



The PARI Journal

A quarterly publication of the Ancient Cultures Institute
Volume XIX, No. 4, Spring 2019

In This Issue:

The Lord of Yellow Tree: A New Reference to a Minor Polity on Sacul Stela 9

by
Nicholas Carter and
Lauren Santini

PAGES 1-9



Sighting a Royal Vehicle: Observations on the Graffiti of Tulix Mul, Belize

by
Christophe Helmke,
Gail Hammond,
Thomas Guderjan,
Pieta Greaves, and
Colleen Hanratty

PAGES 10-30

Marc Zender
Editor
marc@ancientcultures.org

Joel Skidmore
Associate Editor
joel@ancientcultures.org

The PARI Journal
202 Edgewood Avenue
San Francisco, CA 94117
415-664-8889
journal@ancientcultures.org

Electronic version
available at:
www.precolumbia.org/
pari/journal/1904

ISSN 1531-5398

The Lord of Yellow Tree: A New Reference To a Minor Polity on Sacul Stela 9

NICHOLAS CARTER
LAUREN SANTINI

Stela 9 at the site of Sacul 1, Guatemala (9.18.0.0.0, October 12, AD 790) depicts a local ruler, K'iyel Janab, standing above a bound captive. Ian Graham took photographs and made field sketches of the monument in 1970 (Mayer 1990:1). Graham's photographs (Figure 3) show an emblem glyph in the hieroglyphic caption beside the prisoner. A number of internal details of signs in the emblem glyph are visible in the photographs, and recent examination of the monument at night under raking light confirmed their survival. However, some of those details were not included in Graham's unpublished field sketch, and as a result do not appear in published line drawings made from it (e.g., Houston 1984:Fig. 6; Laporte et al. 2006:Fig. 12). With the missing details restored, the emblem glyph in question can be read as *k'ante' ajaw*, "Lord of Yellow Tree," a title not previously attested in the hieroglyphic corpus. The reading adds to the epigraphic evidence for warfare and an increase in the number of royal titles among the polities of the western Maya Mountains at the end of the eighth century.

Background

During the eighth century AD, the site of Sacul 1 ("Sacul") was the capital of the Juluup kingdom, one of several Late Classic polities in the region of present-day Dolores, Peten, Guatemala (Figures 1 and 2). Although decades of work by the Atlas Arqueológico de Guatemala have produced extensive survey data and stratigraphic and ceramic chronologies for the western Maya Mountains, the paucity of local hieroglyphic texts before the late

seventh century means that the early political history of the Juluup dynasty remains obscure. The earliest hieroglyphic text at Sacul 1, on Stela 1, dates to AD 761. It describes its patron, K'iyel Janab, as "fourth in the lordship," perhaps placing the foundation of the Juluup line around 700 (Carter 2016:242). Such a foundational date would substantially postdate the earliest formal plaza floors at Sacul 1, which belong to the Early Classic period, and also a sixth-century ritual deposit of hundreds of ceramic vessels and incense burners in Plaza D (Laporte and Mejía 2006:25, 102, 122-123, 325), but it would be consistent with the Late Classic date of the bulk of the monumental architecture at the site (Laporte et al. 1992).

Mid-eighth-century predecessors or contemporaries of K'iyel Janab are named in painted texts at the cave of Naj Tunich, which they visited in the company of lords from polities including Calakmul, Caracol, Ixtutz, and the unlocated site of Baax Tuun (Garrison and Stuart 2004; MacLeod and Stone 1990; Tokovinine 2013). Recently recognized by Barbara MacLeod (n.d.), lords from Huacutal and Ucanal also made pilgrimages to the cave. K'iyel Janab himself may have taken office in 760, when, according to Sacul Stela 4, he received a ritual palanquin from the Ucanal king Itzamnaaj Bahlam II. The gift highlights the Juluup lord's subordinate status, which persisted to as late as 779. In that year, K'iyel Janab sponsored a vassal of his own, transforming the minor site of Ixkun into a capital suitable for the new subject king—a move which evidently provoked a raid on Sacul by Ucanal (Carter 2016:244-247). In the war that



0 25 50 km

Figure 1. The western Maya Mountains in the Maya region. Map courtesy of Precolumbia Mesoweb Press.



GULF OF MEXICO

CARIBBEAN SEA

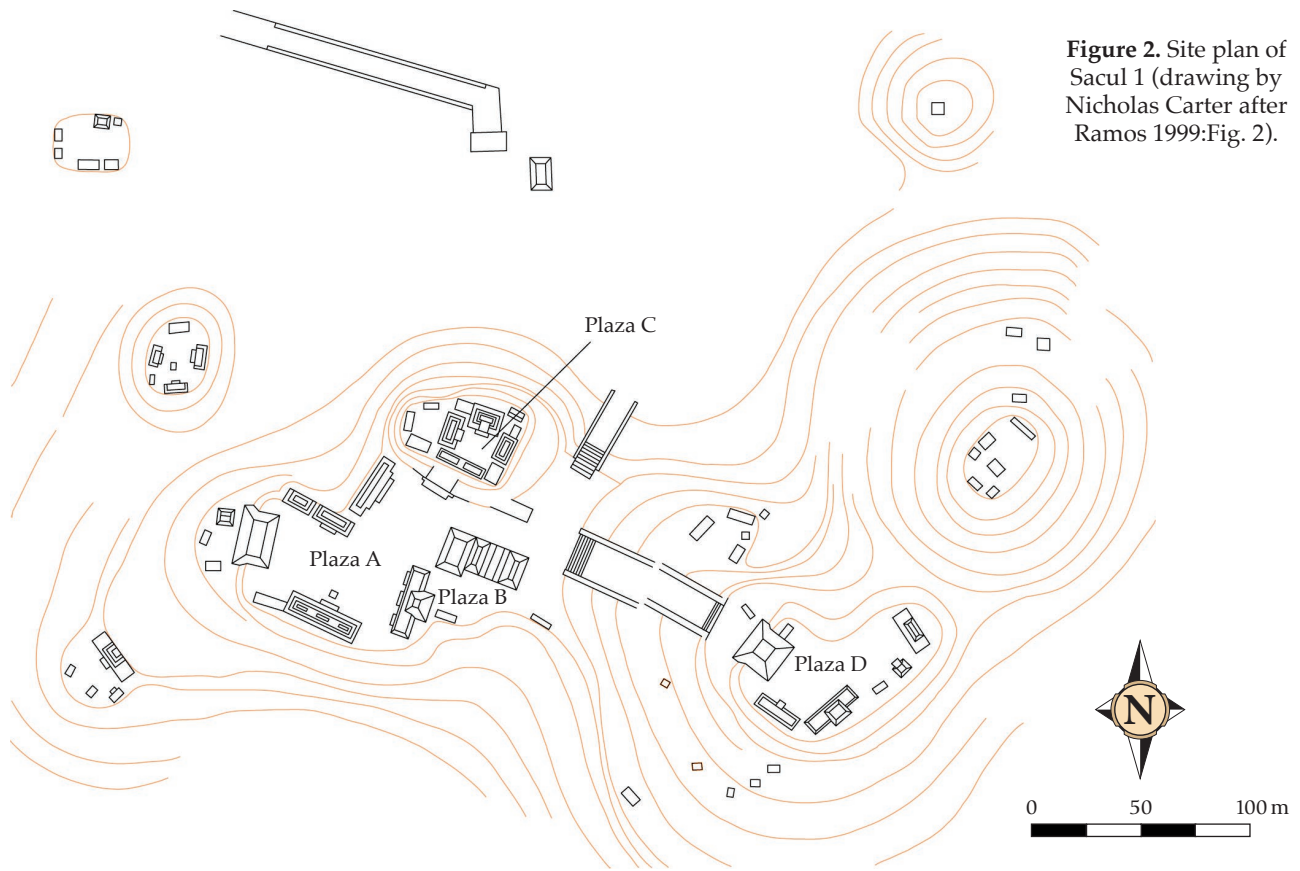
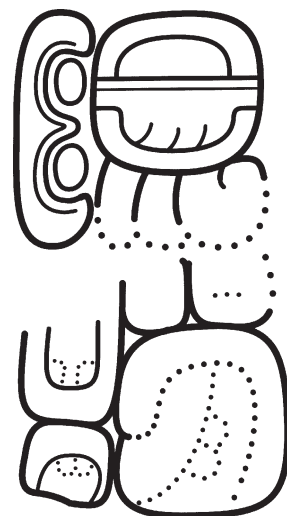
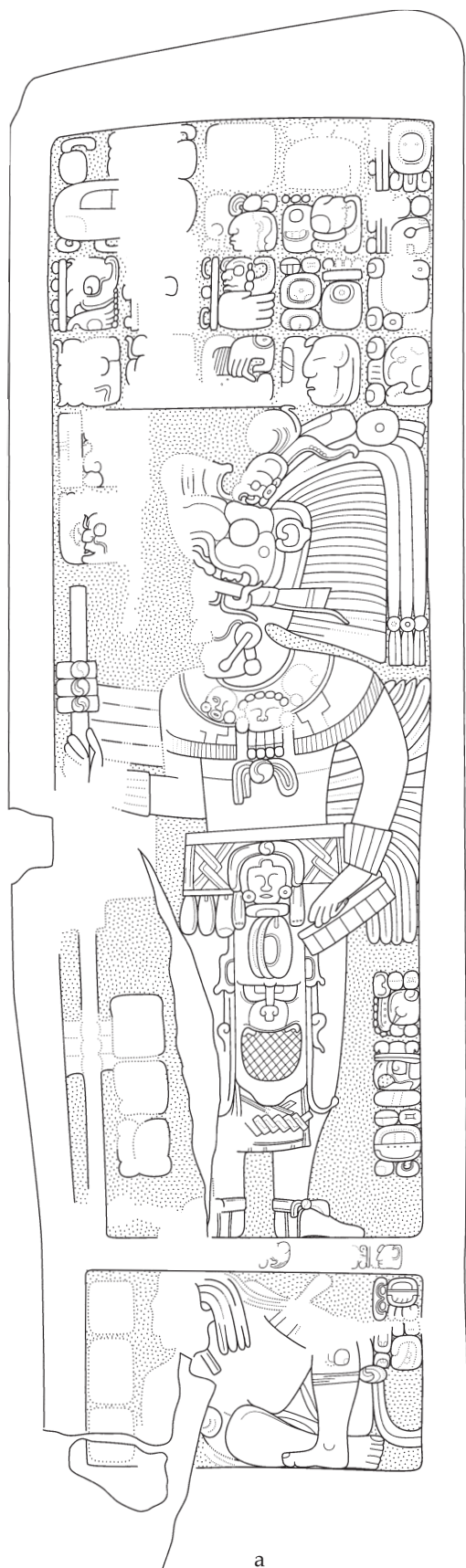


Figure 2. Site plan of Sacul 1 (drawing by Nicholas Carter after Ramos 1999:Fig. 2).



Figure 3. Photograph of Fragment 5 of Sacul Stela 9, by Ian Graham. Gift of Ian Graham, 2004 © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology, PM# 2004.15.1.1082.1.



b

Figure 4. (a) Sacul Stela 9, front (drawing by Nicholas Carter after photographs and field sketches by himself and Ian Graham); (b) detail of the caption on Stela 9, Fragment 5, reading U-CHAN-nu K'AN-na-TE'-AJAW.

followed, K'iyel Janab first attacked a subject town of Ucanal, then Ucanal itself, emerging as the victor after a raid on that site on February 11, 780. Both K'iyel Janab and his vassal Yuklaj Chan Ahk of Ixkun were still in power in 790, when Ixkun Stela 1 and probably its companion piece, the eroded Stela 2 at Sacul, were commissioned. Ixkun Stela 1 shows the two rulers standing above a pair of captives, one of whom bears the title *k'ahk' ajaw* ("Fire Lord"), which served as a secondary emblem glyph or alternative royal title for the kings of Ixtutz.

Sacul Stela 9

Sacul Stela 9 (Figure 4a) is a limestone monument, originally 3.6 m tall by 95 cm wide and 45 cm thick, carved in relief on its front surface (Mayer 1990:4). The stela fell forward or was broken in antiquity, fracturing the lower panel into two large pieces (Fragments 4 and 5, per Mayer 1990:4) and knocking off two additional pieces (Fragments 2 and 3) from the left side of the fragments from the upper panel. The glyphs and details on Fragments 2 and 4 are badly eroded, but the rest of the monument (Fragment 1) is in relatively good condition. At present, Fragment 1 lies in Plaza A under a thatched ramada, roughly where it fell, with the remaining pieces collected under another ramada some meters away.

Approximately the upper four-fifths of the monument (Fragments 1, 2, and 3) show K'iyel Janab holding a ritual fire-drilling staff and a small shield, wearing a jaguar-head headdress adorned with feathers, and with a ritual dance belt and apron of the type used in period-ending rituals around his waist. Above him is a hieroglyphic text of 19 glyph blocks, mainly giving calendrical information, and there are two columns of three glyph blocks to either side of his legs. The left column, on Fragment 3, cannot be read, but it must have contained the king's name, since his titles continue in the right column. These are the standard Sacul emblem glyph (*k'uhul juluup ajaw*, "holy Juluup lord"), an undeciphered elite title depicting the head of a predatory bird (see Stuart 2005:134-136), and a secondary emblem glyph (*k'uhul chan ajaw*, "holy Sky lord") also attested at Salinas de los Nueve Cerros and San Luis Pueblito (Carter 2016:239; Wölfel and Wagner 2010).

In a panel below the king sits a bound prisoner, slumped to one side. The captive is identified by a single glyph block, now much eroded, on his upraised leg. To his left, on Fragment 4, are three glyph blocks in relief, eroded to illegibility, and to his right, on Fragment 5, we find the expression U-CHAN-nu K'AN-na-TE'-AJAW, *u chan k'ante' ajaw*, "the captor of the K'ante' lord" (Figures 3 and 4b).

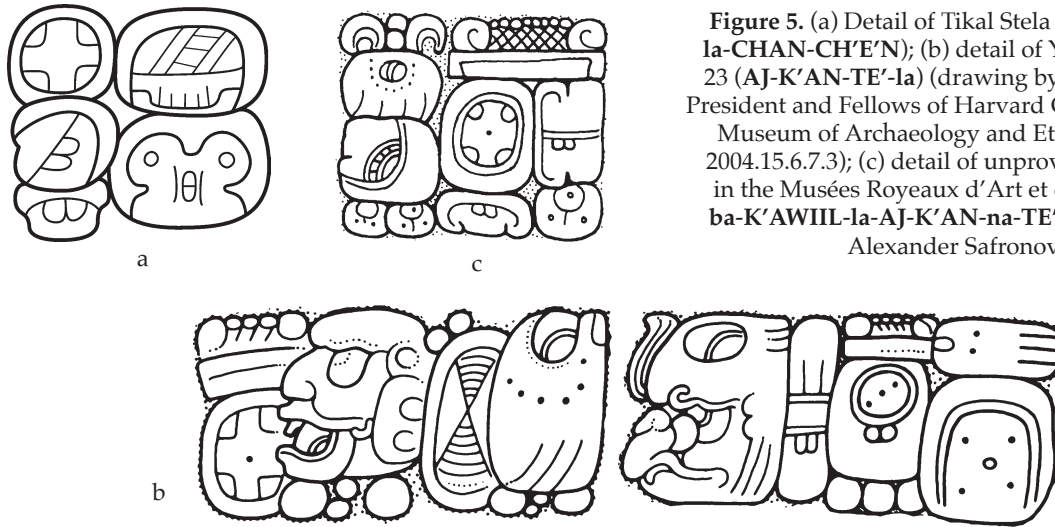


Figure 5. (a) Detail of Tikal Stela 31 (K'AN-TE'-la-CHAN-CH'E'N); (b) detail of Yaxchilan Lintel 23 (AJ-K'AN-TE'-la) (drawing by Ian Graham © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology, PM# 2004.15.6.7.3); (c) detail of unprovenanced panel in the Musées Royeaux d'Art et d'Histoire (ya-ba-K'AWIIL-la-AJ-K'AN-na-TE'-la; drawing © Alexander Safronov).

Botanical identifications of *k'ante'*

K'an te' ("yellow tree") denotes a cultural category of trees whose species reference varies across languages. It joins other trees named in the hieroglyphic corpus after the basic colors of the ancient Maya palette: *sak te'* ("white tree," as in *sak te' ajaw*, a title mentioned at Copan and La Corona; Callaway 2011:102; Gronemeyer 2016:90), *chak te'* ("red tree," on page 33 of the Dresden Codex), *ihk' te'* ("black tree," on page 34 of the Dresden Codex, perhaps a kind of oak; see Ch'orti' *ik'ar te'* [Wisdom 1950] and Ch'ol *ic'te'* [Aulie and Aulie 1998:45]), and *yax te'* ("blue/green tree" or "first tree," the ceiba, on page 15 of the Paris Codex). A similar but probably unrelated Yucatec word, *k'anche'*, refers to benches of any kind of wood (Barrera Vázquez et al. 1980:376).

In Ch'orti', *k'ante'* ("yellow tree") names *Gliricidia sepium*, commonly known as *madre cacao* (Pérez Martínez 1994:50). The term is shared with highland Mayan languages including K'ichee' and Q'eqchi', where *q'an te'* and *k'ante'*, respectively, name the same tree (Christenson 2003:143). In a practice with longstanding roots in Mesoamerica, *G. sepium* is planted in cacao (*Theobroma cacao*) orchards to provide shade for the cacao trees and because the roots host nitrogen-fixing bacteria that repair the soil (Aguirre de Riojas and Pöll 2007; Parker 2008). *K'ante'* in Colonial Yucatec denoted both a post or standard used in certain rituals (Tozzer 1941:141) and a kind of tree from whose roots a yellow dye was made (Ciudad Real 2001:326). The latter is probably the coral tree, *Erythrina berteroana*, which is called *k'ante'* in modern Lacandon and put to the same use (Cook 2016:178). Estella Weiss-Krejci (2012) raised the possibility that *k'ante'* was a term for the allspice tree (*Pimenta dioica*) in Classic Mayan, based in part on the resemblance between cut sections of that tree's trunk and the Maya logogram K'AN, "yellow," "precious,"

"ripe." The few scattered references to *k'ante'* in the hieroglyphic corpus do not clarify the species of tree indicated, while a Postclassic depiction of a *k'ante'*, on page 31 of the Dresden Codex, lacks details that might aid in species identification.

K'ante' in the Hieroglyphic Record

Besides Sacul Stela 9, at least three Classic monuments refer to places whose names include *k'ante'*, none of them firmly identified with a known site. The earliest, Tikal Stela 31 (AD 445), records that the Tikal ruler Chak Took Ich'aak celebrated the 8.17.0.0.0 *k'atun* ending of AD 376 at "the town of K'ante'el" (*k'ante'el chan ch'e'n*) (Figure 5a). Presumably this K'ante'el, a "place of yellow trees," was in or near Tikal, and Nikolai Grube suggested that it corresponds to the Mundo Perdido complex (Boot 2001:201). Two other references come from the Usumacinta River region. Yaxchilan Lintel 23 (714) mentions a *sajal*, on good terms with Yaxchilan, who was a "man from K'ante'el" (*aj k'ante'el*) (Figure 5b). He probably hailed from a second K'ante'el in the neighborhood of Yaxchilan, not from the area of Tikal. An unprovenanced panel in the Musées Royeaux d'Art et d'Histoire in Brussels, probably from the enigmatic Sak Tz'i' kingdom, records the capture and arraignment of another "man from K'ante'el" (Figure 5c) (Beliaev and Safronov 2004). This lord, one Yab K'awiil, was taken together with a king of the Ak'e' dynasty, in AD 693, and his hometown could well be the same K'ante'el named on Yaxchilan Lintel 23.

The only hieroglyphic mention known to us of a polity or ruling family called simply *k'ante'*, as opposed to the derived toponyms discussed above, is the one on Sacul Stela 9. This suggests that K'ante' was a minor dynasty indeed, based somewhere in the vicinity of Sacul. With

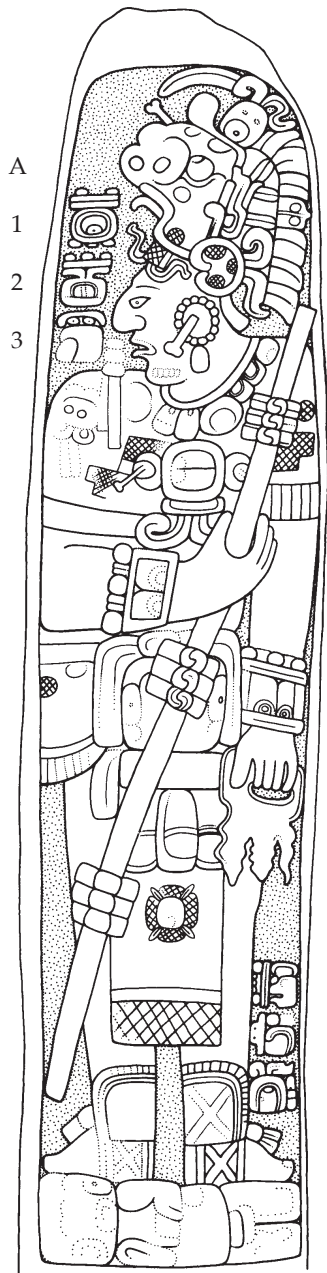
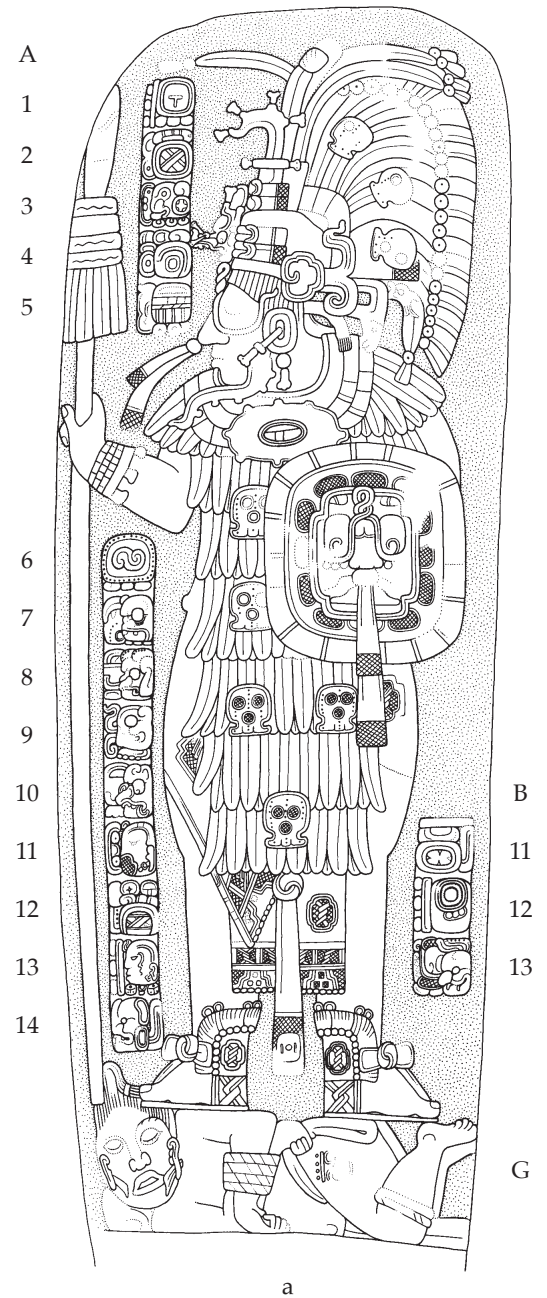


Figure 6. Naranjo Stela 33, front (drawing by Ian Graham, © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology, PM# 2004.15.6.3.15).

only this one reference, however, we cannot identify their dynastic seat, nor even say who the “K’ante’ lord” referenced on the monument was. Two possibilities present themselves. One is that since the name of the prisoner is written on his body, it may not be duplicated in the relief hieroglyphs beside him. In other words, “the captor of the K’ante’ lord” could be K’iyel Janab or an ally of his, in which case the K’ante’ lord himself should be either the captive on the stela or some previous victim. Alternatively, *u chan k’ante’ ajaw* might be a title belonging to the prisoner, in which case the single glyph block on his leg would record his personal name or an abbreviated form of his name phrase. Precedent for that possibility would come, for instance, from Step III of Hieroglyphic Stairway 3 from Yaxchilan. There, the main inscription records the capture of a warrior described as *u baah ti aj ?mook huk chapaht meen* in the main inscription, apparently a reference to his impersonation of the Sun God, but called simply *aj ?mook baak* (“Aj ?Mook, the captive”) in a caption on his loincloth (Graham 1982:169; the reading ?MOOK for T533 comes from work by Barbara MacLeod and Luis Lopes, cited in Vail and Macri 2012:47, buttressed by Yuriy Polyukhovych 2015).

The Iconography of Sacul Stela 9 and Related Monuments

The iconography of Sacul Stela 9 closely resembles that of Stela 33 at Naranjo (Figure 6), which was dedicated ten years earlier, in 780, by the ruler K’ahk’ U Kalaw Chan Chahk (Mitchell 2016:60). Likewise, another of K’iyel Janab’s monuments, Stela 6, is remarkably similar to Naranjo Stelae 11 and 21 (Figure 7). Those latter three stelae all



show their sites’ respective kings standing above bound prisoners (virtually destroyed on the Sacul monument), holding spears or staves and carrying shields with the face of the Jaguar God of the Underworld. Their facial ornaments make further reference to the Jaguar God of the Underworld: a twisted rope worn over the bridge of the nose; trailing cheek barbels or whiskers; and a tasseled bead hung from the septa of the kings on all three monuments, and from the nose of the Jaguar God shield on Naranjo Stela 11. In all three cases, long, feathered robes and tall,



plumed headdresses with trilobate ornaments complete the costume.

Both Sacul Stela 9 and Naranjo Stela 33 were erected for period endings in the Long Count. By contrast, short texts on the three other stelae describe military conquests not tied to such calendrical stations. Naranjo Stela 21 commemorates K'ahk' Tiliw Chan Chahk "in the act of entering the cave of Yootz" (*ubaah ti ochch'e'n yootz*), marking his invasion of that site on 8 Ik seating of Zip (9.13.14.4.2, March 29, AD 706; see Martin and Grube 2008:76). Sacul Stela 6 tells us that someone "arrived" (*huli*) on 1 Muluc 17 Uo (9.17.9.4.9, March 7, 780). The verb refers either to K'iyel Janab's invasion of another

Figure 7. (a) Naranjo Stela 21, front (drawing by Ian Graham, © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology, PM# 2004.15.6.2.37); (b) Sacul Stela 6, front (drawing by Nicholas Carter after a field sketch by Ian Graham); (c) Naranjo Stela 11, front (drawing by Ian Graham, © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology, PM# 2004.15.6.2.19).

town, or to the arrival at Sacul of a prisoner brought back for ransom or sacrifice. The date of the event falls less than a month after Sacul's raid on Ucanal, and an eroded emblem glyph in the lower panel whose surviving details resemble those of the Ho'kab title used at Ixtutz could indicate a successful attack on that site as part of the same conflict. Finally, Naranjo Stela 11 records a "land-burning" (*pulkab*) inflicted on some rival center on 6 Ben 6 Kankin (9.18.13.3.13, October 17, 803).

Taken together, these two sets of stelae point to a shared set of ideas about martial and calendrical ritual common to Naranjo and Sacul in the eighth century. For both types of monuments, Naranjo appears as the innovator, with K'iyel Janab either commissioning his own sculptors to imitate works at Naranjo, or, in another intriguing possibility, receiving aid in kind from Naranjo's court. In either case, it is evident that, following his declaration of independence from Ucanal, K'iyel Janab used Naranjo-style art and sacred war to assert his power in the western Maya Mountains.

Discussion

Extensive agriculture, growing populations, and decades of archaeological survey in the western Maya Mountains and adjoining areas by the Atlas Arqueológico de Guatemala mean that the home of the K'ante' lords is more than likely known to archaeology—but not by its ancient name. Its identification, if it ever comes, will have to await the discovery of some new inscription. At present, we can say little more than that K'ante' takes its place among a number of minor political entities of varying scale acknowledged in the Late Classic inscriptions of the Maya Mountains. Among these are a Yaxa' ("Blue/Green Water" or "First Rain") dynasty, involved with Caracol and distinct from the ruling family of the well-known site of Yaxha', as well as a dynasty called Jut', also affiliated with Caracol, both named in paintings at Naj Tunich (MacLeod n.d.). References on stone monuments include the undeciphered emblem glyph of Yuklaj Chan Ahk's mother, on Ixkun Stela 1.

Minor dynasties like these played secondary but still significant roles in the negotiations and conflicts of the late seventh and eighth centuries, providing more powerful rulers with marriage partners, vassals, and courtiers. Their appearance in the hieroglyphic record coincides with the proliferation of sub-royal noble titles throughout the southern Maya lowlands at the end of the Late Classic period, a time of political fragmentation and increasing warfare in many regions (Houston and Inomata 2009:171-172; Jackson 2005:173-175). Here, whether or not it denotes the captive shown on Sacul Stela 9, the emblem glyph on Fragment 5 indicates that the K'ante' polity was involved in conflicts of this kind in the western Maya Mountains during a period when Sacul was newly independent from Ucanal and involved in some way with Naranjo.

References

- Aguirre de Riojas, Regina, and Elfriede de Pöll
2007 *Trees in the Life of the Maya World*. Botanical Research Institute of Texas Press, Fort Worth.
- Aulie, H. Wilbur, and Evelyn W. de Aulie
1998 *Diccionario ch'ol-español de Tumbalá, Chiapas, con variaciones dialectales de Tila y Sabanilla*, edited by Emily F. Scharfe de Stairs. Electronic edition available: www.mexico.sil.org/es/recursos/archives/35328. Accessed March 6, 2018.
- Barrera Vásquez, Alfredo, Juan Ramón Bastarrachea Manzano, William Brito Sansores, Refugio Vermont Salas, David Dzul Góngora, and Domingo Dzul Poot
1980 *Diccionario maya Cordemex: maya-español, español-maya*. Ediciones Cordemex, Mérida.
- Beliaev, Dmitri, and Alexandr Safronov
2004 Ak'e y Xukulnah: istoria y politiceskaia geografia gosouudarstv maia Vernhei Usumasinty. *Mesoamerica*. Electronic document, accessed February 23, 2018. mesoamerica.ru/indians/maya/ake.html
- Boot, Erik
2001 *Continuity and Change in Text and Image at Chichén Itzá, Yucatán, Mexico: A Study of the Inscriptions, Iconography, and Architecture at a Late Classic to Early Postclassic Maya Site*. CNWS Publications, Leiden.
- Callaway, Carl
2011 *A Catalogue of Maya Day Era Inscriptions*. Ph.D. dissertation, La Trobe University, Bundoora.
- Carter, Nicholas
2016 *These Are Our Mountains Now: Statecraft and the Foundation of a Late Classic Maya Royal Court*. *Ancient Mesoamerica* 27(2):233-253.
- Christenson, Allen
2003 *Popol Vuh: The Sacred Book of the Maya*. University of Oklahoma Press, Norman.
- Ciudad Real, Antonio de
2001 *Calepino maya de Motul*, edited by René Acuña. Plaza y Valdés, Mexico.
- Cook, Suzanne
2016 *The Forest of the Lacandon Maya: An Ethnobotanical Guide*. Springer, New York.
- Garrison, Thomas G., and David Stuart
2004 *Un análisis preliminar de las inscripciones que se relacionan con Xultun, Petén, Guatemala*. In *XVII Simposio de Investigaciones Arqueológicas en Guatemala, 2003*, edited by Juan Pedro Laporte, Bárbara Arroyo, Héctor Escobedo, and Héctor Mejía, pp. 829-842. Ministerio de Cultura y Deportes, Instituto de Antropología e Historia, and Asociación Tikal, Guatemala.

- Graham, Ian
1982 *Corpus of Maya Hieroglyphic Inscriptions, Volume 3, Part 3: Yaxchilan*. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge.
- Gronemeyer, Sven
2016 The Linguistics of Toponymy in Maya Hieroglyphic Writing. In *Places of Power and Memory in Mesoamerica's Past and Present*, edited by Daniel Graña-Behrens, pp. 85-122. Gebr. Mann Verlag, Berlin.
- Houston, Stephen D.
1984 An Example of Homophony in Maya Script. *American Antiquity* 49(4):790-805.
- Laporte, Juan Pedro, and Héctor Mejía
2006 *Sacul, Petén, Guatemala: exploraciones en una entidad política de las Montañas Mayas, 1985–2006*. Atlas Arqueológico de Guatemala; Dirección General del Patrimonio Natural y Cultural, Ministerio de Cultura y Deportes, Guatemala.
- Laporte, Juan Pedro, and Héctor Mejía, with the collaboration of Héctor L. Escobedo and Phil Wanyerka
2006 Los monumentos esculpidos de Sacul y algunos aspectos históricos del sitio. In *Sacul, Petén, Guatemala: exploraciones en una entidad política de las Montañas Mayas, 1985–2006*, by Juan Pedro Laporte and Héctor Mejía, pp. 220-275. Atlas Arqueológico de Guatemala, Dirección General del Patrimonio Natural y Cultural, Ministerio de Cultura y Deportes, Guatemala.
- Laporte, Juan Pedro, Ronaldo Torres, Héctor Escobedo, and Paulino Morales
1992 El valle de Sacul en las Montañas Mayas. In *IV Simposio de Investigaciones Arqueológicas en Guatemala, 1990*, edited by Juan Pedro Laporte, Héctor Escobedo, and Sandra Villagrán de Brady, pp. 107-118. Museo Nacional de Arqueología y Etnología, Guatemala.
- MacLeod, Barbara.
n.d. Celebrations in the Heart of the Mountain. *Bulletin of the Association for Mexican Cave Studies*, in press.
- MacLeod, Barbara, and Andrea Stone
1990 The Hieroglyphic Inscriptions of Naj Tunich. In *Images from the Underworld: Naj Tunich and the Tradition of Maya Cave Painting*, by Andrea Stone, pp. 155-184. 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*. 2nd ed. Thames and Hudson, New York.
- Mayer, Karl Herbert
1990 *The Stelae and Inscriptions of Sacul, Guatemala*. Mexican Occasional Publications 1. Verlag von Flemming, Berlin.
- Mitchell, Spencer T.
2016 Visual Communications of Power: The Iconography of the Classic Maya Naranjo-Sa'al Polity. M.A. thesis, Texas Tech University, Lubbock.
- Parker, Tracey
2008 *Trees of Guatemala*. The Tree Press, Austin.
- Pérez Martínez, Vitalino
1994 *Gramática del idioma ch'orti*. Proyecto Lingüístico "Francisco Marroquín," Antigua.
- Polyukhovych, Yuriy
2015 A Possible Phonetic Substitution for T533 or "Ajaw Face." *Glyph Dwellers* 33. Available: glyphdwellers.com/pdf/R33.pdf
- Ramos, Carmen E.
1999 Excavaciones en la Plaza C de Sacul 1, Dolores, Petén. In *XII Simposio de Investigaciones Arqueológicas en Guatemala, 1998*, edited by Juan Pedro Laporte and Héctor L. Escobedo, pp. 258-272. Museo Nacional de Arqueología y Etnología, Guatemala.
- Stuart, David
2005 *The Inscriptions from Temple XIX at Palenque: A Commentary*. Pre-Columbian Art Research Institute, San Francisco.
- Tokovinine, Alexandre
2013 Travelling to See: Naj Tunich Inscriptions and the Pilgrimage Genre in Classic Maya Texts. Paper presented at the 112th Annual Meeting of the American Anthropological Association, Chicago.
- Tozzer, Alfred M.
1941 *Landa's Relación de las Cosas de Yucatan: A Translation*. Papers of the Peabody Museum of American Archaeology and Ethnology 28. Peabody Museum of American Archaeology and Ethnology, Harvard University, Cambridge.
- Vail, Gabrielle, and Martha J. Macri
2012 *The New Catalog of Maya Hieroglyphs, Volume Two: The Codical Texts*. University of Oklahoma Press, Norman.
- Weiss-Krejci, Estella
2012 Allspice as Template for the Classic Maya K'an Sign. *The PARI Journal* 12(4):1-6.
- Wölfel, Ulrich, and Elizabeth Wagner
2010 The Realm of the Chan Ajaw: An Ancient Maya Kingdom on the Piedmont of the Northwestern Maya Highlands. Paper presented at the 15th European Maya Conference, Museo de América de Madrid, Madrid.