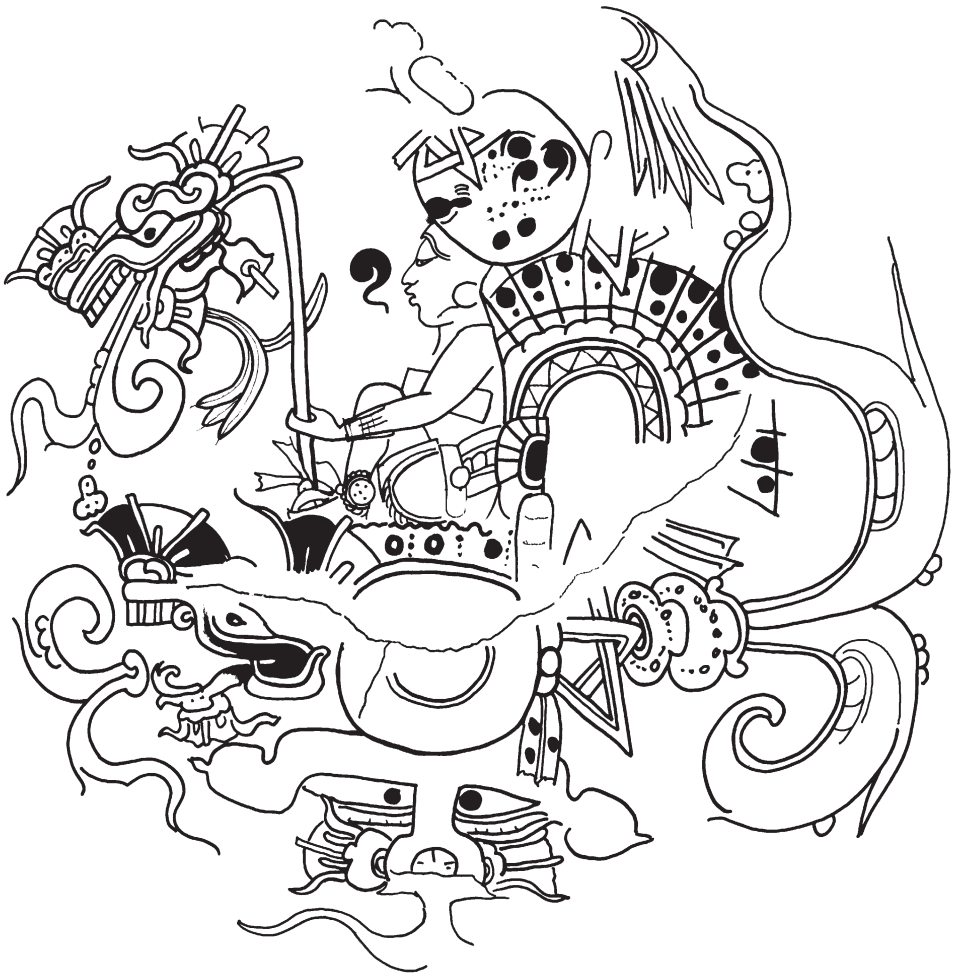

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CHAPTER 5

The Turquoise Hearth: Fire, Self Sacrifice and the Central Mexican Cult of War

In many respects, the great Classic-period city of Teotihuacan can be regarded as the canonical source of Postclassic Nahuatl culture. The civic and religious architecture of the Toltec and Aztec cultures share many traits with earlier Teotihuacan, including the use of balustrades and beam-and-mortar roofs, frequently ornamented with projecting *almena* sculptures. Such specific iconographic motifs as speech scrolls, Mexican year signs, and bivalve shells with coyote-like heads and limbs are well documented in both Teotihuacan and Aztec art.[1] In addition, some of the better-known Postclassic Central Mexican gods, including Tlaloc and Quetzalcoatl, can be readily traced to earlier Teotihuacan. Although many of these cited examples could be explained through shared ancestry, it is also clear that the Aztecs were not simply unconscious inheritors of previous traditions. Instead, they were very aware of Teotihuacan as a specific, ancient place exhibiting its own unique qualities and characteristics. Thus, along with contact-period Native accounts describing the ancient city, there are also archaistic Aztec evocations of Teotihuacan art and architecture (see Umberger 1987; Matos Moctezuma and López Luján 1993). The Aztecs also traced many of the more essential traits of their solar war cult to ancient Teotihuacan (Taube 1992c). In this study, I discuss some of the more important themes shared between Teotihuacan and later Aztec warfare symbolism, including fire, self-sacrifice, and the metamorphosis and resurrection of the warrior soul.

Although this study focuses upon Central Mexican ideology and belief, a considerable amount of material will also derive from ancient Maya epigraphy and art, particularly of the Late Classic period. As general contemporaries of Teotihuacan, the Classic Maya were very much aware of the art and ideology of this great center. Even at the end of the Late Classic period, when Teotihuacan was no longer a major force in Mesoamerica, the Maya continued to celebrate Teotihuacan iconography and symbolism. In Classic Maya art, Teotihuacan imagery tends to appear not as piecemeal items in isolation, but rather within a complex of related motifs, such as Teotihuacan Tlalocs, Mexican year signs, chevrons, and many other elements. In Maya art, this foreign Mexican imagery commonly focuses on the symbolism of war. Possessing both a very naturalistic art style and the most developed writing system

[1] For Aztec examples of legged mollusks, see the *Florentine Codex*, book 11, folio 64.

of ancient Mesoamerica, the Classic Maya have much to tell us of Teotihuacan. Thus objects occurring in the highly developed but rather opaque art of Teotihuacan stand out in striking clarity, and still poorly known entities are described glyphically in Mayan.

Along with presenting vivid insights into the iconography of Teotihuacan, Late Classic Maya art can also provide a crucial link to Late Postclassic Central Mexican symbolism and art. Take, for example, the Central Mexican *aztaxelli* headpiece of paired heron feathers, which serves as an important marker of Late Postclassic war-related deities, including Tezcatlipoca and Mixcoatl-Camaxtli (Figures 1a, 15b, 28b). In Late Classic Maya art, this same feather headpiece is worn in identical position on Aguateca Stela 2 and Dos Pilas Stela 16 (Figure 1b–c). The protagonist upon these very similar monuments, Ruler 3 of Dos Pilas, is portrayed as a Teotihuacan warrior wielding a spearthrower, a weapon generally identified with foreign, Central Mexican warfare in the Maya area. Among the many readily identifiable Mexican elements appearing in his costume are his Tlaloc mask, Mexican year signs, and thick collar edged with bivalves. Although the *aztaxelli* headpiece is yet to be documented for Teotihuacan, its occurrence with Teotihuacan war imagery does imply a Central Mexican origin.

The War Serpent and the Xiuhcoatl

Much of this study revolves around the Temple of Quetzalcoatl within the great Ciudadela compound at Teotihuacan. Excavations by Rubén Cabrera Castro, George Cowgill, and Saburo Sugiyama (Cabrera Castro et al. 1991; Sugiyama 1989a, 1989b, 1995) have revealed that probably over two hundred individuals were sacrificed for the dedication of this temple (ca. 200 CE). The majority were dressed with the costume and gear of Teotihuacan warriors, including back mirrors, obsidian-tipped darts, and, in many cases, thick shell collars adorned with imitation human maxillae. The presence of these many victims in militaristic costume suggests that the Temple of Quetzalcoatl was closely related to the office of war (Taube 1992c). But along with the sacrificed warriors, the remarkable sculptural façades on the temple sides also included a powerful emblem of war.

Two types of massive tenoned heads project from the sides of the Temple of Quetzalcoatl. Whereas one entity is clearly the Plumed Serpent, the other has a distinct muzzlelike snout with a slightly upturned nose and a set of large, closely spaced fangs, quite unlike the dentition of the Plumed Serpent (Figure 2a). In addition, this second being is not covered with plumage but flat, angular plates, creating a scalelike surface. Both Sugiyama (1992, 1993, 1995) and I (Taube 1992c) note that this rather static-appearing head represents a headdress.[2] Similar examples occurring in Classic Maya art indicate that it is a zoomorphic war helmet composed of cut shell platelets (Figures 2e–f, 8a, 9d–e). Since the creature appearing on this

[2] Although both Sugiyama and I identify the Temple of Quetzalcoatl form as a headdress, our interpretations differ considerably. Sugiyama (l989b, 1992) initially viewed it as a representation of the Feathered Serpent, essentially an inanimate form of the plumed serpent heads projecting from the temple façade. However, in a co-authored paper with Alfredo López Austin and Leonardo López Luján and subsequent studies, Sugiyama considers the headdress to represent a caiman, or Cipactli. According to this interpretation, the headdress refers to the first day of the twenty day names and the beginning of the calendar (López Austin et al. 1991; Sugiyama 1993:116). However, Cipactli has yet to be identified as a day name at Teotihuacan. In fact, the only explicit representations of caimans at Teotihuacan appear in the Mythological Animals Mural, and these examples appear to have little in common with the Temple of Quetzalcoatl headdress (see de la Fuente 1995b:Pl. 5).

headdress is deeply embedded in the context of Teotihuacan war iconography in Classic Maya art, I have termed it the War Serpent. Aside from the Temple of Quetzalcoatl, this entity occurs as a platelet headdress in other contexts at Teotihuacan (Figure 2b–c). It will be subsequently noted that the Teotihuacan examples commonly appear upon ceramic figurines portraying mortuary warrior bundles.

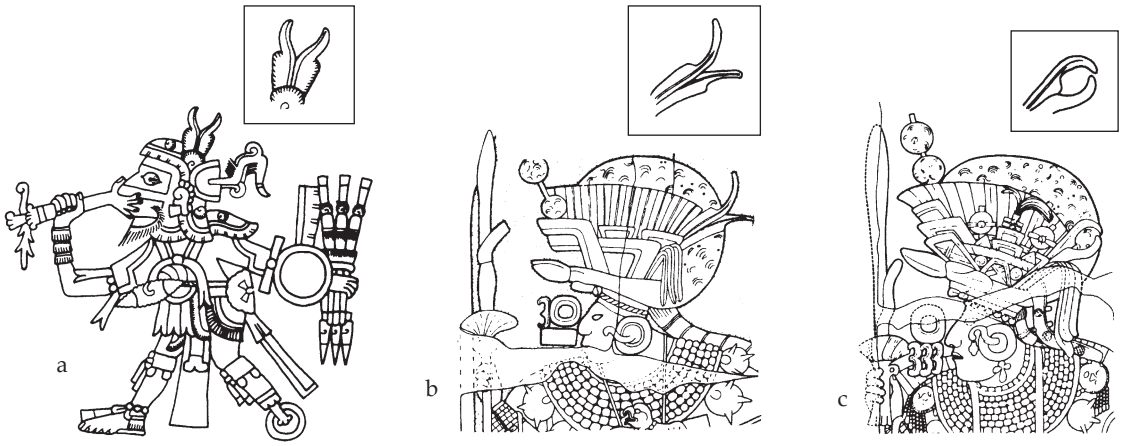


Figure 1. The *aztaxelli* heron feather ornament in Classic and Postclassic Mesoamerican iconography: (a) Tezcatlipoca as warrior with *aztaxelli* ornament, Late Postclassic Central Mexico, *Codex Fejérváry-Mayer*, p. 44; (b) Ruler 3 of Dos Pilas with Teotihuacan-style war regalia and *aztaxelli* ornament, Aguateca Stela 2 (drawing courtesy of Ian Graham); (c) Dos Pilas Ruler 3 with *aztaxelli* ornament (drawing courtesy of Ian Graham).

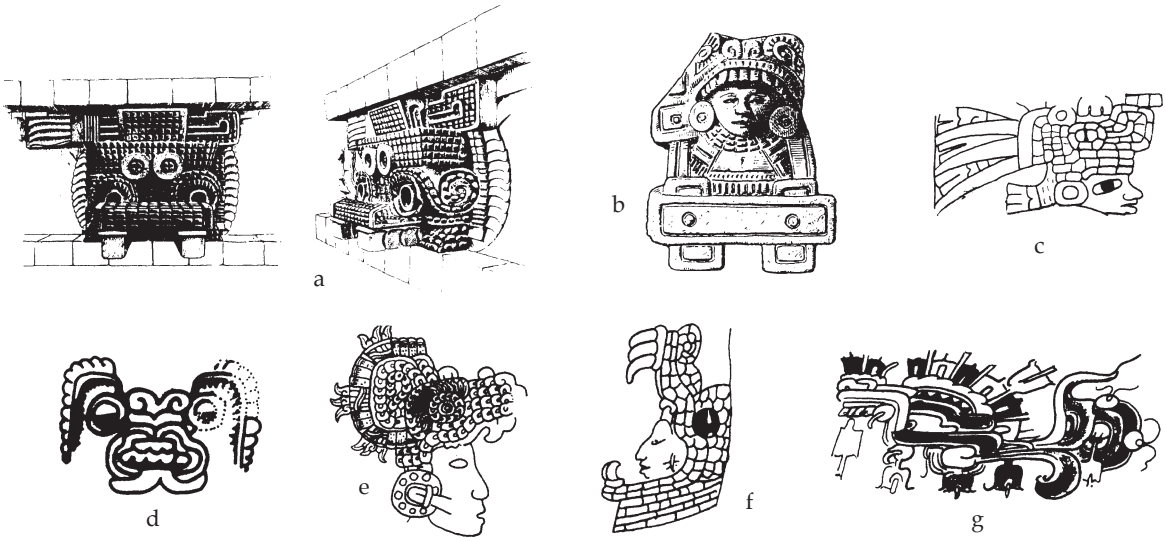


Figure 2. The War Serpent in Teotihuacan and Classic Maya art: (a) two views of War Serpent from the Temple of Quetzalcoatl (from Caso and Bemal 1952:Fig. 184); (b) Teotihuacan bundle figure wearing War Serpent headdress (from Seler 1902-1923:5:457); (c) War Serpent platelet helmet, detail of painted wooden box in Teotihuacan style (after Berrin and Pasztory 1993:No. 55); (d) frontally facing War Serpent head, detail of Teotihuacan carved vase (after Seler 1902-1923:5:516); (e) platelet War Serpent helmet—note feathered eye and burning torches on ears—Tikal Stela 31 (after Jones and Satterthwaite 1982:Fig. 51); (f) ruler wearing platelet War Serpent helmet, detail of sherd from Nohmul, Belize (from Taube 1992c:Fig. 6b); (g) War Serpent trailing flames, detail of Late Classic Maya vase (from Taube 1992c:Fig. 7c).

The War Serpent platelet headdress is but a more elaborate, zoomorphic form of the simple "pillbox" mosaic helmet of Classic Mesoamerica. Both the simple and War Serpent types appear on Piedras Negras Lintel 2, a panel portraying Maya elite in Teotihuacan-style military dress (see Schele and Miller 1986:Pl. 40). Citing archaeological examples of cut-shell platelets from Teotihuacan, Kaminaljuyú, and Tikal, Janet Berlo (1976:36-37) first suggested that the Classic-period platelet helmets were of shell mosaic. Berlo (1976:58) also noted that Piedras Negras Burial 5 contained the remains of such a helmet, here in the form of 209 cut spondylus shell plaques (see Coe 1959:59, Figs. 53-54, 64). In fact, examples of such headdresses have been excavated at a number of Maya sites, including Nebaj, Kaminaljuyú, and Copán (see Kidder et al. 1946:Figs. 22, 31, 161a, d, 163d-e; Smith and Kidder 1951:Figs. 42, 69d; Viel and Cheek 1983:Fig. S-9e). The remains of a shell platelet helmet was found at Teotihuacan, apparently from the compound at Yayahuala (see Séjourné 1966c:Pl. 16).

The Teotihuacan platelet helmet illustrated by Laurette Séjourné (1966c:Pl.16) is accompanied by a pair of cut-shell goggles, such as frequently appear in Teotihuacan art. These goggles are also on the brows of the War Serpent headdresses from the Temple of Quetzalcoatl (Figure 2a). Moreover, the War Serpent often has goggled eyes in Teotihuacan art (Figures 2d, 18d–h, 20a). In both Teotihuacan and Classic Maya art, the goggles are commonly found with individuals wearing platelet helmets of both simple and zoomorphic forms (e.g., Lintel 2, Temple 1, Tikal). At Teotihuacan, these goggles were an important component of military costume, and are often worn across the face of Teotihuacan and other Classic-period warriors (Figure 2a–c). Of course, they are quite like the eyes of the Teotihuacan Tlaloc. It is noteworthy, however, that although fanged feline rain gods can be traced to the earlier Formative period, they lack goggle eyes (see Taube 1995). The goggle eyes of the Teotihuacan Tlaloc probably label him as a warrior or, to take it further, a god of war. Like the German term *blitzkrieg*, "lightning war," the thunderbolt was likened to a powerful weapon (see Paulinyi 1997). In a mural from the Tetitla compound, the lightning bolt of Tlaloc is rendered as an undulating *atlatl* dart (Miller 1973:Figs. 248-249).

Aside from labeling warriors in Teotihuacan art, the white shell goggles probably had other, more esoteric meanings. When worn as facial armor, they would have presented a quite frightening and anonymous face, particularly when worn simultaneously by an onslaught of warriors. In addition, these goggles also resemble the eye orbits of skulls. At Teotihuacan, human skulls are often rendered with eye orbits as circular goggles (Figure 3d–g). Along with serving as practical armor, the white shell goggles of Teotihuacan warriors probably presented an intimidating, other worldly appearance to opponents.

In Classic Maya art, the War Serpent commonly emanates smoke and fire, and appears rising out of a burning bowl on Yaxchilán Lintel 25. Similarly, the War Serpent also occurs with flame volutes at Teotihuacan (Figure 18g–h). Both Caso and Bernal (1952:113-114) and I (Taube 1992c) have suggested that the War Serpent from the Temple of Quetzalcoatl is an ancestral form of the Xiuhcoatl fire serpent of Postclassic Central Mexico. In the temple depictions, a long horizontal element lies atop of the War Serpent headdress (Figure 4a). Whereas one end is curved, the other terminates in a featherlike tuft. As a headdress device, this horizontal element may well have had feathers. In Teotihuacan sculpture, however, flames have very similar undulating lines, and it is likely that this headdress element alludes to a burning. James Langley (1992:272) notes that feathers can be used to designate flames in Teotihuacan art, a convention also known for later Aztec iconography (see Figure 14d). One Teotihuacan mural portrays a very similar form, in this case fashioned of a fibrous plant

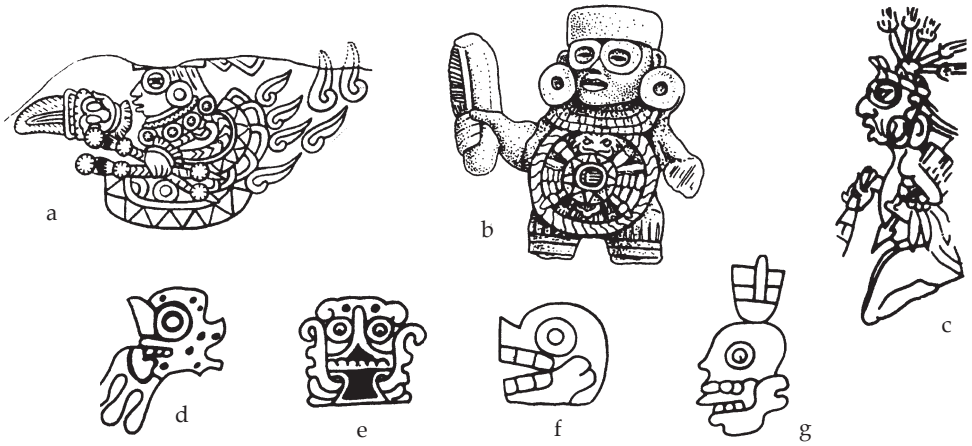


Figure 3. Warrior goggles and skulls in Classic Mesoamerican art: (a) flaming warrior with goggles, Tepantitla (from Miller 1973:Fig. 195); (b) warrior with goggles, spear-thrower, and shield over abdomen (after von Winning 1987:1:Chap. 7, Fig. 9b); (c) kneeling warrior with goggles, Pollinapan, Tuxtla region, Veracruz (after Valenzuela 1945:Pl. 2); (d) bleeding skull, detail of Teotihuacan vessel (after von Winning 1987:1:Chap. 13, Fig. 5b); (e) frontally facing skull, detail of Teotihuacan mural (after Miller 1973:Fig. 47); (f) skull, detail of Teotihuacan vessel (after von Winning 1987:1:Chap. 13, Fig. 5a); (g) skull in glyphic compound, La Ventilla (after Cabrera Castro 1996:Fig. 3).

material bent over on itself and bound in the middle (Figure 4b). This object is quite like the green burning torches appearing in the murals from Tetitla, Teotihuacan (Figure 4c–d).

Aside from Teotihuacan, similar torch bundles occur in Late Classic Maya art, frequently accompanied by Teotihuacan-derived iconography. Comparable objects appear on Copán Altar Q, a monument portraying the sixteen rulers of the Copán dynasty. Whereas the founder, K'inich Yax K'uk' Mo', wields a War Serpent shield and a burning dart, his successors hold probable torches, as if passing down the founding fire of the dynasty. A number of these torches have the same bent-over end appearing with Teotihuacan examples (Figure 4f). In one Late Classic Maya vessel scene, a figure wields a burning torch above the head of the Teotihuacan Tlaloc (Figure 4g). Along with the cited Copán and Teotihuacan

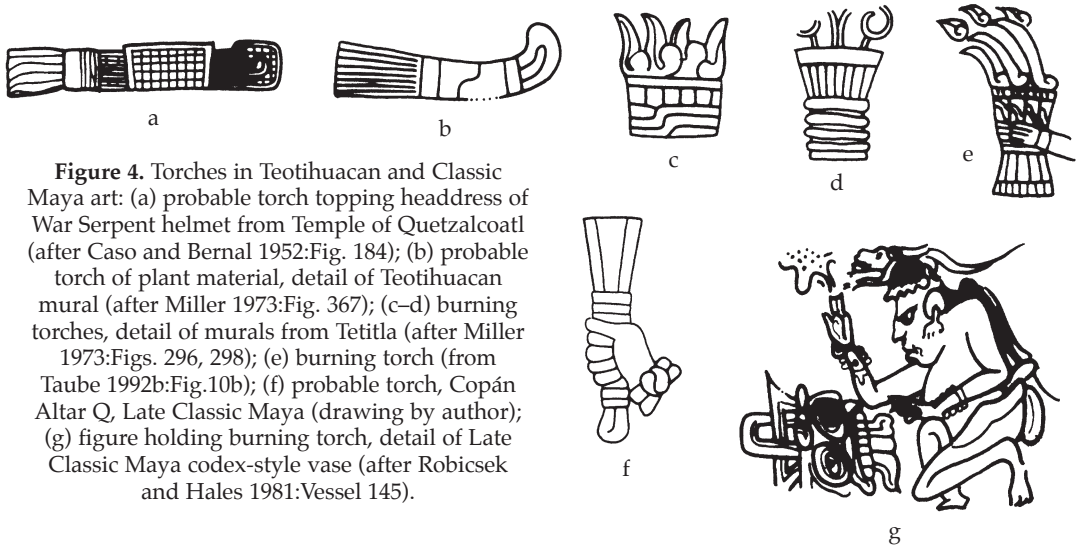


Figure 4. Torches in Teotihuacan and Classic Maya art: (a) probable torch topping headdress of War Serpent helmet from Temple of Quetzalcoatl (after Caso and Bernal 1952:Fig. 184); (b) probable torch of plant material, detail of Teotihuacan mural (after Miller 1973:Fig. 367); (c–d) burning torches, detail of murals from Tetitla (after Miller 1973:Figs. 296, 298); (e) burning torch (from Taube 1992b:Fig.10b); (f) probable torch, Copán Altar Q, Late Classic Maya (drawing by author); (g) figure holding burning torch, detail of Late Classic Maya codex-style vase (after Robicsek and Hales 1981:Vessel 145).

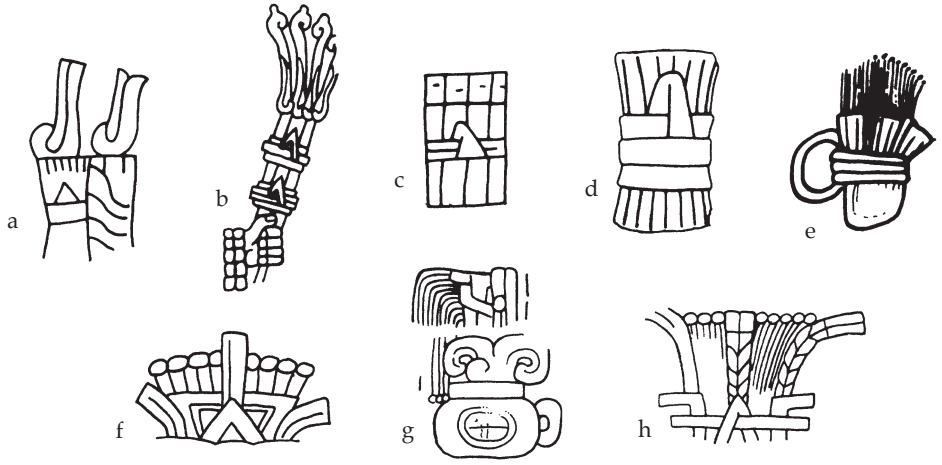


Figure 5. Torches and vegetal bundles in Teotihuacan and Classic Maya art: (a) pair of burning torches, Teotihuacan (after Langley 1986:Fig. 8a); (b) burning torch held by Teotihuacan goddess (after Berrin and Pasztory 1993:No. 4); (c) bundle with Mexican year-sign knot, Teotihuacan (after Langley 1986:239); (d) bundle with Mexican year-sign knot, ceramic *adorno*, Teotihuacan (after Langley 1992:Fig. 36); (e) probable profile representation of bundle with Mexican year-sign knot, detail of Late Classic Maya vase (after Kerr 1990:192); (f) Late Classic Maya Mexican year-sign bundle, Yaxchilán Lintel 17 (after Graham and von Euw 1977:43); (g) Mexican year-sign bundle in burning brazier, text from Temple 26, Copán (after drawing courtesy of David Stuart); (h) Mexican year-sign bundle from lower stairway block, Copán Temple 26 (drawing by author).

examples, this torch appears to have a rounded, bent-over end. A still more complex fire bundle appears in a Late Classic Maya vessel scene portraying Teotihuacan motifs in the context of fire offerings (see Kerr 1990:192). Whereas the center is of pliant plant material, it is surrounded by thicker and shorter elements, quite possibly paper or sticks of the fiercely burning, pitch-filled *ocote* wood (Figure 5e).

One of the more common forms of the Teotihuacan torch bundle has the same type of knot appearing with the trapeze and ray motif, also known as the Mexican year sign (Figure 5a–d). In Postclassic Mixtec writing, this device designates the year bearers, and by extension years, of the 365-day calendar. Hasso von Winning (1977:18) and James Langley (1992:273) interpret the Teotihuacan sign as a tied bundle of firewood. However, the distal ends commonly flare outward, suggesting a more flexible plant substance (Figure 5a, d). In one example, a line transects the upper end of the bundle, creating smaller elements at the tips of the bound vertical material (Figure 5c). This form is markedly similar to Late Classic Maya examples of Mexican year-sign bundles, which tend to be tipped with a series of small, ball-like elements (Figure 5e–h). The Maya torch bundles are clearly of pliant, flexible material. In one Copán text, the bundle drapes over a burning brazier, suggesting that it is as much a fire offering as a burning torch (Figure 5g). It is quite likely that the aforementioned bundle in the Late Classic fire-offering scene is a rare view of the year-sign bundle in profile, with the prominent loop representing the central vertical element of the knot (Figure 5e). At Yaxchilán, these Mexican year-sign bundles are commonly parts of headdresses worn in bloodletting and subsequent fire-offering scenes, often accompanied by representations of the War Serpent and the Teotihuacan Tlaloc (see the Yaxchilán Lintels 17, 24, and 25, and

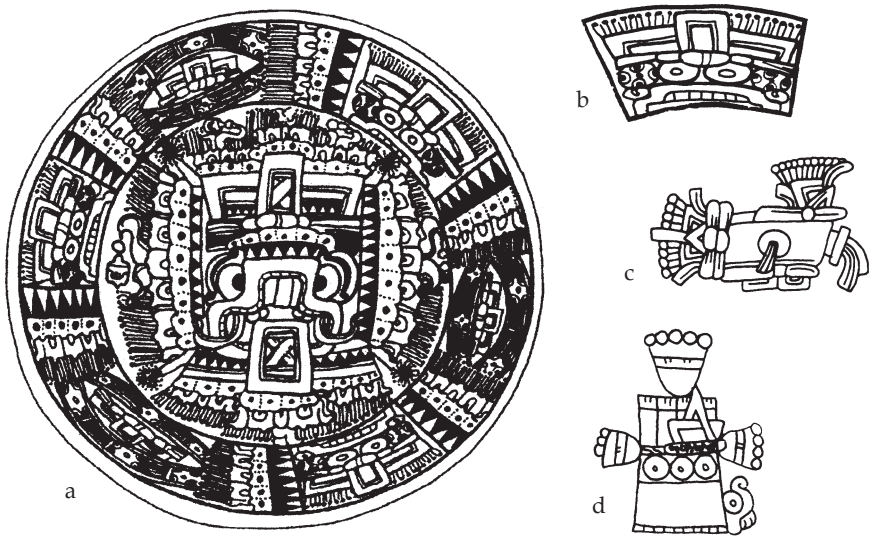


Figure 6. The beaded vegetal bundle in Classic Maya and Aztec art: (a) War Serpent surrounded by beaded vegetal sign, Kan crosses, and Teotihuacan Tlalocs, interior of Late Classic Maya bowl (after Hellmuth 1975:Pl. 51b); (b) detail of Teotihuacan Tlaloc with vegetal material and year-sign headdress; (c) profile of headdress with three jade disks and three Mexican year-sign bundles, Yaxchilán Lintel 17 (after Graham and von Euw 1977:43); (d) headdress of Aztec Tlaloc impersonator with Mexican year sign, three *yauhtli* bundles, and three jade disks, detail from *Codex Borbonicus*, p. 30.

the "New Stela" of Lady Evening Star). One Late Classic Petén-style bowl portrays the War Serpent surrounded by the beaded-plant motif, flames, Teotihuacan Tlalocs, and the Mexican year sign (Figure 6a). The three rain gods on the bowl rim wear the Mexican year-sign bundle as their headdress, a convention known from other Classic Maya scenes (Figure 6b).

The bundle of pliant material with beaded ends continues in Postclassic Central Mexican iconography, frequently with representations of the Xiuhcoatl fire serpent. At Early Postclassic Tula, an early form of the Xiuhcoatl—complete with a smoking mouth—appears on representations of back mirrors (Figure 10h). The arched serpent bodies are of the same plant material tipped with balls. In Late Postclassic iconography, the beaded motif continues to tip the tails of the Xiuhcoatl, suggesting that this creature is virtually a personified bundle of this plant material (Figures 7a, c, 12h, 13b–e). The tail is bound by one or more broad knotted bands topped by the central pointed element of the Mexican year sign or, in a number of cases, the entire year sign (Figure 7a, c). With the Mexican year-sign knot, they are essentially identical to Classic-period year-sign bundles (e.g., Figure 7b). In this regard, it should be noted that in Nahuatl, *xihuitl* has a range of meanings, including "year," as well as "herb," "comet (meteor)," and "turquoise."

The material composing the bundled year sign remains to be discussed. Aztec color representations portray the plant as green and tipped with yellow dots. Along with the cited Xiuhcoatl examples, this same yellow and green vegetation appears as paper-wrapped bundles tied to the headdresses of the Tlaloc and Chicomecoatl impersonators in the famed *Codex Borbonicus* illustrations of Ochpaniztli. In the case of the Chicomecoatl maize goddess impersonators, the central headdress element is the bound Mexican year-sign bundle, quite

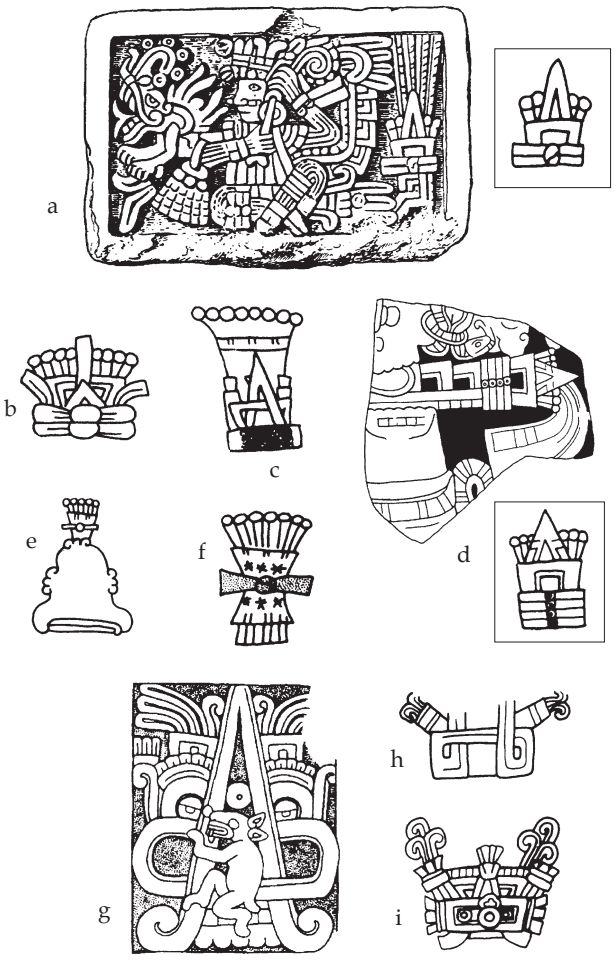


Figure 7. Mexican year-sign and *yauhtli* elements in Mesoamerican iconography: (a) Aztec relief depicting Xiuhcoatl with Mexican year sign and *yauhtli* tail (from Seler 1902-1923:2:717); (b) Mexican year-sign bundle, Yaxchilán Lintel 17 (see Aveni 2000:Fig. 9.7c); (c) Aztec Mexican year-sign *yauhtli* bundle, detail of headdress worn by Chicomecoatl impersonator, *Codex Borbonicus*, p. 30; (d) Xiuhcoatl with *yauhtli* Mexican year-sign tail, detail of fragmentary Coyolxauhqui monument, Templo Mayor (from Taube 1993a:50); (e) the toponym Yauhtepec, or "*yauhtli* mountain," *Codex Mendoza*, fol. 8r; (f) name glyph of pulque god Yauhtecatl, "he of Yauhtepec," *Codex Magliabechiano*, fol. 51r); (g) conflation of Mexican year sign and serpent face in sign for year 1 Rabbit (from Miller and Taube 1993:113); (h) headdress with central Mexican year sign and two diagonal torches, detail from Early Classic Yehnal platform, Copán (drawing courtesy of Robert Sharer); (i) headdress with Mexican year sign and two diagonal torches, detail of ceramic censer from Xico, Valley of Mexico (after Berlo 1984:Pl. 45a).

like the previously cited Classic and Late Postclassic examples (Figure 7c). According to Seler (1902-1923:2:722), the green and yellow plant motif on the Xiuhcoatl tail represents grass. However, explicit Aztec representations of grass (*zacatl*) are notably different, and tend to have large tufts resembling cattails (Seler 1902-1923:1:194). Although it is possible that the material is of *malinalli* grass of the *Muhlenbergia* group, *malinalli* tends to be represented with a bone jaw or skull and lanceolate-shaped flowers (see Peterson 1983).

In the Aztec *Codex Mendoza*, the green and yellow plant material appears as a tied bundle in the toponym for Yauhtepec, or "*yauhtli* mountain" (Figure 7e). Although lacking the central point of the Mexican year sign, this paper-wrapped bundle is virtually identical to the green and yellow examples appearing on Xiuhcoatl tails (e.g., Figure 13b, d). A very similar wrapped plant bundle—complete with the capping yellow dots—appears in the *Codex Magliabechiano* as the name of Yauhtecatl, meaning "he from Yauhtepec." He evidently wears the same plant material both as a headband and a wreath around his neck, costume elements shared with most of the other pulque gods illustrated in the *Magliabechiano*.

The *yauhtli* plant is *Tagetes lucida*, a type of sweet-scented marigold (Sahagún 1997:83, n. 19). The yellow dots appearing on the *yauhtli* bundle refer to the small yellow flowers of this plant. Simeón (1988:145-146) provides the following definition for *yauhtli*: "Planta que tiene el olor y el sabor de anís; se la echaba en el fuego en ves de incienso." According to Seler (1902-1923:1:186, n. 1) one meaning of the term *iauh* is "incense plant" (*Weihrauchkraut*). The use of *yauhtli* as incense immediately recalls the Copán scene of the vegetal year-sign bundle in a burning censer (Figure 5g). Although it is widely known that Teotihuacan strongly influenced Classic Maya visual art, was

sight the only sense involved? Certain exotic smells, such as from incense, can certainly provide powerful emotive responses in ritual, particularly when they are identified with distant, revered places. The use of incense from the Holy Land in Catholic ritual readily comes to mind.

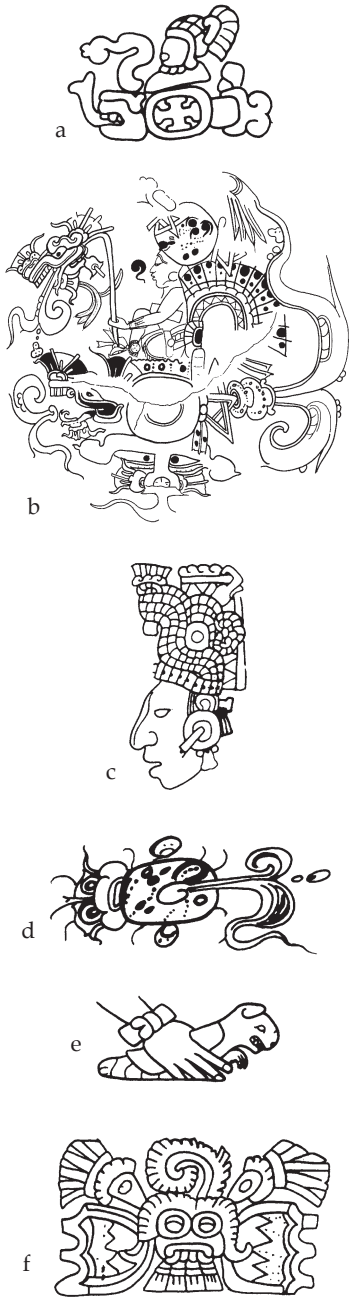
Sahagún (1950-1982:Book 11:145-146) places *yauhtli* under the classification of "herb," or *xihuitl*, and notes that "with it there is incensing, there is washing." As a *xihuitl* plant used as an important form of incense, *yauhtli* is very well-suited for the Xiuhcoatl fire serpent. During the Xocotlhuetzi rites dedicated to the fire gods Xiuhtecuhtli and Xocotl, *yauhtli* was thrown into the face of the victims before they were hurled upon the sacrificial pyre (Sahagún 1950-1982:Book 2:17, 115). The *yauhtli* headbands and wreaths found with the pulque gods, or *centzon totochtin* ("four hundred rabbits"), may also relate to warrior sacrifice. The *centzon totochtin* are probably but aspects of the *centzon huitznahua* ("four hundred southerners"), the four hundred half brothers of Huitzilopochtli defeated at Coatepec (see Taube 1993b:3). However, the *yauhtli* ornaments worn by the pulque gods could also refer to powers of fertility and abundance. Francisco Hernández (1959:1:324) glosses *yauhtli* as "hierba de nubes." Bernard Ortiz de Montellano (1980, 1990) notes that *yauhtli* incense was strongly identified with Tlaloc and other Aztec gods of water and fertility. The appearance of the green and yellow plant in the *Codex Borbonicus* scenes of Ochpaniztli is entirely appropriate for the agricultural role of *yauhtli* (Figures 6d, 7c). The Ochpaniztli festival concerns first harvest, and is filled with references to rain and maize. It will be recalled that in Late Classic Maya art, the Teotihuacan Tlaloc often wears a Mexican year-sign bundle as his headdress; in many instances, this bundle may be of *yauhtli* (Figure 6b).

Although the link between the Aztec and Classic Maya headdresses may seem somewhat tenuous, there is a striking degree of correspondence. One of the headdresses rendered in profile on Yaxchilán Lintel 17 apparently has three *yauhtli* year-sign bundles framing three jade disks on a broad headband (Figure 6c). The Tlaloc impersonator representing the world center on page 30 of the *Codex Borbonicus* wears a headdress of three green jade disks, three *yauhtli* bundles, and a Mexican year sign (Figure 6d). The positioning of these Aztec *yauhtli* bundles—two flanking and one central crowning form—is essentially identical to the bundles appearing on the Yaxchilán headdress.

Some of the most ancient representations of the War Serpent, roughly contemporaneous with the examples from the Temple of Quetzalcoatl, appear as headdresses of Miccaotli-period Teotihuacan warrior figurines (Figure 20f).[3] The schematic, frontally facing headdresses are notably similar to the aforementioned Mexican year sign, and also resemble personified forms of this device appearing in Late Postclassic Mixtec art (Figure 7g). In the case of the Mixtec examples, the personified Mexican year sign is probably the Xiuhcoatl, which can have similar feather tufts on its shoulders (Taube 1992c:67, Fig. 9d-e). One of the early Teotihuacan figurines originally had a pair of diagonal elements on either side of the headdress (Figure 20f). Although it is conceivable that these are feathers, they more likely represent torches,

[3] A form of the War Serpent may have been present in Formative Mesoamerican art. One possible image appears on a vessel attributed to Tlapacoya, a Central Mexican site well known for its Olmec-style Formative vessels. Like the War Serpent, the frontally facing image has a large muzzle, fangs, and featherlike edging (see Gay 1972:Fig. 33). Unfortunately, since the entire vessel is not illustrated, it is difficult to date the image reliably.

Possible Late Preclassic examples of War Serpent headdresses can be found on early, hollow, Remojadas-style figures from Veracruz (see Taube 1988c:Pl. V-13).



analogous to the examples appearing atop the War Serpents from the Temple of Quetzalcoatl. Teotihuacan-style censers from Xico, in the vicinity of Chalco, portray a Mexican year-sign headdress flanked by diagonal burning torches (Figure 7i). At Copán, the same form of headdress—complete with diagonal, burning torches and a central year sign—appears on a recently excavated stucco façade from the Early Classic Yehnal platform (Figure 7h).

As the name implies, the faunal characteristics of the War Serpent are at least partly serpentine. At Teotihuacan and in the Maya region, it commonly has a long, bifurcated serpent tongue (Figures 2d, 9c, 11a–b, 18d–f, h). An Early Classic Teotihuacan-style vessel from Escuintla portrays a burning figure with a War Serpent headdress and a long serpent tail (see Hellmuth 1975:Pl. 20a-c). In Late Classic Maya art, the serpent attributes are especially pronounced, with the creature often displaying a rattlesnake tail (Figures 8b, 18b). On Naranjo Stela 2, the Late Classic Maya king Smoking Squirrel appears in Teotihuacan war costume, with a War Serpent headdress and a smoking rattlesnake tail (for detail of headdress, see Figure 9e). The Classic Maya term for this being is *waxaklahun u bah chan*, meaning "18 its image snake" (Figure 18a) (Freidel et al. 1993:308-310; for the *u bah* reading see Houston and Stuart 1997). Although the meaning of this curious term remains poorly known, the number 18 appears to have been closely identified with the War Serpent and the Temple of Quetzalcoatl. In their reconstructions of the front western façade of the Temple of Quetzalcoatl, both Marquina (1951:85) and Sugiyama (1989a:Fig. 2) place eighteen images of the War Serpent on either side of the stairway. In addition, eighteen is a significant and repetitive number for the group burials within the Temple of Quetzalcoatl. Each of the mass burials known as Graves 4, 190, and 204 contained eighteen individuals dressed in Teotihuacan-style military costume (Sugiyama 1995:101, 108, 113). In addition, eighteen greenstone cones—otherwise unique in ancient Mesoamerica—were found grouped within the central multiple burial of

Figure 8. Conflation of jaguar, serpent, and butterfly imagery in Classic Mesoamerican art: (a) bust of helmeted warrior atop War Serpent with jaguar head and rattlesnake tail, detail of Zapotec text from Stela 1, Monte Albán (after Marcus 1983a:Fig. 5.8); (b) warrior figure atop War Serpent with burning rattlesnake tail, interior of codex-style bowl, Late Classic Maya (after Robicsek and Hales 1981:Vessel 107); (c) Palenque ruler wearing War Serpent headdress with jaguar ears, detail of recently discovered monument (drawing after photograph by author); (d) probable cocoon with butterfly crenelations and jaguar pelt markings, detail of Late Classic Maya codex-style vase (after Kerr 1990:218); (e) Olmec portrayal of probable pupate form of butterfly with jaguarlike head, detail of carved jade pendant from Costa Rica (after Parsons 1993:Fig. 19.1); (f) butterfly with goggled eyes and jaguar maw, detail of carved Teotihuacan vessel (from Taube 1992c:Fig. 18a).

the Temple of Quetzalcoatl (Berrin and Pasztory 1993:Note 173).

Aside from its serpentine characteristics, the War Serpent also has a strongly feline component based on the jaguar. Along with the thick muzzle and large canines, the creature frequently displays jaguar ears (Figures 2c–e, 8a, c, 10a, 18f, h). An example from Monte Albán Stela 1 portrays a Teotihuacan warrior atop a War Serpent with a jaguar head, long serpent tongue, and a rattlesnake tail (Figure 8a). An apparently burning serpent arches before the warrior bust. This representation is notably similar to a Late Classic Maya vessel scene, which represents a Teotihuacan-style warrior holding a curving War Serpent staff while riding atop a larger War Serpent with a burning rattlesnake tail (Figure 8b). At Teotihuacan, the War Serpent is especially feline, and usually has clawed jaguar limbs (Figures 11a, 18f, h). Although the Maya version typically has a snake body, a monument in the Dallas Museum of Art portrays the War Serpent not only with a feline ear, but an entire jaguar body, complete with spots and tail (Figure 10a; for the entire figure, see Mayer 1989:Pl. 104).

In Teotihuacan-style iconography, butterflies are frequently portrayed with jaguar mouths (e.g., Figure 8f). Quite probably, this refers to the fierce, militaristic aspect of this being in Central Mexican thought, a topic subsequently to be discussed in detail. In this regard, it is noteworthy that along with displaying serpent and jaguar attributes, the War Serpent also has strong butterfly traits. Thus the thick snout frequently sports long tasseled elements closely resembling Teotihuacan representations of butterfly antennae (Figures 9a, c–e, 11b). At Teotihuacan, the War Serpent commonly has the feather-edged eye of butterflies, a convention shared with the War Serpent headdress from Tikal Stela 31, which also displays

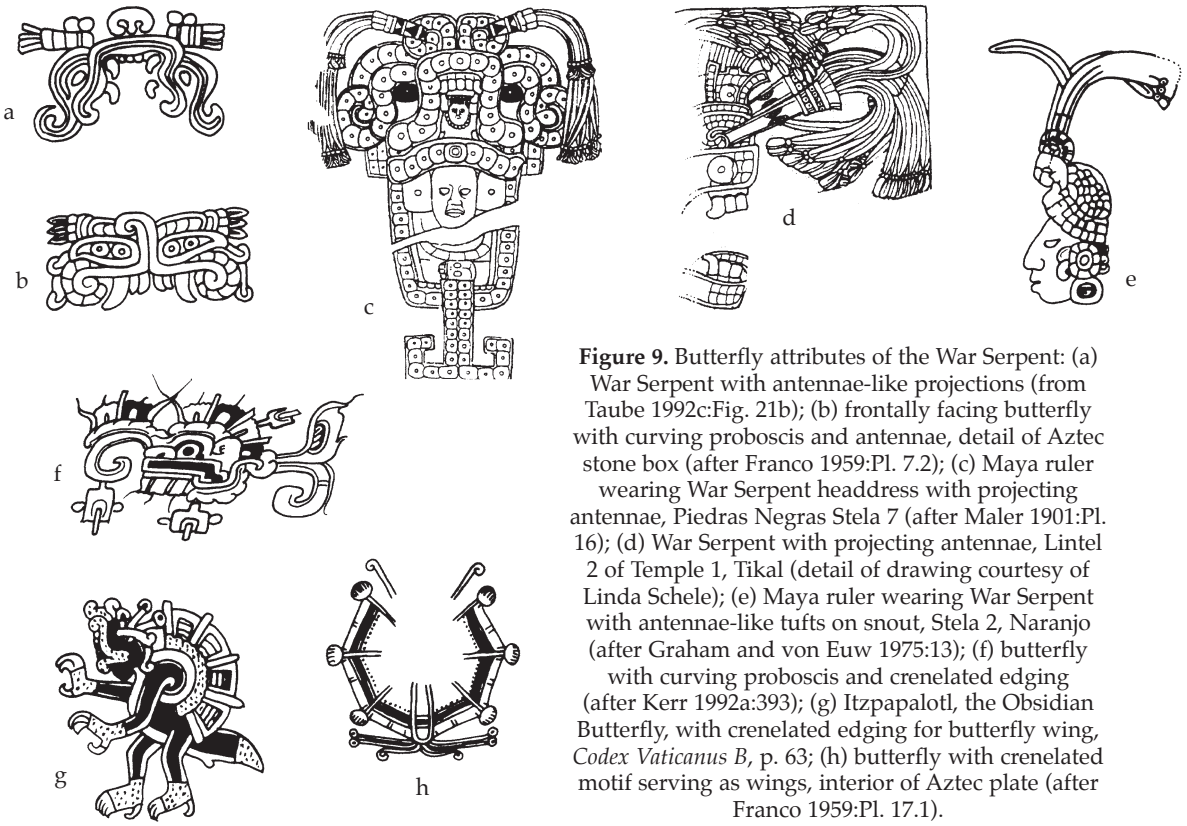


Figure 9. Butterfly attributes of the War Serpent: (a) War Serpent with antennae-like projections (from Taube 1992c:Fig. 21b); (b) frontally facing butterfly with curving proboscis and antennae, detail of Aztec stone box (after Franco 1959:Pl. 7.2); (c) Maya ruler wearing War Serpent headdress with projecting antennae, Piedras Negras Stela 7 (after Maler 1901:Pl. 16); (d) War Serpent with projecting antennae, Lintel 2 of Temple 1, Tikal (detail of drawing courtesy of Linda Schele); (e) Maya ruler wearing War Serpent with antennae-like tufts on snout, Stela 2, Naranjo (after Graham and von Euw 1975:13); (f) butterfly with curving proboscis and crenelated edging (after Kerr 1992a:393); (g) Itzpapalotl, the Obsidian Butterfly, with crenelated edging for butterfly wing, *Codex Vaticanus B*, p. 63; (h) butterfly with crenelated motif serving as wings, interior of Aztec plate (after Franco 1959:Pl. 17.1).

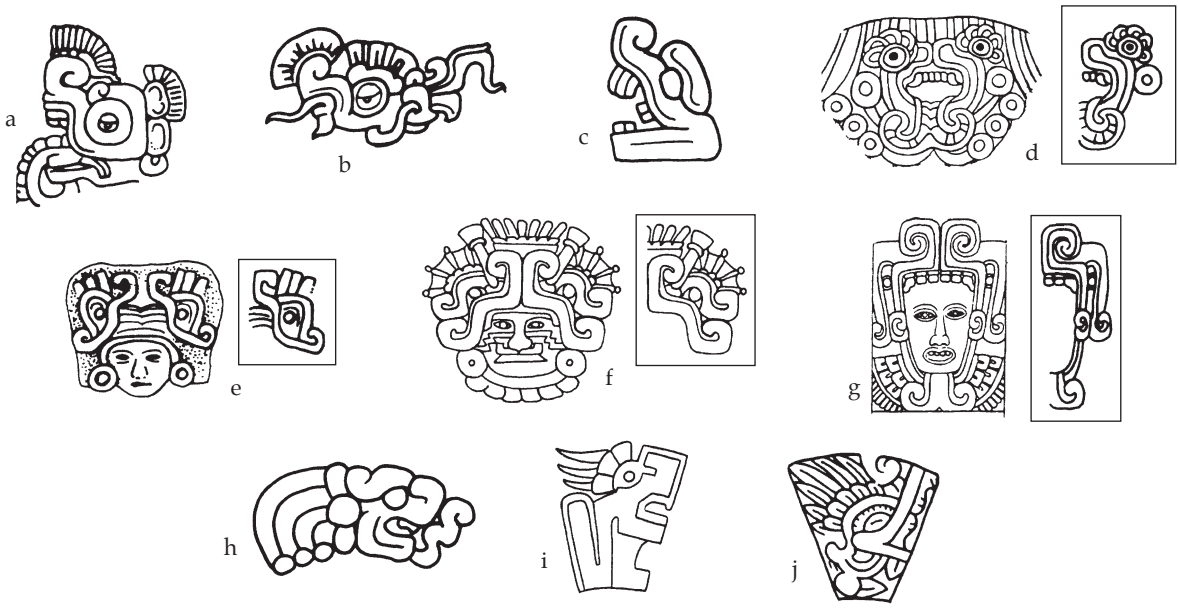


Figure 10. The development of the Classic War Serpent into the Postclassic Xiuhcoatl: (a) jaguar War Serpent with sharply upturned snout (after Mayer 1989:Pl. 104); (b) War Serpent with upturned snout (after Schele and Miller 1986:Pl. 5); (c) War Serpent profile, Xcalumkin Jamb 6 (after Graham and von Euw 1992:168); (d) War Serpent with face halved, Tepantitla (from Miller 1973:Fig. 193); (e) War Serpent headdress with face halved (after Séjoumé 1966c:Fig. 81); (f) headdress of War Serpent with face halved, Ixtapaluca Plaque (from Taube 1992c:Fig. 112c); (g) headdress of War Serpent with face halved, Stela 3, Xochicalco (from Sáenz 1961:Pl. 4); (h) Early Postclassic Xiuhcoatl with upturned snout, detail of portrayal of Toltec-style mirror, Tula (after Tozzer 1957:Fig. 248); (i) Xiuhcoatl from turquoise rim of Toltec-style mirror, Chichén Itzá (from Taube 1992c:Fig. lle); (j) Xiuhcoatl from mirror rim, Casas Grandes (after di Peso 1974b:Figs. 656-657).

burning torches on its large jaguar ears (Figures 2b, d–e, 10d–e, 11a, 20a). One Teotihuacan vessel portrays a creature with a War Serpent head and butterfly wings and tail (Figure 18g). In Late Classic Maya art, the War Serpent usually has the crenelated edging also found with Maya representations of Teotihuacan-style butterflies (Figures 2g, 6a, 8b, 9d–f, 10b). The same edging is found with the War Serpent headdress from the Ixtapaluca Plaque of Late Classic Central Mexico (Figure 10f). This butterfly crenelation continues in Late Postclassic Central Mexican iconography. On page 63 of the *Vaticanus B*, it constitutes the wings of Itzpapalotl, the Obsidian Butterfly (Figure 9g; see also Figure 30c). A fragmentary Aztec bowl contains another example of the butterfly wing crenelation (Figure 9h). One Late Classic codex-style vessel portrays curious bundle-like elements with flames, and the butterfly crenelation (Figure 8d). Also marked with jaguar spots, these devices may well represent the cocoons of the jaguar butterfly.

A frontally facing butterfly face—complete with antennae and a curving, asymmetrical proboscis—appears on an Aztec-style stone box (Figure 9b). In his detailed study of Central Mexican butterfly iconography, José Luis Franco (1959:22) noted that this image is strikingly similar to Teotihuacan artistic conventions. In particular, it is very much like the Teotihuacan and Classic Maya War Serpent headdress (e.g., Figure 9a, c). Thus it has the antennae, fangs, upwardly turned snout, and the comma-shaped eyes of the War Serpent. Moreover, the cheeks of the Aztec being are segmented, quite like the platelet mosaic surface of the War

Serpent helmet. But although the Late Postclassic Aztec butterfly image is very much like the Classic War Serpent, it differs in one significant detail: the face has a curving butterfly proboscis, a trait not found with the Classic War Serpent.

Although the War Serpent has strong butterfly attributes, it is actually a supernatural caterpillar. The larval butterfly before metamorphosis, the caterpillar is ideally suited to embody concepts of transformation and rebirth, a central theme of the Central Mexican cult of war. In Mesoamerica, worm or grublike creatures thematically overlap with snakes. For example, the *Florentine Codex* refers to the rather unpleasant parasitic worm known as *tzoncoatl*, or "anus snake" (Sahagún 1950-1982:Book 11:98). But along with their long, tubular bodies, caterpillars also possess legs, which are particularly developed in the frontal thoracic region, recalling the prominent forelimbs of many Teotihuacan War Serpents (Figures 11a–b, 18f). In ancient Mesoamerican art, caterpillars as well as butterflies can appear with feline characteristics. A Middle Formative Olmec jade pendant discovered at Talamanca de Tibas, Costa Rica, portrays a caterpillar in partial metamorphosis, as if freshly removed from its chrysalis or cocoon (Figure 8e). Along with its pupate body, rudimentary wings, and clawed forelimbs, the creature has an eared, jaguarlike head. It will be subsequently noted that like the War Serpent, the Xiuhcoatl also represents a caterpillarlike being.

Scenes in Late Classic and Early Postclassic Mesoamerican art document the development of the War Serpent into the Late Postclassic Xiuhcoatl. In many Late Classic Maya depictions, the War Serpent already has the sharply backturned nose found with the Xiuhcoatl (Figure 10a–c). Moreover, by splitting frontal images of the War Serpent in half, it is possible to create profiles of this being (Figure 10d–g). Late Classic examples from Teotihuacan and other Central Mexican sites are very similar to the Xiuhcoatl appearing on Early Postclassic Toltec back mirrors. Fashioned in turquoise mosaic, or *xihuitl*, these Toltec examples are true early *xiuhcocoa*, or "turquoise serpents" (Figures 10h–j, 27a).

Aside from the Xiuhcoatl serpents on the rims of back mirrors, there are more elaborate, anthropomorphized examples in

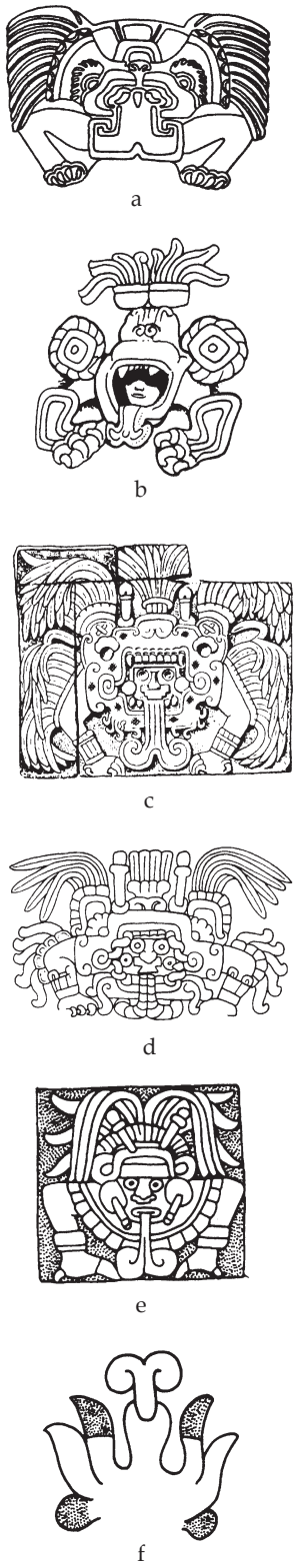


Figure 11. The development of the Classic War Serpent into an Early Postclassic form of the Xiuhcoatl: (a) War Serpent, detail of Teotihuacan vessel (from Séjourné 1956:Fig. 33); (b) War Serpent figure, detail of Xico censer (after Berlo 1984:Pl. 50); (c) crouching figure with goggles and butterfly nosepiece, Chichén Itzá (from Seler 1902-1923:5:367); (d) figure with goggles and butterfly nosepiece, Tula (drawn after photograph by author); (e) figure with goggles and butterfly nosepiece, Chichén Itzá (after Tozzer 1959:Fig. 317); (f) Aztec butterfly flame with long, bifurcated tongue, *Codex Borbonicus*, p. 18, compare with *c–e*.

Early Postclassic Toltec art (Figure 11c–e). As with the profile examples on back mirrors, these frontally facing figures appear to be rising up on forelimbs. In addition, the petalled eyes of some of these figures are entirely comparable to Classic War Serpents and the Xiuhcoatl appearing on Early Postclassic Toltec back mirrors (Figures 10d, i–j, 11d). Long ago, Herbert Spinden (1913:221-222) compared a Chichén Itzá example to the Classic-period War Serpent, including the Ixtapaluca Plaque and depictions from Piedras Negras. Terming this entity the "jaguar serpent bird," Tozzer (1957:123-124) noted its presence at Tula as well as Chichén Itzá, and the Classic-period examples previously noted by Spinden. However, Laurette Séjourné (1966c:103) further argued that the Early Postclassic examples from Tula and Chichén Itzá ultimately derived from Teotihuacan, where there are clear earlier forms of this being (Figure 11a). An excellent example appears on an Early Classic Teotihuacan-style censer from Xico (Figure 11b). Along with a jaguar maw and clawed forelimbs, the figure has a serpent tongue, prominent feathered butterfly eyes, and a pair of antennae-like tufts. Following Tozzer, Séjourné (1966c) and Kubler (1972) considered this crouching being as part jaguar, snake, and bird. However, along with the Classic-period War Serpent, the Early Postclassic form also has strong butterfly attributes. In many instances, the Toltec period figures wear butterfly nosepieces, quite like examples known for Classic Teotihuacan. In addition, the bifurcated tongues are often extremely long, and closely resemble the long "tongues" found with Late Postclassic Central Mexican butterflies (Figures 11f, 29c–d, g, 30b).

In Mesoamerican art, the head of the "jaguar-serpent-bird" motif tends to occur as a headdress worn by anthropomorphic warrior figures. In this regard, butterfly attributes are entirely apt. According to Aztec belief, the souls of slain warriors were reborn as the *tonatiuh ilhuicac yauh*, supernatural butterflies and birds who accompany the rising diurnal sun to zenith (see Sahagún 1950-1982:Book 3:49, Book 6:162-163, Book 10:192). Both Séjourné (1962:141-146) and Kubler (1967:9) suggested that at Classic Teotihuacan, butterflies also represented souls of the deceased. Berlo (1983b) has made a compelling case that much of the Aztec warrior butterfly complex was indeed present at Teotihuacan, and notes the common presence of butterfly nosepieces, wings, antennae, proboscii, and other butterfly attributes with Teotihuacan warriors. It is noteworthy that along with the winged nosepieces, the Toltec-period figures wear goggles, despite the fact that such facial gear was no longer a part of Early Postclassic warrior costume. I suspect that the nosepieces and goggles label these Toltec-period figures as the souls of long dead warriors, those of ancient Teotihuacan.

It has been noted that the War Serpent has butterfly attributes, and probably represents a caterpillarlike being. In the case of the Postclassic Xiuhcoatl, the caterpillar attributes are still more developed. During the Late Postclassic period, the fire serpent tends to have a strangely segmented body (Figures 7a, d, 12f–h, 13a–f). Among the toponyms in the Aztec *Codex Mendoza* is Ocuilan, *ocuila* signifying "caterpillar" or "worm" in Nahuatl. The place name is rendered as a caterpillar with a butterfly head, a bifurcated serpent tongue, fangs, and a segmented body that is virtually identical to that of the Xiuhcoatl. In the *Codex Mendoza*, the caterpillar is also represented in the title for one type of Aztec general, *tocuiltecatl* (Figure 12c). Although this has been glossed as "Keeper of the Worm on Blade of Maize" (Berdan and Anawalt 1992:2:200), the butterfly head denotes a caterpillar. Both this example and one of the Ocuilan signs have prominent forelimbs, a trait also appearing with a probable caterpillar in the *Codex Cospi* (Figure 12d). In Late Postclassic Central Mexico, Xiuhcoatl serpents typically have only clawed forelimbs, with no rear legs (Figures 7a and 12f–g). As I have

mentioned for the War Serpent, these forelimbs probably allude to the highly developed thoracic legs of caterpillars.

Aside from the larval body and forelimbs, the Late Postclassic Xiuhcoatl often displays overt butterfly attributes. As Séjourné (1962:141, Fig. 7) notes, the Aztec Xiuhcoatl can appear with crenelated butterfly wings (Figure 13d–e). The *Codices Azoyu 1* and 2—Guerrero manuscripts painted under strong Aztec influence—also portray Xiuhcoatl serpents with strong butterfly attributes. In this case, the fire serpents have segmented bodies and butterfly heads, although often with fangs and serpent tongues (Figure 13a–c). The heads of the *Codex Azoyu 2* examples also have eye crests, recalling the crests of the War Serpent and Toltec period Xiuhcoatl (Figure 13b–c).

Among the Postclassic Mixtec of Oaxaca, there is a related form of the Xiuhcoatl, here known as *yahui* (Smith 1973:60-64). Like the Central Mexican Xiuhcoatl, this creature also tends to be red with a segmented, pupate body and sharply back-turned snout. Although *yahui* is suspiciously similar to the Nahuatl *yauhtli*, only rarely does the Mixtec creature have a *yauhtli* bundle tail (e.g., Figure 12h). Instead, it tends to be tipped with a burning flint blade (Figure 13f–g). At times, the *yahui* can also appear with winglike flames on the shoulder, a convention also known for the Central Mexican Xiuhcoatl (Figure 7a). Quite probably, these shoulder elements simultaneously refer to both butterfly wings and fire. Seler (1902-1923:4:713-714) noted that in Late Postclassic Central Mexican iconography, butterflies commonly designate flames (e.g., Figure 11f). In fact, the shoulder flames appearing on an aforementioned Aztec Xiuhcoatl are actually a stylized butterfly (Figure 7a).

The Mixtec *Fons Mexicains 20* depicts a *yahui* Xiuhcoatl with small, rudimentary feet on its belly, recalling the feet of the *Codex Cospi* caterpillar and the grublike creature appearing on page 47 of the Mixtec *Codex Vindobonensis* (Figure 12h). A Cholula polychrome vessel portrays a flying butterfly with the same feet found with the Mixtec *yahui*, and it appears that they represent the diminutive legs of caterpillars and related creatures (see Franco 1959:Pl. 12, 1). In the early colonial *Codex Sánchez Solís*,

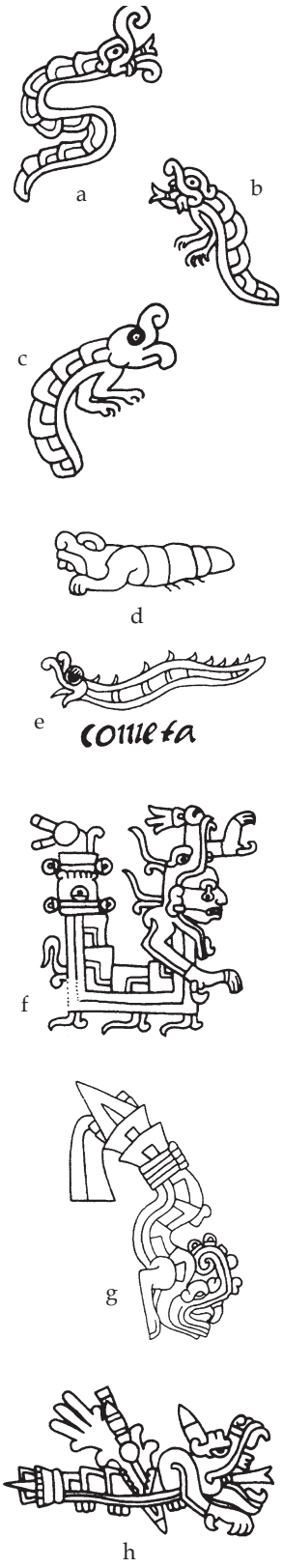


Figure 12. The comparison of the Xiuhcoatl to caterpillars: (a–b) place signs for Ocuilan, *Codex Mendoza*, fols. 34r, 10v; (c) title of Aztec general, the *tocuiltecatl*, *Codex Mendoza*, fol. 65r; (d) probable caterpillar with prominent forelimbs and diminutive rear legs, *Codex Cospi*, p. 25; (e) illustration of *xihuitl* meteor as butterfly-headed caterpillar, *Codex Telleriano-Remensis*, fol. 39v; (f) burning Xiuhcoatl with forelimbs and segmented body, *Codex Borgia*, p. 44; (g) Aztec diving Xiuhcoatl with forelimbs and segmented body (after Nicholson and Quiñones Keber 1983:Note 8); (h) Xiuhcoatl, or *yahui*, with forelimbs and diminutive rear legs, *Fons Mexicains 20*.

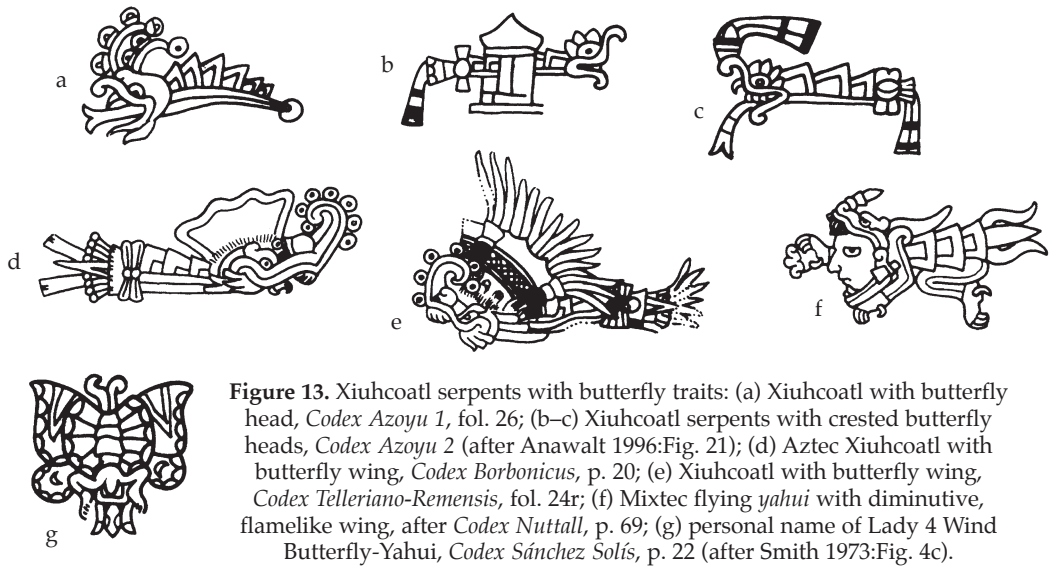


Figure 13. Xiuhcoatl serpents with butterfly traits: (a) Xiuhcoatl with butterfly head, *Codex Azoyu 1*, fol. 26; (b–c) Xiuhcoatl serpents with crested butterfly heads, *Codex Azoyu 2* (after Anawalt 1996:Fig. 21); (d) Aztec Xiuhcoatl with butterfly wing, *Codex Borbonicus*, p. 20; (e) Xiuhcoatl with butterfly wing, *Codex Telleriano-Remensis*, fol. 24r; (f) Mixtec flying *yahui* with diminutive, flamelike wing, after *Codex Nuttall*, p. 69; (g) personal name of Lady 4 Wind Butterfly-Yahui, *Codex Sánchez Solís*, p. 22 (after Smith 1973:Fig. 4c).

the personal name of Lady 4 Wind is a smoking *yahui* with butterfly wings (Figure 13g). The accompanying gloss, *ticuhua yahui*, signifies "butterfly *yahui*." On page 35 of the *Codex Nuttall*, a smoking butterfly *yahui* also serves as the personal name of Lady 9 Crocodile.

Caterpillars and Meteors in Mesoamerica

Aside from shared physical traits, caterpillars and the Xiuhcoatl may appear to have little in common. However, both were viewed as fiery, celestial beings in the form of meteors, that is, shooting stars. Mention has been made of the Mixtec *yahui* with its burning tail. According to Pohl (1994:44), the *yahui* is a form of shooting star, and is considered by contemporary Mixtec as flying "luminescent balls." In one colonial Mixtec dictionary, *yahui nduvua* is glossed as *cometa* or "comet" (Pohl 1994:44). Similarly, there is the Xiuhcoatl, or "*xihuitl*-snake." Colonial Nahuatl sources commonly define *xihuitl* as *cometa*. However, in his detailed study of Mesoamerican comet and meteor lore, Ulrich Köhler (1989:289) notes that in colonial and contemporary Spanish, *cometa* can refer to meteors as well as comets. In addition, among the contemporary Sierra Nahua of Veracruz, *xihuitl* is the specific term for meteors and meteorites (Köhler 1989:296). A detailed description of a *xihuitl* appears in an account of the terrible omens presaging the Spanish conquest:

> It became three parts and began from where the sun set and went toward where he arose. It went as if showering sparks, for a great distance it went extending; far out did its tail reach (Sahagún 1950-1982:Book 8:18).

As Köhler (1989:295) notes, this account best corresponds to a meteor shower, not a comet.

Given the caterpillar body of the Xiuhcoatl, it is noteworthy that the Aztecs regarded shooting stars and meteorites as caterpillars. Köhler (1989:295) cites a number of Aztec examples of meteoric caterpillars, including the belief that shooting stars cause caterpillar or grublike worms. The *Florentine Codex* mentions the *citlalocuilin* ("star worm/caterpillar"): "It is said that they are named 'star-arrow,' and what they are on is called 'shot by a star'" (Sahagún 1950-1982:Book 11:100). A more detailed account appears in another passage

describing astronomical phenomena:

> It is said that the passing of a shooting star rose and fell neither without purpose nor in vain. It brought a worm [*ocuillo*] to something. And of [the animal] wounded by a shooting star, they said: "It hath been wounded by a shooting star; it hath received a worm" (Sahagún 1950-1982:Book 7:13).

Köhler (1989:295) also calls attention to the illustrations of a *xihuitl* meteor in the *Telleriano-Remensis* and cognate *Vaticanus A* codices (Figure 12e). This segmented, snakelike being clearly has a butterfly head, thereby labeling it as a caterpillar.

Aside from the Aztec examples of meteoric caterpillars, Köhler notes that contemporary Sierra Nahuas of Los Reyes, Veracruz, believe that caterpillars appear where *xihuitl* meteorites fall:

> where a *xihuitl*, the term applied both for meteor and meteorite, arrives on the earth, black caterpillars will appear, which are about 3 cm long and are piled together into a heap the size of a hand. These caterpillars are called *citlalocuile*, "star-caterpillars," as well as *citlalcuitlatl*, "star shit," and the heap looks indeed like excrement (Köhler 1989:296).

Along with the instances cited by Köhler, there are many other examples of caterpillarlike meteoric beings in Mesoamerican lore. A common Nahuatl term for obsidian is *citlalcuitlatl*, or "star excrement" (Karttunen 1983:35). In a dictionary of contemporary Nahuatl of the Sierra de Zacapoaxtla, Puebla, *sitalcuita* is glossed as "la suciedad de estrella, gusanos en la tierra" (Key and Ritchie de Key 1953:203). This concept of *citlalcuitlatl* as meteoric, wormlike creatures of black obsidian is very similar to Köhler's Veracruz account of meteorites. Manuel Gamio (1922:1:316) recorded the following belief from the community of Santiago, in the vicinity of Teotihuacan: "Dicen que en el lugar en donde calle un bólido (citlalcuítlatl o meztcuítlatl) se forma un gusano azul." This description of a blue meteorite "worm" recalls the turquoise Xiuhcoatl of Postclassic Central Mexico. Among the Otomí, meteorites, or "star excrement," cause flesh-penetrating worms, a concept virtually identical to the Aztec *citlalocuilin* (Galinier 1990:527).

The belief in wormlike meteorites is also found in the Maya region. In Mopan Mayan, the term for a caterpillar tent ("pabellón de orugas") is *ta' xülab*, which can be glossed as "star excrement," a concept vitually identical to the cited Nahua and Otomí beliefs of meteorites being wormlike excrement of the stars (Ulrich and Dixon de Ulrich 1976:197). Among the Tojolabal Maya of highland Chiapas there are the *sansewal*, little black worms created from meteorites. The following account describes the shooting star, or *sk'oy k'anal*, and the *sansewal*:

> Some say that this concerns metallic objects of stone like glass or mirrors that fall, during the night, from the sky as a light with a tail . . . Others say that they are the same as *sansewal*. They are little black worms that fall from the sky during the night (Lenkersdorf 1979:325; author's translation).

Lenkersdorf provides the following entry for the *sansewal*:

> lightning, shooting star, light that appears at night in the mountains . . . They are stars that fall as shooting stars. They are little worms of fire that move and still are not like stone, but rather like little black serpents, like little worms. In the sky they shine like a lamp. Upon falling to earth they divide (Lenkersdorf 1979:312; author's translation).

As fiery, meteoric creatures having both serpent and wormlike attributes, the *sansewal* are strikingly similar to the Xiuhcoatl.

As the "meteor serpent," the Xiuhcoatl is a caterpillarlike embodiment of a shooting star. Among Tzeltalan-speaking peoples of highland Chiapas, a probable borrowed form of the Nahuatl term *xihuitl* designates caterpillars and grublike creatures. In contemporary Tzotzil, *xuvit* signifies "worm" or "maggot" (Hurley and Ruiz Sánchez 1986:227; Laughlin 1975:327). An early colonial Tzotzil dictionary of Zinacantan glosses *xuvit* as "caterpillar, maggot, or worm infesting meat, cheese, etc." (Laughlin 1988:1:304). The 1571 Tzeltal dictionary of Domingo de Ara has the following entry for *xuuit*: "oruga, Gusano. Xuuitil" (Ruz 1986:418). The last term, *xuuitil*, is extremely similar to the Nahuatl *xihuitl*. In the contemporary Nahuatl of Tetelcingo, Morelos, *xiuhocuilin* is a term for caterpillar (Brewer and Brewer 1971:246).

According to the *Historia de los mexicanos por sus pinturas*, the fifth level of the sky was the realm of the fire serpents who emit "comets," in other words, meteors: "En el quinto había culebras de fuego, que hizo el dios de fuego, y de ellas salen los cometas y señales del cielo" (Garibay 1979:69). The stars frequently appearing on the snout and body of the Xiuhcoatl fire serpent probably refer to these meteors and "signs of the sky" (Figures 12f–g, 13a, d–e, 15d, 17f–h). In the *Vaticanus A*, this fifth level is rendered as a series of spherical stars with darts, representing an Aztec term for meteor, *citlalin tlamina*, or "star shoots dart" (Figure 16a–b). The *Vaticanus A* glosses this region as Ilhuicatl Mamalhuazocan, or "Heaven of the Fire Drill" (Nicholson 1971:Table 2). According to Alfredo López Austin (1988:1:210), this fifth level is the lowest of the true heavens, where supernatural forces fall to earth, "the place where divine influences acquire their circling impulse in order to descend…The luminous heavenly bodies made their influence in the form of shooting arrows." The "shooting arrows" described by López Austin are fiery meteors—potent, highly charged manifestations of celestial power.

The concept of the fifth celestial level as the place of fire and fire drilling is not limited to the Aztecs. In an incantation concerning "traveler-seizure," the colonial Yucatec *Ritual of the Bacabs* describes the fifth level of the sky:

> He [traveler-seizure] comes from the fifth layer of the sky, the offspring of the *ko* in the Tzab (the "snake rattles constellation," the Pleiades) . . .
>
> He would be the offspring of the fire-colored rainbow, the offspring of the fire there in the sky, the offspring of the fire there in the clouds, the force of the friction at the tip of the fire[-drill] (Roys 1965:7).

The concept of the fifth celestial realm as the place of fire and fire-making may have also been present among the Classic Maya. One Classic Maya supernatural place known as Na Ho Chaan, or First Five Sky, is portrayed with long, twisted cords (see Freidel et al. 1993:Fig. 2.31). Although these elements have been interpreted as umbilical cords or as the ropes used in birthing (Freidel et al. 1993:99, 105; Miller 1982; Taube 1994a), there is another possibility. In Teotihuacan and later Aztec iconography, fire drills can be accompanied by a twisted rope, undoubtedly referring to the tightly twisted rope of the pump drill (Coggins 1987:459; for examples, see von Winning 1979). It is likely that the twisted chords appearing with Na Ho Chaan also allude to the spinning force of the drill, fire making, and creation.

At Teotihuacan, the twisted-cord motif not only appears with depictions of flames, but also occurs on monumental stone braziers (Figure 14c). In support of the fire drill

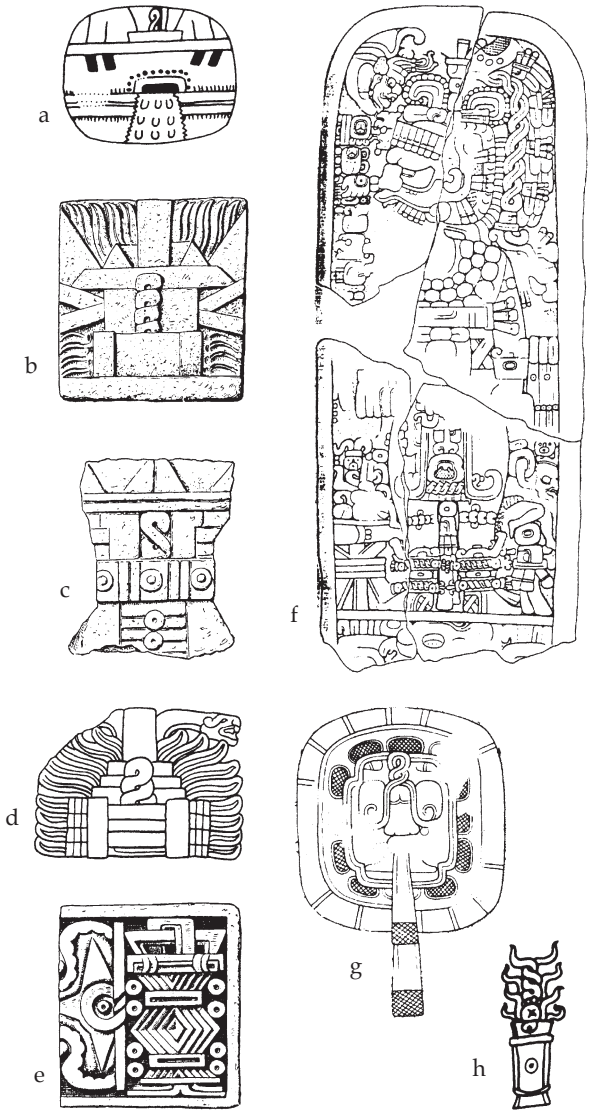


Figure 14. The twisted-cord motif as a fire-making sign: (a) twisted cord with vertical drill stick, detail of Teotihuacan style, stucco painted vessel (after Hellmuth 1975:Pl. 43); (b) Teotihuacan relief of twisted cord with flames (from Seler 1902-1923:5:430); (c) relief on front of Teotihuacan stone censer (from Seler 1902-1923:5:429); (d) twisted cord with serpents and feathers as flames, detail of Aztec-style sculpture from Castillo de Teayo (after Solís 1981:Pl. 47); (e) twisted cord with star, stick, and vegetal year bundle, Chichén Itzá (from Seler 1902-1923:5:367); (f) Late Classic Maya ruler performing fire offering—note twisted cord in headdress—Stela 13, Yaxha (drawing courtesy of Ian Graham); (g) shield representing the Jaguar God of the Underworld with twisted "cruller," detail of Naranjo Stela 21 (drawing courtesy of Ian Graham); (h) burning censer with flames as twisted cords, *Codex Dresden*, p. 28.

identification, Heyden (1977:215, Fig. 9.17) cites Monument 46 from Castillo de Teayo, a stela carved in strong Aztec style.[4] The maize goddess appearing on this monument has a headdress with the twisted rope and the vertical bar of the drill stick (Figure 14d). Heyden compares this headdress to the "new fire" reliefs from Teotihuacan (e.g., Figure 14b). She also notes that in the case of the Aztec headdress, the curving feathers flanking the rope and drill stick represent flames, a convention previously mentioned for Teotihuacan. In one Late Classic Maya fire-offering scene, the ruler wears a headdress with a prominent twisted cord emerging out of the *to* sign of beaded curls (Figure 14f). As the fire drill rope, the twisted cord appears as the curious "cruller" of the Jaguar God of the Underworld, who has been recently identified as the Classic Maya god of fire (Stuart 1998) (Figure 14g). David Stuart (personal communication, 1997) notes that as one of the Tikal Paddlers, the Jaguar God of the Underworld is a well-known denizen of Na Ho Chaan. In the *Codex Dresden*, the central fire of burning braziers and torches is rendered as tightly twisted cords, quite possibly alluding to the swirling, twisting nature of rising flames (Figure 14h).[5]

[4] Heyden (1977:Fig. 18) illustrates another Aztec Chicomecoatl maize goddess displaying a drill stick and twisted ropes in the center of the headdress. It is noteworthy that this headdress is clearly a version of that worn by the Chicomecoatl impersonator appearing in the aforementioned *Borbonicus* scene, that is, the headdress with the central *yauhtli* bundle bound with the Mexican year sign (Figure 6d).

[5] In the northern Maya lowlands, War Serpents can appear as long, twisted ropes (such as in Itzimte Stelae 1 and 7; for unprovenanced examples, see Mayer 1995:Pl. 83). In the case of Itzimte Stela 1, the smoking serpent ropes appear on a ruler wearing a Tlaloc mask.

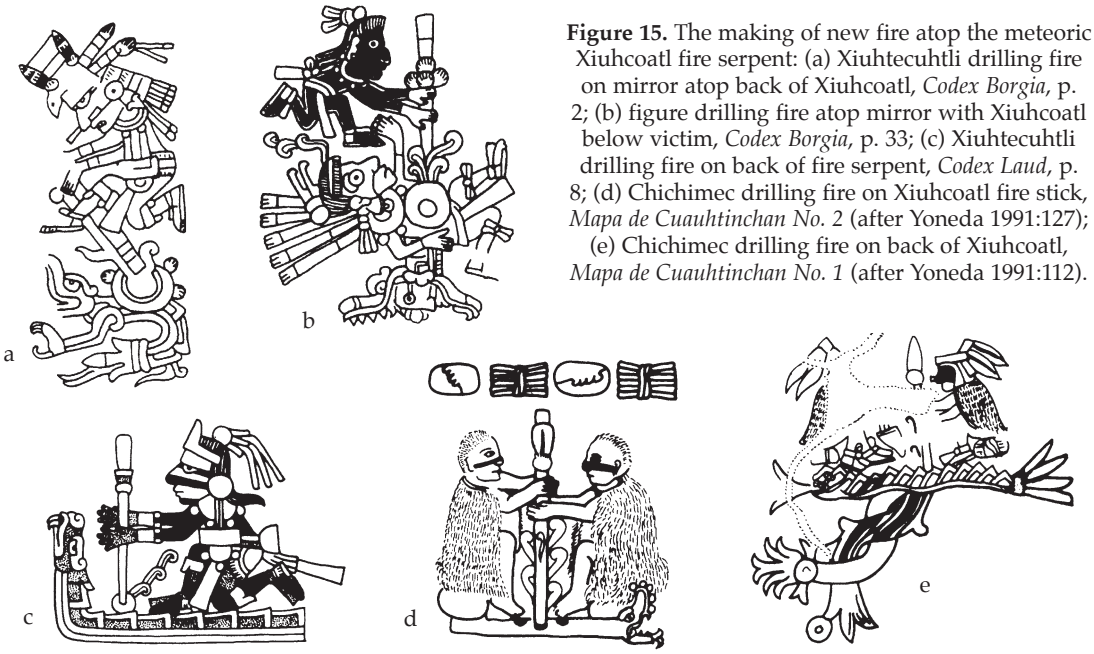


Figure 15. The making of new fire atop the meteoric Xiuhcoatl fire serpent: (a) Xiuhtecuhtli drilling fire on mirror atop back of Xiuhcoatl, *Codex Borgia*, p. 2; (b) figure drilling fire atop mirror with Xiuhcoatl below victim, *Codex Borgia*, p. 33; (c) Xiuhtecuhtli drilling fire on back of fire serpent, *Codex Laud*, p. 8; (d) Chichimec drilling fire on Xiuhcoatl fire stick, *Mapa de Cuauhtinchan No. 2* (after Yoneda 1991:127); (e) Chichimec drilling fire on back of Xiuhcoatl, *Mapa de Cuauhtinchan No. 1* (after Yoneda 1991:112).

Although twisted chords can refer to fire and fire making in both Central Mexican and Maya iconography, this does not necessarily contradict the overlapping meaning of umbilical chords and birth ropes. The making of fire is tantamount to creation and birth. Seler (1963:1:76) notes that in the Aztec *Vaticanus A*, the primordial couple are portrayed as a pair of personified drill sticks. The friction and subsequent fire created by the vertical drill bit in the hole of the second stick mimics the act of copulation and conception. López Austin (1988:1:209-210) suggests that the Aztec fifth level of heaven was the immediate source of the *tonalli*, or "soul," the place where it descends in meteoric fashion into the developing fetus on earth.[6]

At Early Postclassic Chichén ltzá, there are two large radial platforms displaying representations of both the aforementioned Xiuhcoatl warriors and flexible vegetal bundles with Mexican year signs (Figures 11c, 14e).[7] At the side of each year-sign bundle, there is a vertical drill stick wrapped with twisted chord, here combined with a star sign (Figure 14e). Although this star has commonly been interpreted as Venus, it may well refer to the starry,

[6] For the Tzutuhil Maya of Guatemala, there is the term *q'aaq'al*, derived from the word for fire, *q'aaq'*. The *q'aaq'al* refers to a shooting star, which is regarded as a sign for the soul of an infant or child (Mendoza and Mendoza 1996:332).

[7] Whereas one of the radial platforms is oriented to the principal north side of the Castillo, the other occurs at the east side of the Temple of the High Priest's Grave, which in many respects constitutes an early form of the larger Castillo. The imagery of this recently excavated structure is almost identical to the platform north of the Castillo, and also has crouching anthropomorphic Xiuhcoatl figures along with the Mexican year-sign bundle and the starry rope and drill stick. Coggins (1987) and I (Taube 1998c) argue that structures with radial stairways are widely identified with fire making in the Maya area. Both of these radial platforms may well have been loci for creating new fire at Chichén Itzá.

A similar pattern also occurs in the Mundo Perdido of Classic-period Tikal. At the base of another large radial pyramid, 5C-54, there is a radial, *talud-tablero* platform. Along with the two cited examples from Chichén Itzá, this platform is marked with stars and in addition, the shell goggles of Teotihuacan warriors.

meteoric origin of new fire.

In ancient Central Mexican thought, fire drills and the making of new fire appear to have been closely linked to fiery meteors, that is, fire of celestial origin.[8] Thus the Classical Nahuatl term for fire making was *uetzi in tlequauhuitl*, "the fire drill falls." The same verb *uetzi* is also used to refer to the falling of a shooting star, as in the phrase *xihuitl uetzi* (Molina 1977:159). The identification of fire drilling with meteors may well derive from the sparks that fly from the twirling fire drill, fleeting but potent sources of fire that resemble shooting stars. It will be recalled that in the aforementioned *Florentine Codex* description of a *xihuitl* meteor shower, it was compared to a shower of sparks, or *tlexuchtli pipixauhtiuh* in Nahuatl (Sahagún 1950-1982:Book 8:18).

In a discussion of Mixcoatl, the starry deity of slain warriors, Seler (1902-1923:4:72) noted that this being overlaps with the fire god, Xiuhtecuhtli:

> This divinity [Mixcoatl] is the representative of the eternally circling stars, of the firmament that turns around the pole, and for that reason also the god who has bored fire, the first creator of fire; he therefore coincides in some way with the fire god, the deity of the fire in the hearth who resides in the center of the world (translation in Seler 1990-1998:5:41).

It has been noted that *xihuitl* has a range of meanings in Classical Nahuatl, including, turquoise, meteor, year, and herb.[9] Although Xiuhtecuhtli is readily glossed as "turquoise lord," it probably had a related meaning of "meteor lord." In the *Primeros Memoriales*, the Xiuhcoatl meteor serpent is described as the *nahualli* co-essence of Xiuhtecuhtli (Sahagún 1997:100). The precious blue nuggets of turquoise obtained from the distant American Southwest may have been considered as meteoric in origin, in other words, "sky stone."

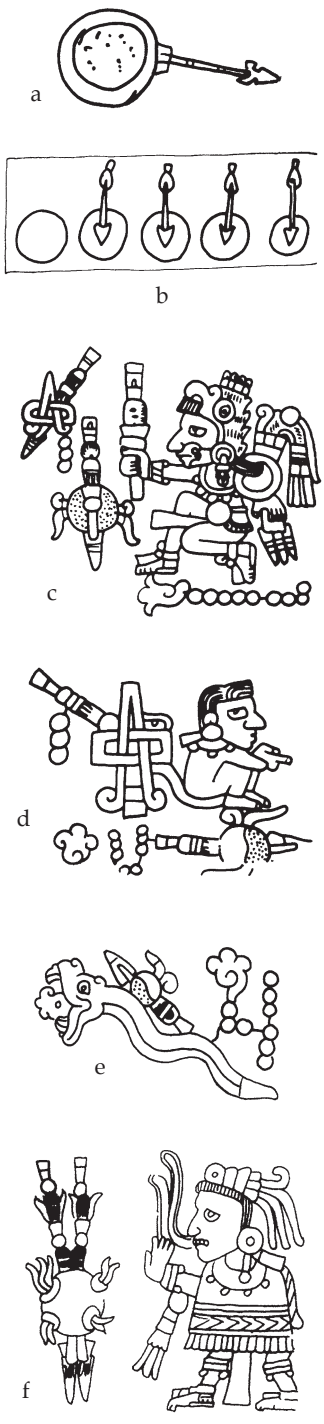
Lined with a series of drilled holes, the horizontal, "female" portion of the fire drill strongly resembles worm-eaten wood (e.g., Figure 15d). In Classic Nahuatl, wood damaged by wood worms was referred to as *ocuilqualoc*, *ocuila* being the word for worm or caterpillar (Molina 1977:76). In Mesoamerican thought, worms, grubs, and other caterpillarlike creatures are often credited with the power of drilling. In the *Leyenda de los soles* account of creation of people, Quetzalcoatl has his conch drilled by worms or caterpillars (*ocuilme*) (Bierhorst 1992:145, see ms. p. 76, line 30, for Nahuatl). In Mayan languages, the words for drills and fire drilling are often the same as for larval wood worms. Thus in Yucatec, *hax* signifies both fire drilling and the holes made by wood worms (Barrera Vásquez 1980:188). In the colonial Tzeltal Domingo de Ara dictionary, *ghoch* is glossed as "roer la madera los gusanos," and *ghochobte*, "ladrado," or "drill" (Ruz 1986:292). Apparently the act of fire drilling was compared to the burrowing of worms, although in this case the worms are fiery, meteoric beings derived from stars.[10]

In many Late Postclassic Central Mexican representations of fire making, fire is drilled on the segmented, larval body of the Xiuhcoatl meteor serpent (Figure 15). In addition, a massive stone head of Xiuhcoatl found near the Templo Mayor bears the date 4 Acatl (Reed). Seler

[8] Among contemporary Nahuas of northern Veracruz, fire is believed to have originated in the sky (Sandstrom 1991:249).

[9] Karttunen (1983:324) notes that in Nahuatl, the terms for "turquoise" and "comet" are slightly different. For comet (i.e., meteor), *xihuitl* has a long vowel *i*. However, in view of the identification of the Xiuhcoatl with meteors, it appears that the two terms were in fact closely related.

[10] Whereas the Nahautl term *tlemoyotl* is a term for "spark," with *tletl* meaning "fire," *moyon* signifies the swarming of ants, worms, and other similar creatures (Karttunen 1983:154, 308).



(1902-1923:2:899) notes that 4 Reed was the most appropriate day for the drilling of new fire, and according to Chimalpahin, was the day on which new fire was drilled in the 1507 year of 2 Reed. At times, a pair of drill sticks appears on the head of the Xiuhcoatl (Figure 13e). In highland Mexican New Fire scenes, a reed dart usually serves as the vertical drill, possibly referring to the concept of *citlalin tlamina*—fiery, meteoric darts shot by stars. Like the flaming dart wielded by K'inich Yax K'uk' Mo' on Copán Altar Q, the drill sticks were considered as weapons of war. Along with being compared to the fire drill, the Xiuhcoatl was also considered as a spear thrower. In one Aztec account, Huitzilopochtli creates war with his Xiuhcoatl and fire drill: "He cast at men the turquoise serpent, the fire drill—war" (Sahagún 1950-1982:Book 1:167).

The concept of shooting stars as the weapon of Huitzilopochtli is entirely consistent with Mesoamerican concepts of meteors, widely viewed as omnipotent weapons of supernatural beings. According to Seler (1902-1923:4:72-73), meteors were darts shot by the Central Mexican star god Mixcoatl. The contemporary Nahuas of Veracruz consider meteors as protective arrows of the stars (Sandstrom 1991:248). For the Huichol of Nayarit, a pair of large stars in the northern and southern skies shoot meteors at venomous snakes:

> They [the pair of stars] are simply termed rulave, and are stars that sometimes fall down and get broken against rocks when trying to kill a serpent (Sp. *culebra*); in other words, meteors . . . these two stand immobile, guarding the world (Lumholtz 1900:58).

Among the types of shooting stars known for the contemporary Otomí, there are the *piso*, which prevent stones from turning into jaguars (Galinier 1990:526). The Huastec consider pieces of obsidian as the spent weapons of protective stars; "obsidian chips are also interpreted as pieces of stars left by red and blue flashes emitted by stars to punish brujos" (Alcorn 1984:141).

In Mesoamerica, shooting stars are widely seen as celestial darts. Mention has been made of the Classical Nahuatl term *citlalin tlamina* and Aztec portrayals of meteoric darts shot from stars (Figure 16a–b). In Mixtec codices, there are similar depictions of darts protruding from burning balls. This sign serves as the personal name of Lord 9 Flower, a brother of the

Figure 16. Meteors as star-shot darts: (a) Aztec sign for meteor, or *citlalin tlamina*, *Primeros Memoriales*, fol. 282r; (b) Ilhuicatl Mamalhuazocan, the Aztec fifth level of heaven, as the place of shooting stars, *Codex Vaticanus A*, fol. lv; (c–d) Mixtec lord 9 Flower Shooting Star, *Codex Nuttall*, p. 26, *Codex Bodley*, p. 7; (e) name of Lord 9 Flower Shooting Star with serpent, *Codex Bodley*, p. 12; (f) Lord 9 Flower Shooting Star with personal name, *Codex Vindobonensis* obverse, p. 7.

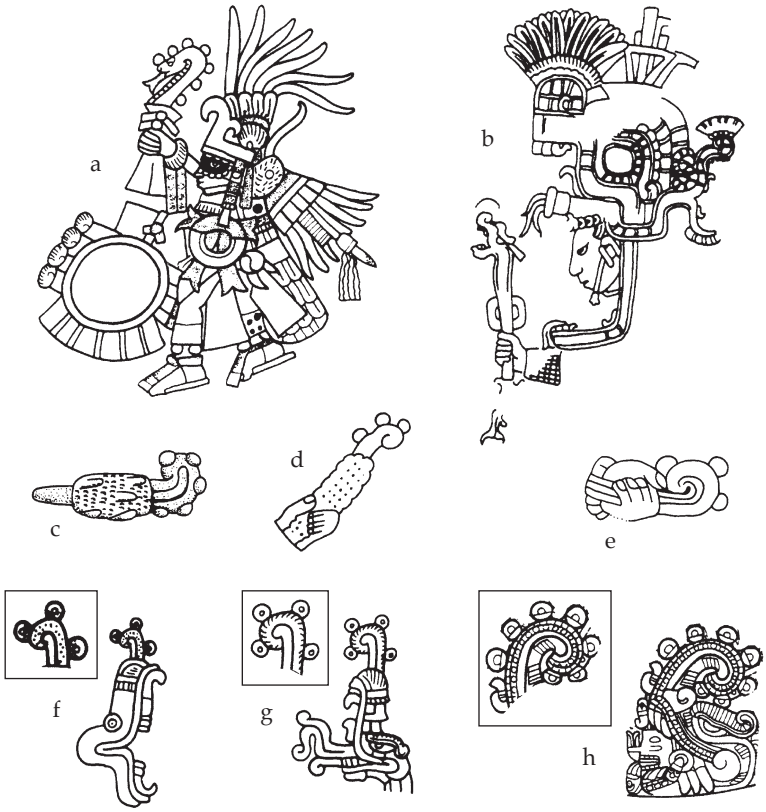


Figure 17. Classic and Postclassic portrayals of starry spear-throwers and the Xiuhcoatl: (a) Huitzilopochtli wielding Xiuhcoatl spear-thrower marked with stars, *Codex Borbonicus*, p. 34; (b) Late Classic Maya ruler holding burning War Serpent *atlatl*, Bonampak Stela 1 (from Taube 1992c:Fig. 6d); (c) spear-thrower ornamented with stars, Teotihuacan (after Séjourné 1959:Fig. 135); (d) spear-thrower with stars, "ball-court marker" from Mundo Perdido, Tikal (after Freidel et al. 1993:Fig. 7.9); (e) spear-thrower with stars, detail of text from Tikal Stela 31 (after Jones and Satterthwaite 1982:Fig. 51a); (f–g) Xiuhcoatl serpents with snout element resembling starry *atlatl*, *Codex Borgia*, pp. 46, 49; (h) Aztec Xiuhcoatl with curving snout resembling starry *atlatl*, detail of Aztec Calendar Stone (see Figure 28).

famed Lord 8 Deer of Tilantongo (Figure 16c–f). In view of the burning ball and dart, this individual could best be referred to as Lord 9 Flower Shooting Star.[11] In the Maya region, meteors are strongly identified with projectiles and warfare. Thus in colonial Yucatec, the term for shooting star or "cometa que corre," is *halal ek'*, meaning "arrow or dart star" (Barrera Vásquez 1980:175). The colonial Tzotzil of Zinacantan referred to a meteor as *yolob vits*, or "mountain arrow" (Laughlin 1988:11:423). The Quiché Maya term for shooting star is *ch'abi q'aq'*, meaning "flaming arrow" (Tedlock 1992:28). In addition, Barbara Tedlock (1992) notes that one colonial Quiché term for meteor was *ch'olanic ch'umil*, or "star makes war." In this regard, David Stuart (personal communication, 1997) notes that two common Classic Maya logographs for war events, the "Earth Star" and "Shell Star" signs, may represent a meteor shower falling from a star (for examples of signs, see Lounsbury 1982:Fig. 2). The parallel lines of dots falling from the stars are very similar to ancient Maya representations of sparks (Figure 4g; see also, *Codex Madrid*, pp. 38b, 51a, 79b, 87b).

An emblem of celestial fire and warfare, the Xiuhcoatl often appears as an *atlatl*, a shooter of starry darts. The Xiuhcoatl commonly displays a series of stars on its snout, probably representing a shower of meteors (Figures 7a, 13a, d–e, 15d, and 17f–h). In the well-known *Codex Borbonicus* scene of Huitzilopochtli wielding his turquoise Xiuhcoatl *atlatl*, the weapon is ornamented with stars, surely referring to the meteoric darts shot by this bellicose god (Figure 17a). The starry *xiuhcoatl* spear-thrower brandished by Huitzilopochtli and other

[11] I am indebted to Monica Bellas Jensen for pointing out the example from the *Codex Vindobonenis* (Figure 16f).

gods in the *Borbonicus* explains the curious series of dots often appearing on the curving tips of Classic-period representations of spear-throwers in both Teotihuacan and Classic Maya art (Figure 17c–e). As in the case of the *Borbonicus* examples, these dots probably depict stars, thereby portraying the weapons as shooters of meteoric darts.[12] The sharply turned snout of the Late Postclassic Xiuhcoatl may also refer to the spear-thrower. In the *Codex Borgia*, this curving, starry element can appear as a separate device affixed to the tip of the snout, and it is also possible to sever Aztec examples from the nose (Figure 17f–h). This curving form closely resembles the bent tip of the spear-thrower, and with the circular stars, probably refers to the Xiuhcoatl as the shooter of starry darts.

The concept of meteors as star darts probably relates to the widespread Mesoamerican belief that dart points and other obsidian objects found in fields are the spent meteoric remains of star arrows. Mention has been made of the Huastec belief that obsidian chips derive from meteors. Bonnie Bade (personal communication, 1997) informs me that according to the Mixtec of San Miguel Cuevas, obsidian chips are stars that fall from the sky. The contemporary Quiché Maya also regard obsidian as meteoric in origin: "since it is believed that obsidian occurs wherever a meteor has landed, arrowheads, obsidian blades, and meteorites are saved and placed together in the traditional household shrine known as the *meb 'il*" (Tedlock 1992:28). In a sixteenth-century Zinacanteco dictionary, *tzo k'anal* is glossed as *cometa*, which Laughlin (1988:1:173) interprets as "meteor, meteorite." In Tzotzil, the same term also refers to obsidian. Laughlin provides the following entry for the contemporary Zinacanteco term for obsidian, *co k'anal*: "Obsidian is thought to have dropped by shooting stars as they fall and return to the sky" (Laughlin 1975:93). Whereas *k'an* signifies "star," *co* is given the rather curious entry of "excrement, shit, guts/person, caterpillar" (Laughlin 1975:93). Thus this Tzotzil phrase for obsidian may signify "caterpillar star excrement." This recalls the nearby Tojolabal concept of *sansewal* meteorites as black wormlike creatures that turn into glassy "mirror stone," quite possibly obsidian.[13]

The identification of meteors with obsidian may well derive from the use of this stone as projectile points. When found unhafted in fields, points and other obsidian fragments could have been readily regarded as the remains of celestial arrows or darts. However, is this an ancient concept or only a recent explanation by modern Mesoamerican peoples? Yet another meaning of obsidian, as excrement, indicates that it probably is also a pre-Hispanic as well as contemporary belief. Mention has been made of the Tzotzil term for meteorites and obsidian, *tzo k'anal*, "star excrement." Although this phrase is only glossed as *cometa* in the sixteenth-century Zinacanteco dictionary, other Mayan languages indicate that at the contact period, obsidian was referred to as excrement. Along with being the Yucatec term for feces, *ta* is also glossed as "lancet" in early colonial Yucatec dictionaries (Schele and Miller 1983:10). Schele and Miller note therein that such lancets were surely of obsidian. More specifically, they were probably prismatic obsidian blades, such as are commonly found over much of ancient Mesoamerica. In Lacandón—a language very closely related to Yucatec—*tah* refers specifically to obsidian. In addition, David Stuart (personal communication, 1995) notes that one Late Classic Maya text from Copán refers phonetically to obsidian as *ta:h* (Figure 18a).

[12] Saville (1925:Pls. 9, 10) illustrates two Late Postclassic wooden spearthrowers marked with a series of stars on their shafts, probably designating them as star shooters.

[13] In appearance, intact prismatic obsidian blades do resemble black worms or caterpillars.

In a great deal of the Mesoamerican meteor lore that has been cited, meteorites are regarded as star feces. Karttunen (1983:35) notes that in some regions of Central Mexico, obsidian is referred to as "caca de estrella," essentially the Nahuatl term for obsidian and meteorite, *citlalcuitlatl*. On page 92 of the *Vaticanus B*, the fierce, celestial being known as Itzpapalotl, or Obsidian Butterfly, has a starry curl extruding from the tip of its abdomen (Figure 30a). Clearly enough, this depicts *citlalcuitlatl* as the meteoric excrement of the Obsidian Butterfly. Carlos Trenary (1987-1988) notes that the concept of meteorites as star excrement is not limited to Mesoamerica, but occurs in many parts of the world. The contact period identification of obsidian with feces strongly suggests that in pre-Hispanic Mesoamerica, this stone was also regarded as meteoric excrement of the stars. The concept of obsidian as a meteor stone may have important implications for the symbolic role of obsidian in Teotihuacan warfare. Volleys of obsidian-tipped projectiles may well have been compared to meteor showers, a celestial "rain of darts."

Much of the present discussion has revolved around the Xiuhcoatl fire serpent as an embodiment of meteors and meteor showers. However, was the War Serpent similarly regarded as a meteoric being in Classic Mesoamerica? The warlike, igneous, and caterpillar qualities of this creature are certainly consistent with Mesoamerican conceptions of shooting stars and meteorites. Like the Xiuhcoatl, the War Serpent can trail flames, often as a prominent burning tail, recalling the long tails of shooting stars (Figures 2g, 8b). The War Serpent also often seems to be in flight, and even can transport warriors on its back (Figure 8a–b).

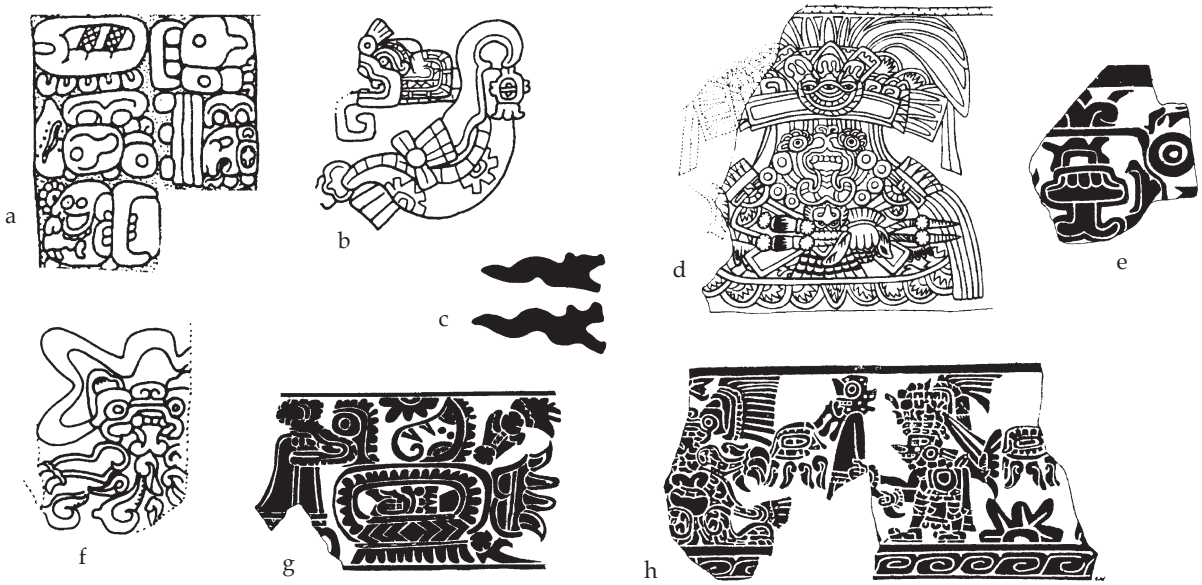


Figure 18. Secondary attributes of the Classic-period War Serpent: (a) Late Classic Maya text describing the obsidian and flint eyes of the War Serpent, detail of text from Copán Stela 11 (detail of drawing courtesy of Linda Schele); (b) War Serpent with star markings and curving obsidian blade, Acanceh, Early Classic Maya (from Taube l992c:Fig. 8a); (c) probable War Serpents in form of obsidian eccentrics, from burials within the Temple of Quetzalcoatl, Teotihuacan (after Cabrera Castro et al. 1991:Fig. 10); (d) War Serpent with curving obsidian blades at base and in headdress, Tepantitla (from Miller 1973:Fg. 193); (e) Teotihuacan vessel sherd of War Serpent with star on snout (from von Winning 1987:2:Chap. 1, Fig. 9q); (f) sherd of War Serpent with star and flames (after Seler 1902-1923:5:Pl. 61); (g) star above butterfly with War Serpent head (from von Winning 1987:2:Chap. 9, Fig. 5); (h) Teotihuacan vessel scene of War Serpent, stars, and flaming eyes (from von Winning 1987:1:Chap. 13, Fig. 5b).

Bonampak Stela 3 portrays the War Serpent as a spear-thrower, a trait also known for the Xiuhcoatl. Dressed in the guise of the War Serpent, Chaan Muan wields an *atlatl* in the form of a War Serpent with a burning tail (Figure 17b). Andrea Stone (1989:158) argues that the burning and sharply bent War Serpent staff appearing in another Late Classic Maya scene also represents a spear-thrower (Figure 8b). Among the Classic Maya, the War Serpent was identified with obsidian. David Stuart (personal communication, 1995) notes that a portion of Copán Stela 11 can be read *ta:h uwu:t tok' uwu:t waxaklahun u bah chan*, meaning "obsidian is its eye, flint is its eye, the eighteen its image snake" (Figure 18a). The Early Classic stucco façade at Acanceh, Yucatán, portrays a star-marked War Serpent coiled around a sickle-shaped weapon, a type of obsidian sacrificial knife known for Teotihuacan (see Berrin and Pasztory 1993:No. 168). The blade handle is bound with fibrous material, quite possibly a *yauhtli* bundle (Figure 18b). One Late Classic carved column from the northern Maya lowlands portrays a ruler wielding the curving, sickle-like blade while dressed in War Serpent costume. As in the case of the Acanceh example, a stylized blood or heart element drips from the tip of the blade (see Mayer 1995:Pl. 83).

At Teotihuacan, the War Serpent is clearly identified with obsidian, warfare, fire, and stars. The two so-called Red Tlaloc War Serpents at Tepantitla are on beds of the aforementioned curving obsidian blades, with more of these knives in their headdresses (Figure 18d). The upper portion of this mural portrays an *atlatl*-wielding warrior trailing flames from his body (Figure 3a). With their upturned snouts and prominent ears, the small, eccentric obsidian serpents found in the Temple of Quetzalcoatl excavations are probable representations of the War Serpent, and recall the aforementioned meteoric *sansewal* serpent-worms of the Tojolabal Maya as well as the Nahuatl *citlalcuitlatl* obsidian worms (Figure 18c). In addition, the War Serpent frequently appears with stars at Teotihuacan (Figure 18e–h). One vessel scene portrays a burning shell platelet War Serpent with a warrior and stars (Figure 18h). A fragmentary but still discernable star occurs immediately above the head of the War Serpent. It is possible that the flaming eyes hovering in the center of the scene represent meteors; in later Central Mexican iconography, stars are frequently depicted as eyes (for examples, see Figures 12f–g, 13a, d–e, 17f–h, 30d–e). Another Teotihuacan vessel portrays the War Serpent as the personification of a flaming star, quite probably a depiction of a fiery meteor (Figure 18f). A fragmentary back mirror published by von Winning (1990:Fig. 10) portrays a frontally facing War Serpent surrounded by a ring of stars, possibly an early version of the Toltec style mirrors marked with the Xiuhcoatl meteor serpents.

Self-Sacrifice, Fire, and Transformation

Among the more striking traits shared between the religious systems of Teotihuacan and the later Toltec and Aztec cultures is the conception of the warrior soul as a flaming butterfly. In Aztec belief, these are the *tonatiuh ilhuicac yauh*, who accompany the sun in its daily ascent into the sky. Both Séjourné (1962:141-146) and Berlo (1982:99, 1983b) have noted that like the later Aztec, the inhabitants of Teotihuacan identified butterflies with both fire and warfare, and considered them the souls of dead warriors. It is especially intriguing that the Aztecs traced this concept to the ancient ruins of Teotihuacan. In the *Florentine Codex*, the resurrection of the soul as a butterfly is ascribed specifically to Teotihuacan:

> And so they named it Teotihuacan, because it was the burial place of the rulers. For it was said: "When we die, it is not true that we die; for still we live, we are resurrected. . . . In this manner they spoke to the dead when one died; . . . "Awaken! It hath reddened; the dawn hath set in. Already singeth the flame-colored cock, the flame-colored swallow; already flieth the flame-colored butterfly" (Sahagún 1950-1982:Book 10:192).

In this text, the rebirth of souls as fiery birds and butterflies is compared to the dawning of the sun. To the Aztecs, Teotihuacan was the place of the first dawning of this creation, the fiery birth of Nahui Ollin, the Fifth Sun.

In Teotihuacan, Toltec, and Aztec art, warriors are frequently represented as butterflies. Thus at Teotihuacan, warrior figures often wear butterfly headdresses and nosepieces in the form of stylized butterflies. One of the more common emblems of Toltec warriors was a large butterfly pectoral, apparently made of turquoise mosaic. For Aztec warriors, large butterfly images were often worn on the back as a form of insignia (see *Primeros Memoriales*, fol. 72r, 74r, 74v, 78v). The curious association of fierce warriors with butterflies may partly derive from the identification of these creatures with the diurnal sun, flowers, and fire.[14] However, the Aztecs also considered the natural event of a moth falling into a flame as a metaphor for self-sacrifice, an act of supreme courage.[15] The following is a Classical Nahuatl description of self-sacrifice recorded by Andrés de Olmos:

> As the butterfly becomes the flame, he lovingly metamorphoses into a rib cage, into a skull. Before the people, above the people, he awaits, publicly he whipped himself, he flogged himself. Then he falls inward there to suffer the stone repeatedly. Heedlessly as the moth he ascends, he falls inward (Maxwell and Hanson 1992:178).

The concept of self-sacrifice epitomizes the code of the warrior, willing to offer his life for the common good.

The virtues of bravery and selflessness are powerfully expressed in the Aztec myth of the first dawning at Teotihuacan. It is not the rich and haughty Tecuciztecatl, but the humble and self-effacing Nanahuatzin who, like a moth, freely throws himself into the terrible flames to become the sun. According to the *Florentine Codex* and the *Leyenda de los soles*, the eagle and jaguar received their dark body markings from the same sacrificial pyre (Sahagún 1950-1982:Book 7:6; Bierhorst 1992:148). The *Florentine Codex* mentions that these markings constituted signs of their personal valor and bravery at the sacrificial pyre. For the Aztecs, the eagle and jaguar were the military orders par excellence. The placement of these creatures at the birth of the sun indicates that to the Aztecs, much of their solar war cult originated in the sacrificial fire at Teotihuacan (Taube 1992c:78).

The self-immolation of Nanahuatzin and Tecuciztecatl and their consequent rebirth relates to burial practices known for Teotihuacan and the later Aztecs. In the funerary rituals of Teotihuacan and the Aztecs, fire served as the transformative process for the metamorphosis and resurrection of the warrior soul. For the Aztecs, both slain warriors and kings were wrapped in bundles to be burned (see Durán 1994:307, 385-386). An excellent representation

[14] Hill (1992:131-132) notes the widespread identification of flowers with flames in Uto-Aztecan languages, including Nahuatl, Yaqui, and the O'odham of the American Southwest.

[15] In Classical Nahuatl, there is the phrase *tlepapalochiua*, meaning "to be placed in a flame like a butterfly," a metaphor for being put in danger (Simeón 1988:704).

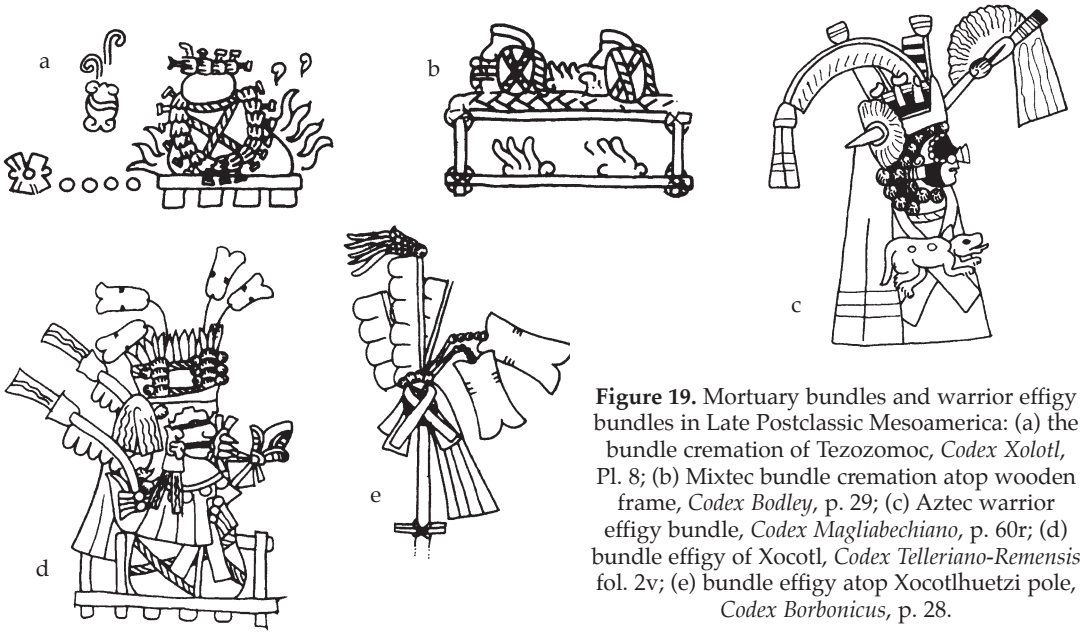


Figure 19. Mortuary bundles and warrior effigy bundles in Late Postclassic Mesoamerica: (a) the bundle cremation of Tezozomoc, *Codex Xolotl*, Pl. 8; (b) Mixtec bundle cremation atop wooden frame, *Codex Bodley*, p. 29; (c) Aztec warrior effigy bundle, *Codex Magliabechiano*, p. 60r; (d) bundle effigy of Xocotl, *Codex Telleriano-Remensis* fol. 2v; (e) bundle effigy atop Xocotlhuetzi pole, *Codex Borbonicus*, p. 28.

of a burning funerary bundle appears in the *Codex Xolotl*, here illustrating the cremation of the Tepanec king Tezozomoc on the day Nahui Ollin (Figure 19a). Although not a common Mixtec mortuary practice, bundle cremations also appear in the Mixtec codices (Figure 19b). In Aztec funerary ceremonies for rulers as well as warriors lost in distant battles, images of mortuary bundles were also fashioned over a core of ocote (*ocotl*), the pitch-filled wood used for torches and for starting fires. Like the bundled dead, these ocote bundles were also burned (Durán 1994:150-151, 284-285, 294). Aside from allowing the bundles to burn well, the ocote may have represented the fiery, potent nature of these beings. The *Codex Magliabechiano* portrays one of these ocote warrior bundle images, here arrayed in paper copies of the turquoise jewelry befitting great warriors and nobility (Figure 19c). According to Durán (1994:150, 294), both the images of Aztec rulers and slain warriors were placed in structures termed *tlacochcalli*, or "house of darts." The strikingly similar treatment of dead warriors and kings was undoubtedly a powerful and profound means of linking these two great offices of Aztec society. In death, kings were treated as valiant warriors, and slain warriors as great kings.

Among the more important annual Aztec rituals pertaining to the souls of warriors was Hueymiccailhuitl, or great feast of the dead, performed during the *veintena* of Xocotlhuetzi. Dedicated to the gods Xiuhtecuhtli and Xocotl as well as deceased adults, one of the major events of this *veintena* was the aforementioned casting of live captives into a large sacrificial hearth, immediately recalling the mythological episode at Teotihuacan (Sahagún 1950-1982:Book 2:17-18, 111-117). Durán (1971:205) notes that this sacrificial fire was called the "divine brazier," quite possibly the same "divine brazier" in which the bundled body of king Ahuiztotl was burned (see Durán 1994:386). The Spanish description of a "divine brazier" also recalls the Nahuatl term for the mythic hearth at Teotihuacan, *teotexcalli*, or "divine oven" (Sahagún 1950-1982:Book 7:4).[16]

[16] Durán (1994:205) mentions that the god impersonators to be sacrificed during Xocotlhuetzi were lined in a row next to the great hearth. Similarly, the *Florentine Codex* describes the gods standing in two lines at the sides of the sacrificial hearth at Teotihuacan (Sahagún 1950-1982:Book 7:5).

Aside from the fire offering of warriors to Xiuhtecuhtli, Xocotlhuetzi also concerned images of the deity Xocotl, also known as Otontecuhtli. This figure appeared as a warrior bundle adorned with paper butterflies, referring to the butterfly soul released during the burning of the bundle (Figure 19d–e). Xocotlhuetzi signifies "the descent of Xocotl," and among the prominent rites during this *veintena* was the removal of the Xocotl warrior bundle image from atop a tall pole (Figure 19e). Seler (1902-1923:4:68) describes the Xocotlhuetzi rites and the Xocotl pole:

> It was for the male deceased and for a god who was called Xocotl ("Younger Brother"?) or Otontecuhtli ("Prince of the Otomí"). Some have identified him with the god of fire, but he had white color and black design on his face and is further characterized by having two butterflies stuck in his hair; he is the picture of the dead warrior. His mummy bundle or his likeness in bird form was erected on high masts and torn down by the young. He came down, he came to earth, he came as fast as a meteor down to earth (translation in Seler 1990-1998:4:41).

Both the Aztec *Codex Borbonicus* and the *Tonalamatl Aubin* portray the Xocotl pole for the *trecena* 1 Flint, dedicated to the sun god, Tonatiuh, and the god of death, Mictlantecuhtli. In view of the solar and death gods, it is appropriate that these scenes concern the fate of the warriors who died for the sun. Thus the upper right corner of page 10 of the *Borbonicus* scene portrays the warrior bundle so prominent in the Xocotlhuetzi rites. In addition, the base of the Xocotl pole is flanked with the turquoise jewelry worn by the warrior bundle effigies, including *xiuhuitzolli* crowns, *yacaxihuitl* nosepieces, and *xolocozcatl* pectoral.

Although Seler sees no direct relation of Xocotl to Xiuhtecuhtli, others consider him a fire god (e.g., Galinier 1990:244; Sahagún 1997:98-99, n. 29). His shared appearance in Xocotlhuetzi and his identification with fiery butterflies and warrior bundles indicate a close relation to the fire god. Although of different color, the horizontal facial bands of Xocotl are strikingly similar to the facial marking of Xiuhtecuhtli. In addition, Xocotl commonly has a headdress containing a pair of sticks ornamented with paper butterflies (Figure 19e; for other examples, see *Primeros Memoriales*, fol. 262r; *Codex Mendoza*, fol. 10v, for Xocotlan toponym). These sticks are probable variants of the pair of fire drill sticks commonly worn in the headdress of Xiuhtecuhtli. As the image of a warrior mortuary bundle, Xocotl is identified with the *xiuhuitzolli* crown and other turquoise ornaments appearing with warrior bundles and Xiuhtecuhtli. In fact, both the *xiuhuitzolli* crown and the *yacaxihuitl* nose ornament appear as the personal name of Motecuhzoma II, or Motecuhzoma Xocoyotzin, which Seler (1902-1923:2:731-736) interpreted as the sign for the spirit of the warrior (Figure 28b). Although the name Xocoyotzin appears to have little to do with Xiuhtecuhtli, it is entirely apt for Xocotl as a play on the term for "the younger" (*xocoyotzin*). In other words, the name glyph for Motecuhzoma II is that of Xocotl.

The meaning of the name *Xocotl* is poorly known. Although Seler tentatively suggested that it signified "younger brother," it also may be closely related to the term *ocotl*, that is, the pitch-filled wood used in firemaking. According to Galinier, Xocotl, or Otontecuhtli, was the god of ocote wood: "según la tradición prehispánica, Otontecuhtli tenía como doble a Ocotecuhtli, el Señor de Ocote" (Galinier 1990:244). In addition, it will be recalled that the Aztec images of warrior bundles contained a core of ocote wood (e.g., Figure 19c). It is possible that Xocotl represents a particular aspect of fire. To pursue the suggestion presented by Seler, Xocotl may represent meteoric fire, that is, the fire acquired from the starry souls of

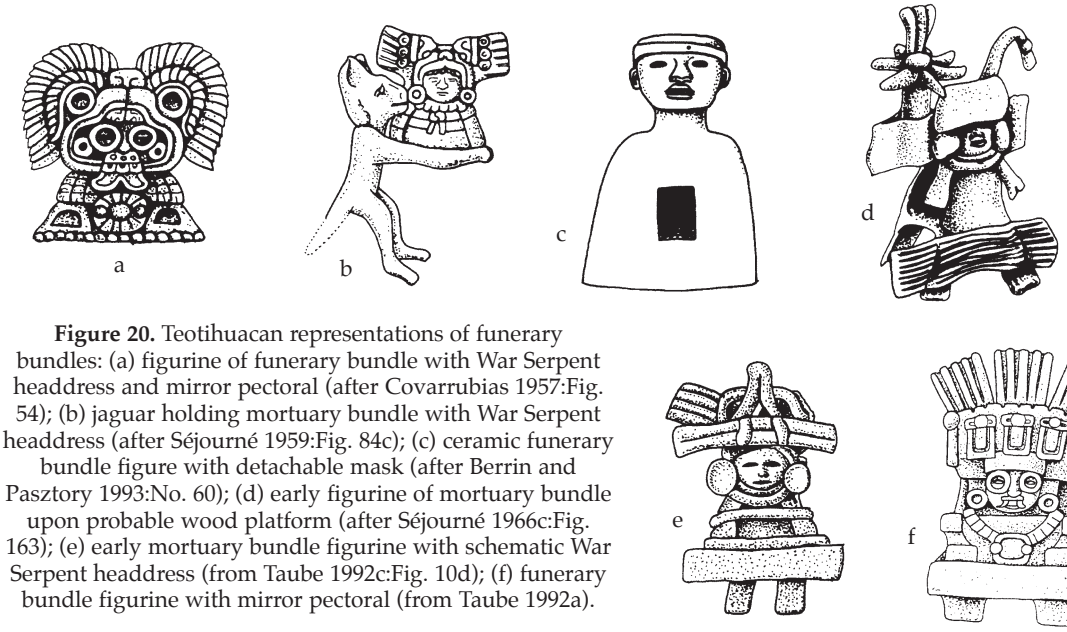


Figure 20. Teotihuacan representations of funerary bundles: (a) figurine of funerary bundle with War Serpent headdress and mirror pectoral (after Covarrubias 1957:Fig. 54); (b) jaguar holding mortuary bundle with War Serpent headdress (after Séjourné 1959:Fig. 84c); (c) ceramic funerary bundle figure with detachable mask (after Berrin and Pasztory 1993:No. 60); (d) early figurine of mortuary bundle upon probable wood platform (after Séjourné 1966c:Fig. 163); (e) early mortuary bundle figurine with schematic War Serpent headdress (from Taube 1992c:Fig. 10d); (f) funerary bundle figurine with mirror pectoral (from Taube 1992a).

dead warriors.[17]

In the major accounts of Xocotlhuetzi, the Xocotl pole is well-integrated with the fire sacrifice of the captive warriors. It is entirely conceivable that the pole represents the "world tree" as the central world axis, the aforementioned *tlalxicco* of the fire god. However, the pole may also allude to a massive fire drill, with the Xocotl warrior image placed atop the vertical male stick.[18] During rites of fire making, the spinning vertical stick may have been compared to the world axis, the source of divine forces, here in the form of the engendering spark. It will be recalled that Seler (1902-1923:4:72) compared the turning of the stars around the central northern pole to the making of fire. In the *Florentine Codex*'s descriptions of the Xocotl pole, it is said to be festooned with heavy ropes, recalling the twisted cord of the pump drill and the Classic Maya place of Na Ho Chaan.[19] The descent (*uetzi*) of the Xocotl image was

[17] Whereas in Jacaltec Mayan, the word for ocote is *tah*, the term for meteorite is *tahwi* (Ramírez Pérez et al. 1996:248). In Mayan languages, the words for ocote and obsidian are often very similar if not identical (see Schele and Miller 1983:Tables 1 and 2). It will be recalled that obsidian chips are often considered as meteorites, or "star excrement," among Mesoamerican peoples. One Kekchi Mayan dictionary defines *cha* as "splinter of glass for bloodletting," *chaj* as "ocote," and *chahim* as "star." In addition, *chajal* is glossed as "certain caterpillar (*gusano*) of a butterfly (Sedat 1955:60-61)."

[18] Aside from the Xocotl beam, the pole of the well-known *volador* dance is very much like a massive pump drill. In this case, the twisted ropes wrapped around the pole cause the descending dancers to spin, quite like the spinning motion of the drill. The *volador* dancers are frequently portrayed as bird-men, and in a number of sources the image topping the Xocotl pole is also described as a bird. Both the Xocotl image and the avian *voladores* dancers may refer to the souls of warriors, which are referred to as birds as well as butterflies. Galinier (1990:396) notes that the contemporary Otomí consider the *volador* pole as a symbolic world axis, the "ladder of heaven." Among the Otomí, the fiery hearth also serves as the center of the world (Galinier 1990:145).

[19] During a fire ceremony performed by the contemporary Otomí of San Pedro Tlachichilco, a pine tree covered with twisted wool threads is erected next to the central hearth. Armed with miniature bows, a group of boys known as "Apaches" shoot down *ídolos* tied to the multicolored cords (Galinier 1990:242). Although making no mention of the twisted cords nor the warrior youths taking down the deity images, Galinier (1990:244) compares this tree to the Xocotlhuetzi pole.

tantamount to the making or "descent" of fire, *uetzi in tlequauhuitl*. The victorious youth who obtained the Xocotl effigy was immediately escorted to the pyre where the captives had been sacrificed:

> he who had captured the *xocotl* … came down. When he had descended, when he had come down, thereupon the old men [fire priests] seized him; they took him up to the place of sacrifice. There they gave him gifts (Sahagún 1950-1982:Book 2:116).

More than just a festival to honor desceased adults, Xocotlhuetzi is a complex and subtle body of symbolic imagery pertaining to fire, self-sacrifice, and the celestial souls of dead warriors.

Much of the essential symbolism pertaining to Xocotlhuetzi also appears with Aztec conceptions of the first dawning at Teotihuacan. Along with the sacrificial pyre, the prominent Xocotl warrior bundle also relates to the Aztec origin of the Fifth Sun. In the Aztec myth, the gods were sacrificed at the birth of the sun. According to the *Leyenda de los soles* (Bierhorst 1992:149) and Mendieta (1980:79), this occurred after the morning star, Tlahuizcalpantecuhtli, was shot by the solar darts of the newly born sun.[20] In the Mendieta account, the gods killed themselves in defeat after the slaying of their companion. From the mantles of these dead gods, the first god bundles were made by their worshippers:

> and these devotees and servants of these said gods wrapped these cloths around certain sticks, and made a notch or hole in the stick; they put as the heart some green stones and serpent and jaguar skin, and this bundle they called *tlaquimillolli* (Mendieta 1980:80; author's translation).

Fashioned from the gods defeated at the first solar battle at Teotihuacan, these are the original warrior bundles. With their core of wood, they are quite like the Aztec effigy warrior bundles containing ocote in place of the body.

For Classic-period Teotihuacan, there is abundant evidence for warrior bundles, which constituted a major funerary cult at this site (see Headrick 1996). Although Paul Westheim (1965:96-97) first suggested that the well-known stone masks of Teotihuacan may have been funerary, he did not interpret them as items worn on bundles destined for cremation. At Teotihuacan, the clearest representations of funerary bundles are represented in ceramic, not stone. By far the most commonly found depictions occur as two types of ceramic figurines. One form, often designated as a "half-conical figure," represents a seated individual with cloth covering the lower body, creating a conelike effect (Figures 20a–b, 21c). Séjourné (1966c:245) interpreted certain of the half-conical figurines as funerary bundles. However, according to Séjourné, these bundles were not burned, and thus are distinct from the aforementioned Aztec crematory bundles. Often wearing War Serpent headdresses, these figures typically appear as inert, lifeless objects. In one instance, the figure occurs as a static bundle carried by an anthropomorphic jaguar (Figure 20b). The half-conical figures are probably related to a large, hollow ceramic sculpture discovered on the north side of the Ciudadela (Figure 20c). Like the half-conical figures, it lacks limbs and has a broad, flaring base. Supplied with a detachable ceramic mask, this curious figure has been interpreted as a mortuary bundle (Múnera 1991; Berrin and Pasztory 1993, n. 60; Headrick 1996). In style and proportion, the detachable mask is virtually identical to the stone examples, indicating that they were

[20] The Mendieta account refers to the morning star simply as Citli, or "star."

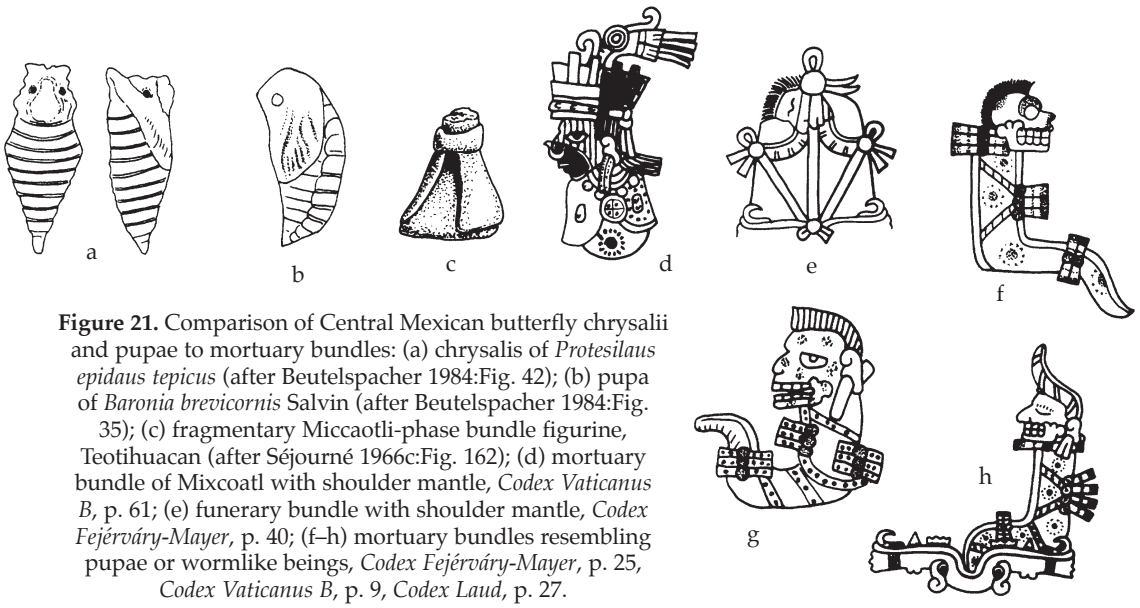


Figure 21. Comparison of Central Mexican butterfly chrysalii and pupae to mortuary bundles: (a) chrysalis of *Protesilaus epidaus tepicus* (after Beutelspacher 1984:Fig. 42); (b) pupa of *Baronia brevicornis* Salvin (after Beutelspacher 1984:Fig. 35); (c) fragmentary Miccaotli-phase bundle figurine, Teotihuacan (after Séjourné 1966c:Fig. 162); (d) mortuary bundle of Mixcoatl with shoulder mantle, *Codex Vaticanus B*, p. 61; (e) funerary bundle with shoulder mantle, *Codex Fejérváry-Mayer*, p. 40; (f–h) mortuary bundles resembling pupae or wormlike beings, *Codex Fejérváry-Mayer*, p. 25, *Codex Vaticanus B*, p. 9, *Codex Laud*, p. 27.

probably also bound to funerary bundles.

One of the examples cited by Séjourné is the second major type of funerary bundle figurine, often referred to as a "throne figure" (Figure 20d–f). This is essentially a more elaborate form of the half-conical figure, with the mortuary bundle placed on a wooden frame or scaffold. In the case of the early example illustrated by Séjourné, the platform appears to have a base of horizontal faggots of wood (Figure 20d). Aside from Séjourné, Harold McBride (1969) and Annabeth Headrick (1996:212) have interpreted throne figurines as representations of mortuary bundles. I suspect that the wooden platform found with these examples is for burning the bundle. Similar wooden platforms are found with burning mortuary bundles appearing in Late Postclassic scenes of cremations (Figure 19a–b). In addition, one early Teotihuacan censer portrays an expanded version of the throne figure, with the censer bowl

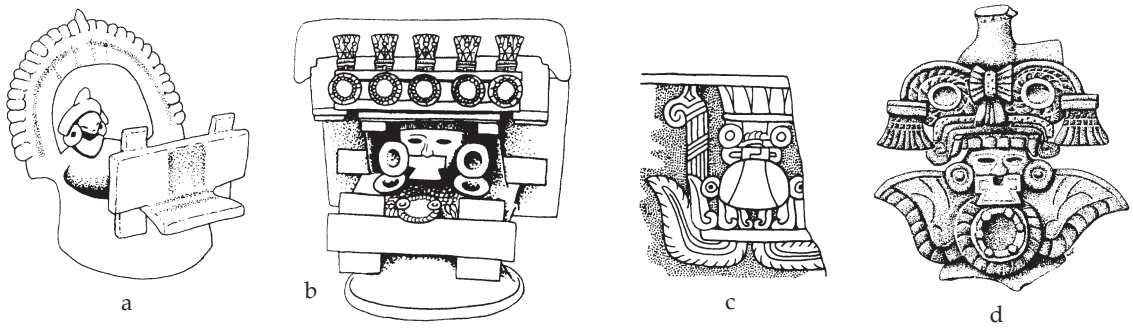


Figure 22. Teotihuacan-style funerary bundles and censers: (a) early Teotihuacan censer with bundle figure and scaffold found with "throne" figurines, drawing by author from item on display in Museo Arqueológico de Teotihuacan; (b) Escuintla-style censer lid in form of masked bundle with wooden frame—note mica mirror pectoral (after Berjonneau et al. 1985:Pl. 172); (c) mortuary bundle atop flames, detail of carved vessel on display in Museo Arqueológico de Teotihuacan; (d) Escuintla-style censer lid portraying butterfly soul—note mirror serving as torso (from von Winning 1987:1:Chap. 9, Fig. 21a).

separating the conical figure from the platform (Figure 22a).[21] When set afire, this censer would portray the mortuary bundle burning on the wooden scaffold.

At Teotihuacan, there is archaeological evidence for the burning of mortuary bundles (Séjourné 1959:56; Serrano and Lagunas 1975; Serrano 1993; Sempowski and Spence 1994:145-146). In this case, the cloth-wrapped bundle apparently was placed in a burning burial pit:

> Fire was used to burn certain materials at the bottom of the pit before proceeding with a burial, which may be noted by the presence of carbon fragments under the skeleton. It is also striking that mica sheets and slate disks decorated with red and ocher lines frequently accompany a body; in some cases, as at La Ventilla, true mica beds were found on which the burial was deposited (Serrano 1993:112).[22]

The slate disks are the remains of pyrite mosaic mirrors, such as are commonly found on the figurine mortuary bundles (Figure 20a, f; see Taube 1992a).[23] One fragmentary Teotihuacan vessel portrays a probable masked mortuary bundle placed on flames (Figure 22c). A curved, burning torch stands at one side of the masked bundle. This scene may well represent the burial practice of placing the bundled dead in a burning pit.

Mention has been made of the early censer with the mortuary bundle and wooden frame (Figure 22a). This censer is probably a rare precursor to the well-known composite censers of Classic-period Teotihuacan. As in the case of the Miccaotli-period example, these later censers are also representations of the mortuary bundle, with the frequently masked figure on the conical lid representing the individual to be burned. An Early Classic example from the Escuintla area of Guatemala appears with not only the wood frame, but the mirror pectoral as well (Figure 22b). With the mortuary figure as the lid, the Classic-period censers replicate the aforementioned practice of placing the mortuary bundle in the burning pit. Just as the interior of the funerary pit is set afire, the incense or other fire offering is lit within the censer basin. The mortuary bundle lid is then placed atop the burning offering, thereby copying the crematory burials. This would explain the abundance of butterfly imagery appearing on Teotihuacan-style censer lids. According to Berlo (1983b), the elaborate censers of Teotihuacan and Escuintla concern a funerary cult centered on the butterfly soul of the dead warrior. These censers summoned the resurrected butterfly soul by reenacting the funerary rites of cremation. A number of examples from the Escuintla region portray the censer lid as the reborn butterfly (Figure 22d). In this case, the large pyrite mirror pectoral

[21] Marked with clay pellets, the curving element arching over the top of the Teotihuacan censer is notably similar to examples occurring on roughly contemporaneous Protoclassic censers from Colima (see Kubler 1986:328-329). However, in this case the pellet-marked arch is typically a bicephalic serpent from which other serpents descend. This arch probably represents the sky as a bicephalic feathered serpent, with the falling snakes probably alluding to lightning, meteors, or perhaps both. An Early Classic censer lid from Tetitla, Teotihuacan, portrays another curving arch marked with feather edging (see Berlo 1984:Pl. 26). In this case the arch is marked with a series of eyes, a common means of representing stars in ancient Mesoamerica.

[22] The Classical Nahuatl term for mica is *metzcuitlatl*, meaning "excrement of the moon" (Sahagún 1950-1982:Book 11:235). In the aforementioned quote by Gamio, this same term is used to refer to meteorites in the region of Teotihuacan. During Classic-period Teotihuacan, mica was frequently used to represent the shining face of miniature mirrors (e.g., Figure 22b).

[23] It appears that for Late Postclassic mortuary bundles, the golden pyrite mirror was replaced with a gold disk. The mortuary god bundles appearing on *Vaticanus B* pages 60 to 62 all wear gold disk pectorals (Figure 21d). For the Tarascans of Michoacán, a circular gold shield was worn behind the bundle of the deceased Cazonci ruler (Craine and Riendorp 1970:47).

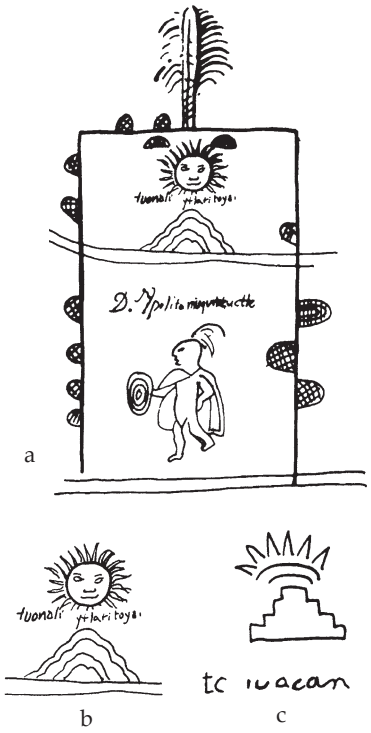


Figure 23. Early colonial portrayals of Teotihuacan: (a) plan of Ciudadela and Temple of Quetzalcoatl, *Plano de San Francisco Mazapan* (after Gamio 1922:1:Pl. 148); (b) detail of Temple of Quetzalcoatl; (c) toponym for Teotihuacan, *Codex Xolotl*, plate 6.

seems to serve as both the body of the fiery butterfly and the burning hearth.

In a discussion of Teotihuacan composite censers, Berlo notes that butterflies are an ideal means of expressing rebirth and metamorphosis: "The butterfly is a natural choice for a transformational symbol. During its life, it changes from caterpillar to pupa wrapped in hard chrysalis, to butterfly: a process of birth, apparent death, and resurrection as an elegant airborn creature" (Berlo 1982:99). If this be the case, what are warrior bundles? They are the chrysalii or cocoons of warrior butterfly souls. Fire is the transformational means by which the moribund bundle metamorphosizes into the flaming butterfly spirit. With the burning of the enveloping shroud, the butterfly soul emerges as flame out of the funerary pyre. For Teotihuacan and Late Postclassic images of mortuary bundles, a cloth frequently covers the shoulder area of the bundle (Figures 20a–b, d, 21c–e). This corresponds to the wing region of the chrysalis, which resembles a shoulder mantle (Figure 21a–b). Durán (1994:294) mentions that the effigy funerary bundle of Axayacatl was capped with a small cape known as the *papalotilmantli*, or "butterfly mantle." Aside from the shoulder mantles appearing on many funerary bundles, there are also representations of strange, wormlike mortuary bundles, quite possibly referring to the pupate quality of the bundled corpse (Figure 21f–h).

The Turquoise Enclosure

In Aztec accounts of the birth of the Fifth Sun, the Pyramids of the Sun and Moon are the places where Nanahuatzin and Tecuciztecatl did penance before their self-immolation. However, where was the place of the climactic, fiery sacrifice and rebirth? In one passage of the *Florentine Codex*, this sacrificial hearth is referred to as the *xiuhtetzaqualco*, or "turquoise enclosure" (Sahagún 1950-1982:Book 1:84). The same source describes this turquoise hearth as the pivotal *tlalxicco*, or "earth navel," the dwelling place of Xiuhtecuhtli-Huehueteotl (Sahagún 1950-1982:Book 6:88-89). The great Ciudadela constitutes the one major enclosure at Teotihuacan. Cowgill suggests that the Ciudadela constitutes the cosmological center of the Teotihuacan world: "the Ciudadela was on the axis of the East and West Avenues and adjacent to the intersection of that axis with the Street of the Dead, and there is every reason to believe that this location signified not only the center of the four quarters of Teotihuacan, but the intersection of cosmic axes" (Cowgill 1983:333).

Along with being the possible symbolic center of the Teotihuacan world, the Ciudadela also contains the Temple of Quetzalcoatl and its many sacrificed warriors. Elizabeth Boone (1996) notes that the early colonial map of San Francisco Mazapan contains an illustration of the Ciudadela and the Temple of Quetzalcoatl with an accompanying gloss in Nahuatl, which can be interpreted as "place of those who died in honor of the sun" (Figure 23a). This

term immediatly recalls the Aztec *tonatiuh ilhuicac yauh*, the deceased warriors who accompany the sun to zenith. According to Boone, this may allude to the ancient mass sacrifice at the dedication of the Temple of Quetzalcoatl. However, it could simultaneously refer to the sacrificial place where the sun was born, that is, the turquoise hearth. In the early colonial illustration, a large sun hovers directly above the Temple of Quetzalcoatl (Figure 23a–b). As a sun above a pyramidal mound, this is notably similar to a sign for Teotihuacan appearing in the *Codex Xolotl* (Figure 23c). Although the *Codex Xolotl* sign could be interpreted as a representation of the Pyramid of the Sun, the major event at this site was not the preparatory penance of Nanahuatzin, but his fiery resurrection as the sun.

Saburo Sugiyama (personal communication, 1996) notes that the largest known workshop of the composite ceramic censers, containing some 20,000 fragments and complete examples, lies in the northwest portion of the Ciudadela (see Berrin and Pasztory 1993:Note 77). This censer workshop was clearly part of the Ciudadela complex and its associated rituals. Not only did a stairway connect the workshop to the Ciudadela, but portions of similar censers were found in the residential areas behind the Temple of Quetzalcoatl. It would appear that the censer cult of dead warriors was an important component of the symbolism and rituals performed in the Ciudadela. Both the Teotihuacanos as well as later Aztecs may have regarded the Ciudadela and the Temple of Quetzalcoatl as the place of warriors who died for the sun.

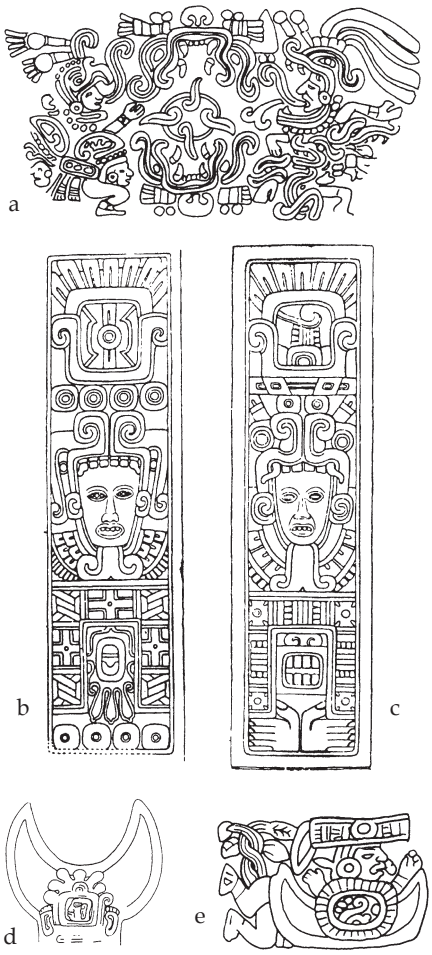


Figure 24. Possible Classic-period versions of the creation of the sun and moon at Teotihuacan: (a) Escuintla-style vessel illustrating pair of individuals flanking hearth with War Serpents (from Taube 1992c:Fig. 21b); (b–c) Stelae 3 and 1, Xochicalco (from Sáenz 1961:Pls. 4, 2); (d) lunar sign with glyph of lifeless head and flames, Xochicalco (after de la Fuente et al. 1995:Illus. 22); (e) figure with lunar crescent and Reptile's Eye sign, detail of Esquintla-style vessel (after Berrin and Pasztory 1993:No. 178).

Along with being an account of creation, the myth of the birth of the Fifth Sun at Teotihuacan expresses some of the most essential aspects of the Aztec solar war cult, including self-sacrifice, fire, butterflies, mortuary bundles, and rebirth. In contrast to the Aztec origin myth of Huitzilopochtli, the Fifth Sun myth is probably of considerable antiquity in Mesoamerica. I have suggested that a probable Classic version of this myth appears on a Teotihuacan-style Escuintla vessel (Figure 24a) (Taube 1992c:79). The center of the scene portrays a rimmed burning hearth flanked above and below by two War Serpent faces. The pair of gesticulating individuals on either side of the central fire may be early versions of Nanahuatzin and Tecuciztecatl, the gods who became the sun and moon.

A version of the Fifth Sun creation myth may also have been present at Late Classic

Figure 25. The Kan cross as a Classic-period sign for fire and centrality: (a) Kan cross with flames, detail of text from Tomb 5, Huijazoo (after Miller 1995:Pl. 35); (b) Huehueteotl censer with Kan crosses on rim, Cerro de las Mesas (from Taube 1992b:Fig. 66c); (c) Maya maize god rising out of Kan cross in center of turtle carapace, interior of Late Classic bowl (from Freidel et al. 1993:Fig. 6:20b); (d) censer and probable *yauhtli* bundle with enclosure marked with Kan crosses, detail of Late Classic Maya vase (after Kerr 1990:192).

Xochicalco. Two of the three stelae from Structure A seem to constitute a pair, and portray busts of individuals wearing War Serpent headdresses above rectangular enclosures (Figure 24b–c).[24] The two figures are topped by large day names with broad fans of radiating feathers. In the case of Stela 3, the date is 4 Motion, or in Nahuatl, Nahui Ollin, the name of the sun born at Teotihuacan. In the first analysis of these stelae, excavator César Sáenz (1961:58) interpreted this date as an explicit reference to the Fifth Sun created at Teotihuacan. The other monument, Stela 1, has the date 7 Reptile's Eye. Unfortunately, the meaning of this date is poorly known, as the Reptile's Eye sign has yet to be correlated with any of the known twenty day names of Late Postclassic Central Mexico. Another, recently excavated Xochicalco monument may refer to the creation of the moon. The sculpture portrays a lunar crescent with a complex hieroglyphic sign (Figure 24d). Along with containing a lifeless human head, the glyph is topped with flames, both elements suggesting the fiery self-sacrifice at Teotihuacan. The upwardly pointed feet at either side may refer to the ascent of the newly born moon. At the base of the sign are the remains of a coefficient, with only a portion of the bar for the number 5 surviving. The complex glyph may have contained the curl of the Reptile's Eye sign above the human head. However, a far clearer representation of the Reptile's Eye sign with a lunar crescent occurs on an Early Classic Escuintla vessel (Figure 24e). The glyph and lunar crescent form the torso of a male with upraised arms, a probable rare representation of the moon god. Whereas Xochicalco Stela 3 represents the sun, Stela 1 probably depicts the moon.

Both the Stela 1 and 3 figures are atop rectangular enclosures marked with the Saint Andrew's cross, also known by the Mayanist term of "Kan cross" in Mesoamerican studies. During the Late Postclassic period, this element served as an Aztec sign for turquoise, recalling the description of the turquoise enclosure at Teotihuacan. For the Classic period, however, the Kan cross probably did not refer to turquoise, as this exotic stone was not common in

[24] Also placed in the Structure A stelae cache were objects in pure Teotihuacan style, including three stone statuettes, a fragmentary stone mask, and most striking of all, a stone Huehueteotl censer (see Sáenz 1961:Figs. 8, 10, and 12). This collection of objects probably constituted an intentional allusion to the great center, Teotihuacan, a theme apparently also expressed by the three stelae.

Mesoamerica until the Postclassic period. Nonetheless, some of the other major meanings of this sign, including "fire" and "centrality," were already present in Classic Mesoamerica. A text from Tomb 5 at Huijazoo suggests that the Late Classic Zapotec regarded the Kan cross as a fire sign. In this text, the sign sprouts flames, much as if it were a burning hearth (Figure 25a). The Classic-period Huehueteotl censer from Cerro de las Mesas, Veracruz, has a series of Kan crosses encircling the rim of the surmounting brazier, recalling the Aztec description of the fire god residing in center of the turquoise enclosure hearth, the *tlalxicco* earth navel (Figure 25b).

Recent research indicates that the ancient Maya regarded the central *axis mundi* and surrounding world as a three-stone hearth placed on the carapace of a turtle (Freidel et al. 1993:65-67, 80-82). In a number of instances, the center of the turtle shell is marked with the Kan cross (Figure 25c). In Late Classic Maya scenes illustrating Teotihuacan iconography, the Kan cross often appears in contexts of fire and centrality. For the previously discussed Late Classic Maya scene of fire offering, a brazier and probable *yauhtli* bundle appear with an enclosure marked with Kan crosses (Figure 25d). The *yauhtli* bundle Tlalocs appearing on the rim of the previously described Petén-style bowl are also accompanied by curving bands of Kan crosses and vegetal material, effectively making an enclosure around the central, burning War Serpent (Figure 6a). Marked with Kan crosses, the rectangular elements at the base of Xochicalco Stelae 1 and 3 probably refer to an early form of the turquoise enclosure, a place identified with fire and centrality.

The *Codex Nuttall* of the Late Postclassic Mixtec contains a probable representation of the creation of the sun and moon at Teotihuacan. This scene is squarely embedded in the early mythological and legendary portion of the codex, and precedes an account of the deity 9 Wind, the Mixtec version of Ehecatl-Quetzalcoatl. However, it should be noted that the mythological scene on page 17 of the *Codex Nuttall* is *not* the native Mixtec account of solar creation, but rather, represents an intentional borrowing of Central Mexican mythology. John Pohl (1994:103-106) notes that the principal protagonist of the *Codex Nuttall*, Lord 8 Deer, consciously identified himself with Central Mexican Chichimec individuals, rites, and iconography. The left half of page 17 of the *Nuttall* and the neighboring right portion of page 18 represent a series of Mixtec gods convening at a great burning pyre. A pair of individuals seated atop mountains flank the sides of the pyre (Figure 26a). Whereas one of the figures is named 4 Motion, the other has the name 7 Reed. Clearly enough, 4 Motion is identical to Nahui Ollin, the name of the sun born at Teotihuacan. In the Central Mexican *Historia de los reyes de Culhuacan*, 7 Reed is the name of the moon (Caso 1959:91). The scene on page 17 of the *Codex Nuttall* probably represents the Central Mexican sun and moon gods engaged in penance on their two mountains, the Pyramids of the Sun and Moon.[25] At the base of the pyre there is the Mixtec sign for town surmounted by a U-shaped enclosure marked with two merlons on either side. This enclosure is painted the color of turquoise, probably referring to the *xiuhtetzaqualco* containing the sacrificial pyre.

The mythological scene on *Nuttall* pages 17 and 18 apparently represents the assembling of the gods at the creation of the sun and moon at Teotihuacan. In the immediately following

[25] However, John Pohl (personal communication, 1997) notes that scenes in the *Codex Nuttall* are tied to specific features in the local landscape of the Mixteca. Although it is quite possible that the Teotihuacan solar creation myth may have been used to describe a particular local place, the town of two hills and the turquoise enclosure are yet to be documented for Oaxaca.

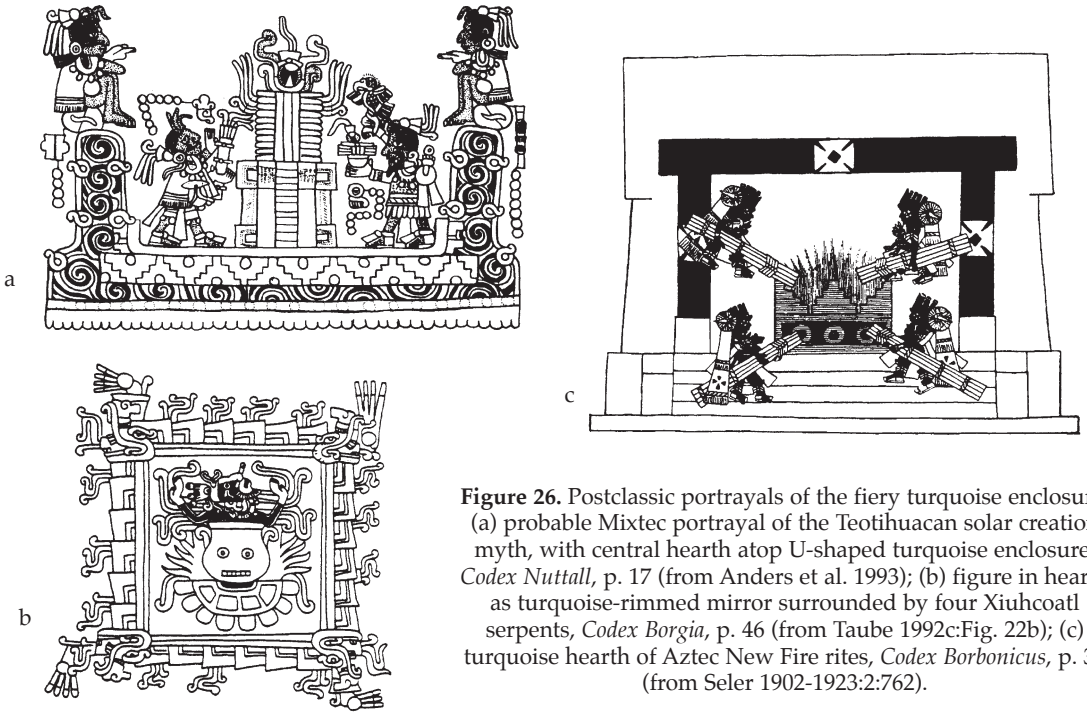


Figure 26. Postclassic portrayals of the fiery turquoise enclosure: (a) probable Mixtec portrayal of the Teotihuacan solar creation myth, with central hearth atop U-shaped turquoise enclosure, *Codex Nuttall*, p. 17 (from Anders et al. 1993); (b) figure in hearth as turquoise-rimmed mirror surrounded by four Xiuhcoatl serpents, *Codex Borgia*, p. 46 (from Taube 1992c:Fig. 22b); (c) turquoise hearth of Aztec New Fire rites, *Codex Borbonicus*, p. 34 (from Seler 1902-1923:2:762).

scene on page 18, there is the first appearance of the sun in the manuscript. Hovering in the sky with an aged creator couple, it is explicitly marked with the Motion or Ollin sign, despite the fact that the Mixtec sun god was named 1 Death, not 4 Motion. On page 21 of the *Nuttall*, there is a clear contrast between a sun marked with the Motion sign and another with the day name Death, that is, the Mixtec sun.[26] The sun first appearing on page 18 is an explicit reference to Nahui Ollin, the sun born at Teotihuacan.

Another probable reference to the birth of the Fifth Sun at Teotihuacan appears on page 46 of the *Codex Borgia*. This complex scene is dominated by an enclosure formed of four burning Xiuhcoatl serpents surrounding a central turquoise hearth (Figure 26b). Combined, the serpents and central hearth represent the turquoise enclosure. In the center of the hearth, there is a vessel containing a figure with upraised arms. An aspect of Quetzalcoatl, this character appears no less than six times on page 46 of the *Borgia*. Both Seler (1963:1:149) and I (Taube 1992b) have interpreted this scene as a version of the self-immolation of Nanahuatzin and the creation of the sun. However, page 46 of the *Borgia* has also been viewed as a depiction of the New Fire rites, such as were performed every fifty-two years by the Aztecs (Anders et al. 1993:241). Indeed, page 46 contains an explicit representation of fire drilling upon the abdomen of Xiuhtecuhtli. The use of Xiuhtecuhtli probably relates to the Aztec practice of drilling the new fire on the chest of a captive warrior whose name contained the term *xihuitl* (Sahagún 1950-1982:Book 7:31).

The two cited interpretations of page 46 of the *Codex Borgia* are by no means

[26] This contrast between the 4 Motion and 1 Death suns could have temporal significance in the *Codex Nuttall*. Here the sun of 4 Motion may have been used to designate the ancient "sun" or time of Classic-period Teotihuacan, whereas 1 Death may have represented the current sun of the Postclassic Mixtec.

contradictory; the New Fire rites reenacted the birth of the sun at Teotihuacan. The body of the captive warrior was entirely consumed in the flames of the new fire, the same fate as Nanahuatzin and Tecuciztecatl (see Sahagún 1950-1982:Book 7:26). During the nocturnal New Fire ceremonies, a series of deity impersonators assembled at the place of fire making, recalling the convening of the gods in darkness at Teotihuacan (Sahagún 1950-1982:Book 7:27). In the New Fire scene on page 34 of *Codex Borbonicus*, the series of god impersonators file toward the new fire burning in the Tlillancalco, the house of darkness. This procession of god impersonators is notably similar to the assembly of gods in the aforementioned scene on pages 17 and 18 of the *Nuttall*. Four individuals holding bundles of firewood stand within the house of darkness (Figure 26c). According to Seler (1902-1923:2:763), these figures are dressed as the warrior spirits who accompany the sun, the *tonatiuh iluicac yauh*. In support, Seler notes that the *xiuhuitzolli* crown, *xolocozcatl* pendant, and paper costume is notably similar to the warrior bundle effigy appearing in the *Codex Magliabechiano* (Figure 19c). It will be recalled that such bundle effigies contained a core of ocote, and were probable embodiments of Xocotl, a god of deceased warriors and the making of new fire. The central, burning hearth is painted turquoise blue, once again alluding to the turquoise enclosure (Figure 26c).

Burning Hearths and Solar Mirrors

The burning turquoise hearth appearing on page 46 of the *Codex Borgia* represents a particular form of artifact, a turquoise-rimmed back mirror (Taube 1983:123, 1992a:186). The spoked and petalled rim of the turquoise hearth and the four encircling Xiuhcoatl fire serpents are diagnostic of Early Postclassic Toltec-style back mirrors (Figure 27a–b). The central pyrite mosaic mirror corresponds to the sacrifical pyre. An Early Postclassic bas-relief from Tula portrays a petalled back mirror flanked by flames, much as if it were a burning hearth (Figure 27b). It is noteworthy that the four burning Xiuhcoatl serpents on *Borgia* page 46 have the directional colors of blue, yellow, white, and red, thereby marking the central hearth as the *tlalxicco* world axis. By extension, the four Xiuhcoatl serpents occurring on the rim of Toltec-style back mirrors probably also define the central pyrite mirror as the world center.

A relatively common sculptural theme in Late Classic Mesoamerica is a standing figure

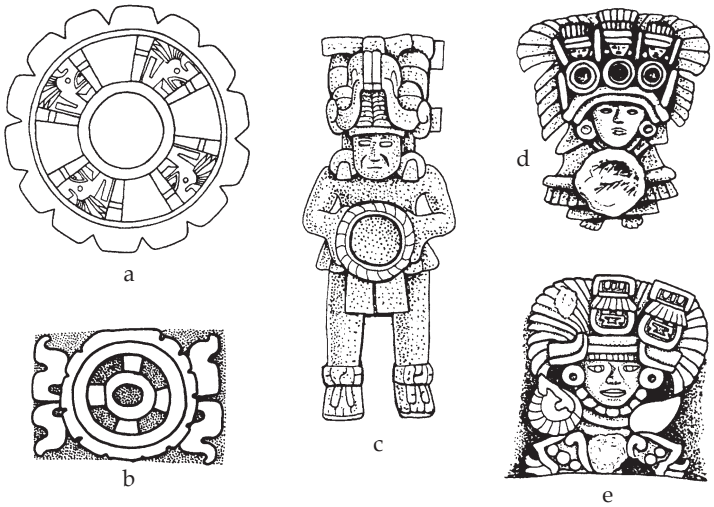


Figure 27. Mirrors, fire, and centrality in Central Mexico: (a) schematic drawing of Toltec-style turquoise mirror with four Xiuhcoatl serpents on rim (from Taube l992a:Fig. 19d); (b) burning Toltec-style mirror, Tula (after de la Fuente et al. 1988:No. 144); (c) standing figure with War Serpent headdress and mirror on abdomen, Late Classic Puebla (from Taube 1992c:Fig. 20c); (d) figure holding corroded miniature pyrite mirror on abdomen as *tlalxicco* (detail after Séjourné 1966c:Fig. 193); (e) butterfly figure from interior of host figure sculpture with miniature pyrite mirror as abdomen (from Taube 1992c:Fig. 23b).

with a War Serpent headdress and a circular mirror over the lower abdomen (Figure 27c; for other examples, see Taube 1992c:Fig. 9.20). These mirrors not only mark the navel of the standing figure, but probably also allude to the *tlalxicco* world navel as a hearth (Taube 1992c:81). At Teotihuacan, a number of the large, hollow ceramic "host figures" contain figurines in the region of the navel (for examples of host figures, see Berrin and Pasztory 1993:210-215). Two of these smaller, interior figurines have the corroded remains of miniature pyrite mirrors in the center of their bodies, a reference to the *tlalxicco* hearth as a pyrite mirror (Figure 27d–e). For one of these figures, the pyrite mirror forms the abdomen of an anthropomorphic butterfly. This figure is very much like the aforementioned Escuintla censer lids portraying warrior butterfly souls (Figure 22d). In both instances, the mirror represents both the burning hearth and the body of the rising, reborn butterfly.

Coggins (1987:465) suggests that new fire was drilled on mirrors, and cites the archaeological presence of burned mirrors at Chichén Itzá. In scenes of fire drilling, the fire drill is often upon a circular mirror placed atop the Xiuhcoatl (Figure 15a–c). One Aztec sculpture portrays a coiled Xiuhcoatl with burning mirrors on its body, which Hermann Beyer (1965b:Fig. 208) identified as a *tezcacoatl* (mirror snake) form of the Xiuhcoatl (for mirror detail, see Taube 1992a:Fig. 14b). It will be recalled that in the Tojolabal description of shooting stars, meteorites were compared to both glass and mirrors. Along with obsidian, iron pyrite may have been considered as a meteoritic stone in ancient Mesoamerica. Today, iron pyrite nodules are among the most common type of "pseudo-meteorites," that is, objects mistaken for the remains of shooting stars (Brown 1973:177). In addition, as an iron ore, pyrite produces strong sparks when struck with stone, which was undoubtedly a common process in the initial stages of lithic reduction for the preparation of iron pyrite mirrors.

Although Toltec-style turquoise mirrors do allude to starry, meteoric fire, this is but the generative spark for the great solar pyre. The principal meaning of such mirrors is the hearth and birthplace of the sun, and by extension, the burning sun itself. The Toltec-style back mirrors with four encircling Xiuhcoatl were extremely widespread in Mesoamerica, and are well-documented at Chichén Itzá, Tula, and even distant Casas Grandes in northern Chihuahua, near the border of the American Southwest (see Figures 10h–j, 27a).

Some of the symbolism of the Toltec-style turquoise mirrors apparently continues in contemporary Navajo creation mythology of the American Southwest. According to Navajo belief, the sun was created by fire drilled upon a turquoise disk: "[T]he First Pair made the sun of a large turquoise disk surrounded by red rain, lightning, and various kinds of snakes. It was heated by Black God's fire drill" (Reichard 1963:17). Surrounded by serpents, this turquoise sun disk is notably like the Toltec mirror with its Xiuhcoatl rim.[27] Born of fire and comet, Black God is the shambling old god of fire, who hurls his fire drill as a powerful weapon (Reichard 1963:196, 399-403). Black God is also a starry being, and is marked with the Pleiades on his body (Reichard 1963:402; see also Haile 1947:2).[28] According to Haile (1947:5), certain Navajo use the appearance of the Pleiades to plan the fall or winter Mountainway ceremonial, which features the drilling of fire and a fire dance atop a mountain. The identification of the Pleiades with fire drilling recalls both the colonial Yucatec account of the

[27] During the Navajo Mountainway rites, there is the manipulation of solar images fashioned from circular, store-bought glass mirrors (Haile 1946:35-37; Wyman 1975:27).

[28] According to Berard Haile (1947:2), the Pleiades appear on the left temple of Black God, who is the deity of gleaming starlight as well as fire.

fifth level of heaven and the Aztec new fire rites of the 52-year cycle, timed according to the zenith passage of the Pleiades in mid-November (Sahagún 1950-1982:Book 4:143; Broda 1982:134). Among the Hopi of Walpi, Arizona, close neighbors of the Navajo, new fire is drilled in mid-November during the initiation rites of Wuwuchim (Fewkes 1900a, 1922; Parsons ed. 1936b:964-965).[29] For the Wuwuchim rites recorded by Alexander Stephen in 1891, the Pleiades had a major role. From November 12 to 14, the Pleiades and Orion were carefully watched, particularly the zenith position of the Pleiades near midnight (Parsons ed. 1936b:969, 973, 977).

The Aztec Calendar Stone

Aside from contemporary Navajo lore, the concept of solar turquoise disks is well documented among the Aztecs. For example, there is the Aztec phrase *xiuhchimaltonatimomanaquiuh*. The *Florentine Codex* paraphrases this as follows: "The *xiuh*-means blue; *chimal*-means shield, that is round, *tonati*-means the sun; *momanaquiuh* means it will come to emerge" (Sahagún 1950-1982:Book 1:81-82). Thus this phrase describes the dawn rising of the blue turquoise solar disk. The great Aztec Calendar Stone constitutes an especially massive turquoise sun disk (Figure 28). Noting the series of turquoise signs encircling the edge of the central sun, Herbert Spinden (cited in Saville 1922:75) interpreted the Calendar Stone as a solar disk fashioned of turquoise mosaic (Figure 28c). However, in view of the pair of Xiuhcoatl serpents circling the edge of the disk, the Calendar Stone can be more closely related to the Toltec-style mirror with its turquoise Xiuhcoatl rim. With this comparison, the central Nahui Ollin sign would correspond to the pyrite mirror face (Taube 1983:125).

The Xiuhcoatl serpents of the Toltec-style mirrors and the Calendar Stone are the fiery, meteoric beings that lit the original solar pyre. Durán describes the dedicatory rites of an important solar monument on the day preceding Nahui Olin:

> [T]he priests took from the shrine of Huitzilopochtli a serpent made from paper coiled around a pole, all made of [red arara] feathers . . . A priest carried the snake, twisted around a pole. He then set it on fire and walked around the stone, incensing it with the smoke. While it was burning, he climbed to the top of the monument and threw the still smoldering serpent upon all the blood that bathed the stone. At this moment a great paper mantle was brought and was cast upon the stone. It burned together with the serpent until there was nothing left of it and the blood was consumed or had dried (Durán 1994:190-191).

Heyden (1977:191, n. 4) notes that this serpent is the same type of feathered Xiuhcoatl torch used in the rites of Panquetzalli, where the burning Xiuhcoatl descends from the temple of Huitzilopochtli. In the dedication of this sun stone, the Xiuhcoatl was used to light a solar

[29] During the 1891 Wuwuchim rites, the vigil of November 13 was particularly dramatic in that only the Agave and Horn Societies who previously drilled the new fire were allowed out:

> When the Pleiades come over head, the marching ceases, at least so I understand. No women look out, no one stirs abroad save the Agaves and the Horns...
>
> As the night grew later the pace waxed swifter until, as the Pleiades reached their zenith, both Horns and Agaves were encircling Walpi at a furious run, and this they maintained until the Pleiades and Orion were in the place they occupied when the Singers and Wü'wüchîmtü finished their songs on the previous nights at the [kiva] hatch, or about 12:30 (Parsons ed. 1936b:977).

The frenetic circling of Walpi recalls the act of fire making, the spinning of the fire drill.

fire atop the blood of captive warriors, a vivid reenactment of the original sacrificial pyre at Teotihuacan.

Aside from the ceremony performed for the sun stone of Motecuhzoma I, Durán also describes the dedication of a solar monument commissioned by the following ruler, Axayacatl:

> [B]efore the sacrifice [of 700 warriors] a fire priest came out of the temple carrying a great incense burner in the form of a serpent, which they called *xiuhcoatl*, "fire serpent," and which was already lit. The fire priest walked around the Stone four times, so that the smoke from the incense bathed it, and finally he placed this upon the Stone, where it finished burning (Durán 1994:290).

For both the Motecuhzoma I and Axayacatl stones, the solar images were lit by burning Xiuhcoatl serpents, thereby endowing them with heat and life. It is also noteworthy that the Xiuhcoatl serpents are carried entirely around the sculptures, recalling the Xiuhcoatl encircling the rims of Toltec-style mirrors and the Aztec Calendar Stone. Of course, the act of lighting these solar images replicated the fiery birth of the sun at Teotihuacan.

Along with representing the descending Xiuhcoatl serpents that lit the original solar pyre, the Calendar Stone also depicts the mythic emergence of the new sun at Teotihuacan. More than simply a solar sign, the date of Nahui Ollin encircled by the turquoise ring alludes to Teotihuacan and the turquoise enclosure. It will be recalled that this enclosure refers to the pivotal hearth of Xiuhtecuhtli, who resides in the *tlalxicco* earth navel. Seler (1902-1923:2:799) suggested that the four flanges of the central Nahui Ollin refer to the four cardinal directions as well as previous creations, a concept also noted by subsequent authors (e.g., Beyer 1965b:188-200; Sáenz 1961:58). As Sáenz (1961) notes, these four directions mark the Ollin sign as the world center. In addition, the ring of twenty day names encircling the Nahui Ollin probably also mark centrality (Figure 28a). Since each of the twenty day names designates a particular direction, this series defines the Ollin sign as the central place surrounded by the four directions. However, the Calendar Stone is not simply a depiction of the earth navel. Durán (1994:191) notes that the aforementioned sun stone of Motecuhzoma I represented the sun at high noon. As a burning hearth lying in the center place of the earth, the *tlalxicco* mirror is reflected into the center of the sky as the sun at zenith. In other words, the Calendar Stone not only represents the fiery birth of the sun god, but also the sun at full glory, in the center of the turquoise blue diurnal sky.

Mention has been made of the flying warrior souls who accompany the rising sun to zenith, which appears to have been the special paradisical realm of the butterfly and bird warrior spirits. According to the *Florentine Codex*, after passing the sun to the western female *mociuaquetzque* warriors at zenith, the male spirit warriors dispersed to enjoy the nectar of celestial flowers:

> [The male warrior spirits] rose up; they came ascending to meet the noonday sun there . . . There these eagle-ocelot warriors, those who had died in war, delivered the sun into the hands of the women. And then [the warriors] scattered out everywhere, sipping, sucking the different flowers (Sahagún 1950-1982:Book 6:163).

The burning of funerary bundles at Teotihuacan and with the later Aztecs concerns the concept of the metamorphosed butterfly accompanying the reborn sun at dawn. Aztec funerary practices reveal the close link between deceased warriors, kings, and the sun. According to

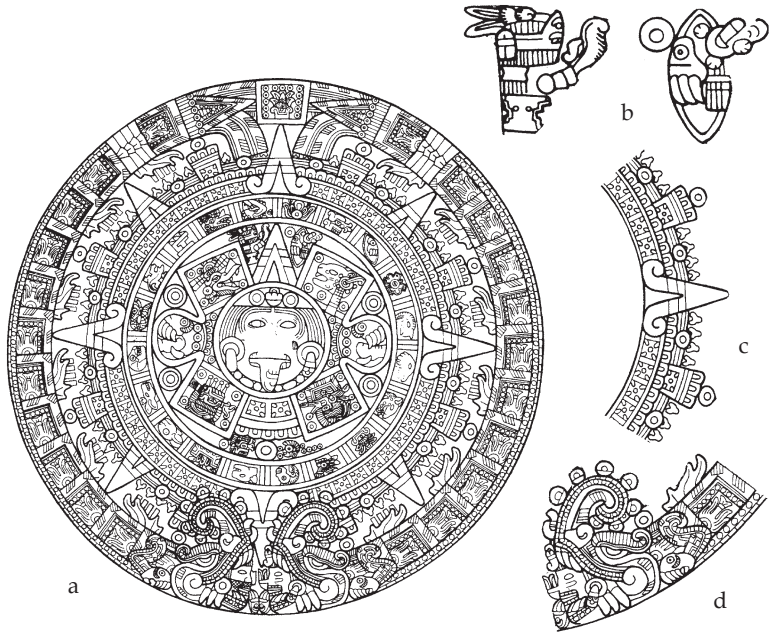


Figure 28. The Aztec Calendar Stone and the birth of the sun at Teotihuacan: (a) Aztec Calendar Stone with Nahui Ollin in center (drawing courtesy of Emily Umberger); (b) glyphs at upper portion of Nahui Ollin sign, signs for Xocotl and the *trecena* 1 Flint; (c) detail of turquoise ring enclosing Nahui Ollin sign; (d) detail of Xiuhcoatl with fiery butterflies on segmented body and winglike flame on shoulder.

Durán (1994:386), the cremated remains of Ahuizotl's funerary bundle was buried next to a solar stone. In another passage, Durán mentions that the burned remains of the bundle effigies in commemoration of three slain brothers of Motecuhzoma II were also buried near the Calendar Stone: "The ashes were gathered and buried in the Altar of the Eagles (as they called it), next to the Sun Stone" (Durán 1994:428). It is probably no coincidence that in the *Codex Xolotl*, the funerary bundle of Tezozomoc is burned on the day 4 Ollin, the name of the sun created at Teotihuacan (Figure 19a).

The Calendar Stone displays several hieroglyphic signs alluding to the mythic birth of the sun at Teotihuacan and the soul of the dead warrior. At the uppermost portion of the disk—between the *yauhtli*-marked tails of the descending *xiuhcocoa*—there is the date 13 Acatl within a square enclosure, designating the Aztec year 13 Reed (Figure 28a). As Seler (1902-1923:4:63-64) notes, 13 Reed is the specific year in which the sun was created at Teotihuacan. Two other glyphs appear below, at the upper portion of the Ollin sign (Figure 28b). One sign is the Xocotl glyph of Motecuhzoma II, complete with the *xiuhuitzolli* crown, *yacaxihuitl* nosepiece, as well as the *aztaxelli* feather ornament of warriors. The accompanying glyph is the date 1 Flint, the *trecena* devoted to the sun and death gods and the soul of the dead warrior. In fact, Seler (1902-1923:2:800) interpreted the Xocotl sign as a reference to the dead warriors who accompany the sun. In view of the accompanying date of 1 Flint, it is likely that the Xocotl glyph is a reference to the slain warriors who accompany the sun.

Rather than being a static depiction of the sun, the Calendar Stone is a dynamic portrayal of transformation and resurrection. The encircling, larval Xiuhcoatl serpents sprout winglike flames on their shoulder and backs, possibly alluding to the spark that grows and matures into fluttering butterfly flames, which also appear in each segment of the Xiuhcoatl bodies (Figure 28a, d). However, the central Nahui Ollin sign presents the most striking reference to metamorphosis and rebirth (Figure 29a). With its four-flanged form, the Ollin sign is strikingly similar to Aztec representations of butterflies, a comparison that has been already made

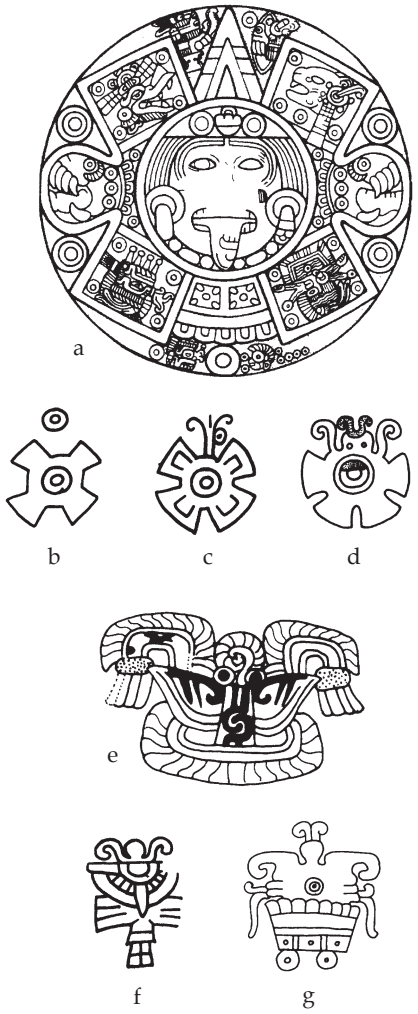


Figure 29. The Ollin sign and butterflies: (a) four-flanged Ollin sign from center of Calendar Stone (detail of drawing courtesy of Emily Umberger); (b) date 1 Ollin, *Primeros Memoriales*, fol. 302v; (c) Aztec ceramic butterfly stamp (after Franco 1959:Pl. 15.5); (d) Aztec butterfly, *Codex Magliabechiano*, p. 8v; (e) butterfly rising out of petalled mirror, Teotihuacan (after Langley 1992:Fig. 25); (f) butterfly emerging out of solar sign, personal name of Mixtec Lady 3 Jaguar, *Codex Bodley*, p. 16; (g) flaming butterfly rising out of burning vessel, *Codex Borgia*, p. 66.

by Beutelspacher (1984:16). The Ollin sign appearing in the *Primeros Memoriales* is virtually identical to an Aztec butterfly seal, save that the latter is supplied with antennae and an eye (Figure 29b–c). According to Durán (1971:187), the Ollin sign represents a butterfly. The Calendar Stone represents the newborn sun rising as a fiery butterfly out of the burning hearth. A related image occurs at Teotihuacan, where a butterfly with star markings rises out of a circular, petal-rimmed mirror (Figure 29e). In Late Postclassic Central Mexican iconography, flames may be represented as a butterfly rising out of a burning hearth (Figure 29g). One Mixtec noblewoman, Lady 3 Jaguar, has the personal name Butterfly Sun Jewel (Caso 1979:2:320). In the *Codex Bodley*, this personal name is rendered as a butterfly rising out of a solar disk, essentially the central theme of the Aztec Calendar Stone (Figure 29f).

Aside from the Calendar Stone, there were surely other Aztec representations of butterflies rising out of solar disks. Durán mentions a complex depiction of the sun within the warrior House of the Eagles:

> [A]bove an altar there hung on the wall a painting done with brush on cloth: the image of the Sun. This figure was in the form of a butterfly with wings and around it a golden circle emitting radiant beams and glowing lines (Durán 1971:188).

The House of the Eagles was dedicated to the Eagle and Jaguar Warriors. It was their sacred charge to support and maintain the movement of the sun, a path that truly began at the blazing sacrificial hearth of Teotihuacan.

Conclusions

To the Aztecs, Teotihuacan was not only the place where time began, but was also the origin of a basic creed—the active role of the warrior, and by extension society, in the support of the sun. Certain aspects of the Aztec solar war cult were inherited from the earlier Classic-period traditions of Teotihuacan. Much of this continuity revolves around the symbolism of fire, including the hearth and centrality, the burning of warrior bundles, and the concept of the warrior soul as a fiery butterfly. However, other elements of the Aztec solar war cult were probably later Postclassic

innovations, such as the Eagle and Jaguar military orders, which have no clear, immediate predecessors at Teotihuacan. In addition, although the Aztec regarded the Pyramids of the Sun and Moon as the places where Nanahuatzin and Tecuciztecatl performed their penance, it is by no means certain whether these structures were identified with the sun and moon during Classic-period Teotihuacan. However, the map of San Francisco Mazapan suggests that the Aztecs did regard the Ciudadela as a place of solar sacrifice, a theme consistent with the mass burials within the Temple of Quetzalcoatl and the mass production of composite censers. Both the mass graves and the censers may well relate to a Classic form of the Aztec *tonatiuh ilhuicac yauh*, the warrior souls who follow the sun. It is probable that the Ciudadela is the turquoise enclosure of Aztec myth, as well as the *tlalxicco* center of the Teotihuacan world.

The War Serpent helmets upon the sides of the Temple of Quetzalcoatl refer to both fire and warfare, and demonstrate the pivotal role of these two themes in Teotihuacan worldview. Both the War Serpent and its Postclassic descendant, the Xiuhcoatl, portray supernatural caterpillars, the pupate butterfly before metamorphosis. Although the Teotihuacan and Classic Maya forms of the War Serpent are clearly the same essential being, there are subtle differences. Whereas the Classic Maya creature is strongly serpentine, the Teotihuacan War Serpent tends to display jaguar attributes with greater frequency, including prominent ears and clawed forelimbs. Nonetheless, the illustrated example from Xico and the "Red Tlalocs" from Tepantitla reveal that the Central Mexican form is by no means an ordinary jaguar, but displays the petalled eyes of butterflies (Figures 10d, 11b, and 18d). Along with physical characteristics, such as the upwardly turned nose, the War Serpent and Xiuhcoatl also share secondary attributes, much of this related to fire and warfare. Thus there are vegetal, Mexican year-sign bundles, probable depictions of bound *yauhtli* incense. In addition, both the War Serpent and the Xiuhcoatl were identified with shooting stars, widely regarded as flaming darts of celestial fire. However, the Xiuhcoatl and the earlier War Serpent differ in one major sense. Whereas the Xiuhcoatl was closely identified with turquoise, this stone was notably rare in Classic Mesoamerica. Instead, obsidian appears to have been the stone of the War Serpent. Nonetheless, it is likely that both obsidian and turquoise were closely identified with shooting stars and meteorites.

It has been noted that in Mesoamerica, meteorites are widely considered as caterpillars or grublike beings, sources of celestial fire, and presumably the sparks created in ritual fire making. However, aside from the work of Trenary (1987-1988) and Köhler (1989), there has been surprisingly little interest in the symbolism of shooting stars and meteorites in ancient or contemporary Mesoamerica. Instead, Venus has dominated studies of Mesoamerican starlore, including the importance of Venus in warfare. Indeed, Venus is the "great star" of ancient Mesoamerica, but clearly there are other equally impressive celestial phenomena. As burning celestial darts, shooting stars are excellent symbols for omnipotent, divine weaponry and warfare. Moreover, meteors and meteor showers are frequently dazzling and even frightening events. The following is an eyewitness account by Professor Thomson who witnessed the Leonid meteor shower on November 12, 1833, in Nashville, Tennessee:

> [I]t was the most sublime and brilliant sight that I have ever witnessed. The largest of the falling bodies appeared about the size of Jupiter or Venus when brightest. The sky presented the appearance of a shower of stars and omens of dreadful events (cited in Brown 1973:205).

As annual events, the seasonal appearance of the Leonids, Perseids, and other meteor showers may have been closely watched by ancient Mesoamerican peoples.[30]

In ancient Mesoamerica, two star groups appear to have been closely identified with meteors and fire making: the Pleiades and the belt of Orion. Mention has been made of the Pleiades with relation to the Yucatec Maya fifth level of heaven and the use of these stars to time the drilling of new fire in ancient Central Mexico and the contemporary American Southwest. Along with representing blazing meteors, the Xiuhcoatl was probably also related to the Pleiades. Each of the descending Xiuhcoatl on the Aztec Calendar Stone have seven stars on their snouts, the conventional number of stars counted for the Pleiades. Located close to the Pleiades, there is the sword and belt of Orion, which Coe (1975b:25-26) has persuasively identified as the Aztec *mamalhuaztli* ("fire drill") constellation. It will be recalled that during the Hopi Wuwichim new fire rites at Walpi, both the Pleiades and Orion are closely observed.

Aside from Orion and the Pleiades, shooting stars and meteorites are also closely related to another celestial phenomenon, lightning. Decorated with turquoise mosaic and seven pyrite disks, an undulating flint thunderbolt from the Aztec Templo Mayor appears to be a conflation of lightning and meteor symbolism (see Weigand 1997:27). The celestial fire of lightning surely overlaps with the fire symbolism of meteors. For the Lacandon Maya, shooting stars are the castaway cigars of the Chacs, the gods of rain and lightning (Thompson 1970b:113). According to Tozzer (1907:157), the Yucatec Maya regard meteorites (*chink'aak'*, or "hanging fire") as the points of arrows shot by the Chacs. Among the Tojolabal, *sansewal* refers to lightning (*relampago*) as well as fiery meteorites. In eighteenth-century Europe, meteorite falls were generally dismissed as "thunderstones," that is, stones created by lightning striking the earth (Burke 1986:14). The close relation of meteors to lightning partly derives from the thunderous effect of blazing meteoric fireballs, or bolides, when they enter the atmosphere.[31] At times, such entries can create a deafening series of explosive sounds.

> If a bolide breaks into smaller fragments . . . each component may set off its own set of cannonades and detonations so that the observers on the ground are treated to an impressive and sometimes frightening tattoo of noises. Such sounds can often be heard more than a hundred kilometers distance from the final impact point (Brown 1973:163)

Along with lightning, the Tlaloc war complex of Classic Mesoamerica may have also encompassed the symbolism of shooting stars and meteorites.

It has been noted that in Late Postclassic Central Mexican thought, the souls of slain warriors were identified both with butterflies and the night stars. The two soul forms,

[30] Although an annual event, the Leonid meteor showers vary in intensity, with especially strong displays averaging every 33.25 years (Burke 1986:84-85). According to elderly Otomí informants, particularly impressive meteor showers, or "lluvia de estrellas" occur every thirty years, a fairly close approximation of the Leonid cycle (Galinier 1990:527).

[31] A recent newspaper article entitled "Flashing Meteor Sparks Panic in West Texas," describes a bolide witnessed on October 9, 1997: "A meteor flashing across the sky yesterday sent a ripple of fear through West Texas, where alarmed residents flooded police lines with reports of an explosion, a shuddering boom, and a burst of smoke" (*San Francisco Chronicle*, October 10, 1997, page A3).

The Niels Boehr Institute of Copenhagen subsequently described a major meteoric fall two months later on December 9, 1997, in southern Greenland: "The flashes observed in conjunction with the meteorite were so bright as to turn night into daylight at a distance of 60 miles, and can be compared to the light of a nuclear explosion in the atmosphere" (*New York Times*, December 19, 1997, page A11).

butterflies and stars, are not necessarily contradictory, as the stars represent the nocturnal form of the butterfly souls. Seler (1902-1923:4:722-723) notes that butterflies can be represented with starry eyballs (e.g., Figure 29d):

> This eye was introduced because the butterfly pictures were fire butterflies, symbols of the flame and the spirits of the dead, and these, dwelling in the sky, were considered as stars (translation in Seler 1990-1998:5:316).

In Late Postclassic iconography, stars are frequently depicted with wings, conflations of the butterfly and star aspects of the warrior soul (Figure 30c–e, g). Aztec forms of these butterfly stars are frequently supplied with stone blades, and thereby refer to the fierce star goddess Itzpapalotl, the obsidian butterfly (Figure 30e, g) (Seler 1902-1923:4:723-724). Among the back emblems donned by Aztec warriors was that of Itzpapalotl, which displays the pair of sticks and paper butterflies found with Xocotl, the god of slain warriors (Figure 30b). Itzpapalotl is also closely identified with Mixcoatl and the Centzon Mimixcoa, the warrior spirit stars, as well as the women warrior souls of the west (Seler 1902-1923:4:76-80, 1963:1:137-142). A warlike, starry being of slain warriors, the Obsidian Butterfly is centered in the symbolism of shooting stars and meteorites.

In Late Postclassic art, the butterfly stars are frequently accompanied by stars hanging

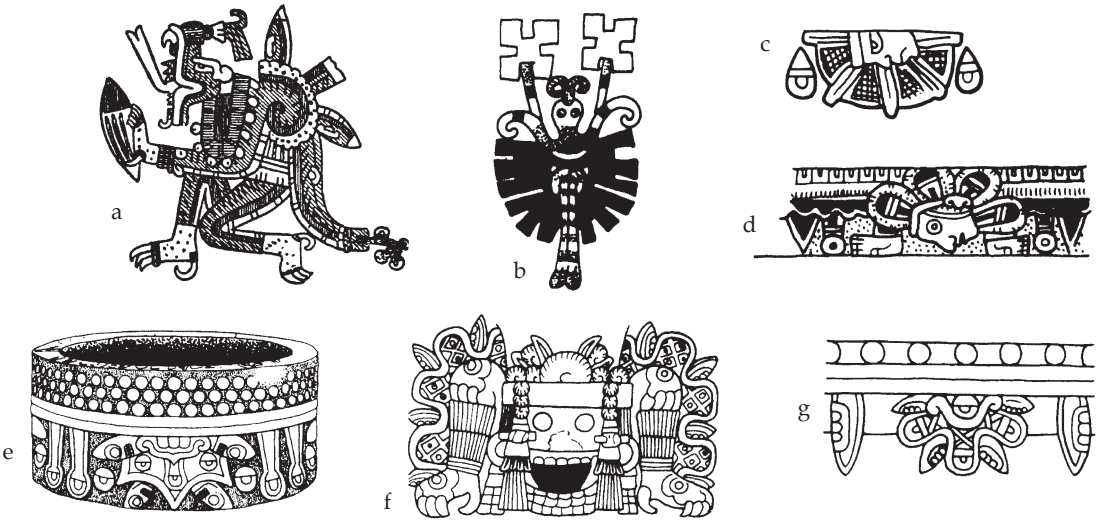


Figure 30. Warrior butterflies, stars, and the goddess Itzpapalotl, Obsidian Butterfly: (a) Itzpapalotl excreting a starry stream, or *citlalcuitlatl*, *Codex Vaticanus B*, p. 92 (from Seler 1902-1923:4:721); (b) Aztec Itzpapalotl warrior standard, *Primeros Memoriales*, fol. 78v; (c) butterfly warrior soul as night star, detail of Mixtec carved bone, Tomb 7, Oaxaca (after Caso 1969:Fig. 193); (d) starry butterfly warrior soul flanked by shooting stars, detail of Mitla mural (after Seler 1902-1923:4:318); (e) schematic Itzpapalotl star flanked by pairs of shooting stars, Aztec carved stone vessel (after Seler 1902-1923:4:318); (f) detail of Aztec sculpture of diving Itzpapalotl with obsidian blades on cross-hatched wings (after Seler 1963:1:Fig. 365); (g) schematic Itzpapalotl star sign flanked by obsidian blades, detail of side of Aztec Calendar Stone (after Beyer 1965b:Fig. 240); (h) Aztec sculpture of diving Itzpapalotl with obsidian blades on cross-hatched wings (from Seler 1963:1:Fig. 365).

on long stalks (Figure 30d–e). Seler (1902-1923:4:23) suggests that these curious elements represent "falling stars," in other words, meteors. His intepretation is surely correct, as falling rain is similarly depicted in Aztec art (Figure 30e). In many Aztec portrayals, stone blades appear instead of the falling stars, the same blades that are found on the wings of Itzpapalotl and the butterfly stars (Figure 30f–h).[32] On the starry side of the Aztec Calendar Stone, these blades alternate with the Itzpapolotl star, which also emanates knives (Figure 30g). The markings on these blades are identical to those found on the diving Itzpapalotl figure (Figure 30h). This particular blade serves as an Aztec sign for obsidian, and appears for the place names Çtzihuinquilocan and Itzucan in the Aztec *Codex Mendoza* (fol. 30r, 42r). Like the pendant stars, the celestial blades refer to meteors, or *citlalcuitlatl*, recalling the *Vaticanus B* scene of Itzpapalotl defecating a stream of starry excrement (Figure 30a). However, Itzpapalotl is also related to the spark-producing flint as well as obsidian. According to the *Leyenda de los soles*, the fiery warrior spirits, the *xiuhteteuctin*, burned Itzpapalotl, and from her remains obtained a white flint blade for the star god, Mixcoatl (Bierhorst 1992:152). In a version reported by Mendieta (1980:77), the flint blade was hurled to earth by Citlalicue, the star-skirted Milky Way.[33]

Much of the warfare imagery discussed in this chapter concerns rebirth and fire as a transformative agent. The fiery resurrection of the sun at Teotihuacan is replicated in the burning of warrior bundles, which transform the dead into flying butterfly spirits of the sun. The butterfly is a perfect metaphor for this process of transformation and metamorphosis, with the warrior bundle symbolized by the dormant chrysalis or cocoon. Two Aztec rites, Xocotlhuetzi and the New Fire ceremony, evoked the mythic birth of the sun at Teotihuacan through the fire sacrifice of warriors. The Calendar Stone also portrays the birth of the sun, with the sun rising as a butterfly out of the burning, turquoise hearth. At Teotihuacan and among the later Aztecs, there was an intentional blurring of the living and dead warrior. Mention has been made of the skull-like shell goggles donned by Teotihuacan warriors. The Central Mexican warrior bundles or their effigies of ceramic or cloth, wood and paper, were probably considered as semi-animate beings to be conjured and supplicated though fire offerings. This negation of the violence and finality of death surely contributed to the ethos of the courageous warrior. Self-sacrifice on the field of battle simply began a metamorphosis, as sure and effortless as a caterpillar transforming into a butterfly.

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[32] Although the place of Itzpapalotl, Tamoanchan, is typically represented as a severed tree, it appears as a furry caterpillar on page 63 of the *Vaticanus B*.

[33] It has been suggested that the eccentric serpents at Teotihuacan may represent meteoritic beings. Similarly, it is possible that Classic Maya obsidian and flint eccentrics may have also related to meteor symbolism. Among the more common forms of flint and obsidian eccentrics at Piedras Negras are oblong, serrated forms that closely resemble multilegged caterpillars (see Coe 1959:Figs. 4e, 5j, 9j, 10k, u, 12a-c, 16f, 17i, 21s, u, 24h, t, u, 25a, p, 29a, n, 30b, 31u-w, 32a-c). In addition, Charles Bouscaren (personal communication, 1997) notes that one elaborate Late Classic serpentine eccentric may be a multilegged caterpiller, complete with projecting antennae (see Schele and Miller 1986:Pl. 114).

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