

An Appearance of Xiuhtecuhtli in the Dresden Venus Pages

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PERHAPS THE MOST SOPHISTICATED EXAMPLE of astronomical notation known for the ancient Maya appears on pages 24 and 46 to 50 of the Dresden Codex. Due to the pioneering work of Ernst Förstemann (1886, 1906), it is now known that these pages concern the 584-day Venus cycle, including specific notations for Venus as the morning star, evening star, and superior and inferior conjunctions. However, it was Eduard Seler (1898, 1904) who first recognized the religious significance of these pages and their similarity to Central Mexican Venus lore. Seler (*ibid.*) noted that much of the iconography appearing on Dresden pages 46 to 48 is strikingly similar to scenes in three codices of the prehispanic Borgia Group, namely, the Borgia itself (pp. 53-54), Vaticanus B (pp. 80-84), and the Cospi (pp. 9-11). With characteristic acumen, Seler discerned that these Mexican scenes also concern the 584-day Venus cycle, here describing the heliacal rising of Venus as the morning star following inferior conjunction.

In his comparison of Maya and Central Mexican Venus lore, Seler (1898, 1904) noted that in the Dresden and the three Mexican codices there is a series of five figures spearing particular individuals or objects. In the Dresden Codex, this is found on pages 46 to 50. On each of the Dresden pages, three scenes are depicted. The uppermost illustrates what appear to be "celestial observers"—gods in association with a sky band throne. In the central scene, a crouching god is in the act of hurling a dart from his *atl-atl*, or spear thrower. The victim lies prone below in the lowermost scene, pierced by the dart. In the Borgia, Cospi and Vaticanus B passages, there is no allusion to an enthroned observer. Instead, the spearing of particular subjects is the primary scene, and is reproduced five times. In the three Mexican codices, the spear-wielding warrior is clearly Tlahuizcalpantecuhtli, the fierce god of Venus as the morning star.

Although the concept of the morning star as a celestial spearer is not known from ethnohistorical Maya accounts, it is recorded in a colonial source from highland Mexico. Thus, Seler (1898, 1904) called attention to an obscure but highly relevant account in the *Anales de Quauhtitlan*:

They [the old men] knew when he [Quetzalcoatl as Venus] appears, on what number and what particular signs he shines. He casts his rays at them, and shows his displeasure with them. If it [heliacal rising] falls on 1 Cipactli, he spears the old, men and women equally, If on 1 Ocelotl, if on 1 Mazatl, if on 1 Tochtli he spears the children. If on 1 Acatl he spears the great lords, and just the same on 1 Miquiztli. If on 1 Quiauitl, he spears the rain, and it will not rain. If on 1 Ollin, he spears the youths and maidens; if on 1 Atl, everything dries up. For that the old men and the old women venerated each one of these signs.

[Translation and emendations by Thompson (1972:64)]

Seler noted that the spearing of particular subjects, such as old people, children, youths, or rain, corresponds thematically to the spearing of individuals and items in the prehispanic Dresden and Mexican Venus pages.

Whereas the series of five Venus gods in the Borgia, Vaticanus B, and Cospi Venus pages are all clear versions of Tlahuizcalpantecuhtli, the five Dresden figures are a series of distinct gods of both Maya and Mexican origin. The black figure on Dresden page 46 is epigraphically labeled as God L, one of the major gods of the Maya pantheon. The corresponding entity on page 47 is also Maya, and appears as a skeletalized Chac-faced figure glyphically named *lahun can*, or *lahun chan* (Roys 1933:101). Coe (1977:341, 345) noted that the page 48 deity appears to be a Postclassic form of the howler monkey artisan commonly appearing in Classic Maya epigraphy and art. More recently, Whittaker (1986) has pointed out the accompanying name glyph of this figure is *tawiskal(a)*, notably similar to the Nahuatl *tlahuizcalpantecuhtli*. The identity of the *atl-atl* wielding figure on page 49 is the central subject of this paper and will be discussed in detail below (Fig. 1). Finally, the fifth figure, that on page 50, has been identified by Seler (1963,2:251) and Thompson (1942:50; 1950:220; 1972:69) as the blindfolded Central Mexican god of stone, coldness, and castigation, Itzlacolihqui-Ixquimilli (Fig. 2). Like the Dresden



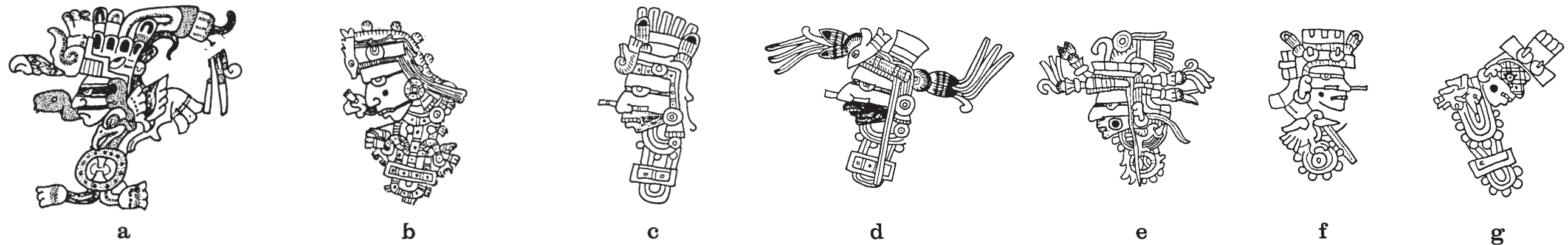
FIGURE 1.
XIUHTECUHTLI AND HIS NAME GLYPH
ON PAGE 49 OF THE DRESDEN CODEX



- a: DRESDEN, 50
 b: VATICANUS B, 39
 c: TELLERIANO REMENSIS, 16 verso (from Danzel 1923: Plate 32)
 d: MAGLIABECHIANO, 72 recto. Dead warrior bundle.

FIGURE 2.
 REPRESENTATIONS OF ITZLACOLIUHQUI-IXQUIMILLI
 IN THE DRESDEN CODEX AND CENTRAL MEXICAN MANUSCRIPTS

FIGURE 3. COMPARISON OF THE DRESDEN XIUHTECUHTLI WITH REPRESENTATIONS IN THE BORGIA AND VATICANUS B CODICES



example, the Mexican deity is usually blindfolded and often wears a pair of heron feathers, the *aztaxelli*, in his headdress (Fig. 2b).¹

The Dresden page 50 Venus figure displays a specific reference to Central Mexican mythology. Seler (1963,2:251) mentioned that this entity has a hafted stone point protruding from the top of the headdress. In another passage, Seler (1963,2:205) noted that Itzlacolihqui-Ixquimilli often has a stone-tipped dart projecting through his headdress (Fig. 2c). Seler related this curious convention to an episode in the *Leyenda de los soles*. In this passage, Tlahuizcalpantecuhtli shot a dart at the newly created sun, who in return transfixed the Venus god with an arrow through the forehead (see Seler, *ibid.*; Velázquez 1945:122). The account goes on to state that because of this incident, Tlahuizcalpantecuhtli is the god of cold (*cetl*). According to Seler (1963,2:205) the transformation of Tlahuizcalpantecuhtli by the sun is embodied by Itzlacolihqui-Ixquimilli, Mexican god of stone and coldness.² The dead warrior bundle on page 72r of the Codex Maglibechiano not only has the dart in his forehead, but also the characteristic beaded facial band of the Aztec Tlahuizcalpantecuhtli (Fig. 2d). The presence of Itzlacolihqui-Ixquimilli in the Dresden Venus pages is thus of special import, since it reveals that the Maya also regarded this deity as an aspect of the morning star. Moreover, the placement of the stone-tipped dart in the headdress of the Dresden example suggest that the painters of this manuscript were well aware of Postclassic Central Mexican iconographic conventions.

THE DRESDEN XIUHTECUHTLI

The identity of the atl-atl wielding figure on Dresden page 49 has been the source of some controversy (Fig. 1). In his initial discussion of the Dresden Venus figures, Seler (1898; 1904:389) noted that the banded facial markings of this entity are notably similar to Tezcatlipoca but did not specify what god is actually represented. Seler (1963,1:251) subsequently stated that the facial banding resembles both Tezcatlipoca and the god of fire, Xiuhtecuhtli. Seler (*ibid.*) also mentioned that the element curling from the mouth of the Dresden figure resembles the mouth volute of Xiuhtecuhtli. In still further support of the Xiuhtecuhtli identification, Seler (*ibid.*) called attention to the descending bird appearing in the Dresden headdress, which recalls the descending *xiuhtototl* bird commonly worn in the headdress of Xiuhtecuhtli (Fig. 3a-d). However, due to a rather forced comparison of the Dresden Venus pages to Borgia page 25 and Vaticanus B page 70, Seler (*ibid.*) argued that the Maya figure represents Mixcoatl, not

Xiuhtecuhtli.

According to Thompson (1972:68-9), the page 49 figure represent Quetzalcoatl or his Maya counterpart, Kukulcan:

A bird (quetzal?) inserted in one earplug and a snake in the other presumably identify him as Kukulcan-Quetzalcoatl. Elsewhere (e.g., Borgia p. 62) Quetzalcoatl's identifying attributes are coiled snakes in headdress and the head of a quetzal at waist. In front of the Tlaloc-like headdress there appears to be a conch shell, another attribute of that god.

Thompson identified the mouth curl mentioned by Seler as an earplug partially obscured by the profile face. However, it is probable that the device represents a lip plug rather than an ear ornament. The identification of the quetzal ear ornament is also doubtful, since the bird lacks the long tail feathers, forehead crest and the thick, parrot-like beak of the quetzal. Although the conch is an important attribute of Quetzalcoatl, the headdress element on the Dresden figure is not a shell but the wing of the descending bird mentioned by Seler. A virtually identical example, again with the volute-like wing appears on Dresden page 60b (Fig. 4d).

The descending-bird headdress element found on Dresden pages 49 and 60b scene is a Central Mexican rather than Maya trait. The Dresden page 60b scene is filled with references to Central Mexican iconography, particularly that of the Early Postclassic Toltec. Thus the warrior figures on 60b brandish atl-atl darts and round shields, typical traits of Toltec warriors appearing at Chichén Itzá (Fig. 4d). The descending-bird headpiece is the same device commonly found on the brows of warrior figures at Toltec Chichén and Tula (Fig. 4e-f). Seler (1902-1923,1:690; 5:274) was the first to identify the bird at Chichén Itzá as the *xiuhtototl*, or lovely cotinga (*Cotinga amabilis*), such as commonly appears in the headdress of the Late Postclassic Xiuhtecuhtli (Fig. 3b-d). At Chichén Itzá, painted examples of this bird are light turquoise blue, the color of the *xiuhtototl* (see Morris, Charlott, and Morris 1931: Plates 29-31). The example on Dresden page 49 also has a blue region in the area of the neck, and can be safely identified as the *xiuhtototl*.

Directly behind the *xiuhtototl* bird, the Dresden figure wears a curious stepped device topped by two levels of feathers, the lower being a line of short feathers, and the upper, a panache of long plumes (Fig. 4c). A large knot binds the headdress at the back of the head. Quite probably, the Dresden headdress is a form of the *xiuhuitzoll* crown worn by Xiuhtecuhtli and actual rulers of Late Postclassic Central Mexico. The stepped element of the Dresden example

probably refers to the central portion of the *xiuhuitzolli* crown, a pointed headband of turquoise mosaic. As in the Dresden example, the Late Postclassic *xiuhuitzolli* often has a short series of feathers topped by a series of long plumes (Fig. 4b).

A circular pectoral is prominently displayed on the chest of the Dresden Venus figure (Figs. 3a, 5a). A quite similar medallion occurs on Dresden page 4a (Fig. 5d). On the basis of the shell jewelry, the hand-held serpent and the probable quetzal upon the back, Seler (1902-1922,1:698) identified this figure as Kukulcan, the Yucatec Maya Quetzalcoatl. However, Seler neglected to note that the headdress medallion is also commonly found on Aztec representations of Ehecatl-Quetzalcoatl (Fig. 5e). Moreover, the Aztec examples are flanked by the same pair of knots appearing on the Dresden Quetzalcoatl figure.

Actual example of the Ehecatl-Quetzalcoatl headdress medallion were discovered in Offering 3 at the Aztec Templo Mayor (Castillo Tejero and Solís Olguín 1974: Pl. 40). These plaques are largely covered by turquoise mosaic and, as the authors note (*ibid.*:50-51), they possess the same design as the Aztec symbol for turquoise, or *xiuitl*. In the Aztec Codex Mendoza and Matricula de Tributos, this device provides the phonetic value *xiu* in the toponyms Xiuhtepēc and Xihuacan (Fig. 5b-c). A version of the *xiuitl* medallion appears on Vaticanus B page 68, here worn as a pectoral by Xiuhtecuhtli (Fig. 3e). This pectoral is entirely comparable to what worn by the Dresden Venus figure, but it also has clear affinities to other examples of Xiuhtecuhtli dress. Thus in the Late Postclassic iconography of Central Mexico, Xiuhtecuhtli frequently appears with turquoise pectorals of various forms (Figs. 3b-g).

In the Central Mexican Vaticanus B and Borgia codices, a blue bird is commonly placed on the necklace supporting the turquoise pectoral (Figs. 3b, e-g). On Borgia page 50, there are two birds on the necklace, both formed of blue turquoise mosaic (Fig. 3b). The necklace piece probably represents a pendant in the form of the *xiuhtotl* (Seler 1963,1:95). The Venus figure on Dresden page 49 also has a bird in the same region, although in this case, the creature is clearly pulled through the ear (Fig. 3a). Nonetheless, the similarity between this example and the Borgia and Vaticanus B birds is striking. Quite possibly, the Dresden example reflects a local Maya reinterpretation of the Mexican bird pendant.

In summary, the figure on Dresden page 49 displays many diagnostic characteristics of the Mexican Xiuhtecuhtli. Thus he not only appears with the horizontal facial striping of Xiuhtecuhtli, but also the *xiuhtotl* brow piece, the *xiuhuitzolli* headdress, a turquoise pectoral, and a possible version of the *xiuhtotl* necklace pendant. However, aside from these important iconographic attributes, there is the accompanying name glyph (Fig. 1). The glyphic compound is composed of a T109 *chak* prefix, followed by the T1048 beaded skull, a T277 *wi* suffix, a glyph resembling a *k'in* sign, and finally, T679, Landa's *i*. Whittaker (1986:58) noted that the *k'in*-like glyph is identical to the "te" sign appearing in the Landa alphabet. More recently, Stuart (1987:37) has proposed that the Classic form of the T1048 beaded skull has the phonetic value *xi*.³ With the two values proposed by Whittaker and Stuart, the entire compound can be read *chak xiw(i)tei*, a close gloss for the Nahuatl name Xiuhtecuhtli. Thus not only does the Dresden figure display the turquoise iconography of Xiuhtecuhtli, but he is also termed "red (or great) Xiuhtecuhtli."

CENTRAL MEXICAN TRAITS IN ANCIENT MAYA VENUS LORE

The Dresden Venus pages are filled with pointed references to Central Mexican gods and iconography. Thus in the representations of the heliacal rising of Venus as morning star, all five figures wield the *atl-atl*, a Mexican rather than Maya weapon. There are also references to specific Central Mexican gods. Thus whereas page 48 provides a probable epigraphic reference to Tlahuizcalpantecuhtli, page 49 displays a phonetically named Xiuhtecuhtli, and finally, on

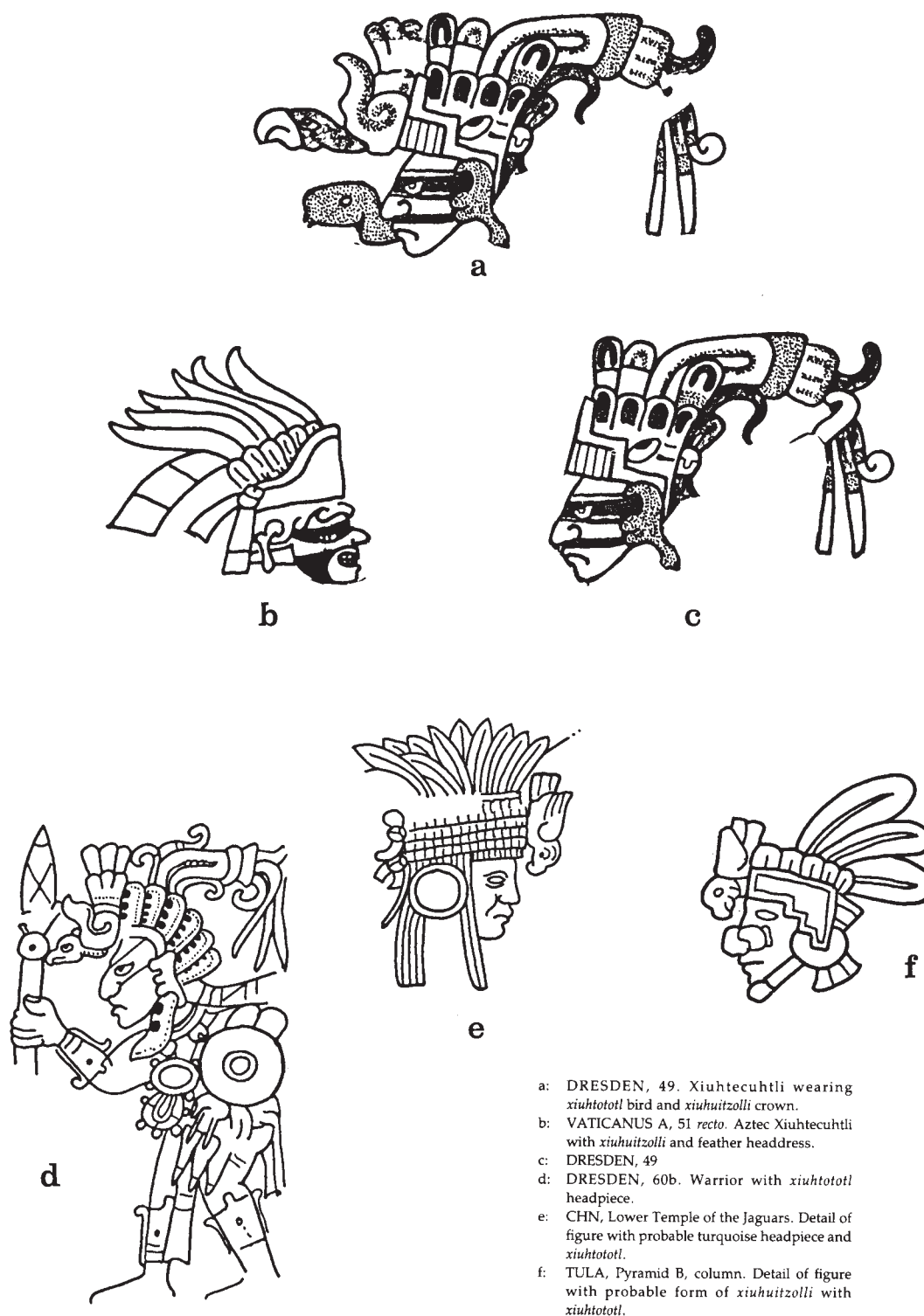


FIGURE 4.
COMPARISON OF THE DRESDEN XIUHTECUHTLI HEADDRESS
WITH OTHER EXAMPLES FROM POSTCLASSIC MESOAMERICA

page 50, there is a depiction of the Mexican blindfolded god of stone and castigation, Itzlacolihqui-Ixquimilli.

It has been noted that the Itzlacolihqui-Ixquimilli figure on Dresden page 50 can be directly related to Mexican Venus lore, in particular, the transformation of Tlahuizcalpantecuhtli into the god of cold at the first dawning. Although the Central Mexican Xiuhtecuhtli cannot be considered as an aspect of Venus, he shares an important role with Tlahuizcalpantecuhtli, that of war god. As the patron of the *trecena* 1 Serpent, Xiuhtecuhtli is consistently represented with Tlahuizcalpantecuhtli in the Mexican manuscripts (egs., Borgia p. 69; Vaticanus B p. 57). In these scenes, the sign for war, *atl-tlachinolli*, is prominently represented. Seler (1963,2:195) noted that while Xiuhtecuhtli was a god of war, Tlahuizcalpantecuhtli symbolized warriors and their after-life apotheosis in the eastern sky.⁴

Although the Dresden Venus figures display aspects of Central Mexican Venus iconography, they are not simply reiterations of Mexican Venus lore. Instead, the foreign imagery was interpreted and combined in new and different ways. Thus, for example, the figure referred to as *tawisikal* on Dresden page 48 bears no resemblance to Tlahuizcalpantecuhtli. Instead, Coe (1977:341,345) has noted that this figure is actually a Postclassic form of the Howler Monkey artisan commonly found in Classic Maya vessel scenes. Moreover, neither Itzlacolihqui-Ixquimilli nor Xiuhtecuhtli directly substitute for Tlahuizcalpantecuhtli in Central Mexican Venus iconography.

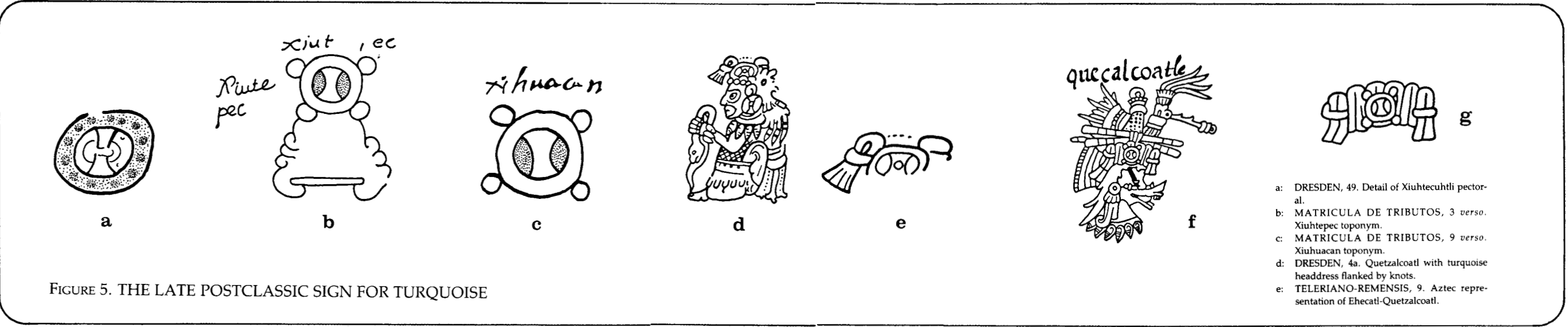
The adoption of Mexican traits in the Dresden Venus pages is probably due to the widespread Maya identification of Venus with Central Mexican war iconography. In the Dresden Venus pages, the five gods of the morning star are clearly portrayed as warriors. Thus the God L figure on Dresden page 46 wields a round shield as well as the Mexican *atl-atl*. The identification of Venus with war was also fully present among the Late Classic Maya. At Bonampak, Dos Pilas, and other sites, war events appear to have been timed according to stations of Venus (Lounsbury 1982). The "star over Seibal" war event mentioned on Aguateca Stela 2 and Dos Pilas Stela 16 appears to have coincided with the first visible appearance of Venus as evening star (ibid.:152). Both of these monuments are filled with allusions to Teotihuacan warrior iconography (see Graham 1967: Figs. 4-7). Schele (1986) has argued that the appearance of Teotihuacan iconography in Classic Maya war scenes frequently coincides with stations of Venus and Jupiter. The identification of Mexican war iconography with Venus continued into the Postclassic at Toltec period Chichen Itza. Thus Toltec figures, at times rendered as complete warriors, often appear with prominent star signs (Miller 1989). In the roughly contempo-

aneous Codex Grolier, the Venus gods frequently appear with spear throwers, arm bands, leggings, *tezcacuitlapilli*, and other Toltec warrior regalia (see Coe 1973, Carlson 1983).

It is curious that although the ancient Maya consistently identified Venus with Central Mexican war iconography, evidence of Venus lore in Classic Central Mexico is weak. Thus at Teotihuacan, there is little indication of calendrical notation, much less specific references to periods of Venus. This gives rise to an interesting contradiction. Although the Maya frequently portrayed Venus events in terms of Mexican iconography, the earliest reliable references to Venus are found among the Classic Maya, not the cultures of highland Mexico. For this reason, there is considerable confusion as to the cultural origins of the codical Venus passages. Unlike the Dresden and the aforementioned three codices of the Borgia Group, the Grolier illustrates all four stations of Venus. Carlson (1983) has noted that the Grolier depiction of war events in relation to the evening star is in complete harmony with Classic Maya conceptions of Venus.

The widely accepted Early Postclassic attribution of the Dresden Codex by Thompson (1972) suggests that the focus upon five aspects of Venus at the first appearance of morning star was of considerable antiquity in the Maya region, and predates the similar Venus pages appearing in the Late Postclassic Borgia, Vaticanus B, and Cospi codices. However, on the basis of calendrical data, Satterthwaite (1965) believed that the Dresden was not created before 1345. More recently, Paxton (1986) has also argued that the Dresden is actually Late Postclassic in date. Paxton noted that certain iconographic elements appearing in the Dresden are known for only Late Postclassic Yucatan. Moreover, although Thompson (1972:15) stated that the particular vessel forms appearing in the Dresden are limited to the earliest occupation of Mayapan, Paxton (1986:119) noted that these ceramic forms are fully present throughout the Late Postclassic Tases complex at Mayapan.

Although Paxton focused upon parallels between the Dresden and the Late Postclassic art of Yucatán, similar comparisons can be made for the Mexican iconography appearing in the Dresden. For example, there is the Quetzalcoatl headdress appearing on Dresden 4a (Fig. 5d). Composed of a turquoise disk flanked by two knots, this headdress is known only for the Late Postclassic Aztec. Similarly, with its flint point and *aztaxelli* headdress elements, the Itzlacolihqui-Ixquimilli figure on Dresden page 50 displays extremely specific aspects of the Late Postclassic Mexican god (Fig. 2). This is also true for the Xiuhtecuhtli upon Dresden page 49 (Fig. 1). Thus he displays both the facial patterning and a version of the bird pendant known for the Late Postclassic Xiuhtecuhtli. Moreover, his chest piece is a form of the Late Postclassic *xiuitl* turquoise sign. None of the specific traits noted for these three gods are known prior to



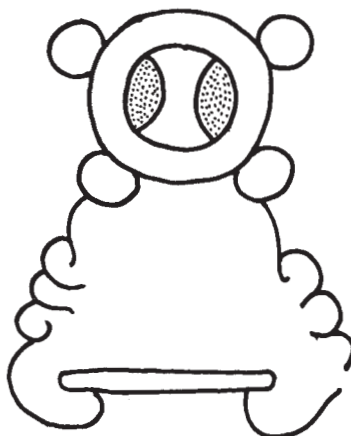
the Late Postclassic. Moreover, although the *xiuhtototl* and *xiuhuitzolli* headdress elements do occur at Early Postclassic Chichen and Tula, there are no explicit examples of *Xiuhtecuhtli* or *Itzlacolihqui-Ixquimilli* known for the Early Postclassic period.⁵

CONCLUSIONS

The appearance of Central Mexican deities and iconography in the Dresden Venus pages reflects the ancient Maya identification of Venus with Mexican war iconography. The weapon-wielding Venus figure upon Dresden page 49 is clearly a representation of *Xiuhtecuhtli*. Like the Late Postclassic Mexican god, he bears the horizontal facial bands, *xiuhtototl* bird and *xiuhuitzolli* headdress elements, a *xiuitl* pectoral, and a Maya interpretation of the *xiuhtototl* bird pendant. In addition, he is epigraphically named *chak xiw(i)tei*, a clear reference to the Nahuatl *Xiuhtecuhtli*, or "turquoise lord." Along with the *tawisikal* reading noted by Whittaker (1986), this glyphic reference to *Xiuhtecuhtli* suggest that the Dresden scribes were quite aware of Nahuatl god names. In addition, the Mexican deities appearing on Dresden pages 4a, 49 and 50 reveal a detailed and subtle understanding of Mexican iconography.

Much of the cited Mexican iconography appearing in the Dresden is only known for the Late Postclassic period, and provides considerable support for a relatively recent age of the Dresden. A Late Postclassic attribution would place the Dresden roughly contemporaneous with the Venus pages appearing in the Borgia, Vaticanus B, and Cospi codices, and probably before the Grolier. In terms of thematic content, the Grolier is more in harmony with the Classic Maya interest in all aspects of Venus. In contrast, the Dresden Venus pages correspond more closely to Late Postclassic Mexican belief, in which the primary focus was on the heliacal rising of Venus as morning star. It is thus quite possible that the pictorial emphasis upon the morning star in the Dresden Venus pages is based on a relatively late Central Mexican rather than Maya format.

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NOTES

1. Early forms of the *aztaxelli* heron-feather headdress element can be found on Aguateca Stela 2 and Dos Pilas Stela 16 (see Graham 1967: Figs. 4-7). It will be subsequently noted that both of these monuments contain specific references to Teotihuacan war iconography.

2. The transformation of Tlahuizcalpantecuhtli into the god of stone recalls the Quiché description of the first dawning in the *Popol Vuh*, in which important gods as well as fierce animals were turned to stone by the appearance of the sun (Tedlock 1985:182). Similar beliefs are recorded for contemporary peoples of highland Mexico. According to recent Mixtec accounts, the early people were turned to stone when the sun first rose (Jansen 1990:103). The Zapotec of Mitla also believe that an early race of people were turned to stone at the first dawning (Parsons 1936:216). Two pinnacles near Mitla are said to represent an ancient *compadre* and *comadre*. As punishment for engaging in sexual relations, they were turned to stone at the dawning (ibid.:94 n. 67). Parsons (ibid.) notes that the same story of punishment is ascribed to two rocks in the Nahuatl region of Chalma, Morelos. The turning of people into stone as divine punishment recalls the role of Itzlacolihqui-Ixquimnilli as the god of castigation.

3. On Dresden page 22c, the *xi* skull twice precedes the T585a *bi* sign, providing a clear reading of *xib(i)*. In the two accompanying scenes, Goddess I appears with the death deity, God A. In Yucatec, the root *xib* has such connotations as "death" and "fright," clearly related to *xibalba*, the Quiché term for the underworld. Thus, in the colonial Yucatec dictionaries,

xibalbail is glossed as *cosa infernal*; *xibalbayen* as *cosa diabolica*; and *xibib* as *temor* (Barrera Vásquez 1980:941). The compound on Dresden 22b qualifies the death god as a frightful being. The use of the skull for the *xi* phonetic value may well derive from the common deathly and fearsome meanings of *xib* in Mayan languages.

4. On Dresden page 49, the victim slain by Xiuhtecuhtli is a turtle. Thompson (1972:69) interprets this as a reference to drought. This is consistent with not only the *Anales de Quauhtitlan* account of drought caused by the heliacal rising of Venus, but also with the Borgia, Vaticanus B, and Cospi Venus passages, in which the water goddess Chalchiuhtlicue is slain. In the illustration on Borgia page 53, a turtle and a conch are also killed by Tlahuizcalpantecuhtli. In terms of Central Mexican lore, it is entirely appropriate that the Dresden Xiuhtecuhtli appears in the role of drought-maker. Thus, Seler (1963,1:92) notes the importance of Xiuhtecuhtli in Aztec rain-making ceremonies in which fire is ritually extinguished by water. In this case, the water clearly represents rain; the fire, dryness and drought.

5. Michael Coe (personal communication, 1990) has pointed out another Late Postclassic Mexican sign appearing in the Dresden Venus pages. On Dresden page 48, the howler monkey spearer wears the vulvate *oyohualli* shell pectoral. Although similar pectorals are known for Early Postclassic Chichén Itzá, these examples have a straight pointed tip. Like the Late Postclassic forms of Central Mexico, the pointed end of the Dresden pectoral is not straight, but curved.

LIST OF REFERENCES

- BARRERA VÁSQUEZ, ALFREDO
1980 *Diccionario Maya Cordemex, Maya-Español, Español-Maya*. Mérida, Yucatán, Mexico: Ediciones Cordemex.
- CARLSON, JOHN B.
1983 The Grolier Codex: A Preliminary Report on the Content and Authenticity of a Thirteenth-Century Maya Venus Alamanac. In *Caldenars in Mesoamerica and Peru: Native Computations of Time*, edited by Anthony F. Aveni and Gordon Brotherston, pp. 27-57. Oxford: BAR.
- CASTILLO TEJERO, NOEMI, AND FELIPE R. SOLÍS OLGUÍN
1975 Ofrendas Mexicanas en el Museo Nacional de Antropología. *Corpus Antiquitatum Americanarum, Mexico*, 8. México: Instituto Nacional de Antropología e Historia.
- COE, MICHAEL D.
1973 *The Maya Scribe and His World*. New York: The Grolier Club.
1977 Supernatural Patrons of Maya Scribes and Artists. In *Social Process in Maya Prehistory*, edited by Norman Hammond, pp. 327-347. New York and San Francisco: Academic Press.
- DANZEL, THEODOR-WILHELM
1923 *Mexiko I: Bilderhandschriften*. Berlin: Folkwang-Verlag.
- FÖRSTEMANN, ERNST WILHELM
1886 *Erläuterungen zur Mayahandschrift der Königlichen öffentlichen Bibliothek zu Dresden*. Dresden:
1906 *Commentary on the Maya Manuscript in the Royal Public Library of Dresden*. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University, vol. 4, no. 2, pp. 49-269. Cambridge, Massachusetts.
- GRAHAM, IAN
1967 *Archaeological Explorations in El Peten, Guatemala*. Middle American Research Institute, Tulane University, Pub. 33. New Orleans.
- JANSEN, MAARTEN
1990 The Search for History in the Mixtec Codices. *Ancient Mesoamerica* 1:99-112. Cambridge University Press.

LOUNSBURY, FLOYD G.

- 1982 *Astronomical Knowledge and its Uses at Bonampak, Mexico*. In *Archaeoastronomy in the New World*, edited by Anthony F. Aveni, pp. 143-186. Cambridge, England: Cambridge University Press.

MILLER, VIRGINIA E.

- 1989 *Star Warriors at Chichen Itza*. In *World and Image in Maya Culture: Explorations in Language, Writing, and Representation*, edited by William F. Hanks and Don Rice, pp. 287-305. Salt Lake City: University of Utah Press.

MORRIS, EARL H., JEAN CHARLOT, AND ANN AXTEL MORRIS

- 1931 *The Temple of the Warriors at Chichen Itza*. Carnegie Institution of Washington, Pub. 406. Two volumes. Washington, D.C.

PARSONS, ELSIE CLEWS

- 1936 *Mitla: Town of the Souls*. Chicago: University of Chicago Press.

PAXTON, MERIDETH

- 1986 *Codex Dresden: Stylistic and Iconographic Analysis of a Maya Manuscript*. Doctoral Dissertation, Department of Art History, University of New Mexico at Albuquerque.

ROYS, RALPH L.

- 1933 *The Book of Chilam Balam of Chumayel*. Carnegie Institution of Washington, Pub. 438. Washington, D.C.

SATTERTHWAITE, LINTON

- 1965 *Calendrics of the Maya Lowlands*. In *Handbook of Middle American Indians*, edited by Robert Wauchope, vol. 3, pp. 603-631. Austin: University of Texas Press.

SCHELE, LINDA

- 1986 *The Tlaloc Complex in the Classic Period: War and the Interaction between the Lowland Maya and Teotihuacan*. Paper presented at the symposium *The New Dynamics*. Fort Worth, Texas: Kimbell Art Museum.

SELER, EDUARD G.

- 1898 *Die Venusperiode in den Bilderschriften der Codex-Borgia-Gruppe*. *Zeitschrift für Ethnologie* 30:346-383. Berlin.

- 1902- *Gesammelte Abhandlungen zur Amerikanischen Sprach- und Alterthumskunde*. Five volumes. Berlin: Ascher & Co.

- 1904 *The Venus Period in the Borgia Codex Group*. In *Mexican and Central American Antiquities, Calendar Systems, and History*, edited by Charles P. Bowditch, pp. 353-391. Smithsonian Institution, Bureau of American Ethnology Bulletin 28. Washington, D.C.

- 1963 *Comentarios al Códice Borgia*. Translated by M. Fenk. Three volumes. México: Fondo de Cultura Económica.

STUART, DAVID

- 1987 *Ten Phonetic Syllables*. Research Reports on Ancient Maya Writing, No. 14. Washington, D.C.: Center for Maya Research.

TEDLOCK, DENNIS

- 1985 *Popol Vuh: The Definitive Edition of the Mayan Book of the Dawn of Life and the Glories of Gods and Kings*. New York: Simon and Schuster.

THOMPSON, J. ERIC S.

- 1942 *Representations of Tezcatlipoca at Chichen Itza*. Notes on Middle American Archeology and Ethnology, no. 12. Cambridge, Massachusetts: Carnegie Institution of Washington, Division of Historical Research.

- 1950 *Maya Hieroglyphic Writing: An Introduction*. Carnegie Institution of Washington, Pub. 589. Washington, D.C.

- 1972 *A Commentary on the Dresden Codex*. Philadelphia: American Philosophical Society.

VELÁZQUEZ, PRIMO FELICIANO [TRANSLATOR & EDITOR]

- 1945 *Códice Chimalpopoca: Anales de Cuauhtitlan y Leyenda de los Soles*. México: Imprenta Universitaria.

WHITTAKER, GORDON

- 1986 *The Mexican names of three Venus gods in the Dresden Codex*. *Mexicon* 8(3):56-60.

