in Classic Mayan. *The PARI Journal* 11(2):1-16.
2014 On the Reading of Three Classic Maya Portrait Glyphs. *The PARI Journal* 15(2):1-14.
- Zender, Marc, Markus Eberl, and Mary Kate Kelly
2025 The Fallen Stucco Inscriptions of Comalcalco & Palenque. Paper presented at the 19th Annual Tulane Maya Symposium, March 23, Tulane University, New Orleans.



Palenque Temple XVIII Jams, glyphs A13–B17 (rubbing by Merle Greene Robertson).