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General Editor Merle Greene Robertson
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Cover illustration:

GI 'Hunahpu

Birth: 1.18.5.3.2 9 Ik 15 Ceh 2697 B.C.

Drawing by Linda Schele

The Hauberg Stela: Bloodletting and the Mythos of Maya Rulership

LINDA SCHELE
UNIVERSITY OF TEXAS AT AUSTIN

The Hauberg Stela first came to public attention in the *Before Cortes* Exhibition of the Metropolitan Museum of Art in 1970, where it was dated stylistically as "Protoclassic, probably A.D. 100-200," and tied iconographically to both Izapan art and Early Classic monuments at Tikal (Easby and Scott 1970:214). Its second publication was as a rubbing, accompanied by the observation that "this unique miniature stela appears to date from a time before the characteristic Peten formalism had crystallized" (Greene, Rands, and Graham 1972:262). Although its assessment as an early monument has generally been accepted by Mayanists, little attention and no further analysis has been focused on it since these earlier publications. However, new findings in and understanding of the archaeology and iconography of the Late Preclassic period have made it possible and important to place the Hauberg within the larger context of the evolution of Maya civilization as an example of an intermediate stage of development, both in the evolution of the hieroglyphic writing system and in strategies employed by the Lowland Maya to charter kingship and sanctify social reality. This paper examines the date of the Hauberg, the content of its hieroglyphic text, and its iconography within the context of the growing body of information known about the Late Preclassic and Classic periods of Maya civilization.

The Inscription

The inscription opens with a column of large glyphs occupying the left vertical side of the monument (Fig. 1). The first six glyphs record the date, but the components are ordered in an unorthodox fashion, as follows: ISIG, haab, G5, unknown, 17C, tzolkin. Peter Mathews originally questioned the authenticity of the monument because of this odd ordering of the date, but he has informed me (personal communication 1982) that the recently found San Diego cliff carving, a Late Preclassic work of unquestioned authenticity, also has an unorthodox ordering, i.e., tzolkin, ISIG, haab, and lord of the night, confirming the acceptability of the Hauberg ordering as both genuine and very early. Furthermore, David Stuart (personal communication 1983) has pointed

out the existence of several Classic monuments (Quirigua Stela U, El Peru Stela 13, and Copan Stela 16 that have the same haab-tzolkin reversal of CR dates. The use of the ISIG with a CR date but without a LC notation is also known from a number of Classic monuments, including Tikal Stela 4 and the same Copan Stela 16. The unorthodox order and the abbreviated format of the Hauberg date, therefore, has precedents on monuments of known provenience from the Late Preclassic and the Early Classic periods.

The components of the Hauberg date are not only arranged in an unusual fashion, but they are damaged in critical areas and present arithmetical problems that are difficult to resolve. The ISIG has the expected superfix and T548 tun sign. The infixed patron of the month is a long-snouted beastie with in-curling fang and muzzle configuration (Fig. 2), remarkably similar to the upper



Fig. 2 *The Initial Series Introductory Glyph of the Hauberg* (drawing by George Stuart).

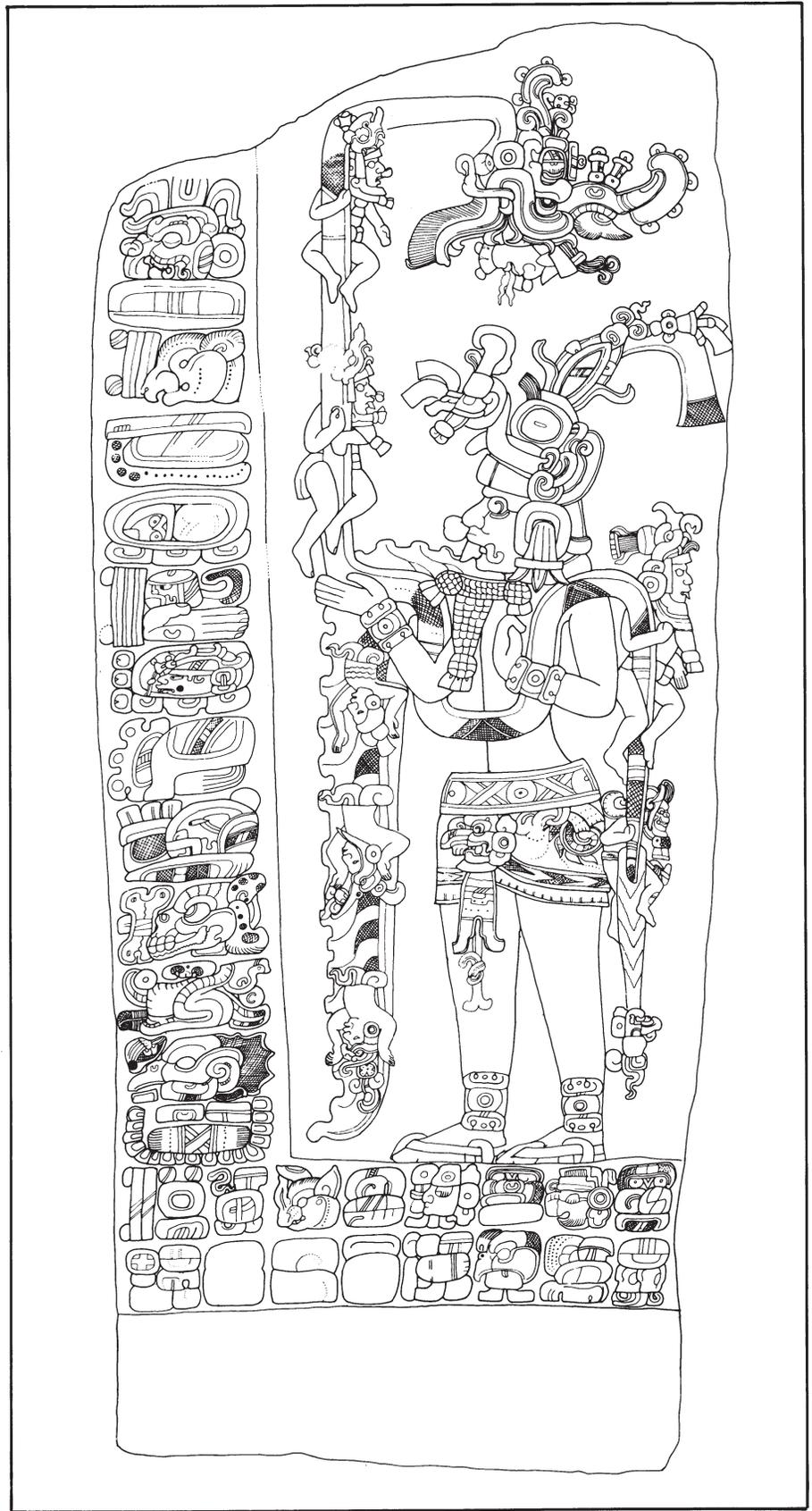


Fig. 1 The Hauberg Stela.

heads on Cerros 5C-2nd (Freidel and Schele 1982). The haab at A2 clearly has 12 as its numerical coefficient (Fig. 3), but the identification of the month sign is somewhat problematic. It is an animal head most closely resembling Xul, but it lacks the T116 affix expected with Xul. Furthermore, the ear and cheek configurations closely resemble those of the Zotz' glyph below at C1.

In most cases the ISIG patron would point towards one or the other of these possibilities, but here it is not conclusive. Thompson (1971: Fig. 22) shows xoc as the patron of the month Zotz', but has only one example for the month Xul. However, a sky sign is clearly shown as the patron of Xul on Lacanja Lintel 1. At first appearances the Hauberg patron seems most likely to be an early xoc, but Freidel and Schele (1982) have shown that the facade of Cerros 5C-2nd is the prototype of the Classic Celestial Monster with the lower heads corresponding to the rear Quadripartite Monster of the Classic beastie, and the upper heads corresponding to the crocodilian front head. The close resemblance of the inward-turning, long muzzle and the in-curling fang of the patron head to the profiles of the upper heads at Cerros can be viewed as evidence for the identification of the Hauberg patron as the front head of the Celestial Monster, and therefore as a zoomorphic version of sky. This latter possibility makes its identification as the patron of Xul as likely an identification as the patron of Zotz'. Since the initial writing of this analysis, John Hauberg has responded to my enquiries concerning the month glyph, and he informs me that the curving line I had previously suspected to be the leaf nose of the zotz' bat is in fact a sphere of harder stone embedded in the softer stone of the stela. This information further supports the identification of the head as the Xul animal.

A3 is clearly G5 of the Lords of the Night, a fact first demonstrated to me by Peter Mathews (personal communication 1982). Glyph F is missing, but G5 also appears without Glyph F on the Leiden Plaque, so Glyph F is not a requirement in early texts. A4 is unknown, but may be related either to the haab notation or to the odd Glyph C that follows at A5. This strange glyph has a day sign cartouche, but it is without a numerical coefficient. The inner space is divided into equal halves, with an unknown sign on the left and an obliterated sign on the right. This glyph does not include known signs nor does it correspond to any structural position reconstructable from Classic texts.

Glyph C appears at A5 with a coefficient of seventeen, a number impossible in the Classic system of lunar reckoning. God C stands above the T713 "to end" glyph, and although it is not normally found with Glyph C, it does appear in Glyph B of the Lunar Series in the door jamb texts of the Group of the Cross at Palenque. The presence of the number seventeen suggests that the Late Preclassic Maya were reckoning lunations using a radically different system than the six lunation semester of the Classic period.¹

The tzolkin position closes the record of the date, but

again an unambiguous reading eludes me. The day cartouche contains a young male head with T84 atop its head. Of the day signs that can go with the haab coefficient twelve, only Kan fits the drawing, and based on this correspondence, I have previously listed (Schele 1982:86) a series of possible LC positions for 3 Kan 12 Xul and 3 Kan 12 Zotz'. The inclusion of the G5 as a condition of the date delimits those possibilities further to 7.17.10.9.4 3 Kan 12 Xul (November 29, -8)² and 8.15.7.5.4 3 Kan 12 Zotz' (A.D. 344, July 24). The latter date is surely too late for the style of the Hauberg.

To further complicate the matter, Lounsbury, Mathews, Justeson, and Stuart (personal communication 1982) have argued that the head is marked as ahau by the presence of a circle on its cheek. I have been able to confirm the presence of this circle and its internal cross-hatching from detail photographs recently provided by the owner of the monument. Furthermore, Lounsbury has tentatively read T84 as *ah* and suggested that here it functions as a phonetic complement for ahau. There seems little doubt that the day sign is the anthropomorphic version of ahau, an identification that poses another problem because of the 12 coefficient of the haab. In order to accept the identification of the day as ahau, we must assume that the coefficient of the haab is in error or that the date is one of the so-called "Yucatecan-style" dates in which the haab is one behind the tzolkin. Mathews (1977) has observed that these kinds of dates are usually accompanied by a half-darkened kin and suggested that they record rituals that took place at an hour of the day at which the tzolkin had advanced, but before the haab had changed. If this date is deliberately in "error," the mysterious glyph at A4 may signal this special category of "Yucatec-style" dates. The date, therefore, may also have been 3 Ahau, which, combined with the haab possibilities, yields two additional possibilities: 8.8.0.7.0 3 Ahau 13 Xul (A.D. 199, October 10)² and 8.4.15.7.0 3 Ahau 13 Zotz' (A.D. 135, September 16). Of these four possibilities, the 3 Ahau 13 Xul date seems to be the most likely reading.

While the date of the Hauberg is unclear, the remaining portion of the first clause follows the syntactical order expected from Classic inscriptions and includes a known verbal expression, names, and titles. A7 is the T712 bloodletting glyph with a shell-*yax* prefix (Fig. 4a); this exact verb, with the addition of the T181 verbal suffix *ah*, occurs on Tikal Stela 10 (Fig. 4b), preceded by the date 7 Cib 14 Yax (9.5.4.5.16) and followed by the ruler's name "Curl-Head." The same T712 glyph appears as the verbal noun following an auxiliary verb + *ti* expression (Josserand, Schele, and Hopkins n.d.) on Yaxchilan Stela 24, where it is the recorded event for a scene that is clearly of tongue mutilation. We can assume, therefore, that the event recorded on the Hauberg is one of bloodletting, and as will be seen, the iconography fully supports this reading.

A8 is a prepositional phrase including T89 *tu*; a very early God C head; and T24, believed by many epigraphers



Fig. 3 The *haab* glyph (photograph courtesy of John Hauberg).

to be a *-vl* suffix. God C with Thompson's "water-group" prefix has been associated with the dotted material scattered on period endings at Yaxchilan (Stuart 1982) and with the material shown emerging from the mouths of women undergoing tongue mutilation at Yaxchilan (Schele 1984). There seems little doubt that this group of suffixes and its God C head variant record blood. These blood affixes are often suffixed to the T714 "fish-in-hand" glyph, another verb that accompanies bloodletting scenes, and blood seems an appropriate substance to record in connection with such acts. The Hauberg verb, then, is the T712 bloodletting glyph followed by a prepositional phrase recording that the substance let is blood.

The final four glyphs of the first clause appear to record the subject and presumably the person shown in the scene. The first of these glyphs (A9) includes a long bone prefixed to a skeletal head, marked with upper and lower front teeth and a long spotted ear. The presence of upper teeth and the ear suggests that the skull is that of a rabbit, and based on this identification, I will tentatively designate this ruler *Bac-T'ul* ('Bone-Rabbit'). A10 seems to be a reptilian head with mouth gaping open; I suspect this glyph is part of the personal name. It is followed at All by a bird head distinguished by a nose attachment appended above a bulging nostril. This nose attachment is marked by a torch, pronounced *tah* in both the Yucatecan and Cholan languages. The torch seems to function here as a phonetic complement specifying a reading of *ta*, making this bird the earliest known example of the head variant of the locative *ti/ta*, usually written as the *tahol* vulture (T747a). The use of the torch, instead of T59, as a phonetic complement for this head variant suggests that the Maya writing system had a significant

phonetic component even at this early stage of its development.

I suspect that the glyph following the locative is an Emblem Glyph, but its form is different from the EG typical of the Classic period. It includes the expected T168 *ahpo* title, but the "blood" prefix is rendered as a contour of beads (blood often appears with a beaded outline) surrounding the main sign. To my knowledge, the main sign (T563b) occurs in no other identified EG, but it may be of interest to note that two of the headdress zoomorphs of the masked façade at Kohunlich³ are marked by this same T563 glyph. If the Kohunlich use of the glyphically marked headdress motif can be taken as some sort of place designation, then the Hauberg may have come from that region. Certainly the style of the Kohunlich building seems to be from approximately the same period.

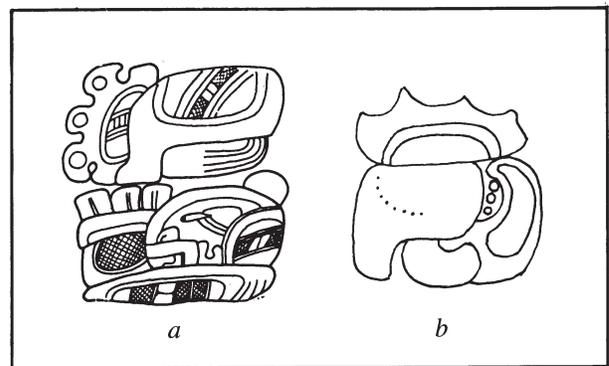


Fig. 4 The T712 "Bloodletting" Verb (a) the Hauberg Stela, A7-A8; (b) Tikal Stela 10, D11.

The first clause of the text, then, records a Calendar Round date with its Lord of the Night, an unknown glyph, and 17C glyph. The date is followed by a bloodletting expression, the name of the subject (presumably the pictured person), a locative preposition, and perhaps an early Emblem Glyph. The remaining part of the text (Fig. 5) is more difficult to read. A13 is clearly a Distance Number, but the main sign does not correspond to any known period glyph. However, because the affixed numbers appear in the configuration expected for the first unit of a Distance Number sequence, I am tentatively assuming that two uinals and twelve days are recorded, and that the chronological order of the events follows the reading order of the text, giving the following dates at the appropriate intervals from the four possible positions of the initial date:

7.17.10.12.18	5 Etz'nab	6 Ch'en	-7, January 20
8.4.15.9.12	3 Eb	5 Yaxkin	135, November 7
8.8.0.9.12	3 Eb	5 Ch'en	199, November 30
8.15.7.7.18	5 Etz'nab	6 Yaxkin	344, September 14

The verb following the Distance Number seems to be an early version of the T168:518 verb (Fig. 6a), which

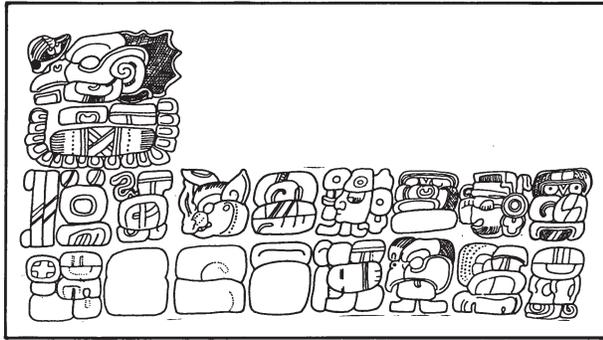


Fig. 5 The lower inscription of the Hauberg

appears on Naranjo Stela 22 (Fig. 6b) as the verb for heir-designation (or accession), and on the west panel of the Temple of Inscriptions (Fig. 6c) as the accession of the ruler. Throughout the Classic inscriptions, it occurs as a title, and although we do not yet understand its specific reference, I think that some sort of office-taking can be assumed for the Hauberg text. The *po* sign in the T168 title appears to be replaced by a sign resembling the undulating body of a snake; this same substitution can be seen with the T518 title in the Late Classic on Tikal Stela 5 (Fig. 6d). It seems likely that the Hauberg text features a bloodletting ritual that took place fifty-two days before an office-taking rite. Unfortunately, the remainder of the text is either eroded or it lacks a clear syntactical framework. E2 seems to repeat the Emblem Glyph at A12, and H1 is the “*hel*-“succession” glyph that occurs throughout the Classic period with numerical prefixes and/or in titular references.

Of the four possible pairs of dates suggested for the Hauberg, the Kan sets seem either too early (7.17.) or too late (8.15.) for the style and glyph content of the Hauberg. For this reason I believe one of the two *ahau* sets to be the most likely decipherment; the 8.8.0.7.0 position is supported by the association of the ISIG with the upper heads at Cerros and by Justeson’s speculations concerning the 17C notation at A5. In both cases of *ahau* dates (8.4.15.7.0 [A.D. 135] and 8.8.0.7.0 [199]), the Hauberg date is a full one hundred years earlier than Tikal Stela 29 and can now be identified as the earliest known lowland Maya monument with a date recorded in a format and with most of the features characteristic of the calendar notation system used during Classic period.

The Iconography

In the pictorial scene (Fig. 7), a profile figure stands, holding a serpent draped across his chest and arching above his head. This figure is simply dressed, but he wears a mask and an object, overlaid by three inverted, mutilated upper bodies, which hangs downward from behind his right shoulder. The serpent he holds has a supernatural head emerging from its mouth, and four miniature figures are shown clinging to its body. Easby and Scott (1970:214) commented on the resemblance of this serpent motif to Izapan “sky faces” and to the bicephalic serpent bar of Classic period iconography. Rands (Greene et al.:252) also commented on the resemblance of the Hauberg iconography to Early Classic stelae at Tikal, but he also emphasized that the details of the composition violate the canons typical of Classic royal portraiture. Accepting that detectable differences echo the earlier style of the Hauberg, its iconography can be directly associated with the charter of rulership and with the bloodletting ritual so prominent in the iconography of Yaxchilan, but also present at Tikal, Copan, and Seibal.

The Figure and Costume

The male figure is shown in the rigid, standing posture characteristic of very early Maya style. The legs are depicted in Proskouriakoff’s Pose A (1950:19), with no overlap below the knees. The pelvic area seems impossibly wide because it is warped into three-quarter view in order to facilitate reading the details of the loincloth ornament. The hip cloth is held in place by a thick belt with the expected disk and crossed-bands markings, and a jaguarian zoomorph overlays the frontal loincloth. This jaguar head relates directly to the lower heads on Cerros 5C-2nd, and to the crueler-eyed GIII heads attached to the front of belts on most pre-9.2.0.0.0 monuments at Tikal and elsewhere (Freidel and Schele 1982). The loincloth has a stepped indentation at its end characteristic of royal costume on Tikal Stelae 1 and 9, although the Hauberg lacks the serpent frets typical of later patterns of dress.

The upper torso of the figure is in full profile view and bare of costume, while the shoulders, like the pelvis, are shown from a more frontal view. The left hand is cocked in the position normally found with the serpent bar in Classic iconography, while the right hand is ex-

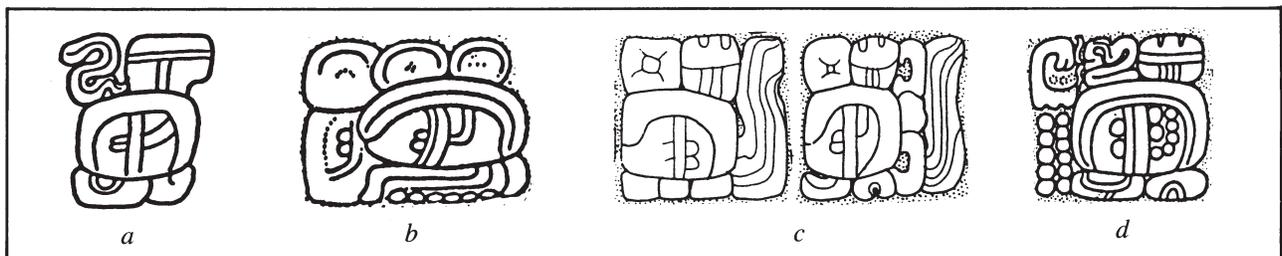


Fig. 6 The T518 verb (a) the Hauberg Stela, B12; (b) Naranjo Stela 22, A10; (c) Palenque Temple of Inscriptions west, F12 and H2; (d) Tikal Stela 5, D9.

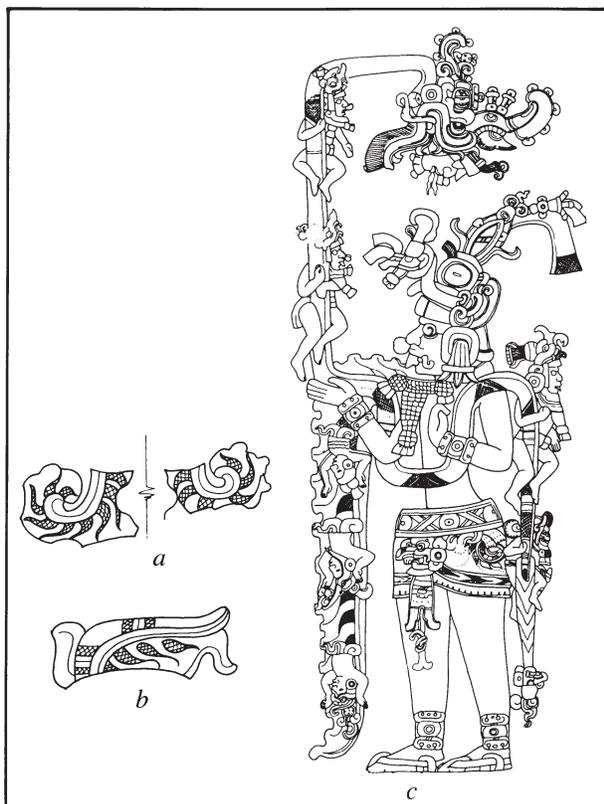


Fig. 7 (a) Detail of the Stormy-Sky name from the front of Tikal Stela 31; (b) "tree" sign from Tikal Stela 26; (c) the figure from the Hauberg Stela.

tended outward from the body in the "scattering" gesture associated with bloodletting rituals. The wrist and ankle cuffs are marked with disks framed by the same "tooth" motifs shown on the Tikal Stela 31 cuffs. The sandals are separate from the cuffs and seem to have a horizontal strap pulled through leather loops at the ankle and ball of the foot. The rear loop is typical of Early Classic sandal forms, but the front loop seems to be unique to the Hauberg.

Costume detail is kept to a minimum except in the elaborately decorated head gear. The face of the figure is covered by an unidentified anthropomorphic mask, marked as supernatural by the presence of a scroll eye motif and perforator tooth. The headdress is composed of a chin strap from which depends a triangular object, perhaps marked as quilted material. The back of the head is covered with two layers of cloth, not unlike the headdress forms on Tikal Stelae 7, 9, and 13. A large ear flare hangs beside the face mask and has a tri-pointed appendage hanging from the central depression. A vertically-oriented personification zoomorph rides above the ear in a form retained on Tikal Stelae 20 and 31; I suspect it may be the forerunner of the personified wing typical of Classic Period head gear.

The upper zone of the headdress can be divided into three sections: (1) a forehead band and cloth cap overlaid by a cantilevered zoomorph I suspect to be the Jester

God; (2) a round frame with an incised glyph; and (3) an arcing top section composed of a number of objects typical of Early Classic headdress assemblages. These latter motifs are: (1) an oblong object with flanking scrolls (it is also seen shown with the cantilevered zoomorph and atop the rearing serpent head); (2) a smoking ahau, designating the figure as "lord"; (3) the bell-cylinder-and-ribbons motif; and (4) an arching cloth, later replaced by a stuffed jaguar pelt or boa skin. The figure is a historical person, dressed in costume closely resembling royal dress and identified by elements that in the Classic period mark rulers. He wears the face mask of an anthropomorphic supernatural distinguished by a scroll eye, perforator tooth, mouth emanation, and spherical nose ornaments.

The most unusual piece of costuming is the sprocketed object that drops from behind the figure's right shoulder. The straight edge of this object is marked by a double line from which emerges *caban*-like signs. At first view I identified this object to be related to "earth" iconography, but closer inspection suggests that it is more closely related to "tree" marking, such as seen in Bz2 on Tikal Stela 26. Shapes identical to it are shown emerging from the "sky" glyph of Stormy-Sky's name on the front of Tikal Stela 31. Unfortunately, the Tikal occurrence is unique to that example and offers no clue as to its identification or meaning. On the Hauberg, this unusual hanging object is overlaid by three inverted figures with blood scrolls gushing from their bifurcated bodies. Each descending figure wears a different headdress, with the lower one topped by a *kin*-sun glyph, the central one wearing a long-beaked bird enveloping his head, and the upper wearing an unidentified motif. The bifurcated bodies appear to mark these figures as sacrificial victims, while their size and headdresses suggest identities as supernaturals.

The Serpent and the Bloodletting Ritual

Bone-Rabbit holds the rearing serpent in his arms, with a hand gesture that is particularly associated with the bicephalic serpent bar in later compositions. Furthermore, the four climbing figures are similar to those shown climbing a double-headed serpent on Tikal Stela 1 (Fig. 8b). However, in the Early Classic period at Tikal and elsewhere, these figures are not shown on the serpent-bar scepter held in the hands of the protagonist, but rather they climb along the verticals of a backrack device that terminates in serpent heads analogous to the bar designs. That these motifs can be identified functionally as backracks can be confirmed on Caracol Stela 16 (dated at 9.5.0.0.0) where the design appears on the same plane as the protagonist and without the complex design and wraparound format that makes the Tikal examples difficult to read. The Caracol example (Fig. 8e) has the feathers typical of backrack devices, and it is shown hanging downward and from behind the upper area of the body. El Peru Stela 22, like Caracol Stela 16, shows this device on the same plane as the protagonist, where it appears without feathers or other obscuring details (Fig.

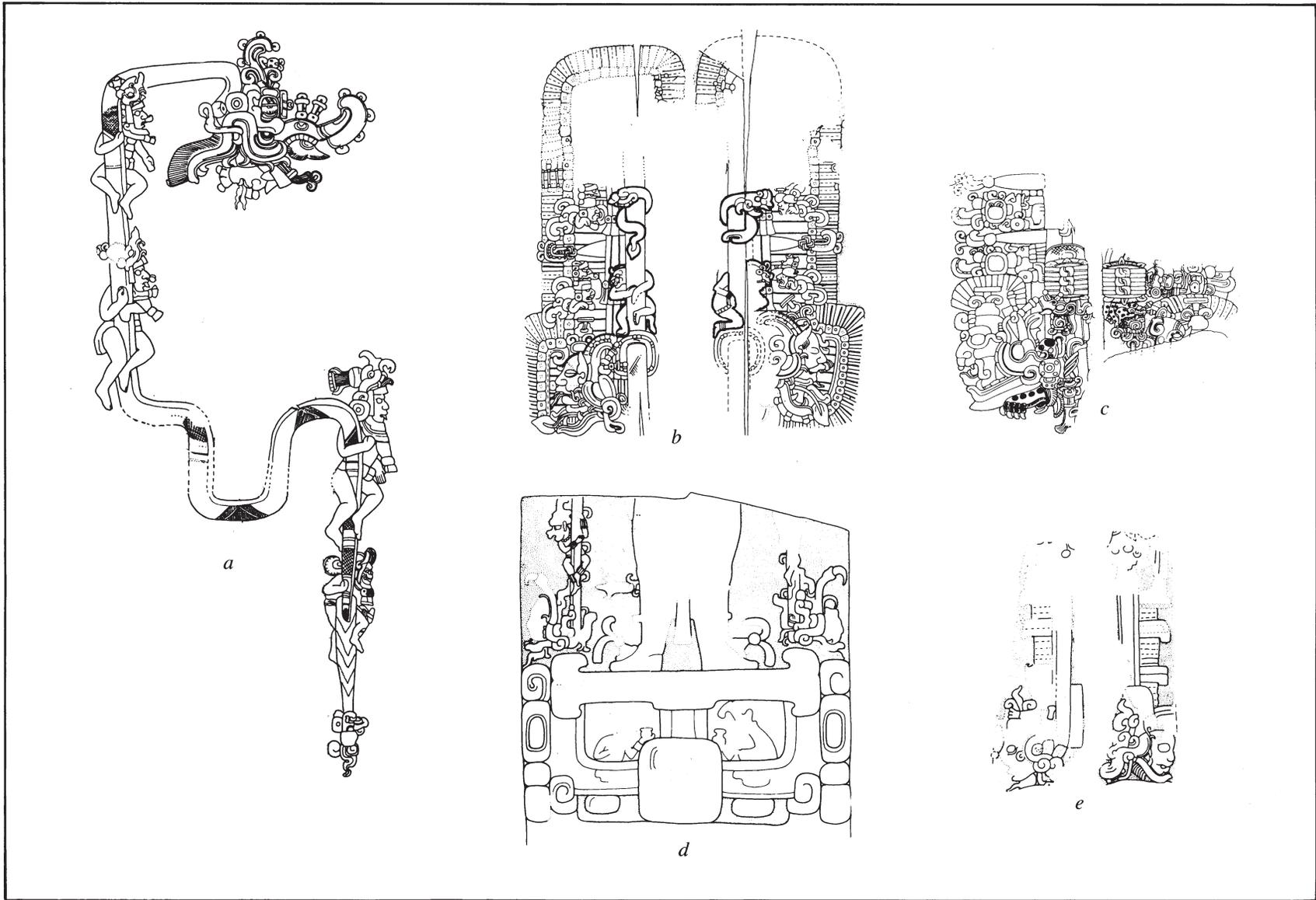


Fig. 8 (a) Vision Serpent from the Hauberg; (b) backrack from Tikal Stela 1; (c) backrack from Tikal Stela 28; (d) El Peru Stela 22; (e) backrack from Caracol Stela 16.

8d). Interestingly, full-figured beasts are shown climbing only the El Peru Stela 22 and Tikal Stela 1 devices (Fig. 8b and d); on all other examples, these figures are either missing, or they emerge as head and forelimbs only from motifs attached to the serpent bodies.

The climbing figures on Tikal Stela 1 consist of two pairs – an upper legless pair and a lower limbed pair (Fig. 8b). The left upper figure is clearly a rattlesnake, while the right upper has an upturned snout and bifurcated tail, perhaps identifying it as a xoc fish. The lower left figure is jaguarian with a vegetal (water lily?) head ornament, and the right is a zoomorph closely resembling the figure emerging from the right head of the serpent bar above. I suspect the right figure is the zoomorphic version of GI while the jaguar refers to GIII. If this association is correct, the upper and lower pairs can be viewed as paired oppositions with the lower pair contrasting GI and GIII and the upper contrasting a rattlesnake and a xoc fish. The analogous figures do not survive on Tikal Stela 2, but on Stela 28 (Fig. 8c), the right backrack head is jaguarian while the left is marked with reptilian features. The small figures emerge from a tri-knot motif attached to the backrack verticals. The left jaguarian head is associated with the reptilian figure, perhaps again meant to be a xoc. The right reptilian head is associated with an emerging jaguar. As on Stela 1, the arrangement invites analysis in terms of horizontal and vertical oppos-

itions, although the pattern of opposition is different.

While the clinging figures are analogous to the compositions discussed above, the Hauberg serpent is neither the backrack nor the royal scepter bar of the Classic period (Fig. 9a). First of all, the body is not bicephalic, but rather has a single head and a tail at the opposite end. Furthermore, the verb of the text describing this scene is bloodletting; the Classic analogue of this serpent should be sought, therefore, in the iconography of bloodletting. In this context, the rearing posture of the Hauberg serpent recalls the vision serpents of Yaxchilan Lintels 13, 14, 15, and 25. On Lintel 25 (Fig. 9c), the serpent is bicephalic with a “tlaloc”-masked human head emerging from the upper head and a fully zoomorphic “tlaloc” emerging from the other. The Lintel 15 vision serpent (Fig. 9b) is single-headed and, like the Hauberg serpent (Fig. 9a), it is marked by T566 *can/chan* serpent markings. In both Yaxchilan examples, the serpents seem to rise vertically from bloodletting bowls and overlay S-scrolls, identified by Stuart (1982) as blood scrolls, signifying perhaps that the visions are of or originate from blood sacrifice. The Hauberg serpent, like all vision serpents of the Classic period, has a head emerging from its mouth.

Perhaps of more direct relevance and certainly of wider distribution, are the vision serpents of Lintels 13 and 14 (Fig. 10a-b). In both these scenes, the vision serpents

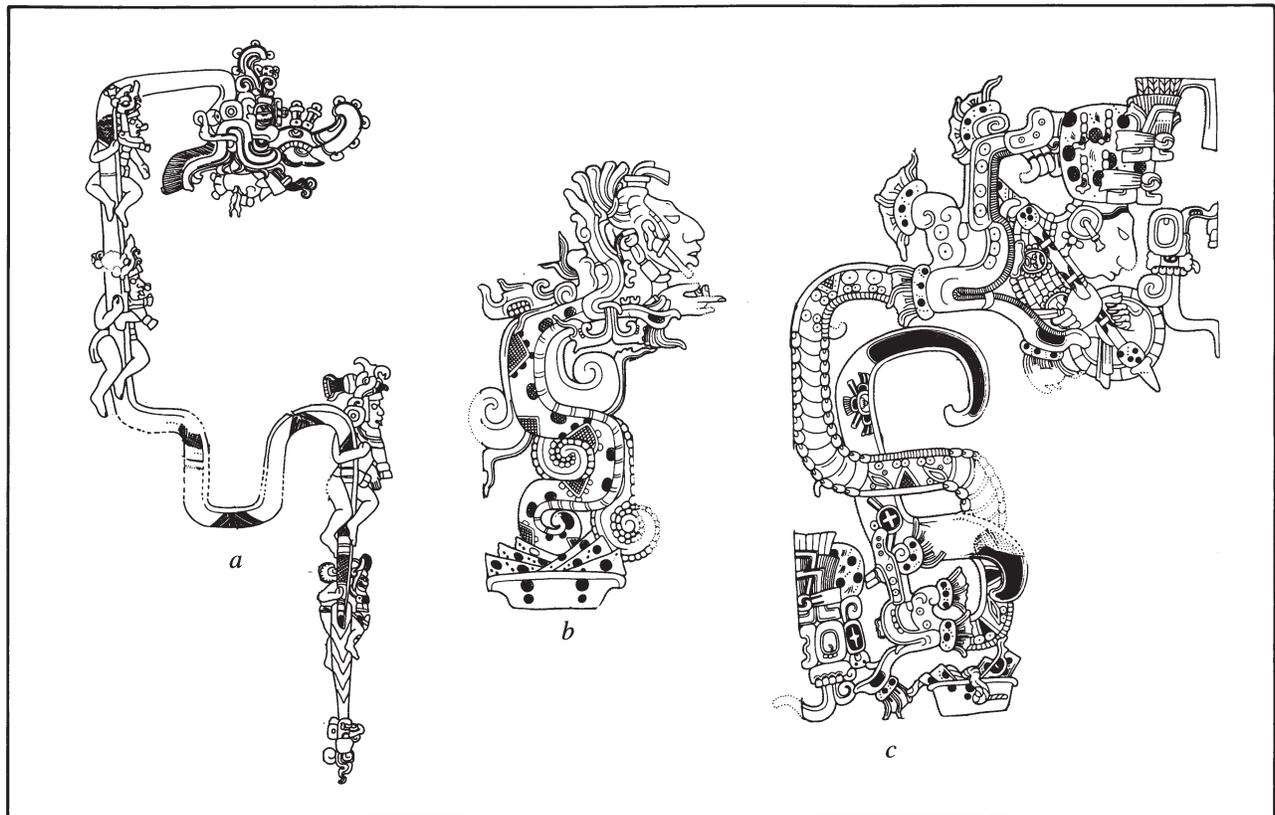


Fig. 9 Vision Serpents: (a) the Hauberg Stela; (b) Yaxchilan Lintel 15; (c) Yaxchilan Lintel 25.

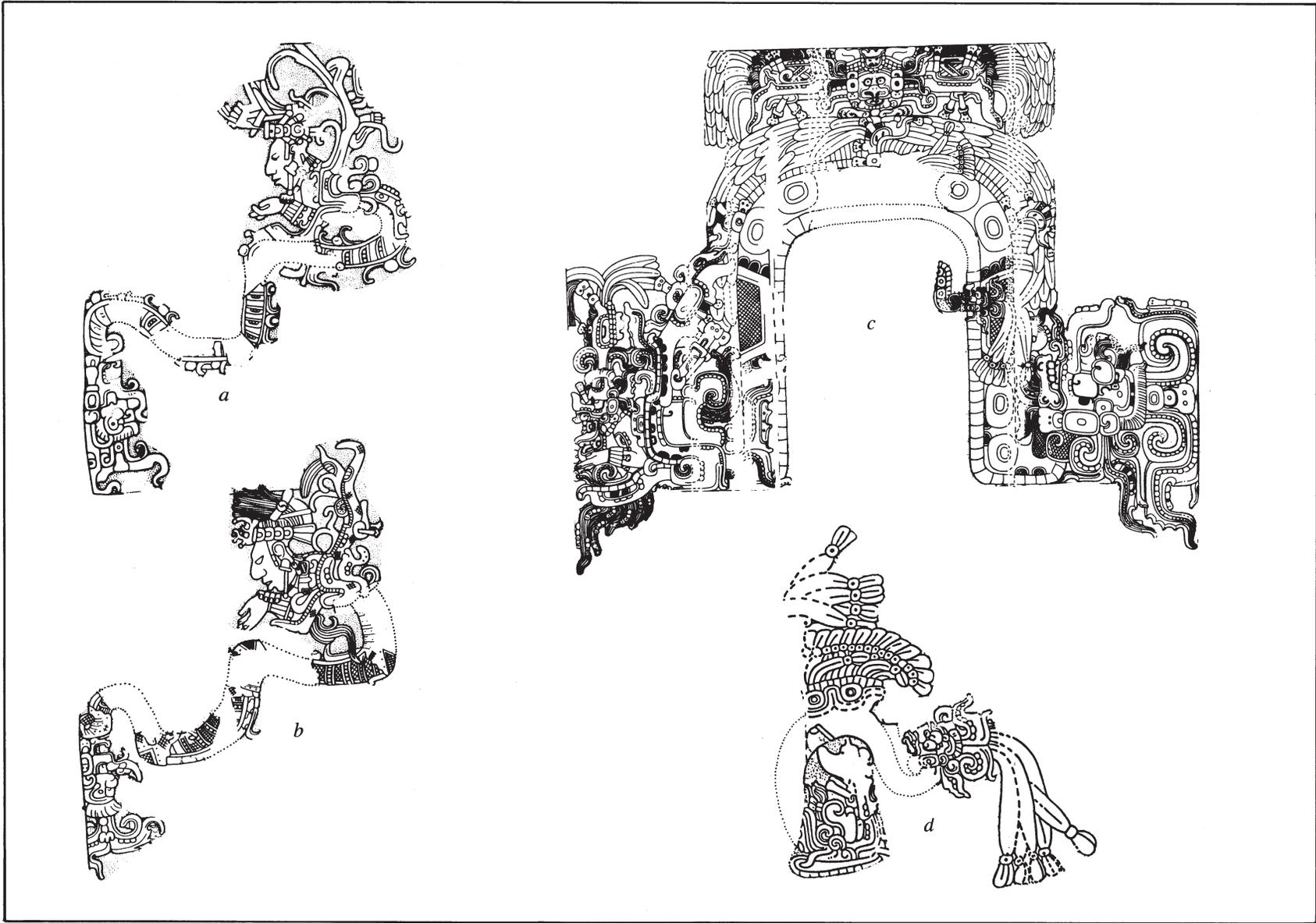


Fig. 10 Vision Serpents: (a) Yaxchilan Lintel 13; (b) Yaxchilan Lintel 14; (c) Tikal Temple IV Lintel 3; (d) Tikal Temple IV Lintel 2.

appear in rearing position, and like the Hauberg, they are held by the persons participating in the vision rite. These serpents, however, are somewhat different than the examples discussed above; their bodies have alternating bands of normal and flayed areas and they have specialized God C heads attached to the ends of the tails. In the two Yaxchilan examples, on Tikal Temple IV Lintel 3 (Fig. 10c), and Copan Stela D, the serpent body terminates in an inward-turning scroll to which is attached a skeletal zoomorphic head. The foreheads of each of the terminal heads are infixed with a God C glyph fringed by short cropped hair. Symmetrical scrolls with a central bone element emerge from the tops of these rear heads, and in many examples these scrolls have a dotted outline. I suspect that the skeletal God C and scroll designs form a unit that functions as a variant of the T41 God C blood glyph and, therefore, specifies blood as the source or media of the vision. They seem to be analogous to the blood scroll surrounding the Lintel 15 and 25 serpents, neither of which have this God C blood-scroll head.

The heads emerging from the mouths of the Yaxchilan serpents appear to represent human personages, perhaps ancestors of particular importance. The vision serpent from Tikal, Temple IV, Lintel 3 (Fig. 10c), however, contrasts to the Yaxchilan examples in several attributes. It arches over the royal portrait and serves as a platform for the zoomorphic bird usually seen atop Celestial Dragons; both the arching position and bird seem to be direct references to the Celestial Dragon and function here as a means of implying either a substitution of the one for the other or an overlapping of function. Furthermore, the emerging figure is not a human, but rather a supernatural. It has a perforator fixed in its mouth, and the top of its head is pierced by a shell perforator, flanked by two of the dotted scrolls I have tentatively associated with blood. Surely this Tikal supernatural is equivalent to the personified lancet identified by Joralemon (1974) at many other sites. The Copan example has God K, a deity repeatedly associated with bloodletting, emerging from the mouth, and the costume of the ruler is dominated by bloodletting icons. Stela D celebrates a period-ending date, and bloodletting is one of the most commonly recorded and widely distributed of period-ending rites.

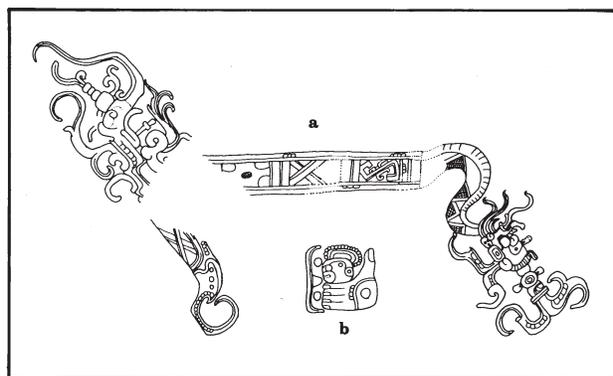


Fig. 11 Seibal Stela 9: (a) the Vision Serpent bar; (b) the "blood-in-hand" verb.

The latest example of the vision serpent occurs on Seibal Stela 9, one of five stelae associated with Temple A-3 and dated at 10.1.0.0. These five stelae seem to be arranged in a program, with each emphasizing a different complex of period-ending iconography. Stela 8 has the T528.116:713 "end of tun" expression, and the ruler Ah-Bolon-Tun/Ah-Hun-Kin is shown wearing GIII regalia and holding a GII head. Stela 11 shows the act of "scattering," and Stela 21, the interior monument, shows the ruler holding the God K scepter and the GIII shield. Stela 10 has "scattering" as the verb and shows this ruler holding the Celestial Dragon in the position of the Bicephalic Serpent Bar. Like Stela 10, Stela 9 has a dragon substituting for the expected Serpent Bar (Fig. 11a); however, in this case, the dragon is the Vision Serpent, rather than the Celestial Monster, and the verb seems to reflect this substitution. It is the T670, now known to record the act of holding or grasping something (Schele 1982:61-63); it is shown here grasping the God C blood glyph (Fig. 11b) so that "holding the vision serpent" is recorded verbally as "to hold blood."

The serpent on the Hauberg Stela does not have the skeletal God C head attached to its tail; instead the tail terminates in a pointed shape, marked by *etz'nab*-flint lines an shaped like a spear blade (Fig. 12). It is a blood-letter. Attached to the tip of the blade is a smoking ahau, a motif shown attached to all sorts of tails in Classic Period iconography. Instead of blood, the Hauberg serpent has the instrument that draws the blood attached to its tail.



Fig. 12 The lower, right climber and the top section of the serpent tail. Note the flint markings (photograph courtesy of John Hauberg).

The mouth of this vision Serpent (Fig. 13) gaps open with an anthropomorphic head emerging from its gullet. This head has a three-part, pointed device overlaying the eye and the looped, bound hair, diagnostic of a class of anthropomorphic supernaturals, including among others GI and GIII of the Palenque Triad. The head has the features of a young male, but the eye motif seems to associate it with the clay effigy figure (12c-508/35) from Tikal Burial 10 (W.R. Coe 1967:60). This full-bodied supernatural has aged facial features and is shown seated on a stool while extending a plate holding a decapitated human head. The head of the Vision Serpent is bearded. A bifurcated tongue emerges from the corner of the mouth, overlapping the counterweight of an earplug assemblage. A scroll motif rides atop the head, emerging from a mirror-image glyph reading “6 (or 11) sky.”

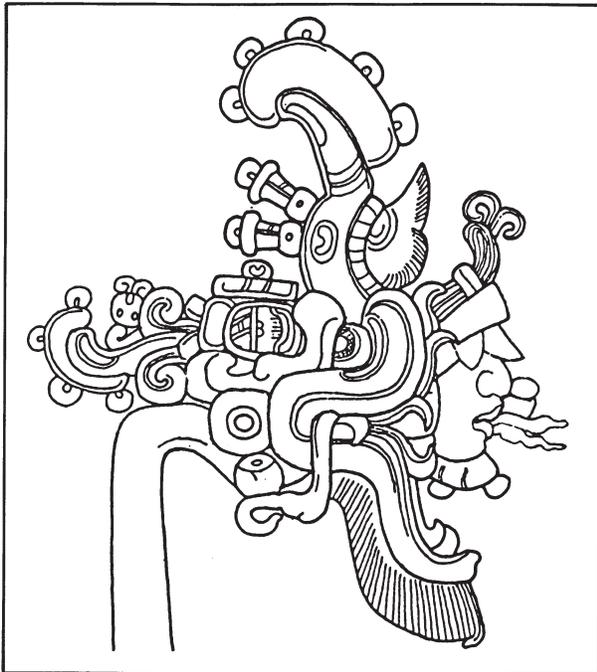


Fig. 13 Detail of the head of the Vision Serpent.

The four figures clinging to the body of the Vision Serpent are the only remaining element to be described. For the sake of clarity, I will designate them a, b, c, and d, moving from top to bottom and left to right. All four figures have anthropomorphic bodies, and figures a-c have anthropomorphic facial features, while figure d has a zoomorphic face. All four are minimally clothed and individual identification seems to be vested in the headdresses. The headdresses of the upper three figures include a horizontal ribbon overlaying the forehead. A second vertical ribbon lies at the rear of each face, and this second ribbon emerges above and below the forehead ribbon folding over it to lay atop the ear region. Exactly this configuration of ribbon marks the headdress of the GIII head held by Stormy-Sky on Tikal St. 31 (Fig. 14e).

The headdress of figure a (Fig. 14a) has a *lamat*-venus sign perched atop a zoomorphic head, marked by reptilian fangs, a large round eye, and an ear. The presence of the *lamat* glyph surely identifies this figure as some early manifestation of Venus. He clings to the serpent body immediately below the topmost curve, facing forward with his head turned into profile view. The right arm and both legs wrap around the serpent body, while the left arm hangs downward at an angle from the shoulder. His head is fully anthropomorphic with a fully human mouth and nose, but with the square-eyes that usually mark supernaturals.

Figure b (Fig. 14b) has his body and head turned profile to the viewer with his loincloth delineated behind the buttocks. The face has the same square eye, human mouth, and bead nose ornament as figure a, but in addition it has a large, pointed front tooth. The headdress is zoomorphic and seems to have the long curving teeth associated with saurian forms. A head stands above the zoomorph and overlaps the serpent body, but I cannot see enough detail in available photographs to posit an identification.

The headdress zoomorph of figure c (Fig. 14c), the upper left effigy, has the upturned snout characteristic of the xoc beastie in Classic Period iconography. The disk and fanlike device is attached to the top of the xoc head and closely resembles the Tikal Emblem Glyph and attached design, marking the GIII head on Tikal Stela 31, already associated with the headbands worn by these miniature figures. Figure c is shown in profile view, but like figure a, the left arm of this figure seems to be extended at an angle away from the body. The belt has a central motif that seems to foreshadow the trilobed knot characteristic of the costume associated with both the Palenque Triad (especially GI and GIII) and the Tikal Paddlers. Figures b and c have the round eye and large front tooth that mark the mask worn by the protagonist, and perhaps more importantly, they wear a bib similar in form to the human's. These shared characteristics suggest that the human wears attributes of one or both of these supernaturals as he undergoes the bloodletting rite.

Figure d (Fig. 14d) is the bottom-most of the figures, and like figures b and c, its body is shown in profile. A section of a belt is visible at the rear of the waist, and an axe is held in his left hand. The face is fully zoomorphic and resembles similar figures clinging to the left hand serpent body on Tikal Stela 1. A half-darkened ahau and a ribbon are suspended below the chin guard. The headdress, unlike those of the other three figures, is not zoomorphic; rather it has an upper, central scroll and it terminates in a sharp point from which emerges a hank of looped hair. A long curving device seems to emerge from the top of the headdress, passing behind the serpent tail. This headdress clearly associates this character with a supernatural identified by Hellmuth (1982) as a featured part of the Early Classic cache vessel and incensario complex. Characteristic of this Early Classic deity is the pointed, scrolled headdress, but it

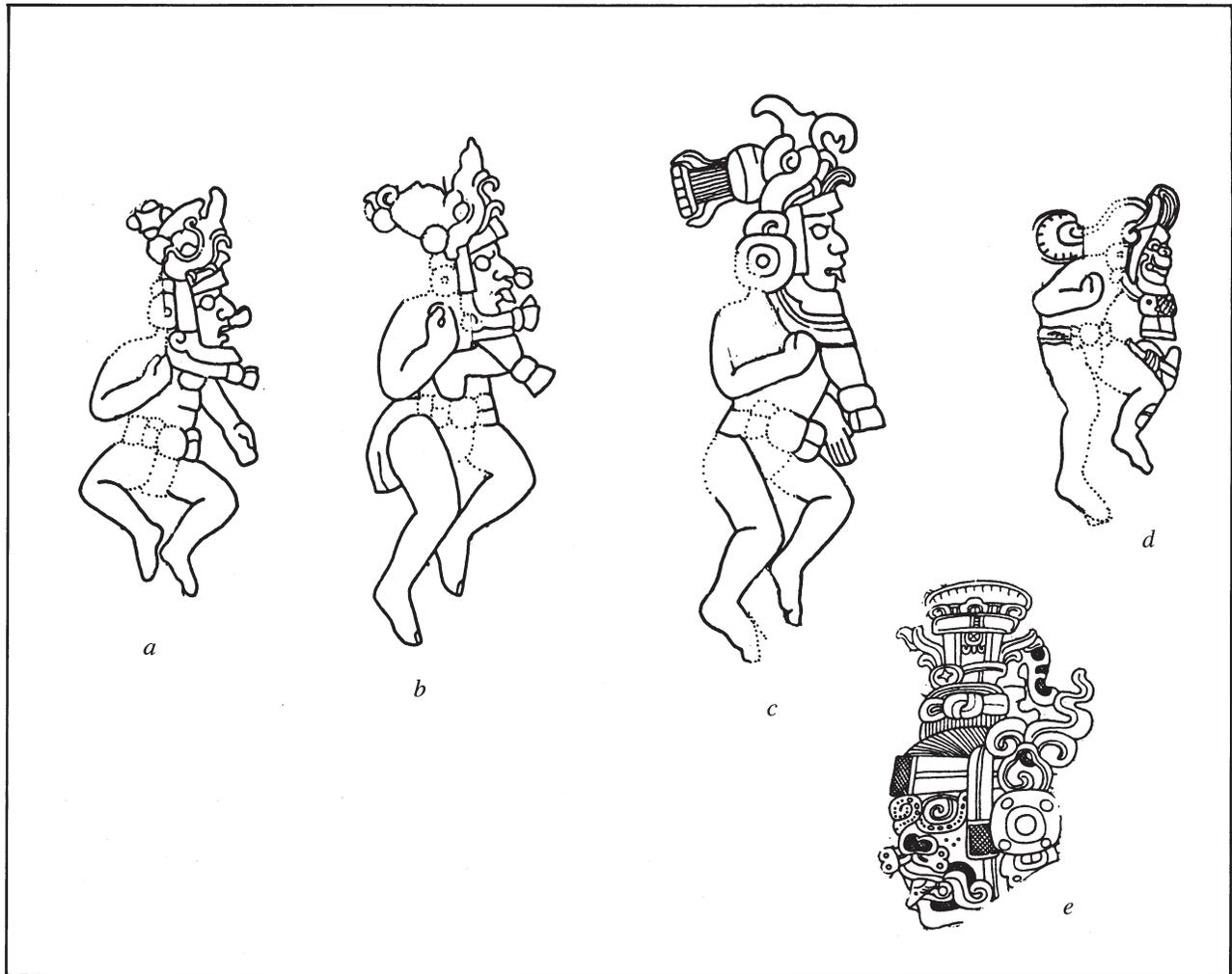


Fig. 14 The Climbers: (a) upper left; (b) lower left; (c) upper right; (d) lower right; (e) Tikal Stela 31, the GIII head.

also appears frequently with a triangular shape, marked by an interior triangle of dots, overlaying the mouth area. This mouth ornament also occurs in a title sequence at Yaxchilan on the Early Classic Lintels 22 (C4-D3) and 34 (A5-B5), where portrait heads of this deity are followed by “sky” and “loincloth” God C phrases. This particular supernatural does not seem to have survived as a part of Late Classic iconographic repertoire, or else its Late Classic allograph has not yet been identified. Figure d is the only one of the four miniatures which can be associated directly with a Classic period analogue, but costume elements characterizing these figures are known to appear with the Palenque Triad and Tikal Paddlers.

The miniatures on the Hauberg Stela can be associated with two complexes in Classic iconography: the backrack miniatures of the Early Classic previously discussed and the floating and costume miniatures of the Late Classic. Such figures are frequently shown dispersed among the costume elements of stelae at Quirigua and Copan. Stelae

H and D are particularly marked by these figures at Copan, and both monuments show 18-Rabbit involved in bloodletting rites and covered with bloodletting regalia.⁴ The sculpted portal of Temple 22 also has an assortment of miniature figures in a context that links them to the vision quest complex of Yaxchilan and the Hauberg. David Stuart (1982) has shown that the dotted scrolls that depict flowing blood in scenes of scattering and tongue mutilation (Fig. 14a-b) also occur with Vision Serpents (Fig. 15c-d) as the media of the vision. This “blood” motif makes its earliest appearance in Maya iconography on Structure 5C-2d at Cerros (ca. 50 B.C.) where, marked as “red liquid” by painted detail, it emerges from the mouth of the ear-flare grotesque (Fig. 15e). Stuart has further shown that these scrolls with droplet contours, especially in the “lazy-S” configuration, appear in the upper registers of Terminal Classic monuments in the Tikal region as the “media” in which miniatures float. The earliest example of this iconographic complex is found on Tikal Stela 22 (Fig. 15f), while the latest examples occur on tenth cycle monuments Tikal, Ixlu, Jimbal, and Ucanal (Fig. 15 g-j). Glyphically and pictorially, all these monuments record “scattering, ”

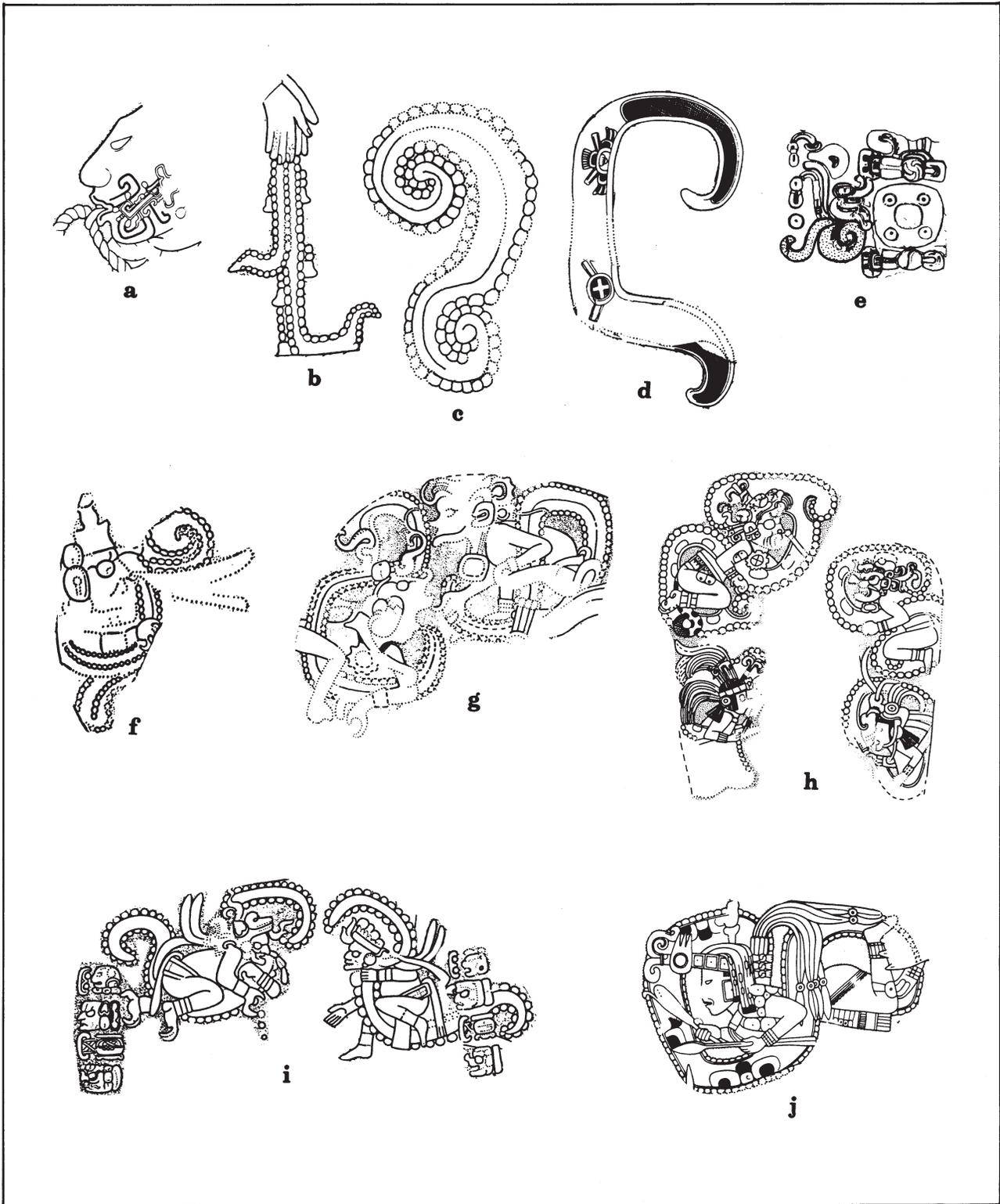


Fig. 15 Blood and the Floaters: (a) Yaxchilan Lintel 24; (b) La Pasadita Lintel 1; (c) Yaxchilan Lintel 15; (d) Yaxchilan Lintel 25; (e) Cerros Structure 5C-2d; (f) Tikal Stela 22; (g) Tikal Stela 11; (h) Ixlu Stela 2; (i) Jimbal Stela 1; (j) Ucanal Stela 4.

now known to be a rite of bloodletting.

Through the careful establishment of structural equivalents, Stuart has extended this complex to include S-scrolls unmarked by the droplet contour (for example, on Lintel 25 at Yaxchilan [Fig. 15d]) and the portal of Copan Temple 22, with its blood scrolls and floating miniatures. It is now clear that the miniatures in the upper register scrolls of the Tikal region and on the Copan portal cavort in the media of blood on the occasion of a ruler's bloodletting activities. While these S-scrolls do not occur on the Hauberg, the miniatures cling to a serpent that is clearly the prototype of the Classic Period Vision Serpent, and the event recorded glyphically as the rite pictured in the scene is bloodletting. The Hauberg miniatures are linked directly to the Classic period iconography of "scattering," as the Hauberg Vision Serpent links directly to the Classic complexes of auto-sacrifice and vision quest.

Conclusions

The authenticity of the Hauberg Stela cannot be questioned. The unorthodox order of its date, the identification of the month patron, the decipherment of the T712 and T518 verbs, and the structural continuities of the blood complex with the miniatures and the vision serpent, were not known at the time of its first publication in 1970. And much of the archaeological (e.g., Cerros, Lamanai, and El Mirador), epigraphic, and iconographic evidence upon which these identifications are based was not discovered until recently. The importance of the Hauberg does not rest with its authentication nor in the fact that it must now be viewed as the earliest lowland Maya monument with a deciphered date. Rather the importance of the Hauberg is vested in the information it yields about the institution of Maya rulership and the rituals by which it verified social reality at this very early stage of Maya civilization.

In the last decade, intensive excavations at Middle and Late Preclassic sites, such as Komchen, Lamanai, Cerros, Cuello, Colha, and El Mirador, have added enormous data to that previously known from work at Tikal, Uaxactun, and other lowland sites and expanded our understanding of the history of the Maya lowlands before the beginning of the Classic period (A.D. 293, as dated by Tikal Stela 29). Friedel (in Freidel and Schele 1982) sees a millennium of relatively stable development of lowland Maya society, based on an agricultural community with "ritual centers, ritual activities including human sacrifice, trade in exotic materials and differentiated social status as seen in burials." During the period prior to the Late Preclassic explosion of the use of public art (now documented at most of the sites above), the lowland Maya archaeology is characterized by an "aversion to [the] broadly diffused and available symbols used to reinforce elite authority" in adjacent societies that are known archaeologically to have been in profound interaction with the Maya. In other words, the lowland Maya avoided the use of public, monumental art and the reification of social order and reality that such use implies.

Freidel and Schele (1982) have presented an extensive analysis of the content and function of public art when it became a major social tool at the Late Preclassic breakthrough (ca. 150 B.C. to 50 B.C.). We have documented continuities and structural transformations of the Late Preclassic models of reality as reified through public art into the Classic and Postclassic records preserved in art, writing, and myth. We see two major crises and resolutions as documented in the public art. First, at the Late Preclassic threshold, the sanctification of stratified social structure takes place and a hitherto *de facto* elite emerges through the identification of the elite as corporal manifestation of a dyad, based on Venus and the sun as twins, and present in transformed versions in the Classic Period as the Palenque Triad and in the Postclassic as the Hero Twins of the *Popol Vuh*. The appearance of this dyad as the focus of public architecture occurs as a regional phenomenon and in conjunction with a massive expansion of public works that must be characterized archaeologically as abrupt. And characteristic of this period is an anonymous and self-effacing elite; there are no portraits, names, or other historical data recorded in the context of public ritual space.

The second threshold is less well documented archaeologically, but from a comparison of the record before and after the threshold, we have deduced that the crises lay in the transmission of power within divine families of the elite, and that the solution was the singular focus on ruling individuals, their rites of passage (i.e., accession, heir-designation, etc.), and their inheritance of divinity (i.e., their genealogy). In the Classic Period, this concentration resulted in the stela cult, the single-minded focus on history as it reflected structural repetitions from the cosmological environment of historical action and the ancestral past, and on genealogy as documented in both glyphic and pictorial records of descent through lines artificially extended to include both legendary (i.e., the remote, but historical past) and divine (i.e., mythological and supernatural) forebears.

Our records of the period in which this second development occurred are, at present, sketchy. We know that some of the dynamic Late Preclassic centers, such as Mirador and Cerros, collapsed, but where we have continuous occupation through the interface period (50 B.C. to A.D. 293), such as at Tikal, Uaxactun, Lamanai, and Colha, we have no architectural or stela sculpture to document the continuities and transformations in the symbol system. The Hauberg stela becomes particularly important because it dates from exactly this period. What then can we say about the institution of rulership, about the rituals supporting its existence, and about the methods of its members to document it in publicly verifiable contexts?

The ruler is no longer anonymous nor is he self-effacing. He is portrayed, frozen for all to see and verify, in the midst of a ritual action, and in at least so far as the vision he induced through the ritual could not have been physically manifest to those observing the ritual, he is

shown interfacing with the supernatural. The vision is physically and permanently manifested on the stela. The stela format is alien to earlier forms of public art. Architectural sculpture as found in the post-threshold Late Preclassic levels at Tikal, Cerros, El Mirador, Lamanai, etc., provides a framework and stage front for ritual activity; it is a reification of the cosmology and religious reality of ritual, but the ritual is historically ephemeral. The Hauberg makes minimal reference to physical context and cosmology as place; rather it fixes the act and consequences of ritual in time and space. It transforms temporally bound ritual action into permanently verifiable historical record that validates ritual as a continuing reality. It fixes past ritual into a permanent present. The stela of the Classic period combines both goals of Late Preclassic formats. It portrays the ruler frozen in ritual action, but linked to the cosmology of architectural sculpture through costume, and, most importantly, through the manipulation of the context of human activity as cosmological framework. Living rulers are shown flanked by dead ancestors; they stand on earth or underworld registers; they stand under registers marked as the arc of heaven; and they wear in their uniforms or hold in their hands objects of power and status that are symbols derived directly from those cosmological environments. The stela is rare in the Late Preclassic archaeological record from the lowlands, so it may well have been borrowed from neighboring highlands peoples who had long used it as a major art form; by the Classic it had joined architectural sculpture as the major media of Classic Maya public art. Its advantage is that it can record narrative action and cosmological framework as a unified image.

The Hauberg iconography further verifies the focal importance of personal bloodletting and sacrifice as a major responsibility of the Maya elite and as a method of reinforcing social reality for the entire society. Late Classic presentations of this theme suggest that the Maya defined this bloodletting ritual as the critical act that insured the continued existence of the universe in its human and supernatural manifestation. Stuart (1982) has shown that the “scattering” rite was thought literally to give “birth” to the gods; in other words, their physical being was generated through the sacrifice of the blood of the king, and this act was repeated at least every hotun. Two rituals are recorded on the Hauberg – auto-sacrifice and accession, but of the two, the interface with the supernatural as symbolized by the serpent and generated by bloodletting is the rite that required the permanent verification through narrative sculpture. We must assume that the ruler Bac-T’ul lived in a political reality that made his public act of sacrifice more important than the event of his becoming king. We are left with little choice but to recognize auto-sacrifice and vision quest as a central rite of the Maya elite, one that supported the social order in which they lived and indeed that insured the continued existence of existence itself.

Footnotes

¹ Justeson (1982) has worked with the Hauberg date based on discussions between himself, Lounsbury, Mathews, Stuart, and Schele in July, 1982. Using the 8.8.0.7.0 date, he has suggested that the 17C notation possibly “functions as part of some computational system for predicting eclipse-possible dates The initial date of the Seattle monument was on or within a few days of an eclipse station, depending on just which correlation constant in the 584290 – 584286 range relates this date to the Christian chronology. Another eclipse station had taken place 17 lunar months earlier, with an annular eclipse on May 23, A.D. 198; . . . this eclipse was not visible in Mesoamerica.” Justeson’s suggestion about the 17C may or may not be supported in the future, but his data adds information favoring the 8.8.0.7.0 3 Ahau 13 Xul placement of the Hauberg date.

² All Christian dates are given in the Julian Calendar using the 584285 number of the original GMT correlation. I choose to use this correlation constant because of overwhelming historical and ethnological evidence accumulated by Floyd Lounsbury (personal communication 1982) and based on the new astronomical correspondences generated by this correlation. Lounsbury (1982) has demonstrated a widely distributed ritual-war complex stimulated by stations in the Venus and Jupiter year, and the dates associated with these rites are now connected to observed astronomical events, not predictive ones. In other words, this new data has established a network of historical events associated with astronomical alignments, which because they were observed phenomena can be checked against modern astronomical data. I have personally generated test situations in which I have predicted where astronomically related dates ought to occur and with what kind of events and ritual contexts; the results of these tests have been overwhelmingly positive and I accept the 584285 correlation until equally good results are produced for other candidates.

³ Kohunlich has a temple displaying a Terminal Late Preclassic or very early Early Classic version of the mask complex that is characteristic of Late Preclassic architecture at Cerros, Lamanai, El Mirador, Tikal, and Uaxactun (Freidel and Schele 1982). The style and particularly the rendering of the serpent frames on this Kohunlich building suggests a transitional dating for Kohunlich. Certainly Kohunlich and the Northeastern Peten-Northern Belizean region was extremely active during the Late Preclassic and pre-9.2.0.0.0 Classic periods.

⁴ Copan Stela D is usually assumed to portray a woman because of the xoc belt, the long skirt, and the netted overskirt, signals usually associated with female costume. However, in analyzing the inscription on this monument, I noticed that no female name appears in the text. If we assume that female costume alone obligates an identification of the portrayed person as female, then it must be also assumed that the Maya would mark a female monument with an inscription that only names a male while making no reference to the pictured female. I suspect that the Maya would not have allowed such ambiguity to exist on a public monument; I must, therefore, work from the premise that the personal identification recorded in the inscription – 18 Rabbit – takes precedence over costume. The figure is male and is the contemporary ruler dressed in female garb for a bloodletting ritual. This same use of female costume by males can be seen on the Tablet of the Foliated Cross at Palenque and on Stela I at Caracol (Reents, Stone, and Coffman n.d.). (See Schele 1982:320-321 for a discussion of the verbal expressions associated with this monument.)

Bibliography

- ACOSTA, JOSEPH DE
1880 *The Natural and Moral History of the Indies*. (Reprinted from the English translated edition of Edward Grimston, 1604.) The Hakluyt Society. London.
- 1970 *The Natural and Moral History of the Indies*. (Reprinted from the English translated edition of Edward Grimston, 1604, and edited by Clements R. Markham.) Vol. I. B. Franklin, New York
- ADAMS, R. E. W.
1971 *The Ceramics of Altar de Sacrificios, Guatemala*. Papers of the Peabody Museum of American Archaeology and Ethnology 63(1). Harvard University, Cambridge.
- 1973 Maya Collapse: Transformation and Termination in the Ceramic Sequence at Altar de Sacrificios. In *The Classic Maya Collapse*, edited by T. P. Culbert, pp. 133-163. University of New Mexico Press, Albuquerque.
- 1977 *Prehistoric Mesoamerica*. Little, Brown and Company, Boston.
- ADAMS, R. E. W., and ROBERT C. ALDRICH
1980 A Reevaluation of the Bonampak Murals: A Preliminary Statement on the Paintings and Texts. In *Third Palenque Round Table, 1978, Part 2*, edited by Merle Greene Robertson, pp. 45-59. University of Texas Press, Austin.
- ADAMS, R. E. W., and WOODRUFF D. SMITH
1981 Feudal Models for Classic Maya Civilization. In *Lowland Maya Settlement Patterns*, edited by Wendy Ashmore, pp. 335-349. University of New Mexico Press, Albuquerque.
- AMRAM, D. W.
1942 The Lacandon, Last of the Maya. *El Mexico Antiguo* 6:15-26.
- ANAWALT, PATRICIA RIEFF
1981 *Indian Clothing Before Cortes. Mesoamerican Costumes from the Codices*. University of Oklahoma Press, Norman.
- ANDREWS, DOROTHY, and HEATH DE ZAPATA
1978 *Vocabulario de Mayathan*. Merida.
- ANONYMOUS
1566 *The Discription of a Rare or Rather Most Monstrous Fische Taken on the East Cost of Holland the XVII of Nouember, Anno 1566*. London.
- ANONYMOUS
1689 *Gazophylacium Anglicanum: Containing the Derivation of English Words, Proper and Common; Each in an Alphabet Distinct: Proving the Dutch and Saxon to Be the Prime Fountains*. London.
- ARBER, EDWARD (editor)
1885 *The First Three English Books on America*. Scribner & Welford, New York.
- THE ARTS CLUB OF CHICAGO
1982 *High Culture in the Americas Before 1500*. The Arts Club of Chicago, Chicago.
- AULIE, H. WILBUR, and E. W. AULIE
1978 *Diccionario Ch'ol-Español, Español-Ch'ol*. Vocabularios Indígenas 21. Instituto Lingüístico de Verano. Mexico.
- AVENI, ANTHONY F. (editor)
1977 *Native American Astronomy*. University of Texas Press, Austin.
- BAILEY, NATHANIAL
1724 *An Universal Etymological English Dictionary: Comprehending the Derivations of the Generality of Words in the English Tongue, Either Ancient or Modern, from the Ancient British, Saxon, Danish, Norman and Modern French, Teutonic, Dutch, Spanish, Italian, as also from the Latin, Greek, and Hebrew Languages, Each in Their Proper Characters*. Second edition. London.
- BARDAWIL, LAWRENCE W.
1976 The Principal Bird Deity in Maya Art – An Iconographic Study of Form and Meaning. In *The Art, Iconography & Dynastic History of Palenque, Part III* (Proceedings of the Segunda Mesa Redonda de Palenque), edited by Merle Greene Robertson, pp. 195-209. Robert Louis Stevenson School, Pebble Beach.
- BARRERA VÁSQUEZ, ALFREDO
1980 *Diccionario Maya Cordemex: Maya-Español, Español-Maya*. Ediciones Cordemex, Merida.
- BARRERA VÁSQUEZ, ALFREDO, and SYLVANUS G. MORLEY
1949 The Maya Chronicles. *Contributions to American Anthropology and History* 10:1-85. Carnegie Institution, Washington.
- BARRERA VÁSQUEZ, ALFREDO, and SYLVIA RENDON

- 1948 *El Libro de los Libros de Chilam Balam*. Fondo de Cultura Económica, Mexico City.
- BARTHEL, THOMAS S.
1951 Maya-Astronomie. Lunare Inschriften aus dem Südreich. *Zeitschrift für Ethnologie* 76:216-238. Braunschweig.
- 1968a El Complejo Emblema. *Estudios de Cultura Maya* 7:159-193. Mexico City.
- 1968b Götter – Sterne – Pyramiden. *Paideuma* 14:45-92. Bamberg.
- 1977 Untersuchungen zur Großen Göttin der Maya. *Zeitschrift für Ethnologie* 102:44-102. Braunschweig.
- 1979 Enigmatisches im Codex Vaticanus 3773: Kosmogramm und Eschatologie. *Tribus* 38:83-122. Linden-Museum, Stuttgart.
- BAUDEZ, CLAUDE F.
n.d. a Iconography and History at Copan. In *The Southeast Mesoamerican Periphery: Problems and Prospects*, edited by Patricia Urban and Edward Schortman. University of Texas Press, Austin, in press.
- 1985 The Knife and the Lancet: the Iconography of Sacrifice at Copan. In *Fourth Palenque Round Table, 1980*, edited by Elizabeth P. Benson. Pre-Columbian Art Research Institute, San Francisco.
- BAUDEZ, CLAUDE, and BERTHOLD RIESE
1982 Bacabs and Bicephalic Monsters in Copan Architecture. Paper presented at the 44th International Congress of Americanists, Manchester, England.
- BEETZ, CARL P., and LINTON SATTERTHWAITE
1981 *The Monuments and Inscriptions of Caracol, Belize*. University Museum Monograph 45. The University Museum, University of Pennsylvania, Philadelphia.
- BELLONI, PETRI
1951 *De Aquatilibus*. Paris.
- BENSON, ELIZABETH
1976 Ritual Cloth and Palenque Kings. In *The Art, Iconography & Dynastic History of Palenque, Part III* (Proceedings of the Segunda Mesa Redonda de Palenque), edited by Merle Greene Robertson, pp. 45-58. Robert Louis Stevenson School, Pebble Beach.
- 1982 The House as an Image in Mesoamerica. Paper presented at the 44th International Congress of Americanists, Manchester, England.
- BERLIN, HEINRICH
1944 Un Templo Olvidado en Palenque. *Revista Mexicana de Estudios Antropológicos* 6(1-2):62-90. Sociedad Mexicana de Antropología, Mexico.
- 1958 El Glifo 'Emblema' en las Inscripciones Mayas. *Journal de la Société des Américanistes* 47:111-119. Paris.
- 1959 Glifos Nominales en el Sarcófago de Palenque. *Humanidades* 2(10):1-8. Universidad de San Carlos, Guatemala.
- 1960 Mas casos del glifo lunar en numeros de distancia. *Antropología e Historia de Guatemala* 12(2):25-33. Instituto de Antropología e Historia, Guatemala.
- 1963 The Palenque Triad. *Journal de la Société des Américanistes* 52:91-99.
- 1965 The Inscription of the Temple of the Cross at Palenque. *American Antiquity* 30:330-342.
- 1968a Estudios Epigraficos 11. *Antropología e Historia de Guatemala* 20(1):13-24.
- 1968b The Tablet of the 96 Glyphs at Palenque, Chiapas, Mexico. *Middle American Research Institute Publication* 26:135-149. Tulane University, New Orleans.
- 1970 Miscelanea Palencana. *Journal de la Société des Américanistes* 59:107-128.
- 1973 Beiträge zum Verständnis de Inschriften von Naranjo. *Bulletin de la Société Suisse des Américanistes* 37:7-14.
- 1977 *Signos y Significados en las Inscripciones Mayas*. Instituto Nacional del Patrimonio Cultural de Guatemala. Guatemala.
- BINFORD, LEWIS R.
1968 Some Comments on Historical versus Processual Archaeology. *Southwestern Journal of Anthropology* 24(3):267-275.
- BISHOP, RONALD L., GARMAN HARBOTTLE, and EDWARD V. SAYRE
1982 Chemical and Mathematical Procedures Employed in the Maya Fine Paste Ceramics Project. In *Analyses of Fine Paste Ceramics [Excavations at Seibal, Guatemala]*, edited by Jeremy A. Sabloff, pp. 272-282. Memoirs of the Peabody Museum of Archaeology and Ethnology 15(2). Harvard University, Cambridge.
- BLOM, FRANS, and OLIVER LA FARGE
1926-27 *Tribes and Temples: A Record of the Expedition to Middle America Conducted by the Tulane University of Louisiana in 1925*. 2 vols. Middle American Research Institute Publication 1. Tulane University, New Orleans.
- BODLEIAN CODEX
see Caso, Alfonso.
- BOLZ, INGEBORG
1975 Sammlung Ludwig Altamerika. *Ethnologica* 7. West Germany.
- BOOS, FRANK H.
1968 Two Zapotec Urns with Identical Unclassified Figures Display a Unique Maize Fertility Concept. *Baessler Archiv* 16:1-8. Berlin.
- BOOTH, DAVID
1836 *An Analytical Dictionary of the English Language, in Which the Words Are Explained in the Order of Their Natural Affinity, Independent of Alphabetical Arrangement; and the Signification of Each Is Traced from Its Etymology*. Simkin, Marshall, London.
- BOVE, FREDERICK J.
1981 Trend Surface Analysis and the Lowland Classic Maya Collapse. *American Antiquity* 46:93-112.
- BRADLEY, HENRY (editor)
1914 *A New English Dictionary on Historical Principles*, Vol. 8, Part II. Clarendon Press, Oxford.
- BRAINERD, GEORGE W.
1958 *The Archaeological Ceramics of Yucatan*. University of California Anthropological Records 19. Berkeley.
- BRASSEUR DE BOURBORG, CHARLES ETIENNE
1864 *Relation des choses de Yucatan de Diego de Landa*. Auguste Durand, Paris.
- BRICKER, VICTORIA R.
1981 Las Ceremonias de Año Nuevo en las Monumentos Clasicos Mayas. Paper presented at the XVII Mesa Redonda of the Sociedad Mexicana de Antropología, San Cristóbal de Las Casas, Mexico.
- 1985 A Morphosyntactic Interpretation of Some Accession Compounds and Other Verbs in the Maya Hieroglyphs. In *Fourth Palenque Round Table, 1980*, edited by Elizabeth P. Benson. Pre-Columbian Art Research Institute, San Francisco.

- BRINTON, DANIEL GARRISON
1882 The Maya Chronicles, *Library of Aboriginal American Literature* 1. Philadelphia.
- BROTHERSTON, GORDON
1979 *Image of the New World*. Thames and Hudson, London.
- BRUCE S., ROBERTO D.
1976 *Textos y Dibujos Lacandonos de Naja*. Colección Científica Lingüística 45. Instituto Nacional de Antropología e Historia, Mexico City.
- BRUNDAGE, BURR CARTWRIGHT
1979 *The Fifth Sun*. University of Texas Press, Austin.
- BUDKER, PAUL
1971 *The Life of Sharks*. Weidenfeld and Nicholson, London.
- BULLARD, WILLIAM R., JR.
1960 Maya Settlement Patterns in Northeastern Peten, Guatemala. *American Antiquity* 25:355-372.
- 1970 Topoxte, a Postclassic Maya Site in Peten, Guatemala. In *Monographs and Papers in Maya Archaeology*, edited by William R. Bullard, pp. 245-307. Papers of the Peabody Museum of Archaeology and Ethnology 61. Harvard University, Cambridge.
- 1973 Postclassic Culture in Central Peten and Adjacent British Honduras. In *The Classic Maya Collapse*, edited by T.P. Culbert, pp. 221-241. University of New Mexico Press, Albuquerque.
- BUSHNELL, G. H. S., and ADRIAN DIGBY
1955 *Ancient American Pottery*. Faber and Faber, London.
- BUTLER, MARY
1931 Dress and Decoration of the Old Maya Empire. *The Museum Journal* 12(2):155-183. The University Museum, University of Pennsylvania, Philadelphia.
- CARMACK, ROBERT
1966 El Ajpop Quiche, K'uk'cumatz: Un Problema de la Sociología Histórica. *Antropología e Historia de Guatemala* 18(1):43-50.
- CASO, ALFONSO
1928 *Las Estelas Zapotecas*. Mexico.
- 1960 *Codice Bodley 2858*, ed. facsimilar. Sociedad Mexicana de Antropología.
- CASO, ALFONSO, and IGNACIO BERNAL
1952 Urnas de Oaxaca. *Memorias del Instituto Nacional de Antropología e Historia* 2. Mexico City.
- CASTRO, JOSE I.
1983 *The Sharks of North American Waters*. Texas A & M University Press, College Station.
- CHARENCEY, CHARLES FÉLIX HYACINTHE GOUTIER, COMTE DE
1874 Essai d'analyse grammaticale d'un texte en langue maya. *Académie Nationale des Sciences, Arts et Belles Lettres de Caen, Mémoires* 141-161. Caen.
- 1875 *Essai d'analyse grammaticale d'un texte en langue maya*. Second edition. Le Havre.
- CHASE, ARLEN F.
1985 Postclassic Peten Interaction Spheres: The View from Tayasal. In *The Lowland Maya Postclassic: Questions and Answers*, edited by Arlen Chase and Prudence Rice. University of Texas Press, Austin, in press.
- n.d. Time Depth or Vacuum: The 11.3.0.0.0 Correlation and the Lowland Maya Postclassic. In *Late Lowland Maya Civilization: Classic to Postclassic*, edited by Jeremy Sabloff and E. W. Andrews V. University of New Mexico Press, Albuquerque, in press.
- CHASE, DIANE Z.
1981 The Maya Postclassic at Santa Rita Corozal. *Archaeology* 34(1):25-33.
- 1982 *Spatial and Temporal Variability in Postclassic Northern Belize*. Ph.D. dissertation, Department of Anthropology, University of Pennsylvania.
- 1985 Ganned But Not Forgotten: Late Postclassic Archaeology and Ritual at Santa Rita Corozal. In *The Lowland Maya Postclassic: Questions and Answers*, edited by Arlen Chase and Prudence Rice. University of Texas Press, Austin, in press.
- CHASE, DIANE Z., and ARLEN F. CHASE
1982 Yucatec Influence in Terminal Classic Northern Belize. *American Antiquity* 47:596-614.
- CHRISTALLER, W.
1933 *Die zentralen Orte in Suddeutschland*. Karl Zeiss, Jena. (Translated by Carlisle W. Baskin, 1966: *Central Places in Southern Germany*. Prentice Hall. Englewood Cliffs, New Jersey.)
- CLARKSON, PERSIS B.
1979 *Classic Maya Attire as Indicators of Status, Role, and Function*. Masters' thesis, Department of Archaeology, University of Calgary, Alberta.
- CLAYTON, THOMAS
1969 *The "Shakespearean" Addition in the Booke of Sir Thomas Moore: Some Aids to Scholarly and Critical Shakespearean Studies*. W. C. Brown, Dubuque.
- CLOSS, MICHAEL P.
1981 Venus Dates Revisited. *Archaeoastronomy* 4(4):38-41.
- 1982 On a Classic Maya Accession Phrase and a Glyph for "Rulership." *Mexicon* 4:47-50.
- 1985 A New Reading of Glyphs T12 and T229. In *Fourth Palenque Round Table, 1980*, edited by Elizabeth P. Benson. Pre-Columbian Art Research Institute, San Francisco.
- n.d. a The Dynastic History of Naranjo: The Early Period. *Estudios de Cultura Maya*, in press.
- COE, MICHAEL D.
1965 *The Jaguar's Children: Pre-Classic Central Mexico*. Museum of Primitive Art, New York.
- 1973 *The Maya Scribe and His World*. The Grolier Club, New York.
- 1975a *Classic Maya Pottery at Dumbarton Oaks*. Dumbarton Oaks, Washington, D.C.
- 1975b Death and the Ancient Maya. In *Death and the Afterlife in Pre-Columbian America*, edited by Elizabeth P. Benson, pp. 87-104. Dumbarton Oaks, Washington, D.C.
- 1977 Supernatural Patrons of Maya Scribes and Artists. In *Social Process in Maya Prehistory*, edited by Norman Hammond, pp. 327-347. Academic Press, New York.
- 1978 *Lords of the Underworld: Masterpieces of Classic Maya Ceramics*. Princeton University Press, Princeton.
- 1981a The Maya God N in the Memorial Art Gallery. *Porticus* 4:9-13. University of Rochester, New York.
- 1981b Religion and the Rise of Mesoamerican States. In *The Transition to Statehood in the New World*, edited by Grant D. Jones and Robert R. Kautz, pp. 157-171. Cambridge University Press, Cambridge.
- 1982 *Old Gods and Young Heroes: The Pearlman Collection of Maya Ceramics*. The Israel Museum, Jerusalem.

- COE, WILLIAM R.
1965 Tikal: Ten Years of Study of a Maya Ruin in the Lowlands of Guatemala. *Expedition* 8:5-56.
1967 *Tikal: A Handbook of the Ancient Maya Ruins*. The University Museum, University of Pennsylvania, Philadelphia.
- COE, WILLIAM R., and ROBERT J. SHARER
1979 The Quirigua Project: 1975 Season. In *Quirigua Reports* 1, edited by Wendy Ashmore, pp. 13-36. University Museum Monograph 37. University of Pennsylvania, Philadelphia.
- COE, WILLIAM R., EDWIN M. SHOOK, and LINTON SAT-TERTHWAITE
1961 *The Carved Wooden Lintels of Tikal*. Tikal Report Number 6. Museum Monographs, The University Museum. University of Pennsylvania, Philadelphia.
- COFFMAN, ROBERT
1979 A Commentary on the Hieroglyphic Inscriptions of Naranjo, El Peten, Guatemala. Unpublished manuscript, University of Texas at Austin.
- COGGINS, CLEMENCY C.
1975 *Painting and Drawing Styles at Tikal: An Historical and Iconographic Reconstruction*. Ph.D. dissertation, Harvard University. University Microfilms, Ann Arbor.
1980 The Shape of Time: Some Political Implications of a Four-Part Figure. *American Antiquity* 45:727-739.
1983 *The Stucco Decoration and Architectural Assemblage of Structure 1-Sub, Dzibilchaltun, Yucatan, Mexico*. Middle American Research Institute Publication 49. Tulane University, New Orleans.
- COLBY, BENJAMIN N., and LORE M. COLBY
1981 *The Daykeeper: The Life and Discourse of an Ixil Diviner*. Harvard University Press, Cambridge.
- COLLIER, GEORGE A.
1975 *Fields of the Zotzil: The Ecological Bases of Tradition in Highland Chiapas*. University of Texas Press, Austin.
- CORDRY, DONALD, and DOROTHY CORDRY
1968 *Mexican Indian Costumes*. University of Texas Press, Austin.
- COROMINAS, JUAN (editor)
1954 *Diccionario Crítico Etimológico de la Lengua Castellana*, Vol. 4. Madrid.
- CORONEL, FRAY JUAN
1930 *Diccionario de Motul*, atribuido a fray Antonio de Ciudad Real. Talleres de la Compañía Tipográfica Yucateca. Mérida.
- COWGILL, GEORGE
1963 *Postclassic Period Culture in the Vicinity of Flores, Peten, Guatemala*. Ph.D. dissertation, Department of Anthropology, Harvard University.
- CRAINE, EUGENE R., and REGINALD C. REINDORP (translators and editors)
1979 *The Codex Pérez and the Book of Chilam Balam of Maní*. University of Oklahoma Press, Norman.
- CRÓNICA DE MANÍ
1596 Latin American Library, Tulane University, New Orleans.
- DAVOUST, MICHEL
1982 Los primeros soberanos de Palenque. *Boletín de la Escuela de Ciencias Antropológicas de la Universidad de Yucatan* 52:25-46. Mérida.
- DELGADO, HILDEGARD SCHMIDT
1963 *Aboriginal Guatemala Handweaving and Costume*. Ph.D. dissertation, Department of Anthropology, Indiana University.
- DE VOS, JAN
1980a *Fray Pedro Lorenzo de la Nada; Misionero de Chiapas y Tabasco; en el Cuarto Centenario de su Muerte*. (No publisher or place of publication listed.)
1980b *La Paz de Dios y del Rey; La Conquista de la Selva Lacandona; 1525-1821*. Colección Ceiba, Ensayo, 10. Gobierno del Estado de Chiapas, Tuxtla Gutiérrez.
- DIESELDORFF, ERWIN P.
1893a Ausgrabungen in Coban. *Zeitschrift für Ethnologie* 25:374-382. Berlin.
1893b Bericht über alte bemalte Tongefässe von Guatemala. *Zeitschrift für Ethnologie* 25:547-550. Berlin.
1922 Welchen Gott Stellen die Steindollen der Mayavölker dar? In *Festschrift Eduard Seler*, edited by Walter Lehmann, pp. 47-58. Strecker und Schroder, Stuttgart.
1926-31 *Kunst und Religion der Mayavölker*. 2 volumes. Berlin.
1939 *Los Secretos Contenidos en el Tablero del Templo de la Cruz de Palenque...* El Sobre Azul, Mexico.
- DURAN, FRAY DIEGO
1971 *Book of the Gods and Rites and the Ancient Calendar*. University of Oklahoma Press, Norman.
- DÜTTING, DIETER
1976 The Great Goddess in Classic Maya Religious Belief. *Zeitschrift für Ethnologie* 101:41-146. Braunschweig.
1978 "Bats" in the Usumacinta-Valley. Remarks on the Inscriptions of Bonampak and Neighboring Sites in Chiapas, Mexico. *Zeitschrift für Ethnologie* 103:1-56. Braunschweig.
1979a Sustina Gracia. An Inquiry into the Farmer's Almanacs of the Codex Dresden. *Indiana* 5:145-170. Berlin.
1979b On the Hieroglyphic Inscriptions of Three Monuments from Piedras Negras, Guatemala. *Zeitschrift für Ethnologie* 104:17-63. Braunschweig.
1980 Aspects of Classic Maya Religion and World View. *Tribus* 29:106-167. Linden-Museum, Stuttgart.
1981 Life and Death in Mayan Hieroglyphic Inscriptions. *Zeitschrift für Ethnologie* 106:185-228. Berlin.
1982 The 2 Cib 14 Mol Event in the Inscriptions of Palenque, Chiapas, Mexico. *Zeitschrift für Ethnologie* 107:233-258. Berlin.
1984 Venus, the Moon, and the Gods of the Palenque Triad. *Zeitschrift für Ethnologie* 109, in press. Berlin.
n.d. On the Context-dependent Use of Bi- and Polyvalent Graphemes in Mayan Hieroglyphic Writing. Paper presented at the Fourth Palenque Round Table, June, 1980, Palenque, Chiapas, Mexico.
- EARLE, DUNCAN M.
1983 The Metaphor of the Day in Quiche: Notes on the Nature of Everyday Life. In *Symbol and Meaning Beyond the Closed Community: Essays in Mesoamerican Ideas*, edited by Gary H. Gossen. Institute for Mesoamerican Studies, State University of New York at Albany.
- EASBY, ELIZABETH K., and JOHN F. SCOTT
1970 *Before Cortes: Sculpture of Middle America*. The Metropolitan Museum of Art, New York.

- EDMONSON, MUNRO STERLING
 1965 *Quiche-English Dictionary*. Middle American Research Institute Publication 30. Tulane University, New Orleans.
- 1971 *The Book of Counsel: The Popul Vuh of the Quiche Maya of Guatemala*. Middle American Research Institute Publication 35. Tulane University, New Orleans.
- 1976 The Mayan Calendar Reform of 11.16.0.0.0. *Current Anthropology* 17:713-717.
- 1981 Some Postclassic Questions About the Classic Maya. In *Ancient Mesoamerica, Selected Readings*, second edition, edited by John A. Graham, pp. 221-228. Peek Publications, Palo Alto, California.
- 1982 *The Ancient Future of the Itza: The Book of Chilam Balam of Tizimin*. University of Texas Press, Austin.
- n.d. a *Heaven Born Merida and Its Destiny*. University of Texas Press, Austin, in press.
- n.d. b The First Chronicle from the Book of Chilam Balam of Mani. Transcription from a photographic facsimile of text in Craine and Reindorp 1979:134-137. Manuscript.
- EKHOLM, GORDON F.
 1970 *Ancient Mexico and Central America*. American Museum of Natural History, New York.
- EKHOLM, SUSANNA M.
 1979a The Lagertero Figurines. In *Maya Archaeology and Ethnohistory*, edited by Norman Hammond and Gordon R. Willey, pp. 172-186. University of Texas Press, Austin.
- 1979b The Significance of an Extraordinary Maya Ceremonial Refuse Deposit at Lagertero, Chiapas. In *Actes du XLII^e Congrès International des Américanistes* 8:147-159. Société des Américanistes, Musée de l'Homme, Paris.
- 1981 The Lagertero Regional Style of Maya Moldmade Figurines. Paper presented at Mesoamerican Figurines: Their Archaeological Contexts and Iconographic Meanings, a University Seminar, Columbia University, New York.
- 1982 Una Ceremonia Maya de Fin de Ciclo. Paper presented at Cuarenta Años de Investigaciones Antropológicas en Chiapas: Conmemoración, San Cristobal de Las Casas, Chiapas. State Government of Chiapas, in press.
- 1983 End of Haab Ceremonies: Possible Ancient Muluc-year Rites at Lagertero. Paper presented at the Fifth Palenque Round Table, Palenque, Chiapas, Mexico.
- 1985 The Lagertero Ceramic 'Pendants'. In *Fourth Palenque Round Table, 1980*, edited by Elizabeth P. Benson. Pre-Columbian Art Research Institute, San Francisco.
- ESCALONA RAMOS, ALBERTO
 1933 *Historia de los Mayas por sus Crónicas*. Universidad Nacional del Sureste, Merida.
- EUW, ERIC VON
 1977 *Itzimte, Pixoy, Tzum*. Corpus of Maya Hieroglyphic Inscriptions, 4(1). Peabody Museum, Harvard University, Cambridge.
- 1978 *Xultun*. Corpus of Maya Hieroglyphic Inscriptions, 5(1). Peabody Museum, Harvard University, Cambridge.
- FAULHABER, JOHANNA
 1970 Anthropometry of Living Indians. In *Handbook of Middle American Indians*, Vol. 9, edited by T. Dale Stewart, pp. 82-104. General editor, Robert Wauchope. University of Texas Press, Austin.
- FITCHETT, ARTHUR G.
 1974 Origin of the 260-day Cycle in Mesoamerica. *Science* 185:542-543.
- FITZPATRICK, ELISE, and NICHOLSON J. EASTMAN
 1960 *Obstetrics for Nurses*. Lippincott, Philadelphia.
- FLANNERY, KENT V.
 1972 The Cultural Evolution of Civilizations. *Annual Review of Ecology and Systematics* 3:399-426.
- FONCERRADA DE MOLINA, MARTA
 1965 *La Escultura Arquitectónica de Uxmal*. Imprenta Universitaria, Mexico.
- 1980 Mural Painting in Cacaxtla and Teotihuacan Cosmopolitanism. In *Third Palenque Round Table, 1978, Part 2*, edited by Merle Greene Robertson, pp. 183-198. University of Texas Press, Austin.
- FORSTEMANN, ERNST
 1906 *Commentary on the Maya Manuscript in the Royal Public Library of Dresden*. Papers of the Peabody Museum of American Archaeology and Ethnology 4(2). Harvard University, Cambridge.
- FOUGHT, JOHN G.
 1972 *Chorti (Mayan) Texts (I)*. Edited by Sarah S. Fought. University of Pennsylvania Press, Philadelphia.
- FOX, JAMES A., and JOHN S. JUSTESON
 1980 Mayan Hieroglyphs as Linguistic Evidence. In *Third Palenque Round Table, 1978, Part 2*, edited by Merle Greene Robertson, pp. 204-216. University of Texas Press, Austin.
- 1983 Hieroglyphic Evidence for the Languages of the Classic Maya. Manuscript.
- n.d. Polyvalence in Mayan Hieroglyphic Writing. In *Phonetic Studies in Mayan Hieroglyphic Writing*, edited by Lyle Campbell and John S. Justeson, Institute for Mesoamerican Studies, State University of New York, Albany, in press.
- FREIDEL, DAVID A.
 1981 Civilization as a State of Mind: The Cultural Evolution of the Lowland Maya. In *The Transition to Statehood in the New World*, edited by Grant D. Jones and Robert R. Kautz, pp. 188-227. Cambridge University Press, Cambridge.
- 1985 New Light on the Dark Age: A Summary of Major Themes. In *The Lowland Maya Postclassic: Questions and Answers*, edited by Arlen Chase and Prudence Rice. University of Texas Press, Austin, in press.
- FREIDEL, DAVID A., and LINDA SCHELE
 1982 Symbol and Power: A History of the Lowland Maya Cosmogram. Paper presented at the Princeton Conference on the Origins of Maya Iconography, Princeton.
- GANN, THOMAS
 1900 *Mounds in Northern Honduras*. Nineteenth Annual Report 1897-1898, Part 2:655-692. Bureau of American Ethnology, Washington, D.C.
- 1918 *The Maya Indians of Southern Yucatan and Northern British Honduras*. Bureau of American Ethnology Bulletin 64. Washington, D.C.
- GATES, WILLIAM E.
 1932 Eras of the Thirteen Gods and the Nine Gods: Book of Chumayel, Pages 42-48. *Maya Society Quarterly* 1(2):78-92.

- GELB, IGNACE J.
1963 *A Study of Writing*. Second edition. University of Chicago Press, Chicago.
- GENDROP, PAUL
1980 Dragon-Mouth Entrances: Zoomorphic Portals in the Architecture of Central Yucatan. In *Third Palenque Round Table, 1978, Part 2*, edited by Merle Greene Robertson, pp. 138-150. University of Texas Press, Austin.
- GIRARD, RAFAEL
1962 *Los Mayas Eternos*. Libro Mex, Mexico.
- GOLDSTINE, HERMAN H.
1973 *New and Full Moons 1001 B.C. to A.D. 1651*. Memoirs of the American Philosophical Society 94. Philadelphia.
- GOODMAN, J.T.
1897 The Archaic Maya Inscriptions. Appendix to A. P. Maudslay, *Biologia-Centrali Americana; Archaeology*. R. H. Porter and Dulau and Company, London.
- GORDON, G. B.
1896 *Prehistoric Ruins of Copan, Honduras*. Memoirs of the Peabody Museum of American Archaeology and Ethnology 1(1). Harvard University, Cambridge.
- GOSSSEN, GARY H.
1974 *Chamulas in the World of the Sun: Time and Space in a Maya Oral Tradition*. Harvard University Press, Cambridge.
- GRAHAM, IAN
1967 *Archaeological Explorations in El Peten, Guatemala*. Middle American Research Institute Publication 33. Tulane University. New Orleans.
1978 *Naranjo, Chunhuitz, Xunantunich*. Corpus of Maya Hieroglyphic Inscriptions 2(2). Peabody Museum, Harvard University, Cambridge.
1979 *Yaxchilan*. Corpus of Maya Hieroglyphic Inscriptions 3(2). Peabody Museum, Harvard University, Cambridge.
1980 *Ixkun, Ucanal, Ixtutz, Naranjo*. Corpus of Maya Hieroglyphic Inscriptions 2(3). Peabody Museum, Harvard University, Cambridge.
1982 *Yaxchilan*. Corpus of Maya Hieroglyphic Inscriptions 3(3). Peabody Museum, Harvard University, Cambridge.
- GRAHAM, IAN, and ERIC VON EUW
1975 *Naranjo*. Corpus of Maya Hieroglyphic Inscriptions 2(1). Peabody Museum, Harvard University, Cambridge.
1977 *Yaxchilan*. Corpus of Maya Hieroglyphic Inscriptions 3(1). Peabody Museum, Harvard University, Cambridge.
- GRAHAM, JOHN A.
1973 Aspects of Non-Classic Presences in the Inscriptions and Sculptural Art of Seibal. In *The Classic Maya Collapse*, edited by T. P. Culbert, pp. 207-217. University of New Mexico Press, Albuquerque.
- GRANGER, TIMOTHIE
1568 *A Moste True and Marueilous Straunge Wonder, the Lyke Hath Seldom Ben Seene, of XVII Monstrous Fishes, Taken in Suffolke, at Downam Brydge, Within a Myle of Ipswicke*. London.
- GREENE, MERLE
1967 *Ancient Maya Relief Sculpture*. The Museum of Primitive Art, New York.
- GREENE, MERLE, ROBERT L. RANDS, and JOHN A. GRAHAM
1972 *Maya Sculpture from the Southern Lowlands, the Highlands and Pacific Piedmont: Guatemala, Mexico, Honduras*. Lederer, Street and Zeus, Berkeley.
- GREENE ROBERTSON, MERLE
1974 The Quadripartite Badge – A Badge of Rulership. In *Primera Mesa Redonda de Palenque, Part 1*, edited by Merle Greene Robertson, pp. 77-93. Robert Louis Stevenson School, Pebble Beach.
1979 A Sequence for Palenque Painting Techniques. In *Maya Archaeology and Ethnohistory*, edited by Norman Hammond and Gordon R. Willey, pp. 149-171. University of Texas Press, Austin.
- GREENE ROBERTSON, MERLE, MARJORIE S. ROSENBLUM SCANDIZZO, and JOHN R. SCANDIZZO
1976 Physical Deformities in the Ruling Lineage of Palenque, and the Dynastic Implications. In *The Art, Iconography & Dynastic History of Palenque, Part III*, Proceedings of the Segunda Mesa Redonda de Palenque, edited by Merle Greene Robertson, pp. 59-86. Robert Louis Stevenson School, Pebble Beach.
- GRIEDER, TERENCE
1960 Manifestaciones de Arte Maya en la Region de Petexbatun. *Antropología e Historia de Guatemala* 12(2):10-17. Instituto de Antropología e Historia, Guatemala.
1982 *Origins of Pre-Columbian Art*. University of Texas Press, Austin.
- GROVE, DAVID C.
1981 Olmec Monuments: Mutilation as a Clue to Meaning. In *The Olmec and Their Neighbors: Essays in Memory of Matthew W. Stirling*, edited by Elizabeth P. Benson, pp. 48-68. Dumbarton Oaks, Washington, D.C.
- GUI TERAS HOLMES, CALIXTA
1960 La Familia Tzotzil en la Salud y en la Enfermedad. *Tlatoani* 2(13):4-6. Mexico.
- GUNTER, GORDON
1938 Notes on invasion of fresh water by fishes of the Gulf of Mexico, with special reference to the Mississippi-Atchafalaya River System. *Copeia* 2:69-72.
- HAKLUYT, RICHARD
1927 *The Principal Navigations, Voyages, Traffiques & Discoveries of the English Nation*, Vol. 4. Dutton, New York.
- HAMBLIN, ROBERT L., and BRIAN L. PITCHER
1980 The Classic Maya Collapse: Testing Class Conflict Hypotheses. *American Antiquity* 45:246-267.
- HAMILTON, FRANCIS
1822 *An Account of the Fishes Found in the River Ganges and Its Branches*. Edinburgh.
- HAMMOND, NORMAN
1973 *British Museum-Cambridge University Corozal Project, 1973 Interim Report* (editor). Centre of Latin American Studies, Cambridge University, Cambridge.
1974 The Distribution of Late Classic Maya Major Ceremonial Centres in the Central Area. In *Mesoamerican Archaeology: New Approaches*, edited by Norman Hammond, pp. 313-334. University of Texas Press, Austin.
1975 *Lubaantun, a Classic Maya Realm*. Monograph of the Peabody Museum of Archaeology and Ethnology,

- Vol. 2. Harvard University, Cambridge.
- 1977 Ex Oriente Lux: A View from Belize. In *The Origins of Maya Civilization*, edited by R. E. W. Adams, pp. 45-76. University of New Mexico Press, Albuquerque.
- HARRISON, PETER D.
1981 Some Aspects of Preconquest Settlement in Southern Quintana Roo, Mexico. In *Lowland Maya Settlement Patterns*, edited by Wendy Ashmore, pp. 259-286. University of New Mexico Press, Albuquerque.
- HAURY, EMIL W.
1933 Maya Textile Weaves. Unpublished manuscript, Tozzer Library, Harvard University, Cambridge.
- HAWKINS, JOHN
1569 *A True Declaration of the Troublesome Voyage of M. John Hawkins to the Parts of Guinea and the West Indies, in the Years of Our Lord 1567 and 1568*. London.
- HELLMUTH, NICHOLAS M.
1970 *Preliminary Bibliography of the Chol Lacandon, Yucatec Lacandon, Chol, Itza, Mopan and Quehache of the Southern Maya Lowlands; 1524-1969*. Third edition, revised. Katunob, Occasional Publications in Mesoamerican Anthropology 4. Museum of Anthropology, University of Northern Colorado, Greeley.
- 1971 *Progress Report and Notes on Research on Ethnohistory of the 16th-19th Century Southern Lowland Maya. Part I: The Cholti-Lacandon of Dolores (Sac Balam), Chiapas, 1695-1712. Part II: The Yucatec-Lacandon of San Jose de Gracia Real, 1786-1807*, revised (original 1970). Mimeographed, Guatemala City.
- 1978 *Tikal Copan Travel Guide: A General Introduction to Maya Art, Architecture, and Archaeology*. Foundation for Latin American Anthropological Research, Guatemala City and St. Louis.
- 1982 Cosmology, Zoology, and Iconography of Early Peten Maya Cache Vessels and Incensarios. Paper presented at the Princeton Conference on the Origins of Maya Iconography, Princeton University.
- HELMS, MARY W.
1977 Iguanas and Crocodilians in Tropical American Mythology and Iconography with Special Reference to Panama. *Journal of Latin American Lore* 3:51-133.
- HENDERSON, JOHN S.
1974 Origin of the 260-day Cycle in Mesoamerica. *Science* 185:542.
- HEYDEN, DORIS
1981 Caves, Gods, and Myths: World-View and Planning in Teotihuacan. In *Mesoamerican Sites and World-Views*, edited by Elizabeth P. Benson, pp. 1-39. Dumbarton Oaks, Washington, D.C.
- HOPKINS, NICHOLAS A.
1981 La Influencia del Yucatecano Sobre el Cholano y su Contexto Histórico. Paper presented at the XVII Mesa Redonda, Sociedad Mexicana de Antropología, San Cristobal de Las Casa, Chiapas.
- 1982 Cholan as Western Mayan With a Yucatecan Substratum. Paper presented at the Annual Meeting of the American Anthropological Association, Washington, D.C.
- HOUSTON, STEPHEN, and PETER MATHEWS
1983 The Dynastic Sequence of Dos Pilas, Peten, Guatemala. Paper presented at the Fifth Palenque Round Table, Palenque, Chiapas, Mexico.
- HUGH-JONES, STEPHEN
1982 The Pleiades and Scorpius in Barasana Cosmology. In *Ethnoastronomy and Archaeoastronomy in the American Tropics*, edited by Anthony F. Aveni and Gary Urton, pp. 183-201. Annals of the New York Academy of Sciences, Vol. 385. New York.
- JAKEMAN, M. WELLS
1948 *The Origins and History of the Mayas*. Research Publishing Company, Los Angeles.
- JOHNSON, IRMGARD WEITLANER
1954 Chiptic Cave Textiles from Chiapas, Mexico. *Journal de la Société des Américanistes* 43:137-147.
- 1971 Basketry and Textiles. In *Handbook of Middle American Indians*, Vol. 10, edited by Gordon F. Ekholm and Ignacio Bernal, pp. 297-321. General editor, Robert Wauchope. University of Texas Press, Austin.
- JOHNSON, SAMUEL
1756 *A Dictionary of the English Language; in Which Words Are Deduced from Their Originals; and Illustrated in Their Different Significations, by Examples from the Best Writers*, Vol. 2. London.
- JOHNSTON, KEVIN
1981 A Commentary on the Hieroglyphic Inscriptions of Dos Pilas, Petexbatun, Guatemala. Unpublished manuscript, University of Texas, Austin.
- JONES, CHRISTOPHER
1977 Inauguration Dates of Three Late Classic Rulers of Tikal, Guatemala. *American Antiquity* 42:28-60.
- JONES, CHRISTOPHER, and LINTON SATTERTHWAITHE
1982 *The Monuments and Inscriptions of Tikal: The Carved Monuments*. Tikal Report No. 33A. University Museum Monograph 44. The University Museum, University of Pennsylvania, Philadelphia.
- JONES, CHRISTOPHER, and ROBERT J. SHARER
1980 Archaeological Investigations in the Site Core of Quirigua. *Expedition* 23(1):11-19.
- JORALEMON, PETER DAVID
1971 *A Study of Olmec Iconography*. Studies in Pre-Columbian Art and Archaeology 7. Dumbarton Oaks, Washington, D.C.
- 1974 Ritual Blood-Sacrifice Among the Ancient Maya: Part I. In *Primera Mesa Redonda de Palenque, Part II*, edited by Merle Greene Robertson, pp. 59-75. Robert Louis Stevenson School, Pebble Beach, California.
- JORDAN, DAVID STARR, and MARY CYNTHIA DICKERSON
1899 Notes on a Collection of Fishes from The Gulf of Mexico at Vera Cruz and Tampico. *Proceedings of the U.S. National Museum* 34:11-22.
- JOSSERAND, J. KATHRYN
1975 Archaeological and Linguistic Correlations for Mayan Prehistory. *Actas del XLI Congreso Internacional de Americanistas, México* 1:501-510.
- JOSSERAND, KATHRYN, LINDA SCHELE, and NICHOLAS HOPKINS
1985 Linguistic Data on Maya Inscriptions: The *Ti* Constructions. In *Fourth Palenque Round Table, 1980*, edited by Elizabeth P. Benson. Pre-Columbian Art Research Institute, San Francisco.
- JUSTESON, JOHN S.
1982 The Chronological Portion of a Late Preclassic Maya Stela and the Early Development of the Maya Eclipse

- Calendar. Unpublished manuscript.
- JUSTESON, JOHN S., and WILLIAM M. NORMAN
1983 A Reinterpretation of Some 'Auxiliary Verb' Constructions in Mayan Hieroglyphic Writing. Paper presented at the Fifth Palenque Round Table, Chiapas, Mexico.
- KAUFMAN, TERRENCE S.
1971 Materiales Lingüísticos para el Estudio de las Relaciones Internas y Externas de la Familia de Idiomas Mayas. In *Desarrollo Cultural de los Mayas*, edited by Evon Z. Vogt and Alberto Ruz L., pp. 81-136. Centro de Estudios Mayas, Universidad Nacional Autónoma de Mexico, Mexico.
1972 *El Proto-Tzeltal-Tzotzil: Fonología Comprada y Diccionario Reconstruido*. Centro de Estudios Mayas, Cuaderno 5. Universidad Nacional Autónoma de Mexico, Mexico.
1978 Meso-American Indian Languages. *Encyclopaedia Britannica* 11:956-963. Fifteenth edition.
- KAUFMAN, TERRENCE S., and WILLIAM NORMAN
n.d. An Outline of Proto-Cholan Phonology, Morphology, and Vocabulary. In *Phonetic Studies in Mayan Hieroglyphic Writing*, edited by Lyle Campbell and John S. Justeson, Institute for Mesoamerican Studies, State University of New York, Albany, in press.
- KELLEY, DAVID H.
1962 Glyphic Evidence for a Dynastic Sequence at Quirigua, Guatemala. *American Antiquity* 27:323-335.
1965 The Birth of the Gods at Palenque. *Estudios de Cultura Maya* 5:93-134.
1968 Kakupacal and the Itzas. *Estudios de Cultura Maya* 7:255-268.
1976 *Deciphering the Maya Script*. University of Texas Press, Austin.
1977 Maya Astronomical Tables and Inscriptions. In *Native American Astronomy*, edited by Anthony Aveni, pp. 57-73.
1980 Astronomical Identities of Mesoamerican Gods. In *Archaeoastronomy Supplement to the Journal for the History of Astronomy* 2:51-554.
1983 The Maya Calendar Correlation Problem. In *Civilization in the Ancient Americas: Essays in Honor of Gordon R. Willey*, edited by Richard M. Leventhal and Alan L. Kolata, pp. 157-208. University of New Mexico Press, Albuquerque, and Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge.
- KIDDER, ALFRED V.
1947 *The Artifacts of Uaxactun, Guatemala*. Carnegie Institution of Washington Publication 576. Washington, D.C.
1949 Certain Archaeological Specimens from Guatemala, I. *Notes on Middle American Archaeology and Ethnology* 4(92). Carnegie Institution of Washington, Division of Historical Research. Washington, D.C.
- KIDDER, ALFRED V., and CARLOS SAMAYOA CHINCHILLA
1959 *The Art of the Ancient Maya*. T. W. Crowell, New York.
- KIDDER, ALFRED V., JESSE D. JENNINGS, and EDWIN M. SHOOK
1946 *Excavations at Kaminaljuyu, Guatemala*. Carnegie Institution of Washington Publication 561. Washington, D.C.
- KING, ARDEN R.
1955 Archaeological Remains from the Cintalapa Region, Chiapas, Mexico. *Middle American Research Records* 2(4):70-99. Tulane University, New Orleans.
- KLEIN, CECELIA F.
1975 Post-Classic Mexican Death Imagery as a Sign of Cyclic Completion. In *Death and the Afterlife in Pre-Columbian America*, edited by Elizabeth P. Benson, pp. 69-85. *Dumbarton Oaks*, Washington, D.C.
- KNOROZOV, YURI V.,
1952 Drevniaia Pis'mennost' Tsentral'noi Ameriki. *Sovetskaia Etnografiia* 3:100-118.
1955 Pis'mennost' Drevnikh Maia (Opyt Rasshifrovki). *Sovetskaia Etnografiia* 1:94-125.
1967 Selected Chapters from *The Writing of the Maya Indians*, translated by Sophie Coe. *Russian Translation Series of the Peabody Museum of Archaeology and Ethnology* 4. Harvard University, Cambridge.
- KÖHLER, U.
1977 Čonbilal Č'ulelal. Grundformen Mesoamerikanischer Kosmologie und Religion in einem Gebetstext auf Maya-Tzotzil. *Acta Humboldtiana, Series Geographico et Ethnographica* 5, Wiesbaden.
- KUBLER, GEORGE
1962 *The Art and Architecture of Ancient America: The Mexican, Maya, and Andean Peoples*. Penguin Books, Baltimore.
1967 *The Iconography of the Art of Teotihuacan*. Studies in Pre-Columian Art and Archaeology 4. *Dumbarton Oaks*, Washington, D.C.
1969 *Studies in Classic Maya Iconography*. *Memoirs of the Connecticut Academy of Arts and Sciences* 18. New Haven.
- KURBUJH, KORNELIA
1980 *Die Sitze der Maya: Eine Ikonographische Untersuchung*. Tübingen.
- LABBÉ, ARMAND J.
1982 *Religion, Art and Iconography: Man and Cosmos in Prehispanic Mesoamerica*. Bowers Museum Foundation, Santa Ana, California.
- LA FARGE, OLIVER, II, and DOUGLAS BYERS
1931 *The Year Bearer's People*. Middle American Research Series Publication 3. Tulane University, New Orleans.
- LANDA, DIEGO DE
1982 *Relación de las Cosas de Yucatán*. Twelfth edition. Editorial Porrúa, Mexico City.
- LATHRAP, DONALD W.
1973 Gifts of the Cayman: Some Thoughts on the Subsistence Basis of Chavin. In *Variation in Anthropology, Essays in Honor of John C. McGregor*, edited by Donald W. Lathrap and Jody Douglas, pp. 91-105. Illinois Archaeological Survey, Urbana.
- LAUGHLIN, ROBERT M.
1975 *The Great Tzotzil Dictionary of San Lorenzo Zinacantán*. Smithsonian Institution Contributions to Anthropology 19. Washington, D.C.
- LECHUGA, RUTH D.
1982 *El Traje Indígena de México*. Panorama Editorial, Mexico.
- LEHMANN, WALTER (editor)
1922 *Festschrift Eduard Seler*. Strecker und Shroder, Stuttgart.

- LEIGH, HOWARD
 1966 The Evolution of the Zapotec Glyph C. In *Ancient Oaxaca*, edited by J. Paddock, pp. 256-269. Stanford University Press, Palo Alto.
- LEMON, GEORGE
 1783 *English Etymology; or, a Derivative Dictionary of the English Language: in Two Alphabets*. London.
- LEVENTHAL, RICHARD, and ALAN KOLATA (editors)
 1983 *Civilization in the Ancient Americas: Essays in Honor of Gordon R. Willey*. University of New Mexico Press, Albuquerque, and Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge.
- LEYENDA DE LOS SOLES
 1945 in Velasquez, Primo F.
- LINNAEUS, CAROLUS
 1894 *Systema Naturae: Regnum Animale*. Tenth edition. Wilhelm Engelmann, Lipsius.
- LOTHROP, SAMUEL K.
 1936 *Zacualpa: A Study of Ancient Quiche Artifacts*. Carnegie Institution of Washington Publication 472. Washington, D.C.
 1952 *Metals from the Cenote of Sacrifice, Chichen Itza, Yucatan*. Memoirs of the Peabody Museum of Archaeology and Ethnology 10(2). Harvard University, Cambridge.
- LOUNSBURY, FLOYD G.
 1973 On the Derivation and Reading of the 'Ben-Ich' Prefix. In *Mesoamerican Writing Systems*, edited by Elizabeth P. Benson, pp. 99-143. *Dumbarton Oaks*, Washington, D.C.
 1974a Pacal. In *Primera Mesa Redonda de Palenque, Part I*, edited by Merle Greene Robertson, p. ii. Robert Louis Stevenson School, Pebble Beach.
 1974b The Inscription of the Sarcophagus Lid at Palenque. In *Primera Mesa Redonda de Palenque, Part II*, edited by Merle Greene Robertson, pp. 5-19. Robert Louis Stevenson School, Pebble Beach, California.
 1976 A Rationale for the Initial Date of the Temple of the Cross at Palenque. In *The Art, Iconography & Dynastic History of Palenque, Part III*, edited by Merle Greene Robertson, pp. 211-224. Robert Louis Stevenson School, Pebble Beach, California.
 1978 Maya Numeration, Computation, and Calendrical Astronomy. *Dictionary of Scientific Biography* 15:759-818.
 1982 Astronomical Knowledge and Its Uses at Bonampak, Mexico. In *Archaeoastronomy in the New World: American Primitive Astronomy*, edited by Anthony F. Aveni, pp. 143-168. Cambridge University Press, Cambridge.
 1985 The Identities of the Mythological Figures in the 'Cross Group' Inscriptions of Palenque. In *Fourth Palenque Round Table, 1980*, edited by Elizabeth P. Benson. Pre-Columbian Art Research Institute, San Francisco.
- LOWE, JOHN W. G.
 1982 On Mathematical Models of the Classic Maya Collapse: The Class Conflict Hypothesis Reexamined. *American Antiquity* 47:643-652.
- LUCKERT, KARL W.
 1976 *Olmec Religion: A Key to Middle America and Beyond*. University of Oklahoma Press, Norman.
- MACLEOD, BARBARA
 1979 Cholan and Yucatecan Verb Morphology and Glyphic Verbal Affixes in the Inscriptions. Paper presented in part to the Fourth Taller Maya at Palenque, Chiapas, Mexico.
- MAHLER, JOY
 1962 Textiles and Textile Impressions. In *Mayapan, Yucatan, Mexico*, by H. E. D. Pollock, Ralph L. Roys, Tatiana Proskouriakoff, and A. Ledyard Smith, pp. 403-405. Carnegie Institution of Washington Publication 619. Washington, D.C.
 1965 Garments and Textiles of the Maya Lowlands. In *Handbook of Middle American Indians*, Vol. 3, edited by Gordon R. Willey, pp. 581-593. General editor, Robert Wauchope. University of Texas Press, Austin.
- MAKEMSON, MAUDE WORCESTER
 1951 *The Book of the Jaguar Priest*. Henry Schuman, New York.
- MALER, TEOBERT
 1901-03 *Researches in the Central Portion of the Usumatsintla Valley*. Memoirs of the Peabody Museum of American Archaeology and Ethnology 2. Harvard University, Cambridge.
- MALMSTROM, VINCENT H.
 1973 Origin of the Mesoamerican 260-day Calendar. *Science* 181:939-941.
 1978 A Reconstruction of the Chronology of Mesoamerican Calendrical Systems. *Journal for the History of Astronomy* 9:105-116. Science History Publications, Chalfont, Bucks, England.
- MARCUS, JOYCE
 1973 Territorial Organization of the Lowland Classic Maya. *Science* 180:911-916.
 1976a *Emblem and State in the Classic Maya Lowlands: An Epigraphic Approach to Territorial Organization*. *Dumbarton Oaks*, Washington, D.C.
 1976b The Origins of Mesoamerican Writing. *Annual Review of Anthropology* 5:35-67.
- MARKHAM, CLEMENTS R. (editor)
 1970 *The Hawkins's Voyages During the Reigns of Henry VIII, Queen Elizabeth, and James I*. B. Franklin, New York.
- MARTÍNEZ HERNÁNDEZ, JUAN
 1926 Crónica de Maní. *Boletín de la Universidad Nacional del Sureste, Julio a Diciembre*: 160-169. Merida.
 1927 *Crónicas Mayas*. Carlos R. Menéndez. Merida.
 1929 *Diccionario de Motul*. Atribuido a Fray Antonio de Ciudad Real. Merida.
 1940 *Crónicas Mayas*. Second edition. Carlos R. Menéndez. Merida.
- MASON, ALDEN, and G. B. GORDON
 1925-28, 1943 *Examples of Maya Pottery in the Museum and Other Collections*. The University Museum, University of Pennsylvania, Philadelphia.
- MASTACHE DE ESCOBAR, ALBA GUADALUPE
 1971 *Técnicas Prehispánicas del Tejido*. Serie Investigaciones 20. Instituto Nacional de Antropología e Historia, Mexico.
 1974 Textiles from the Cueva de la Media Luna, Chiapas, Mexico. Preliminary Report, pp. 142-147. *Archaeological Textiles; Irene Emory Round Table on Museum Textiles, 1974 Proceedings*. The Textile Museum, Washington, D.C.
- MATHENY, RAY
 1978 Northern Maya Lowland Water-Control Systems. In *Prehispanic Maya Agriculture*, edited by Peter D.

- Harrison and B. L. Turner, pp. 185-210. University of New Mexico Press, Albuquerque.
- MATHEWS, PETER
 1977 The Inscription on the Back of Stela 8, Dos Pilas. Paper presented at Yale University.
 1980 Notes on the Dynastic Sequence of Bonampak, Part I. In *Third Palenque Round Table, 1978, Part 2*, edited by Merle Greene Robertson, pp. 60-73. University of Texas Press, Austin.
- MATHEWS, PETER, and LINDA SCHELE
 1974 Lords of Palenque – The Glyphic Evidence. In *Primera Mesa Redonda de Palenque, Part I*, edited by Merle Greene Robertson, pp. 63-75. Robert Louis Stevenson School, Pebble Beach, California.
- MATOS MOCTEZUMA, EDUARDO
 1982 Symbolism of the Templo Mayor. In *Aztec Mexico: Discovery of Templo Mayor*, edited by Emily Umberger. Direccion General de Asuntos Culturales, S.R.E., Mexico.
- MATTHEWS, GEORGE TENNYSON
 1959 *News and Rumor in Renaissance Europe: the Fugger Newsletters*. Capricorn Books, New York.
- MAUDSLAY, ALFRED P.
 1889- *Biologia Centrali-Americana; Archaeology*. 5 vols.
 1902 Edited by F. Ducane Godman and O. Salvin. R. H. Porter and Dulau and Company, London.
 1896- *Biologia Centrali-Americana; Archaeology*, Vol. 4,
 1902 Text. R. H. Porter and Dulau and Company, London.
- MAYER, KARL H.
 1978 *Maya Monuments: Sculptures of Unknown Provenance in Europe*. Acoma Books, Ramona, California.
 1980 *Maya Monuments: Sculptures of Unknown Provenance in the United States*. Acoma Books, Ramona, California.
- McARTHUR, H.
 1979 The Role of the Ancestors in the Daily Life of the Aguacatec (Maya). Paper presented at the 18th International Congress of Americanists, Vancouver.
- MEDIZ BOLIO, ANTONIO
 1930 *Libro de Chilam Balam de Chumayel*. San Jose, Costa Rica.
 1952 *Libro de Chilam Balam de Chumayel*. Second edition. Universidad Nacional Autónoma de Mexico, México.
- MENDOZA, JUAN GONZALES DE
 1970 *The History of the Great and Mighty Kingdom of China and the Situation Thereof*, Vol. 2, edited by George T. Staunton. B. Franklin, New York.
- MERRILL, ROBERT H.
 1945 Maya Sun Calendar Dictum Disproved. *American Antiquity* 10:307-311.
- MICHELON, OSCAR (editor)
 1976 *Diccionario de San Francisco*. Akademische Druck- u. Verlagsanstalt. Graz.
- MILBRATH, SUSAN
 1981 Astronomical Imagery in the Serpent Sequence of the Madrid Codex. In *Archaeoastronomy in the Americas*, edited by Ray A. Williamson, pp. 263-284. Ballena Press Anthropological Papers 22, Los Altos, California.
- MILES, S. W.
 1957 The Sixteenth-Century Pokom Maya. *Transactions of the American Philosophical Society* 47(4):735-781.
- MILLER, ARTHUR G.
 1973 *The Mural Painting of Teotihuacan*. Dumbarton Oaks, Washington, D.C.
- 1974 The Iconography of the Painting in the Temple of the Diving God, Tulum, Quintana Roo: The Twisted Cords. In *Mesoamerican Archaeology: New Approaches*, edited by Norman Hammond, pp. 167-186. University of Texas Press, Austin.
- 1981 The Quintana Roo Mural Project. *National Geographic Society Research Reports* 13:443-457.
 1982 *On the Edge of the Sea, Mural Painting at Tancah-Tulum, Quintana Roo, Mexico*. Dumbarton Oaks, Washington, D.C., Harvard University, Cambridge.
- MILLER JEFFREY
 1974 Notes on a Stelae Pair Probably from Calakmul, Campeche, Mexico. In *Primera Mesa Redonda de Palenque, Part I*, edited by Merle Greene Robertson, pp. 149-161. Robert Louis Stevenson School, Pebble Beach, California.
- MILLER, MARY
 1981 *The Murals of Bonampak*. Ph.D. dissertation, Department of Anthropology, Yale University, New Haven.
- MILLER, ROBERT RUSH
 1966 Geographical Distribution of Central American Fresh Water Fishes. *Copeia* 4:773-802.
- MOLLOY, JOHN P., and WILLIAM L. RATHJE
 1974 Sexploitation Among the Late Classic Maya. In *Mesoamerican Archaeology: New Approaches*, edited by Norman Hammond, pp. 431-444. University of Texas Press, Austin.
- MORAN, FRAY FRANCISCO
 1935 *Arte y Diccionario en Lengua Cholti Quiere Decir Lengua de Milperos. Vocabulario en Lengua Cholti*. Facsimile of 1695 manuscript. The Maya Society, Publication 9, Baltimore.
- MORLEY, SYLVANUS G.
 1935 *Guide Book to the Ruins of Quirigua*. Carnegie Institution of Washington, Supplemental Publication No. 16. Washington, D.C.
 1937- *The Inscriptions of Peten*. 5 Vols. Carnegie Institution of Washington Publication 437. Washington, D.C.
 1970 The Stela Platform at Uxmal, Yucatan, Mexico. *Middle American Research Institute Publication* 26:151-180. Tulane University, New Orleans.
- MORRIS, WALTER F., JR.
 1979 *A Catalog of Textiles and Folkart of Chiapas, Mexico*. 2 Vols. San Cristobal de Las Casas, Chiapas.
 n.d. a Lagertero Textile Impressions. In *The Figurines of Lagertero*, by Susanna Ekholm and Walter F. Morris, Jr. *Papers of the New World Archaeological Foundation*. Brigham Young University, Provo, in preparation.
 n.d. b The Textile Impressions of the Soconusco Coast Project. A Report to Barbara Voorhies, Project Director, Department of Anthropology, University of California, Santa Barbara.
 n.d. c The Textiles of Pinuela Cave. In Report by John Clark and Walter F. Morris, Jr. *Papers of the New World Archaeological Foundation*. Brigham Young University, Provo, in preparation.
 1985 Warped Glyphs: A Reading of Maya Textiles. In *Fourth Palenque Round Table, 1980*, edited by Elizabeth P. Benson. Pre-Columbian Art Research Institute, San Francisco.
- MOTOLINÍA, TORIBIO DE
 1951 *Motolinía's History of the Indians of New Spain*.

- Francis Borgia Steck, translator and annotator. Academy of American Franciscan History, Washington, D.C.
- MUNDKUR, BALAJI
1976 The Cult of the Serpent in the Americas: Its Asian Background. *Current Anthropology* 17:429-455.
- MURRAY, JAMES A. H. (editor)
1926 *A New English Dictionary on Historical Principles*, Vol. 10, Part I. Clarendon Press, Oxford.
- MYERS, GEORGE S.
1952 Sharks and Sawfishes in the Amazon. *Copeia* 4:268-269.
- NAVARETTE, CARLOS, y LUIS LUJAN MUÑOZ
1963 Reconocimiento Arqueológico del Sitio de 'Dos Pilas', Petexbatun, Guatemala. *Cuadernos de Antropología* 2. Instituto de Investigaciones Historicas, Universidad de San Carlos, Guatemala.
- NEUENSWANDER, HELEN
1981 Vestiges of Early Maya Time Concepts in a Contemporary Maya (Cubulco Achi) Community. *Estudios de Cultura Maya* 13:125-163.
- NEUGEBAUER, PAUL VICTOR
1938 Tafeln zur Berechnung der jährlichen Auf-und Untergänge der Planeten. *Astronomische Nachrichten*, Bd. 264, Nr. 6331. Kiel.
- NICHOLSON, HENRY B.
1971 Religion in Pre-Hispanic Central Mexico. In *Handbook of Middle American Indians*, Vol. 10, edited by Gordon F. Ekholm and Ignacio Bernal, pp. 395-446. General editor, Robert Wauchope. University of Texas Press, Austin.
- NICHOLSON, IRENE
1959 *Firefly in the Night, A Study of Ancient Mexican Poetry and Symbolism*. Faber and Faber, London.
1967 *Mexicanische Mythologie*. Wiesbaden. Also published as *Mexican and Central American Mythology*, Hamlyn, London.
- NUTTALL, ZÉLIA
1928 Nouvelles Lumières sur les Civilisations Américaines et le Système du Calendrier. Proceedings of the 22nd International Congress of Americanists I:119-148. Rome.
- OAKES, MAUD
1951 *The Two Crosses of Todos Santos: Survivals of Mayan Religious Ritual*. Princeton University Press, Princeton.
- O'NEALE, LILA
1942 *Early Textiles from Chiapas, Mexico*. Middle American Research Records 1(1). Tulane University, New Orleans.
- ONIONS, C. T. (editor)
1966 *The Oxford Dictionary of English Etymology*. Clarendon Press, Oxford.
- OPPOLZER, THEODOR RITTER VON
1962 *Canon of Eclipses*. Translated by Owen Gingerich. Dover Publications, New York. Originally published in 1887 (*Canon der Finsternisse*) as Vol. 52 of the Memoirs of the Imperial Academy of Science, Vienna.
- PALMA y PALMA, EULOGIO
1901 *Los Mayas*, Justo Sierra. Motul.
- PALMER, A. SMYTHE
1890 *Folk-etymology*. Henry Holt, New York.
- PANG, HILDA DELGADO
1976 Similarities Between Certain Early Spanish, Contemporary Spanish Folk and Mesoamerican Textile Design Motifs. In *Ethnographic Textiles of the Western Hemisphere: Irene Emory Round Table on Museum Textiles, 1976 Proceedings*, pp. 388-404. The Textile Museum, Washington, D.C.
- PARSONS, LEE
1980 *Pre-Columbian Art: The Morton D. May and The St. Louis Art Museum Collections*. Harper and Row, New York.
- PARTRIDGE, ERIC
1983 *Origins: a Short Etymological Dictionary of Modern English*. Greenwich House, New York.
- PASZTORY, ESTHER
1974 *The Iconography of the Teotihuacan Tlaloc*. Studies in Pre-Columbian Art and Archaeology 15. Dumbarton Oaks, Washington, D.C.
- PENDERGAST, DAVID M.
1981 Lamanai, Belize: Summary of Excavation Results, 1974-80. *Journal of Field Archaeology* 8(1):29-53.
1982 *Excavations at Altun Ha, Belize, 1964-70, Vol. 2*. Royal Ontario Museum, Toronto.
- PETERSON, KATHERINE K.
1979 Observations on the Ik Windows at Palenque. Unpublished manuscript. Department of Anthropology, University of California, Berkeley.
- PIÑA CHAN, ROMÁN
1970 The Archaeological Section. In *The Mexican National Museum of Anthropology*, by Ignacio Bernal, Román Piña Chan, and Fernando Cámara Barbachano, pp. 14-173 (revised edition). Thames and Hudson, London.
- PLOG, STEVEN
1980 *Stylistic Variation in Prehistoric Ceramics: Design Analysis in the American Southwest*. Cambridge University Press, New York.
- POHL, MARY
1981 Ritual Continuity and Transformation in Mesoamerica; Reconstructing the Ancient *Cuch* Ritual. *American Antiquity* 46:513-529.
- POHL, MARY, and JOHN POHL
1983 Ancient Maya Cave Rituals. *Archaeology* 36(3):28-32.
- PO'OT YAH, ELEUTERIO, and VICTORIA BRICKER
1981 Yucatec Maya Verbs (Hocaba Dialect). Grammatical Introduction by Victoria Bricker. *Latin American Studies Curriculum Aids*. Tulane University, New Orleans.
- PROSKOURIAKOFF, TATIANA
1950 *A Study of Classic Maya Sculpture*. Carnegie Institution of Washington Publication 593. Washington, D.C.
1960 Historical Implications of a Pattern of Dates at Piedras Negras, Guatemala. *American Antiquity* 25:454-475.
1961a Portraits of Women in Maya Art. In *Essays in Pre-Columbian Art and Archaeology*, by Samuel K. Lothrop, and others, pp. 81-99. Harvard University Press, Cambridge.
1961b The Lords of the Maya Realm. *Expedition* 4(1):14-21.
1962 Civic and Religious Structures of Mayapan. In *Mayapan, Yucatan, Mexico*, edited by H. E. D. Pollock, Ralph L. Roys, Tatiana Proskouriakoff, and A.

- Ledyard Smith, pp. 86-140. Carnegie Institution of Washington Publication 619. Washington, D.C.
- 1963 Historical Data in the Inscriptions of Yaxchilan, Part I. *Estudios de Cultura Maya* 3:149-167.
- 1964 Historical Data in the Inscriptions of Yaxchilan, Part II. *Estudios de Cultura Maya* 4:177-201.
- 1974 *Jades from the Cenote of Sacrifice*. Memoirs of the Peabody Museum of Archaeology and Ethnology 10(1). Harvard University Press, Cambridge.
- PULESTON, DENNIS E.
- 1974 Intersite Areas in the Vicinity of Tikal and Uaxactun. In *Mesoamerican Archaeology: New Approaches*, edited by Norman Hammond, pp. 303-311. University of Texas Press, Austin.
- 1976 The People of the Cayman/Crocodile: Riparian Agriculture and the Origins of Aquatic Motifs in Ancient Maya Iconography. In *Aspects of Ancient Maya Civilization*, edited by Francois de Montequin, pp. 1-26. Hamline University, St. Paul.
- 1977 The Art and Archaeology of Hydraulic Agriculture in the Maya Lowlands. In *Social Process in Maya Prehistory*, edited by Norman Hammond, pp. 449-467. Academic Press, London.
- QUIRARTE, JACINTO
- 1976 The Relationship of Izapan-Style Art to Olmec and Maya Art: A Review. In *Origins of Religious Art and Iconography in Preclassic Mesoamerica*, edited by Henry B. Nicholson, pp. 73-86. UCLA Latin American Center Publications, Los Angeles.
- 1979 The Representation of Underworld Processions in Maya Vase Painting: An Iconographic Study. In *Maya Archaeology and Ethnohistory*, edited by Norman Hammond and Gordon R. Willey, pp. 116-148. University of Texas Press, Austin.
- R., C.
- 1569 *The True Discription of This Marueilous Straunge Fishe, Whiche Was Taken on Thursday Wassennight, the XVI Day of June, This Present Month, in the Yeare of Our Lord God MDLXIX*. London.
- RANDS, ROBERT L.
- 1953 The Water Lily in Maya Art: A Complex of Alleged Asiatic Origin. *Bureau of American Ethnology Bulletin* 151:75-153. Washington, D.C.
- 1955 Some Manifestations of Water in Mesoamerican Art. *Bureau of American Ethnology Bulletin* 157:265-393. Washington, D.C.
- RECINOS, ADRIÁN, DELIA GOETZ, and SYLVANUS G. MORLEY
- 1950 *Popul Vuh: The Sacred Book of the Ancient Quiché Maya*. University of Oklahoma Press, Norman.
- REDFIELD, ROBERT, and ALFONSO VILLA R.
- 1934 *Chan Kom, A Maya Village*. Carnegie Institution of Washington Publication 448. Washington, D.C.
- REENTS, DORIE J., and JOHN R. SOSA
- 1980 Glyphic Evidence for Classic Maya Militarism. *Belizean Studies* 8(3):2-11.
- REIFLER, ERWIN
- n.d. A Comparative History of Metrology. Compiled by H. J. Griffin. Unpublished manuscript.
- RICE, DON S.
- 1982 The Peten Postclassic: A Settlement Perspective. Paper prepared for the School of American Research Advanced Seminar publication, *Late Lowland Maya Civilization: Classic to Postclassic*, edited by Jeremy A. Sabloff and E. W. Andrews V. University of New Mexico Press, Albuquerque, in press.
- RICE, PRUDENCE M.
- 1979 The Ceramic and Non-ceramic Artifacts of Yaxha-Sacnab, El Peten, Guatemala. Part I – The Ceramics: Section B, Postclassic Pottery from Topoxte. *Ceramica de Cultura Maya* 11:1-85.
- 1982 The Peten Postclassic: Perspectives from the Central Peten Lakes. Paper prepared for the School of American Research Advanced Seminar publication, *Late Lowland Maya Civilization: Classic to Postclassic*, edited by Jeremy A. Sabloff and E. W. Andrews V. University of New Mexico Press, Albuquerque, in press.
- 1983a Serpents and Styles in Peten Postclassic Pottery. *American Anthropologist* 85:866-880.
- 1983b Reptiles and Rulership in the Peten Postclassic. Paper presented at the Annual Meeting of the American Anthropological Association, Chicago.
- 1984 The Ceramics of Negroman-Tipu: A Preliminary Overview. Paper presented at the Annual Meeting of the Northwestern Anthropological Association, Hartford, Connecticut.
- RIESE, FRAUKE JOHANNA
- 1981 Indianische Landrechte in Yukatan um die Mitte des 16. Jahrhunderts. *Beiträge zur Mittelamerikanischen Völkerkunde* 16. Hamburgisches Museum für Völkerkunde, Hamburg.
- RINGLE, WILLIAM, and THOMAS SMITH-STARK
- n.d. a A Computer Concordance to the Inscriptions of Palenque. Manuscript, in preparation. Tulane University, New Orleans.
- n.d. b Computational Approaches to Decipherment. Manuscript, in preparation. Tulane University, New Orleans.
- ROBERTSON, DONALD
- 1970 The Tulum Murals: The International Style of the Late Postclassic. *Verhandlungen des 38th Internationalen Amerikanistenkongresses* 2:77-88.
- ROBERTSON, MERLE GREENE
- see Greene Robertson, Merle.
- ROBICSEK, FRANCIS
- 1975 *A Study in Maya Art and History: The Mat Symbol*. The Museum of the American Indian, Heye Foundation, New York.
- 1978 *The Smoking Gods: Tobacco in Maya Art, History, and Religion*. University of Oklahoma Press, Norman.
- ROBICSEK, FRANCIS, and DONALD M. HALES
- 1981 *The Maya Book of the Dead. The Ceramic Codex*. University of Virginia Art Museum, Charlottesville.
- 1982 *Maya Ceramic Vases from the Late Classic Period: The November Collection of Maya Ceramics*. University of Virginia Art Museum, Charlottesville.
- ROYS, LAWRENCE
- 1934 The Engineering Knowledge of the Maya. *Contributions to American Archaeology* 6. Carnegie Institution of Washington Publication 436. Washington, D.C.
- ROYS, RALPH L.
- 1931 *The Ethno-Botany of the Maya*. Middle American Research Series Publication 2. Tulane University, New Orleans.
- 1933 *The Book of Chilam Balam of Chumayel*. Carnegie Institution of Washington Publication 438.

- Washington, D.C.
- 1949 The Prophecies for the Maya Tuns or Years in the Books of Chilam Balam of Tizimin and Mani. In *Carnegie Institution of Washington Publication* 585:157-186. Washington, D.C.
- 1965 *Ritual of the Bacabs*. University of Oklahoma Press, Norman.
- 1967 *The Book of Chilam Balam of Chumayel*. Second edition. University of Oklahoma Press, Norman.
- RUPPERT, KARL, and JOHN H. DENISON
- 1943 *Archaeological Reconnaissance in Campeche, Quintana Roo, and Peten*. Carnegie Institution of Washington Publication 543. Washington, D.C.
- RUZ LHUILLER, ALBERTO
- 1958 Exploraciones Arqueologicas en Palenque 1955. *Anales del Instituto Nacional de Antropologia e Historia* 10(39):185-240. Mexico City. Mexico.
- SABLOFF, JEREMY A.
- 1973 Continuity and Disruption During Terminal Late Classic Times at Seibal: Ceramic and Other Evidence. In *The Classic Maya Collapse*, edited by T.P. Culbert, pp. 107-131. University of New Mexico Press, Albuquerque.
- 1975 Ceramics. *Excavations at Seibal, Department of Peten, Guatemala*. *Memoirs of the Peabody Museum of Archaeology and Ethnology* 13(2). Harvard University, Cambridge.
- SABLOFF, JEREMY A., and GORDON R. WILLEY
- 1967 The Collapse of Maya Civilization in the Southern Lowlands: A Consideration of History and Process. *Southwestern Journal of Anthropology* 23(4):311-336.
- SABLOFF, JEREMY A., RONALD L. BISHOP, GARMAN HARBOTTLE, ROBERT L. RANDS, and EDWARD V. SAYRE
- 1982 Analysis of Fine Paste Ceramics. *Excavations at Seibal, Guatemala*, edited by Jeremy A. Sabloff. *Memoirs of the Peabody Museum of Archaeology and Ethnology* 15(2). Harvard University, Cambridge.
- SAHAGÚN, FRAY BERNARDINO DE
- 1950-69 *Florentine Codex. General History of the Things of New Spain*. Edited by Arthur J. O. Anderson and Charles E. Dibble. Twelve volumes. The School of American Research and the University of Utah. Santa Fe.
- SAHLINS, MARSHALL
- 1976 Colors and Cultures. *Semiotica* 16:1-22.
- SANDERS, WILLIAM
- 1960 Prehistoric Ceramics and Settlement Pattern in Quintana Roo, Mexico. In *Carnegie Institution of Washington Publication* 606:155-264.
- SARTOR, MARIO
- 1981 La città e la conquista: Mappa e documenti sulla trasformazione urbana e territoriale nell' America centrale del 500. Casa del Libro Editrice, Rome.
- SATTERTHWAITE, LINTON
- 1964 Dates in a New Maya Hieroglyphic Text as Katun-Baktun Anniversaries. *Estudios de Cultura Maya* 4:203-222.
- 1965 Calendrics of the Maya Lowlands. In *Handbook of Middle American Indians*, vol. 3, edited by Gordon R. Willey, pp. 603-631. General editor, Robert Wauchope. University of Texas Press, Austin.
- SCHÁVELZON, DANIEL
- 1980 Temples, Caves, or Monsters? Notes on Zoomorphic Façades in Pre-Hispanic Architecture. In *Third Palenque Round Table, 1978, Part 2*, edited by Merle Greene Robertson, pp. 151-162. University of Texas Press, Austin.
- SCHELE, LINDA
- 1974 The Attribution of Monumental Architecture to Specific Rulers at Palenque. Paper presented at the 41st International Congress of Americanists, Mexico City.
- 1976 Accession Iconography of Chan-Bahlum in the Group of the Cross at Palenque. In *The Art, Iconography & Dynastic History of Palenque, Part III* (Segunda Mesa Redonda de Palenque), edited by Merle Greene Robertson, pp. 9-34. Robert Louis Stevenson School, Pebble Beach.
- 1978 *Notebook for the Maya Hieroglyphic Writing Workshop at Texas*. Institute of Latin American Studies, The University of Texas, Austin.
- 1979a Genealogical Documentation on the Tri-figure Panels at Palenque. In *Tercera Mesa Redonda de Palenque, 1978, Part 1*, edited by Merle Greene Robertson and Donnan Call Jeffers, pp. 41-70. Pre-Columbian Art Research, Monterey, California.
- 1979b The Puleston Hypothesis: The Water Lily Complex in Classic Maya Art and Writing. Paper presented at Princeton University.
- 1982 *Maya Glyphs: The Verbs*. University of Texas Press, Austin.
- 1984 Human Sacrifice Among the Classic Maya. In *Ritual Human Sacrifice in Mesoamerica*, edited by Elizabeth H. Boone, pp. 7-48. Dumbarton Oaks, Washington, D.C.
- SCHELE, LINDA, and JEFFREY H. MILLER
- 1983 *The Mirror, the Rabbit, and the Bundle: "Accession" Expressions from the Classic Maya Inscriptions*. *Studies in Pre-Columbian Art and Archaeology* 25. Dumbarton Oaks, Washington, D.C.
- SCHELE, LINDA, and PETER MATHEWS
- 1979 *The Bodega of Palenque, Chiapas, Mexico*. Dumbarton Oaks, Washington, D.C.
- SCHELE, LINDA, PETER MATHEWS, and FLOYD G. LOUNSBURY
- 1977 Parentage Statements in Classic Maya Inscriptions. Paper presented at the International Conference on Maya Iconography and Hieroglyphic Writing, Guatemala City.
- SCHELLHAS, PAUL
- 1897 *Die Göttergestalten der Mayahandschriften: Ein mythologisches Kulturbild aus dem alten Amerika*. Verlag von Richard Bertling, Dresden.
- 1904a Comparative Studies in the Field of Maya Antiquities. *Bureau of American Ethnology Bulletin* 28:591-622. Washington, D.C.
- 1904b *Representation of Deities of the Maya Manuscripts*. Papers of the Peabody Museum of American Archaeology and Ethnology 4(1). Harvard University, Cambridge.
- SCHOLES, FRANCE V., and RALPH L. ROYS
- 1968 *The Maya Chontal Indians of Acalan-Tixchel: a Contribution to the History and Ethnography of the Yucatan Peninsula*. University of Oklahoma Press, Norman.
- SCHRAM, ROBERT

- 1908 *Kalendariographische und Chronologische Tafeln*. J. C. Hinrichs, Leipzig.
- SCHULTZE JENA, LEONARD
1954 *La vida y las creencias de los indigenas Quiches de Guatemala*. *Biblioteca Cultura Popular* 49. Ministerio de Educacion Publica, Guatemala.
- SCHWARTZ, FRANK J.
1960 Additional Comments on Adult Bull Sharks *Carcharhinus leucas* (Müller and Henle), from Chesapeake Bay, Maryland. *Chesapeake Science* 1:68-71.
- SEJOURNE, LAURETTE
1970 *Arqueología del Valle de Mexico, I. Culhuacan*. Instituto Nacional de Antropología e Historia, Mexico.
- SELER, EDUARD
1887 Ueber die Namen der in der Dresdener Handschrift abgebildeten Maya Gotter. *Zeitschrift für Ethnologie* 19:224-231; 1:367-389.
- 1902-23 *Gesammelte Abhandlungen zur Amerikanischen Sprach- und Altherhumskunde*. 5 vols. (1908: *Die Ruinen von Chichen Itza in Yucatan*, Vol. 5.) A. Asher and Co., Berlin.
- 1963 *Commentarios al Codice Borgia*. Fondo de Cultura Economica, Mexico.
- 1976 *Observations and Studies in the Ruins of Palenque, 1915*, translated by Gisela Morgner and edited by Thomas Bartman and George Kubler. Robert Louis Stevenson School, Pebble Beach.
- SEVERIN, GREGORY M.
1981 *The Paris Codex: Decoding an Astronomical Ephemeris*. Transactions of the American Philosophical Society 71(5). Philadelphia.
- SHARER, ROBERT J.
1985 Terminal Classic Events in the Southeastern Lowlands: A View from Quirigua. In *The Lowland Maya Postclassic: Questions and Answers*, edited by Arlen F. Chase and Prudence M. Rice. University of Texas Press, Austin.
- SHIPLEY, JOSEPH T.
1945 *Dictionary of Word Origins*. Philosophical Library, New York.
- SHOOK, EDWIN M.
1965 Archaeological Survey of the Pacific Coast of Guatemala. In *Handbook of Middle American Indians*, Vol. 2, edited by Gordon R. Willey, pp. 180-194. General editor, Robert Wauchope. University of Texas Press, Austin.
- SIDRYS, RAYMOND
1976 *Mesoamerica: An Archaeological Analysis of Low-Energy Civilization*. Ph.D. dissertation, University of California, Los Angeles. University Microfilms International, Ann Arbor.
- SILVEIRA BUENO, FRANCISCO DA (editor)
1967 *Grande Dicionario Etimológico-Prosódico de Lingua Portuguesa*, Vol. 8. Sao Paulo.
- SMAILUS, ORTWIN
1975 *El Maya-Chontal de Acalán: Analisis Lingüístico de un Documento de los Años 1610-12*. Centro de Estudios Mayas Cuaderno 9. Universidad Nacional Autónoma de Mexico, Mexico.
- SMITH, AUGUSTUS LEDYARD
1950 *Uaxactun, Guatemala; Excavations of 1931-37*. Carnegie Institution of Washington Publication 588. Washington, D.C.
- 1982 Major Architecture and Caches. *Excavations at Seibal*. Memoirs of the Peabody Museum of Archaeology and Ethnology 15(1). Harvard University, Cambridge.
- SMITH, AUGUSTUS LEDYARD, and A. V. KIDDER
1951 *Excavations at Nebaj, Guatemala*. Carnegie Institution of Washington Publication 594. Washington D.C.
- SMITH, AUGUSTUS LEDYARD, and KARL RUPPERT
1956 Excavations in Housemounds at Mayapan: IV. *Carnegie Institution of Washington, Department of Archaeology, Current Reports* 36:471-527. Washington, D.C.
- SMITH, HOMES W.
1936 The Retention and Physiological Role of Urea in the Elasmobranchii. *Biological Reviews* 11:49-82.
- SMITH, ROBERT E.
1952 *Pottery from Chipoc, Alta Verapaz, Guatemala*. Carnegie Institution of Washington Publication 596. Washington, D.C.
- 1955 *Ceramic Sequence at Uaxactun, Guatemala*. 2 vols. Middle American Research Institute Publication 20. Tulane University, New Orleans.
- 1957 Tohil Plumbate and Classic Maya Polychrome Vessels in the Marquez Collection. *Notes on Middle American Archaeology and Ethnology* 124. Carnegie Institution of Washington, Washington, D.C.
- 1971 *The Pottery of Mayapan*. Papers of the Peabody Museum of Archaeology and Ethnology 66. Harvard University, Cambridge.
- SMITH, ROBERT E., and JAMES GIFFORD
1965 Pottery of the Maya Lowlands. In *Handbook of Middle American Indians*, Vol. 2, Part 1, edited by Gordon R. Willey, pp. 498-534. General editor, Robert Wauchope. University of Texas Press, Austin.
- SOLÍS ALCALÁ, ERMILO
1949 *Códice Pérez*. Oriente, Merida.
- SOTHEBY PARK BERNET, INC.
1982 *Catalogue, Sale 4889Y, Fine Pre-Columbian Art*. New York.
- SPINDEN, HERBERT JOSEPH
1913 *A Study of Maya Art: Its Subject Matter and Historical Development*. Memoirs of the Peabody Museum of American Archaeology and Ethnology 6. Harvard University, Cambridge. Reprinted in 1975 by Dover Publications, New York.
- 1930 Maya Dates and What They Reveal. *Science Bulletin* 4(1). Museum of the Brooklyn Institute of Arts and Sciences, Brooklyn.
- SPORES, RONALD
1974 Marital Alliance in the Political Integration of Mixtec Kingdoms. *American Anthropologist* 76:279-311.
- SQUIER, EPHRAIM G.
1852 *Nicaragua: Its People, Scenery, Monuments, and the Proposed Interoceanic Canal*, Vol. 1. Appleton, New York.
- STAHLMAN, WILLIAM D., and OWEN GINGERICH
1963 *Solar and Planetary Longitudes for Years - 2500 to + 2000 by Ten-Day Intervals*. University of Wisconsin Press, Madison.
- STEGGERDA, MORRIS
1941 *Maya Indians of Yucatan*. Carnegie Institution of Washington Publication 531. Washington, D.C.
- STEPHENS, JOHN LLOYD

- 1841 *Incidents of Travel in Central America, Chiapas and Yucatan*. 2 vols. Harper and Brothers, New York. Reprinted in 1969 by Dover Publications, New York.
- 1843 *Incidents of Travel in Yucatan*. 2 vols. Harper and Brothers, New York. Reprinted in 1961 by Dover Publications, New York.
- STIRLING, MATTHEW W.
1943 *Stone Monuments of Southern Mexico*. Bureau of American Ethnology Bulletin 138. Smithsonian Institution, Washington, D.C.
- STONE, ANDREA
1983 *The Zoomorphs of Quirigua, Guatemala* Ph.D. dissertation, Department of Art History, The University of Texas, Austin.
- STONE, ANDREA, DORIE REENTS, and ROBERT COFFMAN
1985 Genealogical Documentation of the Middle Classic Dynasty of Caracol, El Cayo, Belize. In *Fourth Palenque Round Table, 1980*, edited by Elizabeth P. Benson. Pre-Columbian Art Research Institute, San Francisco.
- STUART, DAVID
1982 The Iconography of Blood in the Symbolism of Maya Rulership. Paper presented at the Princeton Conference on the Beginnings of Maya Iconography.
- TATE, CAROLYN
1980 *The Maya Cauac Monster: Visual Evidence for Ancestor Veneration Among the Ancient Maya*. Masters' thesis, Department of Art History, The University of Texas, Austin.
1982 The Maya Cauac Monster's Formal Development and Dynastic Contexts. In *Pre-Columbian Art History: Selected Readings*, edited by Alana Cordy-Collins, pp. 33-54. Peek Publications, Palo Alto.
- TAUBE, KARL
1981 Classic Maya Scaffold Sacrifice: A Ceremony of Field and State. Manuscript.
- TEDLOCK, BARBARA
1982 *Time and the Highland Maya*. University of New Mexico Press, Albuquerque.
n.d. Earth Rites and Moon Cycles: Mayan Synodic and Sidereal Lunar Reckoning. In *Ethnoastronomy: Indigenous Astronomical and Cosmological Traditions in the World*, edited by John B. Carlson and Von Del Chamberlain. Smithsonian Institution Press, in preparation.
- TESOROS MAYAS DE GUATEMALA
1974 *Exposicion Museo Nacional de Arqueología y Etnología de Guatemala*. Guatemala City.
- THOMAS, CYRUS
1882 A Study of the Manuscript Troano. *U.S. Department of the Interior: Contributions to North American Ethnology* 5:1-237. Washington, D.C.
1888 Aids to the Study of the Maya Codices. *Sixth Annual Report of the Bureau of American Ethnology (1884-85)*, pp. 253-371. Washington, D.C.
- THOMERSON, JAMIE E., THOMAS B. THORSON, and RONALD L. HEMPEL
1977 The Bull Shark, *Carcharhinus leucas*, from the Upper Mississippi River Near Alton, Illinois. *Copeia* 1:166-168.
- THOMPSON, J. ERIC S.
1934 *Sky Bearers, Colors and Directions in Maya and Mexican Religion*. Carnegie Institution of Washington Publication 436, Contribution 10. Washington, D.C.
- 1935 *Maya Chronology: The Correlation Question*. Carnegie Institution of Washington Publication 456, Contribution 14. Washington, D.C.
- 1937 *A New Method of Deciphering Yucatecan Dates With Special Reference to Chichen Itza*. Carnegie Institution of Washington Publication 483, Contribution 22. Washington, D.C.
- 1938 Sixteenth and Seventeenth Century Reports on the Chol Mayas. *American Anthropologist* 40(4):584-604.
- 1944 The Fish as a Maya Symbol for Counting and Further Discussion of Directional Glyphs. *Theoretical Approaches to Problems 2*. Carnegie Institution of Washington, Washington, D.C.
- 1950 *Maya Hieroglyphic Writing: An Introduction*. Carnegie Institution of Washington Publication 589. Washington, D.C. Second and third editions published in 1960 and 1971 by the University of Oklahoma Press, Norman.
- 1954 A Presumed Residence of the Nobility of Mayapan. *Carnegie Institution of Washington, Department of Archaeology, Current Reports* 19:71-87. Washington, D.C.
- 1957 Deities Portrayed on Censers at Mayapan. *Carnegie Institution of Washington, Department of Archaeology, Current Reports* 40.
- 1962 *A Catalog of Maya Hieroglyphs*. University of Oklahoma Press, Norman.
- 1965 Maya Hieroglyphic Writing. In *Handbook of Middle American Indians*, Vol. 3, edited by Gordon R. Willey, pp. 632-658. General editor, Robert Wauchope. University of Texas Press, Austin.
- 1970a *Maya History and Religion*. University of Oklahoma Press, Norman.
- 1970b The Bacabs: Their Portraits and Glyphs. In *Monographs and Papers in Maya Archaeology*, edited by William R. Bullard, Jr., pp. 469-485. Papers of the Peabody Museum of Archaeology and Ethnology 61. Harvard University Press, Cambridge.
- 1972 *A Commentary on the Dresden Codex*. Memoirs of the American Philosophical Society 93. Philadelphia.
- THOMPSON, STITH
1955- *Motif Index of Folk Literature*. Indiana University Press, Bloomington.
- THORSON, THOMAS B.
1972 The Status of the Bull Shark, *Carcharhinus leucas*, in the Amazon River. *Copeia* 3:601-605.
1976 The Status of the Nicaragua Shark: an Updated Appraisal. In *Investigations of the Ichthyofauna of Nicaraguan Lakes*, edited by Thomas B. Thorson, pp. 561-574. School of Life Sciences, University of Nebraska, Lincoln.
- THORSON, THOMAS B., DONALD E. WATSON, and C. MICHAEL COWAN
1966 The Status of the Fresh Water Shark of Lake Nicaragua. *Copeia* 3:385-402.
- TOWNSEND, RICHARD F.
1982 Malinalco and the Lords of Tenochtitlan. In *The Art and Iconography of Late Post-Classic Central Mexico*, edited by Elizabeth H. Boone, pp. 111-140. Dumbarton Oaks, Washington, D.C.
- TOZZER, ALFRED M.

- 1907 *A Comparative Study of the Mayas and Lacandones*. New York.
- 1941 *Landa's Relación de las Cosa de Yucatan*. Papers of the Peabody Museum of American Archaeology and Ethnology 18. Harvard University Press, Cambridge.
- 1957 *Chichen Itza and Its Cenote of Sacrifice: A Comparative Study of Contemporaneous Maya and Toltec*. Memoirs of the Peabody Museum of Archaeology and Ethnology 11, 12. Harvard University, Cambridge.
- TREATY OF MANI
See *Crónica de Maní*
- TRIK, AUBREY S.
1939 *Temple XXII at Copan*. Carnegie Institution of Washington Publication 509, Contribution 27. Washington, D.C.
- 1963 The Splendid Tomb of Temple I at Tikal, Guatemala. *Expedition* 6(1):2-18.
- TUCKERMAN, BRYANT
1964 *Planetary, Lunar, and Solar Positions, A.D. 2 to A.D. 1649 at Five-Day and Ten-Day Intervals*. Memoirs of the American Philosophical Society 59. Philadelphia.
- TURNER, B. L., II
1974 Prehistoric Intensive Agriculture in the Maya Lowlands. *Science* 185:118-124.
- 1979 Prehispanic Terracing in the Central Maya Lowlands: Problems of Agricultural Intensification. In *Maya Archaeology and Ethnohistory*, edited by Norman Hammond and Gordon R. Willey, pp. 103-115. University of Texas Press, Austin.
- UNWIN, RAYNER
1960 *The Defeat of John Hawkins: a Biography of His Third Slaving Voyage*. Macmillan, New York.
- VALENTINI, PHILIPP J. J.
1879 The Katunes of Maya history. *Proceedings of the American Antiquarian Society* 74:69-117. Worcester.
- VALLADARES, LEON A.
1957 *El Hombre y el Maize: Etnografía y Etnopsicología de Colotenango, Guatemala*. Guatemala City.
- VAN SWIETEN, G.
1976 *Art de Mesoamerique/Meso-Amerikaanse Kunst*. Société Générale de Banque, Bruxelles.
- VELASQUEZ, PRIMO F. (editor and translator)
1945 *Codice Chimalpopoca* (including *Anales de Cuauhtitlan* and *Leyenda de los Soles*). Universidad Nacional Autónoma de México, México.
- VILLA, JAIME
1976 Ichthyology of the Lakes of Nicaragua: Historical Perspective. In *Investigations of the Ichthyofauna of Nicaraguan Lakes*, edited by Thomas B. Thorson, pp. 101-113. School of Life Sciences, University of Nebraska, Lincoln.
- VILLA ROJAS, ALFONSO
1969 Maya Lowlands: The Chontal, Chol, and Kekchi. In *Handbook of Middle American Indians*, Vol. 7, edited by Evon Z. Vogt, pp. 230-243. General editor, Robert Wauchope. University of Texas Press, Austin.
- VILLACORTA C., J. ANTONIO, and CARLOS A. VILLACORTA R.
1930 *Códices Mayas: Dresdensis, Pereseianus, Tro-Cortesianus*. Tipografía Nacional, Guatemala City. (Second edition: 1977).
- VINSON, G. L.
1960 Las Ruinas de Petexbatun. *Antropología e Historia de Guatemala* 12(2):3-9. Instituto de Antropología e Historia de Guatemala.
- VOGT, EVON Z.
1969 *Zinacantan: A Maya Community in the Highlands of Chiapas*. Belknap Press of Harvard University Press, Cambridge.
- 1976 *Tortillas for the Gods: A Symbolic Analysis of Zinacanteco Rituals*. Harvard University Press, Cambridge.
- VON EUW, ERIC
see Euw, Eric von
- WAUCHOPE, ROBERT
1970 Protohistoric Pottery of the Guatemalan Highlands. In *Monographs and Papers in Maya Archaeology*, edited by William R. Bullard, Jr., pp. 89-244. Papers of the Peabody Museum of Archaeology and Ethnology 61, Harvard University, Cambridge.
- WEAVER, MURIEL PORTER
1972 *The Aztecs, Maya and Their Predecessors: Archaeology of Mesoamerica*. Seminar Press, New York.
- WEBSTER NOAH
1828 *An American Dictionary of the English Language: Exhibiting the Origin, Orthography, Pronunciation and Definitions of Words*, Vol. 2. Lippincott, Philadelphia.
- WHITNEY, WILLIAM DWIGHT (editor)
1903 *The Century Dictionary and Cyclopaedia*, Vol. 8. Century Company, New York.
- WILKINS, JOHN
1668 *An Essay Towards a Real Character, and a Philosophical Language*. London.
- WILLEY, GORDON R., A. LEDYARD SMITH, GAIR TOURTELLOT III, and IAN GRAHAM
1975 *Excavations at Seibal*. Memoirs of the Peabody Museum of Archaeology and Ethnology 13(1). Harvard University, Cambridge.
- WILLIAMSON, JAMES A.
1949 *Hawkins of Plymouth*. Adam and Charles Black, London.
- WILLSON, ROBERT W.
1924 *Astronomical Notes on the Maya Codices*. Papers of the Peabody Museum of Archaeology and Ethnology 6(3). Harvard University, Cambridge.
- WINNING, HASSO VON
1961 Teotihuacan Symbols: The Reptile's Eye Glyph. *Ethnos* 26(3):121-166.
- 1963 A Maya 'God N' Effigy Bowl. *Masterkey* 37(2).
- WISDOM, CHARLES
1940 *The Chorti Indians of Guatemala*. University of Chicago Press, Chicago.
- WOBST, H. M.
1977 Stylistic Behavior and Information Exchange. In *For the Director: Research Essays in Honor of James B. Griffin*, edited by Charles E. Cleland, pp. 317-342. Anthropological Papers 61, Museum of Anthropology, University of Michigan, Ann Arbor.
- WONDERLEY, ANTHONY W.
1981 *Late Postclassic Excavations at Naco, Honduras*. Latin American Studies Program Dissertation Series 86. Cornell University, Ithaca, New York.
- WOODBURY, RICHARD, and AUBREY S. TRIK
1953 *The Ruins of Zaculeu, Guatemala*. 2 vols. United Fruit Company, New York.
- WRIGHT, I. A. (editor)
1929 *Spanish Documents Concerning English Voyages to the Caribbean 1527-1568*. Hakluyt Society, London.