



The PARI Journal

A quarterly publication of the Pre-Columbian Art Research Institute
Volume IV, No 4, Spring 2004

In This Issue:

**Glyphs for
"Handspan" and
"Strike" in Classic
Maya Ballgame
Texts**

by Marc Zender
PAGES 1-9

**Sport, Spectacle
and Political
Theater:
New Views of
the Classic Maya
Ballgame**

by Marc Zender
PAGES 10-12

**Return to the
Great Forests
Frans Blom's
Letters from
Palenque:**

December 24, 1922-
January 22, 1923
PAGES 13-16

Submissions:
parijournal@mesoweb.com

The printed version of
this issue is distributed
to subscribing libraries
and is available via PARI
Online Ordering or:
D. Greene & Co.
970 Dewing Avenue,
Suite 300
Lafayette, CA 94549
925-824-8630

The electronic version
will remain available at:
www.mesoweb.com/
pari/journal/0404

ISSN 1531-5398

Glyphs for "Handspan" and "Strike" in Classic Maya Ballgame Texts¹

MARC ZENDER

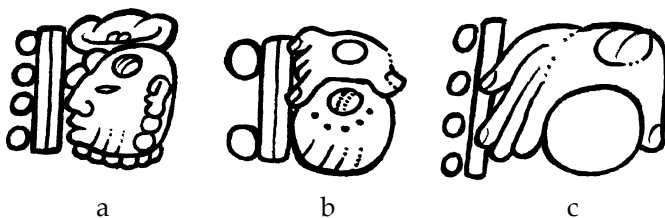
Peabody Museum, Harvard University

Part ritual, part recreation, and almost wholly mysterious, the ancient Maya ballgame has long been regarded as an enigmatic entity. Literally dozens of ballcourts are known; untold hundreds of pieces of ballgame paraphernalia are housed in Museums; and yet we know frustratingly little for certain about the rules of the ancient game, its purpose or its origins.

Recently, however, the veil of obscurity has begun to lift from these most intriguing of all relics of the Mesoamerican past. Archaeological investigations have revealed the construction history of ballcourts, disclosing their Preclassic origins and convincingly embedding them in cultural, historical and political trajectories of which they form an integral part. Further, anthropologists' and historians' diligent sifting of ethnohistoric documents and careful comparison with surviving ballgame traditions have begun to reveal something of the rules, purpose and underlying rationale of the game.

The aim of this paper is to further refine our understanding of Classic Maya ballgames (ca. A.D. 250-900) through an exploration of two previously undeciphered logographs. The first represents a right hand shown palm down and with thumb and forefinger spread

(Figures 1b, 1c, 5a and 5b). The second represents a left hand tightly grasping a semi-spherical stone object (Figures 6, 7c, 8-11, 13a and 13b). While both appear with some frequency in ballgame scenes and associated texts, and while each has seen a fair amount of discussion by scholars, satisfactory readings and explanations of these important glyphs have yet to materialize. This is no doubt due at least in part to the



Figures 1a-c. Examples of the "number"-*nahb* compound labelling ballgame balls in monument and pottery scenes. a) Site Q Ballplayer Panel 1, Art Institute of Chicago (after a photograph by Justin Kerr). b) Yaxchilan H.S. 2, Step X (after a photograph by Ian Graham, CMHI 3:163). c) Vase K5206 (after a photograph by Justin Kerr). (All drawings by the author unless otherwise stated).

eroded state of a number of key examples of these signs at Yaxchilan, Copan and El Peru, coupled with the unavailability of a sufficiently large number of painted examples prior to the publication of Justin Kerr's corpus of unprovenanced ceramics. Nevertheless, sufficient evidence now exists to read these glyphs, respectively, as **NAHB** "handspan" (in reference

¹Previous versions of this paper were presented at the Eighth Annual UCLA Maya Weekend, Cotsen Institute of Archaeology, October 13-14, 2001, and the 22nd Annual Maya Weekend of the University of Pennsylvania Museum, March 26-28, 2004. I would like to thank Richard Leventhal and Loa Traxler, respectively, for their kind invitations to present my work at these prestigious meetings.

to the size of the ball) and **JATZ’** “to strike, hit” (in reference to the ball’s role in play). Despite such prosaic meanings, it will be seen that a better understanding of these logographs allows us to identify a number of important ballgame-related texts in contexts not directly associated with ballgame imagery. These previously unrecognized texts shed substantial new light on core ballgame myths, and therefore on the underlying mythological rationale of ballgame ritual.

The Ball Compound

Nicholas Hellmuth (in Mayer 1980:46, and Robicsek and Hales 1981:172) first noticed that the large balls typical of Classic ballgame scenes were frequently labeled with a complex glyphic compound composed of a prefixed set of bar-and-dot coefficients followed by somewhat more variable elements (Figures 1 and 2). Although he didn’t attempt either a reading or a translation, Hellmuth supposed that the compound might refer to the “final score” of the game depicted, a suggestion which has influenced much subsequent thinking on the subject (e.g., Boot 1991:237-9; Macri 2000:29; Macri andLooper 2000).² Linda Schele and Mary Miller (1986:252, 255 and note 22) were the first to notice the phonetic significance of the variant spellings of this compound—often simply **na-ba** (Figure 1a), though occasionally with an undeciphered “hand” sign either followed by **ba** (Figures 1b, 2) or, more rarely, appearing alone (Figure 1c). They took this to signal nab, which they linked to Maya terms for “water-lily” and “standing water”, though they acknowledged that the term seemed of dubious significance in these contexts.

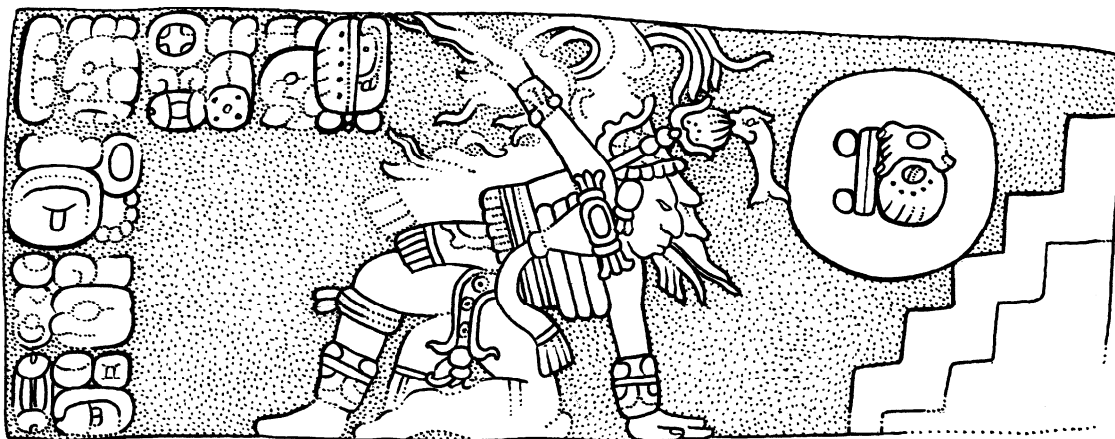


Figure 2. K'an Tok Wayib of Yaxchilan plays ball in the guise of a wind god. Yaxchilan H.S. 2, Step X (after a drawing and photographs by Ian Graham, CMHI 3:163).

Importantly, they also noted that the numerical coefficients were limited to the numbers 9, 10, 12, 13 and 14. This restriction to a small set of coefficients—coupled with the persistent absence of any secondary notation—led them to doubt Hellmuth’s suggestion that they recorded a score. Instead, they proposed that the coefficients may have referred to the number of “captives” or “human sacrifices” at stake in the game, a suggestion motivated in part by their martial interpretations of Classic ballgame imagery. There are problems with this interpretation as well, but suffice it to say that the **na-ba** spellings remain unexplained in their hypothesis, and many scholars still consider the term effectively undeciphered (Colas and Voss 2001:188; Freidel et al. 1993:357).

More recently, and building on the key substitution with **na-ba** spellings first noted by Schele and Miller, a number of scholars (including the present author) have come to the conclusion that rather than *nahb* “waterlily”, a quite different but either partially or completely homophonous root *nahb* “handspan” may have been intended instead (Lacadena and Wichmann, in press; Macri 2000:29; Macri andLooper 2000:2; Zender 2002:404). Such an interpretation would certainly explain the logographic substitution for these **na-ba** spellings, a palm-down right hand with thumb

²The most divergent suggestion is surely that of Marvin Cohodas (1991:261-3), who advocated reading these compounds as “#-chaan”, and related them to the Classic depictions of God L and his owl familiar. Nevertheless, there is no support for any such reading of the well-known **na** and **ba** signs in these contexts.

and fingers outstretched (Figures 1b, 1c, 5a, 5b). Lexical support from relevant languages is equally encouraging:

Ch’ol	-ñajb	“ <i>sufijo numeral para contar cuartas de la mano</i> (numerical suffix for counting handspans)” (Aulie and Aulie 1996:79)
Tzeltal	-nahb	“ <i>medida del pulgar al dedo del corazón</i> (measure from the thumb to the middle finger)” (Slocum et al. 1999:80, 318)
Yucatec	náab <naab>	“handspan” (Bricker et al. 1998:192) “ <i>palmo</i> (span); <i>la cuarta parte de la vara castellana</i> (fourth part of the Spanish <i>vara</i>)” (Barrera Vásquez et al. 1980:545; Thompson 1970:330)
Mopan	naab	“cuarta” (Ulrich and Ulrich 1976:136)
Itzaj	naab	“cuarta (vara)/ quarter-rod, measure from outstretched thumb to little finger (8-9 inches)” (Hofling and Tesucún 1997:468).

There can be little doubt that these forms are related, for all are the expected reflexes of an ancestral form **nahb* “handspan”. This finds further support in the morphology of numerical classifiers, which are typically derived from positional and transitive roots through the infixation of *-h-* (Berlin 1968:20-23; Hironymous 1982:14-27). Indeed, Bricker et al. (1998:192) suggest that the Yucatec term *náab* (< **nahb*) “handspan” may itself have been derived from the transitive verb *nab* “place near, lay aside” via historical infixation of *-h-*.

So what are we to make of these compounds? While some are still tempted by Hellmuth’s suggestion to see these as ballgame scores—perhaps as “the number of slaps or blows of the hand allowed in the course of the ballgame” (Macri andLooper 2000:3; see also Macri 2000:29)—I prefer a more literal interpretation of the “handspan” term. Given that the single most common context of these compounds is as a label for balls, it stands to reason that it should provide either a personal name or some generic designation for the ball itself. As such, I have argued that these numerical compounds provide us with a circumferential measure of the size of these balls in “handspans”.³

While not all of the lexical sources agree on the precise manner in which this measure was taken, it is intriguing that the Colonial Yucatec and modern Itzaj sources agree in equating the *nahb* measure to about 8 or 9 inches (21-23 cm).⁴ If we accept a median measure of 8.5 inches, we can quickly calculate the circumference and diameter of the ball sizes encountered in Maya art:

No. of Handspans	Circumference	Diameter
9	76.5 inches (194.3 cm)	24.4 inches (61.9 cm)
10	85 inches (215.9 cm)	27 inches (68.7 cm)
12	102 inches (259 cm)	32.5 inches (82.5 cm)
13	110.5 inches (280.7 cm)	35.2 inches (89.3 cm)
14	119 inches (302.3 cm)	37.9 inches (96.2 cm)

³ Just as this article was going to press, I became aware that Michael Coe (2003:199-200) has also linked the *na-ba* spellings to the Yucatec term for “handspan”, arguing as I have that it most likely refers to a measure of circumference.

⁴ The Spanish *vara* measured some 83.6 cm, a quarter of which would have been 20.9 cm or some 8 1/4 inches. This agrees well with Hofling and Tesucún’s (1997:468) “8-9 inches”.

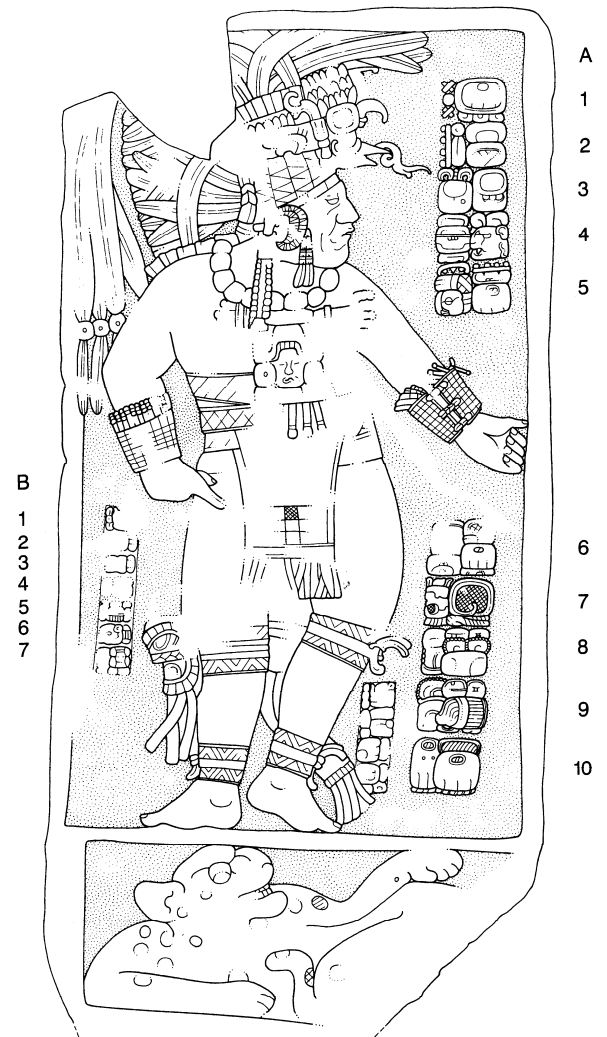


Figure 3. The king of La Amelia dressed as a ballplayer. La Amelia Panel 2. Drawing by Stephen Houston (1993: fig. 3-21)

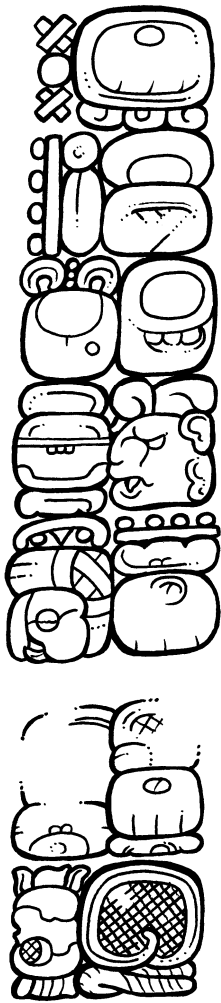


Figure 4. The names of a ballgame ball, La Amelia Panel 2 (after Houston 1993:fig. 3-21).

If these measurements are valid, then Classic Maya ballgame balls would have measured from just over two feet to well over three feet in diameter (62 to 96 cm), with an average of 2.5 feet or about 80 cms. These measurements tally well with the observed size ranges of balls portrayed in iconography, at least as compared with associated ballplayers (Figure 2), and thus provide some measure of support for this hypothesis. Moreover, the largest sizes—13 and 14 handspans—also correlate well with the occasional depictions of captives trussed up and rolled into balls almost a meter in diameter (Figure 12). But there is still further support for the notion that these ball compounds provided a specific reference to the ball itself, rather than to an abstract score or count of sacrificial victims.

La Amelia Panel 2 (Figure 3) is one of two panels erected to either side of a sacrificial stairway in the site center, both depicting the early ninth-century potentate Lajchan K’awil Ajaw Bot in the characteristic paraphernalia of a ballplayer (Martin and Grube 2000:64-5). As first recognized by Linda Schele (Freidel et al. 1993:361; Schele and Grube 1990), the associated text kens the sacrificial death of a captive as the “throwing” of a ballgame ball (Figure 4):

ya-la-ja U-CHAN-na BAHLAM-NAL U-K’ABA-a 9-na-ba

yahlaj uchan bahlamnall uk’aba’ baluun nahb

“is thrown, the Master of Bahlamnall, (which is) the name of the nine-handspan (ball)”

Intriguingly, the text goes on to clarify this reference to the size of the ball with a statement to the effect that the “nine handspan (ball)” is itself the namesake of the “rubber ball” and “rope” of the king:⁵

***ye-te-k’a-ba-IL U-“rubber.ball”-“rope”**

yetk’aba’il u-?-?

“(which is) the namesake of his rubber ball and rope”

While the precise meaning of “names” and “namesakes” in such instances is admittedly a bit difficult to penetrate, it nevertheless highlights the usage of the ball compound—*baluun nahb* or “nine handspans” in this instance—as a specific reference to the ball itself. Beyond supporting the hypothesis that these compounds truly do provide designations for the balls they label, however, they also make possible the identification of a number of hitherto unrecognized ballgame texts, as well as the unmasking of a divine patron of the Maya ballgame.

As first recognized by David Stuart and Stephen Houston (Houston and Stuart 1996), and discussed more recently by Alexander Tokovinine (2002), deity impersonation is a central theme of ballgame scenes and associated texts. Like the dramatic ritual reenactments staged in the Aztec *teotlachtli* or “divine ballcourt” (Nicholson and Quiñones Keber 1991), Classic Maya kings and nobles played ball in the guise of their tutelary gods as a powerful means of reiterating and reifying the founding myths of the polity. Thus, on a number of unprovenanced vessels and on a fragment of the hieroglyphic stairway of El Peru, kings take on the guise of an entity known variously as 7-? (Figure 5a) or 7-[TE’]?(wa) (Figures 5b, 5c, 5d). I will return to the issue of this god’s name presently, but it is important to note that in at least two instances the text goes on to clarify the act of impersonation as occurring *ti lajchan nahb* or “with the 12 handspan (ball)” (Figures 5 a, b).⁶ While the two other texts make no mention of this deity’s signature size 12 ball, both refer to the impersonation as taking place either *ti pitziiil* “in the act of ballplaying” (Figure 5c) or while the king *pitziiij* “plays ball” (Figure 5d). Whatever his name, then, the association of this deity with ballgames and ballgame implements is undeniable.

As to the identity of this enigmatic ballgame patron, while Tokovinine (2002:4-5) saw this figure as related to the deer god *Huk Sip* or “Seven Sip”, I believe he misinterpreted the eroded

⁵ For *etk’aba’* as “namesake” see Zender and Guenter (2000).

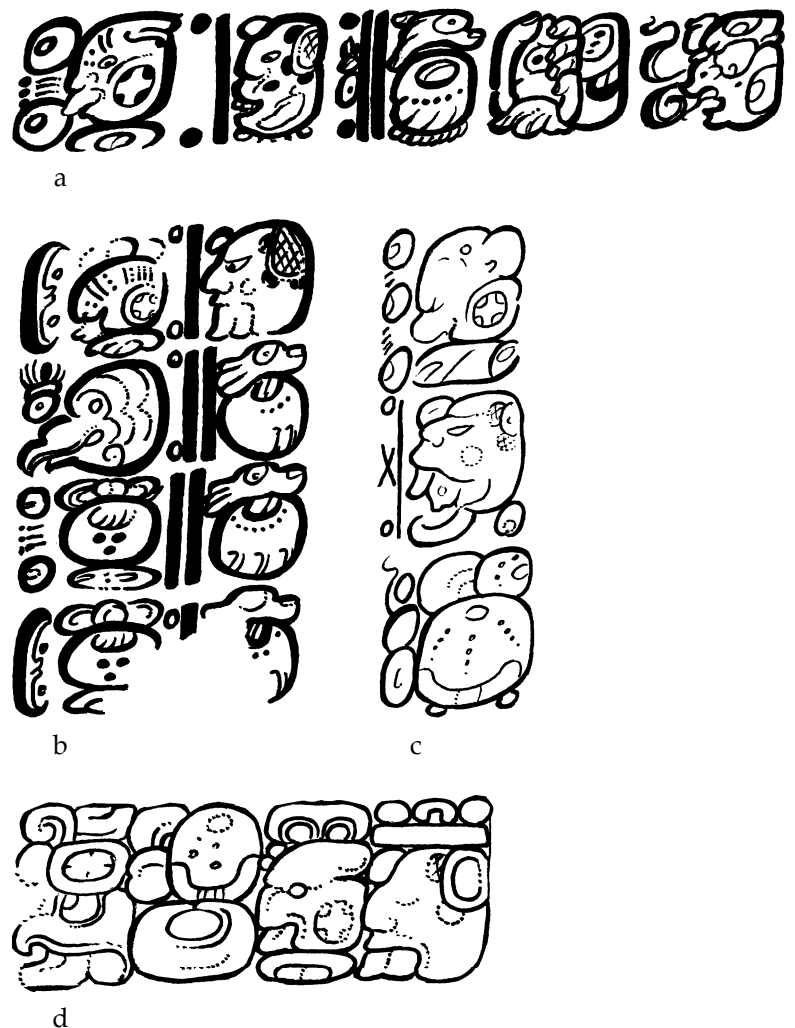
⁶ The second text (Figure 5b) goes on to implicate two further balls, including a *lajuun nahb* or “ten handspan (ball)” and just possibly a *huk nahb* or “seven handspan (ball)”, though damage to the vessel makes the rest of the phrase and its articulation with the name of the impersonator somewhat difficult to assess.

TE' infix appearing in a number of examples as the diagnostic of a distinct entity known as the patron of the month “Pax”. In point of fact, this entity—itsself the head-variant of the sign **TE'**—is conflated here with the youthful “Chicchan” head. Given the occasional cross-over between this head and **AJAW** in a number of early texts (Stephen Houston, personal communication 2003)—coupled with the final and apparently non-obligatory **-wa** in at least one instance (Figure 5c)—it is tempting to read the **TE'** simply as a numerical classifier and the whole as *Huk Ajaw* or *Hukte' Ajaw* “Seven Ajaw”, perhaps the Classic cognate of Vucub Hunahpu of the K'ichee' *Popol Vuh* (see Tedlock 1996:91-98). This would in turn suggest that the “Chicchan” head is itself the portrait glyph of “Seven Ajaw”, and would have the benefit of explaining the aforementioned formal distinction between it and the more common **AJAW** sign. Moreover, as the brother of Hun Hunahpu and a ballplayer of no mean skill, Vucub Hunahpu would certainly have made a suitable patron of the Classic ballgame.

The “Stone-in-Hand” Glyph

Somewhat rarer and unfortunately less variable in its spelling and complementation than the **NAHB** logograph, the “stone-in-hand” sign has been much slower to yield to decipherment. Grube and Nahm (1994:688-9, 708-9) were the first to describe the major contexts of the sign and to outline its salient features, pointing out that it represents a left hand tightly grasping a stone (Figures 6, 7c, 8-11, 13a-b). Based on a unique spelling on an unprovenanced vessel (Figure 6)—where the sign is prefixed by **ja-** and suffixed by **-ma**—they tentatively proposed a reading of **JAM** (or **HAM**) for the sign, though they readily acknowledged that the reading made little sense in any of the sign's contexts (Grube and Nahm 1994:689).

More recently, Timothy Knowlton (1999) has proposed a reading of **TOK** “to burn, to take”, based on the **to-** signs occasionally prefixed to “stone-in-hand” in the names of jaguar spirits depicted on a number of Codex Style vessels (Figures 8c, 10-11). However, given that the putative **to** prefix never appears outside the context of this “jaguar” name, it seems unlikely that it functions solely as a phonetic comple-



Figures 5a-d. Impersonating “Seven Ajaw”. a) Vase K1383 (after a photograph by Justin Kerr). b) Vase K635 (after a photograph by Justin Kerr). c) Vase K3296 (after a photograph by Justin Kerr). d) El Peru H.S. block (after a field drawing and photographs by Ian Graham).

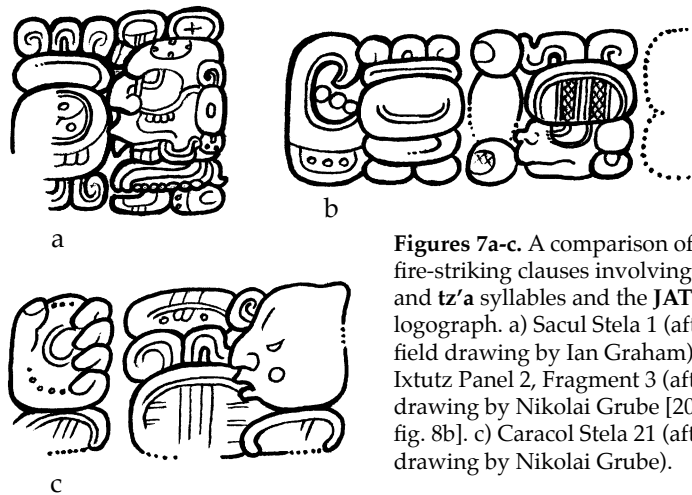


Figure 6. Phonetic complementation of the “stone-in-hand” sign, **JATZ'**. Vase K2068 (after a photograph by Justin Kerr).

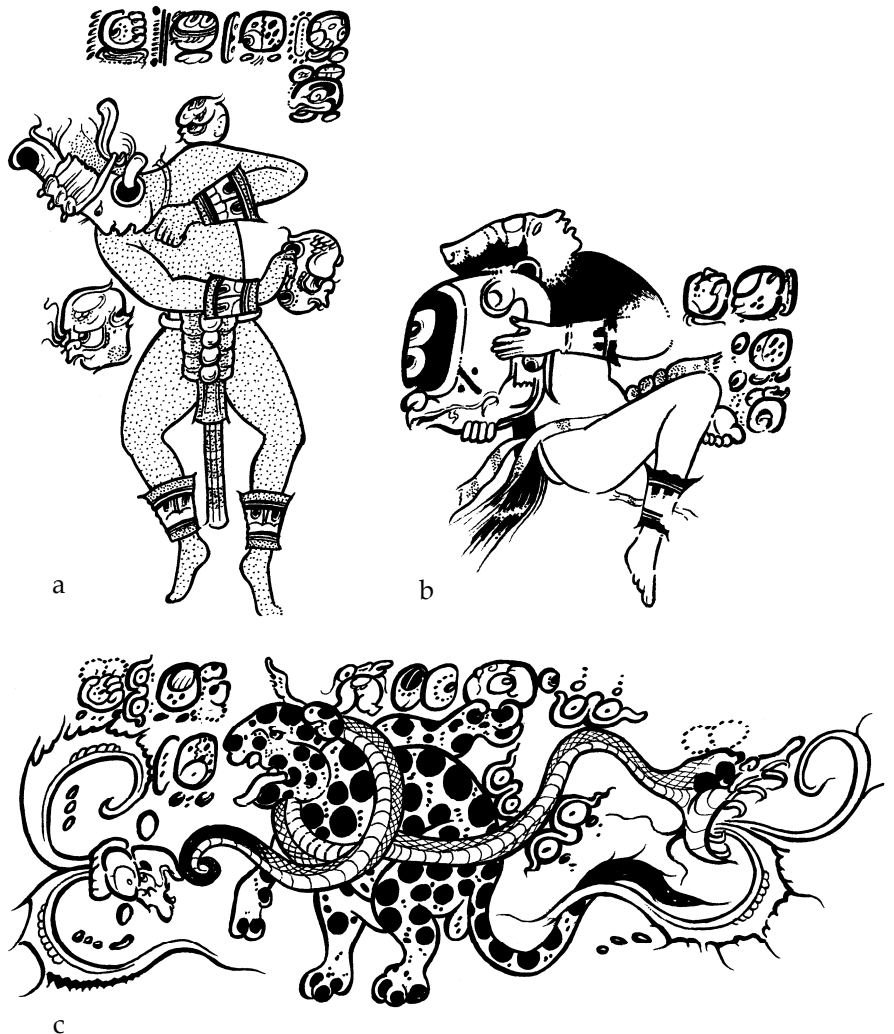
ment. Rather, the prefix is probably meant to be read as a fully functioning part of the jaguar’s name phrase—perhaps as **TOK**, a value the **to** syllable is known to carry elsewhere, and possibly a reference to the writhing coils of the snake that envelop him, features frequently marked by **TOK** signs in these and other contexts (Figure 8c; see also Miller and Martin 2004:102-3; Taube 1989:fig. 24-17). In any event, the **to/TOK** prefix in these contexts probably has little bearing on the phonetic reading of the “stone-in-hand” sign itself.

The first real hint of the sign’s value appears in the context of the enigmatic “fire-striking” clauses of the Classic Maya Supplementary Series. As recognized by Grube (2000), some of these phrases are written syllabically as **ja-tz’a-la (U)-K’AHK’**, *jatz’al k’ahk’* “struck is (his) fire” (Figures 7a and 7b) or **ja-tz’a-li U-K’AHK’**, *jatz’aal uk’ahk’* “struck is his fire” (as on Naachtun Stela 8; see Grube 2000:103). Although of uncertain equivalence, a variant spelling appears wherein the “stone-in-hand” sign may substitute for the **ja** and **tz’a** syllables (Figure 7c). This raises the possibility that “stone-in-hand” actually reads **JATZ’** “to strike” or “to hit”, a well-known term with cognates in all of the Ch’olan and Yucatecan languages (Kaufman and Norman 1984:121). This possibility would certainly have the virtue of explaining the iconic origin of the sign—i.e., a hand holding a cudgel-like stone—and is further strengthened by the initial **ja-** complement first noted on “stone-in-hand” by Grube and Nahm (Figure 6). In all, the **JATZ’** value seems reasonably strong and is certainly worthy of further investigation.

The “stone-in-hand” glyph is frequently associated with *way* spirits on Maya vessels (Figure 8), where it apparently refers to the large, anthropomorphized stones held by these otherworldly spooks. As Karl Taube (2001) has shown, such fantastic scenes are



Figures 7a-c. A comparison of fire-striking clauses involving **ja** and **tz’a** syllables and the **JATZ’** logograph. a) Sacul Stela 1 (after a field drawing by Ian Graham). b) Ixtutz Panel 2, Fragment 3 (after a drawing by Nikolai Grube [2000: fig. 8b]). c) Caracol Stela 21 (after a drawing by Nikolai Grube).



Figures 8a-c. Boxing characters in Classic Maya art. a) Vase K791 (after a photograph by Justin Kerr). b) Altar de Sacrificios Vase (after a photograph by Otis Imboden, in G. Stuart [1975:775-6]). c) Vase K2284 (after a photograph by Justin Kerr).

perhaps best seen as mythic echos of actual blood sports. Like Classic boxers, these figures threaten opponents with heavy stone cudgels (Figure 8c) or hold them out in combat readiness (Figures 8a and 8b). Like ballplayers, they are frequently well protected, wearing long, heavy hipcloths and yokes to protect their kidneys and other vital organs (Figure 8a; see also Orr 2003:fig. 10), while heavy headbands and wristbands control the flow of sweat (Figures 2, 8a and 8b), keeping eyes and hands dry, thereby ensuring an unimpeded view as well as a good grip on weapons.

While there is some variation in the spelling of his name—variably given as **JATZ’-AHKAN-na** (Figure 9), **JATZ’-no-ni a-AHKAN-na** (Figure 8a) and **JATZ’-ni AHKAN-na** (Figure 8b)—the most common of these boxing spirits was apparently known as *Jatz’oon Ahkan* or even *Jatz’noon Ahkan*, “Striking Ahkan” (Figures 8a and 8b).⁷ A particularly grim variant of the Bacchanalian god of intoxication first recognized by Grube and Nahm (1994:708-9; see also Grube 2001:294-5), this character usually sports dark body paint and tied-back hair, and frequently wields anthropomorphic stone cudgels that reveal his additional role as a patron of Maya blood sports.

Secondary in importance only to “Striking Ahkan”, another fabulous boxing spirit represents a stone-wielding jaguar encircled in the coils of a lightning serpent as sparking or dripping star signs affix themselves to the bodies of both creatures (Figure 8c; Grube and Nahm 1994:688-89). While complex and somewhat variable in spelling (Figures 8c and 10), his name can now be read as **JATZ’-la-TOK-EK’ HIIX** or *Jatz’ Tokal Ek’ Hiix* “Striking Sparking-Star Jaguar”, a straightforward description of the associated iconography. Still relentlessly enigmatic, the name must nevertheless have carried some currency, for at least one Late Classic king seems to have taken this complicated epithet as his regnal name (Figure 11).⁸

Like the ballgame itself, there were probably elements of both sport and ritual in Maya blood sports. Frequent association of boxing scenes with ballcourts might suggest the former (Orr 2003; Taube 2000), while depictions of



Figure 9. The **JATZ’** sign in the name of the Boxing God A’. Vase K5070 (after a photograph by Justin Kerr).



Figure 10. The **JATZ’** sign in the name of the Boxing Jaguar. Vase K1652 (after a photograph by Justin Kerr).

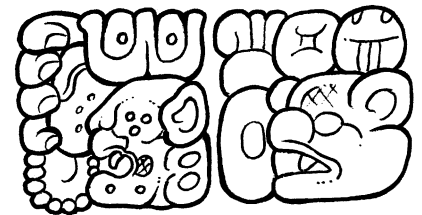


Figure 11. The **JATZ’** sign in the name of a captive king of Sak Tz’i’. Tonina M.83 (after a drawing and photographs by Ian Graham, CMHI 6:113).

⁷ It’s not impossible that the occasional **-ni** suffixes here reflect a **TUUN** or “stone” sign conflated with the **JATZ’** main sign. If so, a more complex name like *Jatz’ontuun Ahkan* or “Stone-Striking Ahkan” might be contemplated.

⁸ Simon Martin (personal communication, 1999) first mentioned the significance of this spelling to me (see also Martin and Grube 2000:188-189).

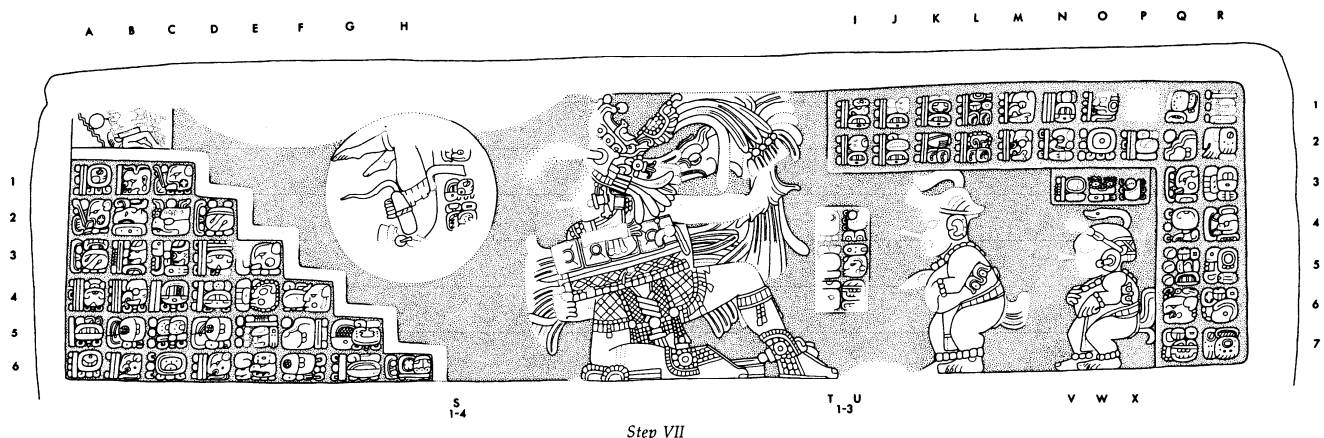


Figure 12. The King of Yaxchilan plays ball in the guise of the Waterlily Serpent. Yaxchilan H.S. 2, Step VII. Drawing by Ian Graham (CMHI 3:160).



Figures 13a-c. Dedicational Clauses involving the **JATZ'** sign and the syllables ***ja** and **tz'i**. a) Yaxchilan H.S. 2, Step VII: Q1-Q2 (after a drawing and photographs by Ian Graham, CMHI 3:160). b) El Peru H.S. block (after a field drawing and photographs by Ian Graham). c) Copan H.S. (after a drawing by Barbara Fash).

mythological characters engaged in boxing reveal an important religious component, perhaps associating combative bloodletting with agricultural themes such as rainmaking or crop abundance. Indeed, a number of modern Mesoamerican groups still practice highly-ritualized forms of boxing in times of drought. Intriguingly, ritual practitioners in Guerrero still take on the guise of rain-making jaguars perhaps not all that different from “Striking Sparking-Star Jaguar”, and square off against their heavily-padded opponents (Brody 1988; Cordry 1980; Orr 2003:90-1). The aim is to let blood, and thereby to stimulate rainfall through sympathetic magic.

Another important context of the **JATZ'** glyph is in scenes of ballgame sacrifice, as on Step VII of Yaxchilan Hieroglyphic Stairway 2 (Figure 12). Here, the late eighth century king Bird Jaguar IV assumes the guise of the Waterlily Serpent—a god of wind, water and cenotes, and the classic Maya counterpart of the Central Mexican deity *Quetzalcoatl* (Taube 1992:56-59; see also Robertson 1990). Bird Jaguar IV is depicted not only in the guise of this god, but also in full ballplayer apparel, including a yoke, protective hipcloth and kneepad. As dwarf servants of the god look on, the king-cum-supernatural has just dealt his captive a telling blow, sending his bound body careening wildly off the sacrificial steps. This climactic event is described in the associated text as **JATZ'-na-ja 3-a-ha-li EHB** or *jaatz'naj uhx ahaal ehb* “the three-conquests stairway is struck” (Figure 13a). Essentially the same formula is also known from the hieroglyphic stairways of El Peru and Copan (Figures 13b and 13c), the former no doubt associated with the impersonation of “Seven Ajaw” discussed above (Figure 5d). Although somewhat eroded, the Copan spelling apparently substitutes ***ja** and **tz'i** signs for the “stone-in-hand” glyph, providing further evidence of a **JATZ'** value for the logograph.⁹

The text presents Bird Jaguar IV's sacrificial act as a modern-day echo of the decapitations of three supernatural beings deep in mythological time (Freidel et al. 1993:356-62; Martin and Grube 2000:130). These refer-

ences to ancient struggles between ancestral gods no doubt comprise the underlying mythical charter of the ballgame, distorted versions of which still survive in the seventeenth-century K'ichee' *Popol Vuh* (Martin and Grube 2000:130). The parallels with this foundational myth are further rounded out by the father's and grandfather's own impersonations of the Waterlily Serpent on two associated steps (6 and 8), wherein they also dispatch unfortunate captives. Seen in this light, Bird Jaguar IV's ritual reenactment of this ancient myth squarely placed his actions in the context of these foundational events, thereby lending cosmological significance to these key acts of captive sacrifice.

Yet such reenactments probably played a practical role as well, usefully reminding lesser nobility and royal women of their divinely-ordained roles as servants and helpmeets of the king. Thus, while Bird Jaguar IV and his ancestors assume the guise of the Waterlily Serpent and vanquish captives kenned as ancient enemies of civilization, lower-ranking nobles appear in the guise of the arguably more servile Ik K'uh, or “Wind Gods”, and play not with defeated captives, but with *lajchan nahb* or “twelve handspan” balls (Figure 2) (Stuart et al. 1999: II-44; see also steps 4, 5 and 12). Meanwhile, queens either place balls in play (steps 1 and 11) or conjure gods of lightning and fecundity (steps 2 and 3). In this way, ballgame myths and associated blood sports served as social charters (Malinowski 1984:101), naturalizing the social order and placing its origins squarely in the numinous otherworld of the mythological past.

⁹ As Lacadena (in press) has shown, *-n-aj* endings in the hieroglyphic script probably reflect the passivization of non-CVC constituents. The disharmonic spelling of **ja-tz'i** or *jaatz'* is therefore intriguing (see Houston et al. 1998), since it may point to an initial derivation of *jatzt'* as *jaatz'*, a noun meaning “whip” or “cudgel” (e.g., Yucatec *hàatz'* n. “whip”, Bricker et al. 1998:93) before its rederivation as a verb (*jaatz'a?*) and eventual passivization in the form *jaatz'naj*. In other contexts, the better known **ja-tz'a-la** and **ja-tz'a-ja** spellings probably reflect participial and passive inflection, respectively, of the unadulterated root *jatzt'*.

Glyphs for “Handspan” and “Strike”

References

- Aulie, H. Wilbur and Evelyn Woodward Aulie
1996 *Diccionario Ch'ol de Tumbalá, Chiapas, con variaciones dialectales de Tila y Sabanilla*. Second edition, edited by E. F. Scharfe de Stairs. Summer Institute of Linguistics, Mexico.
- Berlin, Brent
1968 *Tzeltal Numeral Classifiers: A Study in Ethnographic Semantics*. Mouton, Paris.
- Boot, Erik
1991 The Maya Ballgame, as Referred to in Hieroglyphic Writing. In *The Mesoamerican Ballgame*, edited by G. W. van Bussel, P. L. F. Van Dongen and T. J. J. Leyenaar, pp. 233-244. Rijksmuseum voor Volkenkunde, Leiden.
- Bricker, Victoria R., Eleuterio Po'ot Yah and Ofelia Dzul de Po'ot
1998 *A Dictionary of the Maya Language as Spoken in Hocabá, Yucatán*. University of Utah Press, Salt Lake City.
- Brody Esser, J. (editor)
1998 *Behind the Mask in Mexico*. Museum of New Mexico Press, Santa Fe.
- Coe, Michael D.
2003 Another Look at the Maya Ballgame. In *Il sacro e il paesaggio nell'America indigena*, edited by D. Domenici, C. Orsini and S. Venturoli, pp. 197-204. CLUEB, Bologna.
- Cohodas, Marvin
1991 Ballgame Imagery of the Maya Lowlands: History and Iconography. In *The Mesoamerican Ballgame*, edited by V. L. Scarborough and D. Wilcox, pp. 251-88. University of Arizona, Tucson.
- Colas, Pierre R. and Alexander Voss
2001 A Game of Life and Death - The Maya Ball Game. In *Maya: Divine Kings of the Rainforest*, edited by Nikolai Grube, pp. 186-91. Könemann, Cologne.
- Cordry, D.
1980 *Mexican Masks*. University of Texas Press, Austin.
- Freidel, David, Linda Schele and Joy Parker
1993 *Maya Cosmos: Three Thousand Years on the Shaman's Path*. Quill, New York.
- Graham, Ian
1982 *Corpus of Maya Hieroglyphic Inscriptions*, Vol. 3, No. 3. Peabody Museum, Cambridge.
- Graham, Ian and Peter Mathews
1996 *Corpus of Maya Hieroglyphic Inscriptions*, Vol. 6, No. 2. Peabody Museum, Cambridge.
- Grube, Nikolai
2000 Fire Rituals in the Context of Classic Maya Initial Series. In *The Sacred and the Profane: Architecture and Identity in the Maya Lowlands*, edited by P. R. Colas, K. Delvendahl, M. Kuhnert and A. Schubart, pp. 93-110. Acta Mesoamericana, Volume 10. Berlin.
- 2001 Intoxication and Ecstasy. In *Maya: Divine Kings of the Rainforest*, edited by Nikolai Grube, pp. 294-5. Könemann, Cologne.
- Grube, Nikolai and Werner Nahm
1994 A Census of Xibalba: A Complete Inventory of *way* Characters on Maya Ceramics. In *The Maya Vase Book*, Volume 4, edited by B. Kerr and J. Kerr, pp. 686-715. Kerr Associates, New York.
- Hironymous, Michael O.
1982 The Origin of Yucatec Tone. Unpublished MA Thesis, Brigham Young University.
- Hofling, Charles A. and Félix Fernando Tesucún
1997 *Itz'aj Maya Spanish English Dictionary*. University of Utah Press: Salt Lake City.
- Houston, Stephen D.
1993 *Hieroglyphs and History at Dos Pilas: Dynastic Politics of the Classic Maya*. University of Texas, Austin.
- Houston, Stephen D. and David Stuart
1996 Of Gods, Glyphs and Kings: Divinity and Rulership among the Classic Maya. *Antiquity* 70:289-312.
- Houston, Stephen D., David Stuart and John Robertson
1998 Disharmony in Maya Hieroglyphic Writing: Linguistic Change and Continuity in Classic Society. In *Anatomía de una Civilización: Aproximaciones Interdisciplinarias a la Cultura Maya*, edited by A. Ciudad Ruiz, et al., pp. 275-296. Madrid: Sociedad Española de Estudios Mayas.
- 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 J. S. Justeson and L. Campbell, pp. 77-166. State University of New York, Albany.
- Knowlton, Timothy
1999 The Stone-in-Hand Glyph. *Famsi*: <www.famsi.org/research/kerr/articles/stone-in-hand>.
- Lacadena, Alfonso
in press Passive Voice in Classic Mayan Texts: CV-*h-C-aj* and -*n-aj* Constructions. In *The Linguistics of Maya Writing*, edited by S. Wichmann and A. Lacadena. Salt Lake City: University of Utah Press.
- Lacadena, Alfonso and Søren Wichmann
2003 The Representation of the Glottal Stop in Maya Writing. In *The Linguistics of Maya Writing*, edited by S. Wichmann and A. Lacadena. Salt Lake City: University of Utah.
- Macri, Martha J.
2000 Numeral Classifiers and Counted Nouns in the Classic Maya Inscriptions. *Written Language and Literacy* 3(1):13-36.
- Macri, Martha J. and Matthew G. Looper
2000 A New Interpretation of the Ball Compound. *Glyph Dwellers* 6. University of California, Davis.
- Malinowski, Bronislaw
1984 [1946] Myth in Primitive Psychology. In *Magic, Science, and Religion and Other Essays by Bronislaw Malinowski*, edited by R. Redfield, pp. 93-148. Harper Collins, New York.
- Martin, Simon and Nikolai Grube
2000 *Chronicle of the Maya Kings and Queens*. Thames and Hudson, London.
- Mayer, Karl H.
1980 *Maya Monuments: Sculptures of Unknown Provenance in the United States*. Acoma Books, Ramona, CA.
- Miller, Mary and Simon Martin
2004 *Courtly Art of the Ancient Maya*. Thames and Hudson, London.
- Nicholson, H. B. and Eloise Quiñones Keber
1991 Ballcourt Images in Central Mexican Native Tradition Pictorial Manuscripts. In *The Mesoamerican Ballgame*, edited by G. W. van Bussel, P. L. F. Van Dongen and T. J. J. Leyenaar, pp. 119-133. Rijksmuseum voor Volkenkunde, Leiden.
- Orr, Heather
2003 Stone Balls and Masked Men: Ballgame as Combat Ritual, Dainzú, Oaxaca. *Ancient America* 5. Center for Ancient American Studies, Washington, DC.
- Robertson, Merle Greene
1990 The Celestial God of the Number 13. *Triptych* (Sept/Oct 1990), pp. 26-31. The Museum Society, San Francisco.
- Robicsek, Francis and Donald M. Hales
1981 *The Maya Book of the Dead: The Ceramic Codex*. University of Oklahoma Press, Norman.
- Schele, Linda and Nikolai Grube
1990 Six-Staired Ballcourts. *Copán Note* 83. Austin, Texas.
- Schele, Linda and Mary Miller
1986 *The Blood of Kings: Dynasty and Ritual in Maya Art*. George Braziller, New York.
- Slocum, Marianna C., Florencia L. Gerdel and Manuel Cruz Aguilar
1999 *Diccionario Tzeltal de Bachajón, Chiapas*. Instituto Lingüístico de Verano, Mexico.
- Stuart, David, Stephen D. 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, Part II*, pp. 1-96. Maya Workshop Foundation, Austin.
- Stuart, George
1975 Riddle of the Glyphs. *National Geographic* 148(6):768-91.
- Taube, Karl
1989 Ritual Humor in Classic Maya Religion. In *Word and Image in Maya Culture*, edited by W. F. Hanks and D. S. Rice, pp. 351-82. University of Utah Press, Salt Lake City.
- 1992 *The Major Gods of Ancient Yucatan*. Studies in Pre-Columbian Art & Archaeology, Number Thirty-Two. Dumbarton Oaks, Washington, DC.
- 2001 American Gladiators: The Ballgame and Boxing in Ancient Mesoamerica. Paper presented at the 8th Annual UCLA Maya Weekend, Cotsen Institute of Archaeology, October 13-14, 2001.
- Tedlock, Dennis
1996 *Popol Vuh*. Simon and Schuster, New York.
- Thompson, J. Eric S.
1970 Sufijos Numerales y Medidas en Yucateco. *Estudios de la Cultura Maya* 8:319-39. Mexico.
- Tokovinine, Alexandre
2002 Divine Patrons of the Maya Ballgame. *Mesoweb*: <www.mesoweb.com/features/tokovinine/Ballgame.pdf>
- Ulrich, E. Matthew and Rosemary Dixon de Ulrich
1976 *Diccionario Maya Mopan*. Instituto Lingüístico de Verano, Guatemala.
- Zender, Marc
2002 The Cavern of Naj Tunich. In *The Definitive Guide to Archaeology*, edited by Paul G. Bahn, pp.404-5. Weldon Owen, London.
- Zender, Marc and Stan Guenter
2000 Three Kings of Late Classic Tortuguero. *Pre-Columbian Art Research Institute Newsletter* 31 (Spring 2000), pp. 6-8. San Francisco.

Sport, Spectacle and Political Theater: New Views of the Classic Maya Ballgame

MARC ZENDER

Peabody Museum, Harvard University

Although it is not always apparent from the stately scenes of kings and princes squaring off to either side of a single, oversized ball, Classic ballcourts were often crowded and noisy places, full of boisterous activity and the thunderous bounce of the ballgame ball, a dangerously heavy and occasionally unpredictable missile. New views of this old game owe much to the injection of data from recent archaeological investigations (Fox 1996), though reanalyses of well-known texts and imagery have also played a vital role in ongoing investigations of the ballgame tradition (Coe 2003; Chinchilla 1992; Tokovinine 2002; Zender 2001a).

The divergent roles of players, spectators, musicians and referees are highlighted on these remarkable vessels (Figures 1 and 2), both of which feature a backdrop of stair-like bleachers, perhaps one of the “reviewing stands” typical of the palace precincts of any number of Classic cities (Coe 2003; Chinchilla 1992) or even of steps leading up from the end zone of a sunken ballcourt (Zender 2001a). As archaeological investigations by John Fox (1996:485-93) have demonstrated, these were the locales of sumptuous feasts, revealed in the form of smashed service vessels, discarded *jute* snail shells (an ancient snack food *par excellence*) and occasionally more ample fare, such as deer bones and turtle carapaces.

Ballplayers hug the groundline of both images, sporting characteristic kneepads, ballgame yokes and whimsical animal headdresses. Up in the bleachers, spectators wear the cylindrical bark paper headdresses common to priests, and the referee holds a large conch shell no doubt blown to initiate and halt play. The noise in a masonry court would have been deafening, not least when the blaring trumpets of the pre-game show (Figure 2) gave way to the staccato beat of maracas and bone rasps held by onlookers (Figure 1), punctuated by the rhythmic thud of a ten pound ball (Coe 2003). In some scenes, the furious sound of play is reflected in the dozens of disembodied speech scrolls which fill all of the available space (Figure 1), recalling the legendary ire of the Underworld Gods in having this noisy game played right above their heads (Tedlock 1996:91, 112-13).

Probably commissioned in commemoration of a joint ballgame of El Pajamal and Motul de San Jose (Stuart 2004:8-9), this vessel (Figure 3) depicts the kings of these two cities squaring off before an enormous ball marked with the glyphic label **12-na-ba**, or *lajchan nahb* “twelve handspans” (see Zender, this issue). In addition to their ballgame paraphernalia, the two lords sport elegant depictions of hummingbirds in their plumed helmets, while their lieutenants wear somewhat more

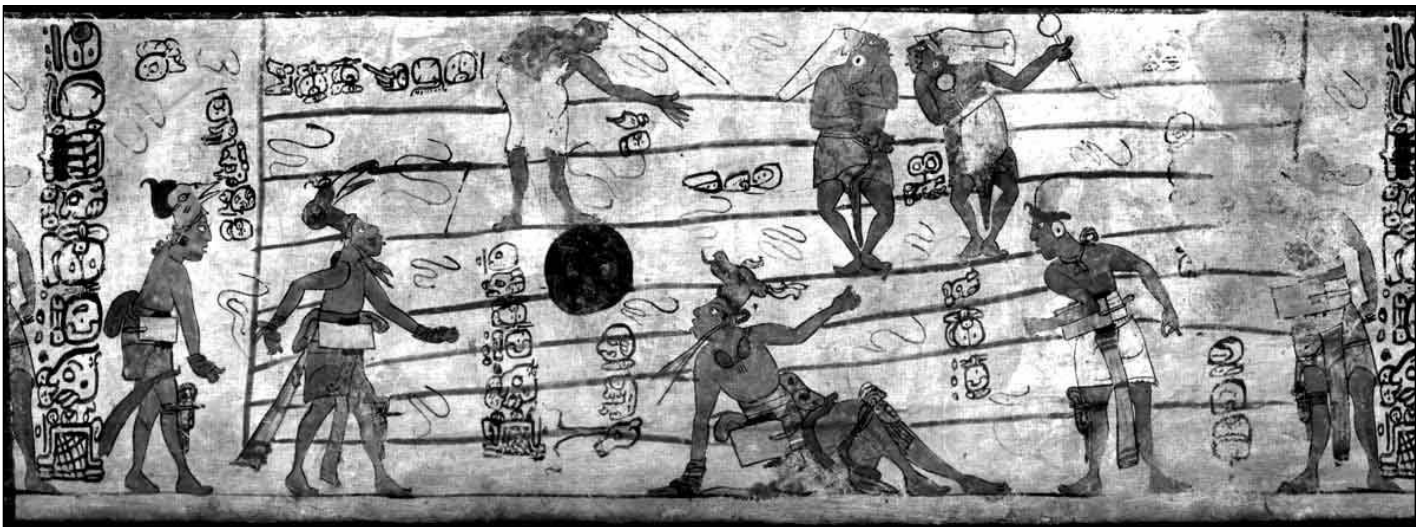


Figure 1. Frozen in action, players rush to field a ball dropped into play. Late Classic Polychrome Vase, St. Louis Art Museum (K5435). Photograph © Justin Kerr.

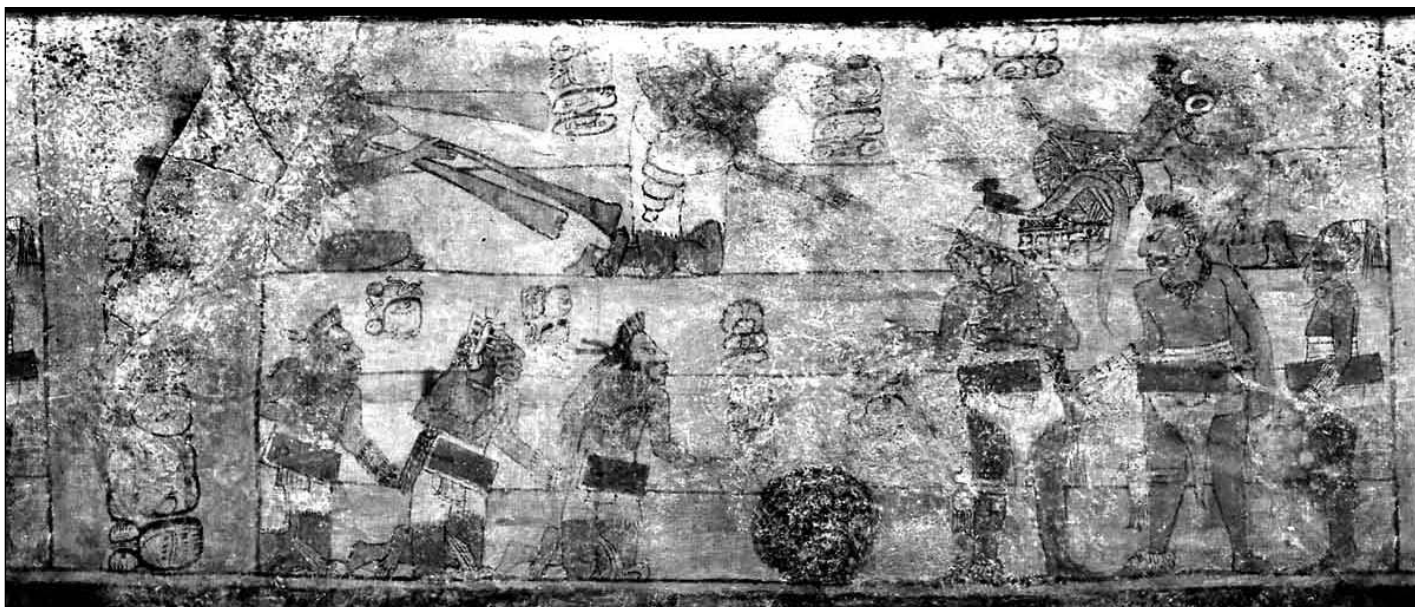


Figure 2. Pre- or post-game parlay with musical interlude. Late Classic polychrome vase, Peabody Museum, Yale University (K3814). Photograph © Justin Kerr.

comical headdresses representing a deer and a vulture. To judge from associated hieroglyphs, the lord closest to the ball was the king of Motul de San Jose, while the lord in front of him was the contemporary king of El Pajal, who most likely commissioned the vessel. While a lack of provenience makes the life history of this looted object frustratingly uncertain, it is quite possible that the El Pajal lord bequeathed this vase

as either a gift or tribute to the Motul de San Jose king (Tokovinine 2002:5).

Originally from the little-known site of La Corona (Stuart, in Graham 1997), this unprovenanced panel (Figure 4) was commissioned in the late 7th-century A.D. by local lord Chak Ak'aach Yuhk and records a ballgame he played against a sacrificial stairway at Calakmul in April of 687. Chak Ak'aach Yuhk is



Figure 3. A Gift for Lord Sak Ch'een of Motul de San Jose. Late Classic polychrome vase, Dallas Museum of Art (K2803). Photograph © Justin Kerr.

depicted to the right, apparently in mid-dive as he strives to field the remarkably large ball bouncing toward him. His close association with the main text, coupled with the turkey (AK'AACH) in his headdress, unequivocally identifies him as the sole member of the 'visiting' team. Intriguingly, he does not play against the king of Calakmul, but rather competes against the

high-ranking priest Aj ?-K'inich, the *ti'sakhuun* of the reigning king (Zender 2001b). As Martin and Grube (2000:110) have noted, "[s]uch records give some insight into the great gatherings of lords that took place on these occasions, as client nobility travelled to the capital to participate in solemn rituals, sumptuous feasts and great public spectacles".

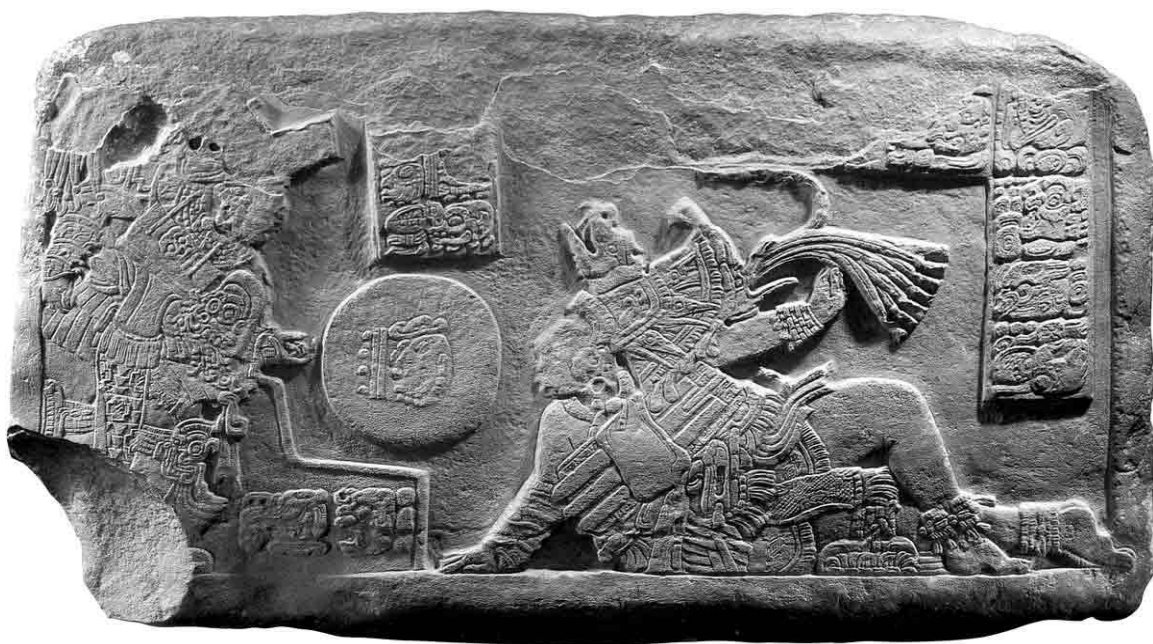


Figure 4. Chak Ak'aach Yuhk of La Corona strikes a "fourteen handspan" ball. Site Q Ballplayer Panel 1, Art Institute of Chicago (K2882). Photograph © Justin Kerr.

References

- Chinchilla Mazariegos, Oswaldo
1992 El juego de pelota en la escritura y el arte maya clásico: interpretaciones recientes. In *El juego de pelota en Mesoamérica: Raíces y supervivencia*, edited by M. T. Uriarte, pp. 157-67. Siglo XXI, Mexico.
- Coe, Michael D.
2003 Another Look at the Maya Ballgame. In *Il sacro e il paesaggio nell'America indigena*, edited by D. Domenici, C. Orsini and S. Venturoli, pp. 197-204. CLUEB, Bologna.
- Fox, John G.
1996 Playing with Power: Ballcourts and Political Ritual in Southern Mesoamerica. *Current Anthropology* 37(3):483-509.
- Graham, Ian
1997 Mission to La Corona. *Archaeology* 50(5):46.
- Martin, Simon and Nikolai Grube
2000 *Chronicle of the Maya Kings and Queens*. Thames and Hudson, London.
- Stuart, David
2004 Looking for Jaguar Hill: The Identification of a "Lost" Maya Kingdom. *Smoking Mirror* 11(7):7-10. Newsletter of the Pre-Columbian Society of Washington, D.C.
- Tedlock, Dennis
1996 *Popol Vuh*. Simon and Schuster, New York.
- Tokovinine, Alexandre
2002 Divine Patrons of the Maya Ballgame. *Mesoweb*: <www.mesoweb.com/features/tokovinine/Ballgame.pdf>
- Zender, Marc
2001a The Ball's in Your Court: Rulership, Religion and Recreation in Classic Maya Ballgame Texts. Paper presented at the 8th Annual UCLA Maya Weekend, Cotsen Institute of Archaeology, Los Angeles.
2001b Lords of La Corona: Reconstructing the Historical Documents of 'Site Q'. Paper presented at the 6th Annual European Maya Conference, Hamburg.

Return to the Great Forests

FRANS BLOM'S LETTERS FROM PALENQUE
December 1922 - March 1923

Translated and with an introduction and notes by Jesper Nielsen & Tore Leifer

Editor's note

As explained by the translators in their introduction to this series in PARI Journal 4(3), the Maya archaeologist and explorer Frans Blom carried out one of the first scientific investigations of Palenque, Chiapas, Mexico, from December 14, 1922, to March 14, 1923. This issue continues the publication of his letters from the site.

December 24, 1922

My workmen went off to the village this afternoon to celebrate "Noche Buena", to them a welcome excuse to have a fiesta and let off fireworks.

The keeper, the archloafer Manuel, went as well; so I am now sitting here, alone in my palm castle. However, I don't complain, since I have plenty of work to do here. Work progresses well, building after building, temple after temple appears from the forest, and for every building we get cleared there is more work to do. In one place a stucco relief appears, in another place a stone with hieroglyphs. Every new thing must be drawn or photographed. In many places measuring and mapping have to be done. Yesterday, I made a trip up the mountain slopes behind the temple city and came upon a hitherto unknown building—in two stories even, so the entire morning of today went with measuring and drawing a ground plan of it.

"Christmas Eve", I can't, however, bring forth any real Christmas mood. The Otolum creek which passes by close to my hut, rushes below the trees, and it is the most wonderful and mild evening. The moon appears between the drifting clouds and lights up the ruined masses of the Palace. It is a somewhat unique experience for a Dane to sit here. I try to imagine you all at home, gathered around the Christmas tree with the

grandchildren, candles and tinsel and the presents at the foot of the tree, it works; however, a moment later my attention is caught by the monotonous and shrill singing of the cicadas out there in the tropical night.

January 6, 1923

New Year's Eve was a doubtful pleasure. In the morning I went off on a fairly long trip into the forests to the coffee plantation of El Encanto. Some really nice Europeans live there; and what attracted me even more, there are some very fine limestone tablets with sculptures, created by the ancient Maya artists. I brought a guide with me; however, the poor creature got so tired that he collapsed just half an hour away from the finca. It was after nightfall and the most wonderful moonlight, and we could easily have reached our goal, if only the brute could have walked on his feet. But he couldn't be

moved. We went to bed in a small shack in a maize field that we were lucky enough to find close by, and while we were sleeping there on the ground—why does the ground always turn the hardest side upwards when one has to sleep on it—the old year slipped away and the new one came without asking. When I have to sleep like this out in the open, I always place my lasso around my bed; the curious thing about it is that the snakes don't dare crawl across it, just as they don't dare crossing it if they are inside its circle; what it is that scares them I don't know.

On the way back from Encanto we had rain, real tropical rain, and for two days we sat underneath a roof of leaves, caught between two rivers. The waters



Figure 1. Frans Blom, 1922. Courtesy of The Bancroft Library, University of California, Berkeley.

were rising to the degree that it would be highly dangerous to attempt to cross them, so we simply had to wait until the water level went down again. Yes, these are the small blows that life gives you out here. I was happy to get back my ruins and my cosy palm house.

January 10, 1923

Today Manuel showed up with a solemn look on his face; I could immediately see that he had something special on his mind, presumably some kind of new idea as to how he could slope off from his duties. Then finally he spoke up about his business. He and his friends had reached the conclusion that I must be very lonely and bored living alone in my palm hut, and therefore he had come to offer me his daughter as my wife. I tried to explain to the man that I didn't need a wife since I travelled from place to place and couldn't bring her with me. I didn't need to do that, he felt, since he wouldn't mind taking her back, he wouldn't have any troubles getting rid of her again, she was wonderfully fat and she knew how to cook. I had my share of trouble to make him understand that I couldn't accept his offer in spite of the many tempting qualities of the lady.

The good Indians cannot comprehend how one can live without a wife, because she is the one who has to do all the work, slaving away from early till late, being bullied and getting beaten as well. And Manuel probably had his own interest in providing me with a "wife", since he would then be able to load a good part of his own work on her. Lazy and sly, that's what they are, the women have to do all the work, in the house as well as in the field, and if they are travelling she will have to carry the full load. My neighbors, another Indian family, treat me with touching care, it takes time before the natives get used to strangers, but once they've realized that you will not harm them and do not shout at them from morning till evening, they become confident and devoted. My mozo in Vista Hermosa, who followed me for a couple of years, was deeply reliable and very devoted, he demonstrated all virtues towards me, although he had the reputation of being "a bad man", but if you can hook up on a guy like that, then you are safe; when I left for Mexico [City], he returned to his former occupation: arson and murder! Unfortunately, he was a faithful servant, but a grand bandit too; the last news I heard about him was that he had been hanged.

January 14, 1923

Yesterday I had the pleasure of discovering two completely new things: a temple about two kilometers [1.2 miles] away from the main ruins, entirely unknown until now, and a stela, a great stone monument, somewhat further into the forest than the temple.

Otherwise the work takes its normal course. Building after building appears from the dense forest, and when the workmen have finished their job of cutting down the trees and clearing away the bush, I start with knives and brushes to clean the sadly damaged stucco reliefs. These are often covered by a whole web of fine, small roots and pillows of moss. One has to work with the greatest care in order not to destroy anything. Often, when one of these webs of tiny roots has been carefully loosened, the most amazing relief appears, whole figures, created by the hand of a master.



Figure 2. The Palace, Palenque, 1922-23. Photo by Frans Blom, from the M.A.R.I. typescript. Courtesy The Middle American Research Institute, Tulane University, New Orleans.

When the cleaning job is done I take photographs. Sometimes, however, there's no space for me and the camera, and then I'll have to draw. Occasionally, I have to be lowered by a rope from a steep roof comb to be able to draw up close.

Yesterday I rode to the village to see if any mail had arrived, normally it comes once a week, but this time it had not arrived. How I really enjoy riding off on my own or wandering alone in the forests. The forest is ever new, animals and plants are a most lively and entertaining company. Here and there I come across old Maya walls, small pyramids or heaps of sherds that have been brought to the surface by the rains. I search around and find small figurines, fragments of ornamented jars or small whistles of burnt

clay. The Mayas were masters in shaping the clay. After such an outing I often return with a whole bag full of what looks like lumps of earth. They are all poured out on the working table and treated with water and old toothbrushes, and many curious details appear. My little museum here grows day by day. These trips into the forest, however, are rare. My main job here is in the ruins themselves, there I measure, draw and take photographs. Often I sit for hours in front of one of the beautiful, carved limestone tablets, go over the thousands of details, one after the other. They are wonderful: worked without the use of metal tools the figures and hieroglyphs stand out sharply and clearly in the stone. The characters are always carved within a square. Temples and figures were all painted, the palette wasn't large, but the colors were matching; when I uncover the reliefs I often find the colors as clear and bright as they were when they were applied a thousand years ago. Everything is limestone, the calcareous rainwater of centuries has run down walls and ornaments, every raindrop has left behind a little lime and thus many things are covered by a crust several inches thick. I chip away this limey crust and thus many beautiful ornaments see the light of day.

I have had a bad night. I was woken up by a burning pain in my legs, and when I made some light I could see what caused it: foraging ants. The entire floor of my hut was a rolling red mass, I got up in a rush, grabbed my kerosene cans and quickly poured some down my legs, I then hurried out of the hut with a can in each hand. From earlier experience I knew what should be done. I poured out kerosene in a circle surrounding the hut and into the dense, creeping mass of ants, got a few steps away and threw a burning match into the circle. In the next moment a bright fire was burning around my hut; the ants inside the circle seek to get out and burn up, while those on the outside sense the danger and move off in another direction. An hour later I could get back in and go back to bed. On their wanderings these ants eat all the creepy things they come across.

Down in Minatitlan the ants cleaned out the storehouse, the refinery and every other building of all the kinds of tropical vermin, including snakes, scorpions and the more harmless bugs. When they attack snakes they eat their eyes first. If you can't save yourself as I did on this occasion, there is nothing else to do except lying completely still and they will wander across your body. This may last several hours and it is a tough ordeal. In Minatitlan they were almost con-

sidered a welcome housecleaning.

January 22, 1923

Each day I grow even more fond of this place. I walk around the site and dream about what could be done. Here some trees should be cut down, there a good clean-up is necessary. The great heaps of ruins whisper about hidden treasures buried beneath them. In one place there is a long, narrow passage bricked up at one end. What lies hidden behind that wall? Some other place there is a mound. I know that there are burial chambers hidden in that mound. Yet, there are other things that have to be done first. Walls have to be supported, reliefs that are flaking off have to be fixed with lime. For hours on end I clean figures or reliefs, other hours are passed by drawing. Photographs have to be taken and I need to keep an eye on the workmen. Before I know it, the sun touches the treetops in the west, and the day is about to come to an end.

Now and then visitors arrive. Fortunately, this happens only rarely, as it takes so much time. A couple of foreigners—I get some news from the outside world and they explain everything about the ruins, how they were built etc., they are so well-informed—with their marvelous theories.

Or a group of half-breeds arrive from the village. All the men are mounted, the women and children trudge on behind them on foot, their babies sitting astride on their hips. They come here out of curiosity to see what the stranger is doing. It has caused a great deal of sensation that I have been excavating a few graves. They all ask for *Los huesos*, The bones. When they get to see them, they all stare in awe. "One doesn't last more than 20 years in our cemetery", they say when I explain to them that these bones are more than a thousand years old. The difference is that "one" will be wrapped in a poor straw mat and buried under a few feet of the moist soil, whereas the Maya were placed in carefully constructed, dry burial crypts.

The real Indians show up as well, and these are the best of them all. They appear from the forest without a sound, take a look around and don't say much. Having prowled about for a couple of hours without talking, only looking, they thaw, speak now and then—most of them speak some Spanish and I know a little of their language. I always take very good care of these guys. They explain to each other what they see, and many of their small comments have provided me with interesting leads.

A conversation is very slow; first I ask them how they are—answer: fine! Followed by an inquiry concerning my health. After having replied, fine thank you, we say nothing for a couple of minutes. Then I ask about the maize fields, the tobacco harvest and the hunting, and all of this is followed by brief answers and the proper intervals. Then I show them some kind of little Maya earthenware figurine and ask them if they ever find similar ones when working in their maize fields. To that question they always answer no and then we have a dram together. They don't refuse that. The aguardiente always makes their tongues loosen up. Then we talk about the wind and weather and about the road to some place, and now and then I sneak in a question about ruins. It can be taken for granted that they do not know of any ruins close by, but always some that are situated a couple of days' journey away. In this manner I often get information on new sites and I explore them further when I get there.

Little by little we become confident with each other, and suddenly they recall that they may have some small earthenware figurines in their huts and eventually also the fact that their hut is built in the middle of a ruin or very close to one. If you are impatient you'll never get to know anything from these people. If, on the other hand, you take it easy and act in the way that they are used to get around each other they will become good friends. They will come again bringing small presents such as fruits, nicely woven baskets or the like. The poor creatures are badly plagued by fever and I give them quinine. They are shy, but completely honest, so much more reliable than the half-breeds who are haughty and call themselves "gente de razon" = "gens de raison", in contrast to the Indians who are referred to as "gente de rafacha". "Refaja" [sic] is the 2-3 meter long cloth the Indian women use as a skirt wrapped tightly around their hips.¹

Later

I sat down outside my hut for a little while. The moon hangs above the tower of the Palace and throws a fantastic light upon the buildings and the temples. The Otolum creek is roaring in the darkness below the trees and the cicadas are singing incessantly. Now and

then the blowing of a cow horn can be heard down from the lowlands. It is my Indian friends who blow to scare away the jaguar. The forest is black against the starry sky. There the Pleiades, which had such tremendous importance to the religion and astronomy of the Maya, can be seen. This constellation was also very important to the Aztecs. They believed that it would be the end of the world when a period of 52 years had run out. Hence they sacrificed to the gods in the final days before such a 52-year period would elapse. All fires were put out, in the temples as well as in the homes, all earthenware jars were broken to pieces, for if the sun rose to a new period, then they would enter this new century (as one may call it) with new kitchen utensils. Everyone would sacrifice blood from their body by piercing their earlobes with maguey thorns. The blood was collected in straw and offered to the gods.

The evening before the last night the high priests went in a procession to a high mountain outside Mexico [City]. On the top of the mountain they waited in fear, fearing that the sun would not appear in the sky again. They followed the movement of the Pleiades, and as the constellation reached zenith, the new fire was lit. Runners stood ready with torches, they ran with the new fire to all towns and temples across the wide plain, and in the temples the people would fetch the fire for their hearths. The people was celebrating that the sun would continue its course through a new period. Isn't it splendid? Can you imagine those thousands of people waiting in fear, everyone looking to the top of the mountain, seeing the first flames up there, creating light both there and in the hearts of the thousands that are waiting. Look at the runners who spread towards north and south, east and west. The torches resemble small luminous points in the night over the plain. The sun, the bringer of life, the bringer of light will continue its course. The sun and the rain, Tonatiuh and Tlaloc, were the great gods.

The North Star was followed by the Maya, and they were careful about Venus. The cycle of the moon they had calculated with only one day's error in a period of 300 years compared to our modern calculations. By a simple system of numbers and signs their solar calendar covered a period of more than 374,000 years (three hundred and seventy-four thousand years) without messing up the numbers. What about our pitiful, tiny centuries!

To be continued in the next PARI Journal.

¹Young Blom's attempts at Spanish etymology do not seem quite convincing. "Refajo" is a heavy skirt, but the word could hardly be related to the expression "gente de rafacha".