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# COMETS AND METEORS IN THE BELIEFS OF ANCIENT MAYAS

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Data concerning the Mayan approach to comets and meteors have till now been available mostly from ethnographical and folklore sources which dealt, as a rule, with various beliefs and tokens. The studies of hieroglyphic texts of the Classic Period (AD 600–900) have proved that comets and meteors were undoubtedly known in this culture through astronomical observations and their periodicity.

**KEY WORDS** Comets and meteors, Mayan beliefs, solar – lunar calendar, hieroglyphic writing

Data concerning the Mayan approach to comets and meteors have till now been available mostly from ethnographical and folklore sources which dealt, as a rule, with various beliefs and tokens. The studies of hieroglyphic texts of the Classic Period (AD 600–900) have proved that comets and meteors were undoubtedly known in this culture through astronomical observations and their periodicity. Nevertheless, in the 'official' and practical life of the Maya community these astronomical phenomena had acquired a quite different meaning.

First of all, it was believed that only magicians or 'seers' had the power of mastering night dreams and visions and could use them to come in contact with divine entities in sacred places in order to acquire knowledge and intellectual maturity, as well as paranormal abilities, such as the ability to replace oneself in an animal body, or even in a comet, a bolide or lightning, with full identification with these phenomena. Through the mechanism of freeing their souls during night dreams or visions, the ancient magicians proved their ability as conjurers, healers and fortune-tellers, as they still do (Garza, 1990, p. 197).

It is a well-known fact that a cult of caves, existed among Mesoamericans, a cult being closely related to the conception of the ancestors' homeland and reincarnation cycles. Initiatory rites took place in sacred caves, during which the person being initiated was shown mysterious spaces of life and death. Temples with symmetrical labyrinths, such as the one in Oxkintoc, in the opinion of some archaeologists, might have been used for the same purpose. A similar rite was depicted by an ancient Maya painter on a polychrome ceramic vessel of the Classic Period (Coe, 1982, No 60) (see Photo 1). It seems, in general, that the main theme of the composition

is a kind of sacred ceremony, presumably a priest initiation, performed under the the 'dreaming' state, i.e. an altered state of consciousness. This method was very common among Mexican Indians and is found among contemporary Mayas too. The universality of such practices in different ethnical groups leads us to conclusions about their common ancient source. Let us briefly review the essence of these practices.

A 'dream' state was produced either by natural sleep, or by means of purposely produced hallucinations in a changed state of consciousness. The 'dreams' could be divided into three separate kinds: (1) personal, concerning the dream or himself only; (2) circumstantial, which could be interpreted within the external conditions of the dreaming person; and (3) intercircumstantial, the most important of all, in which elements from different levels of the scheme match together. In such 'dreams', myths and rites intermix with each other, contact is established with mystic forces and godlike ancestors, and one is inclined to meet ghosts of the dead as well as souls of the living people there. For instance, a beginner priest of the Tzotzil Indians while passing an initiation ceremony is very apt to 'find himself' in a large room where godlike forefathers, together with other priests of his folk, share their knowledge with him (Garza, 1990, p. 206–297). Such a scene is depicted on the vessel.

The composition seems to consist of several parallel lines. The first of them is related to a calculation of the lunar half-year; the second one to an account of meteor streams and comets' time of appearance; the third one to zodiacal and other adjacent constellations, and the position of the Milky Way also projected on the geographical level; the fourth one to psychedelic material extracted from a water-lily root used for ceremonial purposes; the fifth line, the less clearly described by now, though the most important for the author of the composition himself, deals with the ideas of reincarnation, or with the mythologized history of the Maya.

The third level describing the cycle of the Zodiac and the Milky Way was given a circumstantial account in a previous article (Yershova, 1997a); we will only remark here that it was due to inscriptions on this very vessel that the list of the Mayan zodiacal constellations could be actually completed.

The Mayan world scheme was based on religious belief in reincarnation, or the recurrent return of souls of the deceased (Yershova, 1997a), presented as a cyclic process which could be described by the count of lunar months just like terms of pregnancy, and connected with the appearance of meteors or comets in the sky.

For a Mayan woman, it was a matter of great importance to meet a 'mystical father' who would give a soul to her unborn baby. A 'mystical father' was seen as a 'falling star', that is, a meteor, bolide, or comet. The childbearing process is, however, conditioned by strict temporary limits. It was thus necessary to know the schedule of meteor streams, so that a woman would once at night ascend a pyramid no later than in the first month of her pregnancy, being sure that she would succeed in watching a 'falling star'.

Belief in reincarnation is one of the most ancient beliefs not only in the Meso-american world scheme, but in other ethnical groups as well (Yershova, 1997a). These notions were attached to the lunar calendric system from the very beginning.

Later, observations of the Milky Way, meteor streams and comets drew attention to other kinds of regular cycles, better situated in the solar calendar.

Such an approach to calendrical comprehension of life and death is common to different nations of the world. Thus, Christians, after the celebration of Easter (Christ's death), begin to prepare themselves for Christmas, giving a start to a new cycle. It may be of some interest that one possible period of Christ's life cycle of 33 years and a maximum of 4 months (24.12.05BC–AD7.04.30) corresponds well with the solar period congruent to 400 lunar months. In fact, one may state that an event such as human birth is generally attached to the solar calendar, while death and reincarnation is attached to the lunar calendric system. So, His birth is truly connected only with the solar calendar, the solstice, and besides, the year of His birth marks the precessional shift or the vernal equinox point from Aries to Pisces. So in the Christian calendar two separate models of the world are combined, an archaic one, implying a cyclic course of reincarnations, and a newer one, reflecting the linear quality of time, more acceptable for the Christian age. But regarding the resurrection of Christ, the Church had to abandon the universal idea of the soul's successive rebirth in different bodies in favour of a rather illogical conception of bodily resurrection, though it produced the problem of where to assign the mortal body of Christ, which, in the case of its remaining on earth, would inevitably have grown older and weaker with years. Pragmatic evidence of Christ's bodily identity after His return from the dead, most probably taken as absurd even in evangelical times, deprived Christianity of the logic of reincarnation's adherence to the lunar calendar, accepting it simply as a strict dogma.

This digression into the history of Christian calendric beliefs not only presented the mechanism of the general adoption of their lunar–solar conventions, but also helped us understand how the systematic organization of time and chronology is closely connected to questions concerning the world view and human destiny.

As mentioned above, the archaic lunar calendar was of utmost importance for counting the terms of pregnancy, birth and reincarnation.

Yet in the inscription drawn on the pot, the main measure of time is a lunar half-year. The Deer figure (Figure 1, discussed later in the text) being a symbol of the 1st month after the winter solstice, has a rectangle depicted above its belt, divided into 27 rhombic pieces by two horizontal and seven oblique lines. These 27 pieces correspond to the number of days of the sidereal lunar month. According to the 27-day cycle, 27 is also the number of days during which the moon completes the sequence of phases from neomeny, or the moment when the crescent moon becomes first visible, till the last day of the visible waning moon.

Two more rhombi are added left at the top of rectangle, summing up together to 29, i.e. the number of days in a synodical month. The deer's belt is decorated with six signs T136/1-*at* 'interval', all six together meaning 'a half lunar year period',

It makes clear why the inscription on the casket (Yershova, 1996) lacks a 5th day sign: it was 'hidden' in the number of days in the nine-day week difference on both sides of the inscription.

The idea, in turn, is based on a presumption that the Mayan names of 'skies', the first, the second, and so on, up to the thirteenth sky, correspond with lunar



Figure 1

days, beginning from neomeny, till the full moon phase. It is very likely that the days of the lunar month in Mesoamerica were counted beginning from neomeny, like in most other cultures. The first day of new moon was called *tz'ay uh*, or 'the Moon's Fang', which meant the first sighting of a visible crescent moon.

The 13th sky was supposed to be 'the Sky of the Full Moon', *Oxlahu kaan* meaning 'Full Moon' or, literally, 'the Thirteenth Sky Moon'. The full moon phase continued for about three days (as perceived with the naked eye). Then a count of nine more 'skies' started, according to the number of days of the waning moon. This number was later, mostly in colonial times, associated with the 'lower world'. Now, as we begin to understand the meaning of this cycle, one may know why the days of the week were counted backwards, from 9 to 1 (as it was signed in the Mayan inscription on the casket, so did it later appear with the people of Nahuatl). I have previously stated that this backward count of days in a 9-day week *Bolon-ti-Ku* was conditioned by some natural reasons both in Mayas and Nahuas (Yershova, 1996). It is now clearly seen that this way of counting days was congruent with the sequence of waning moon phases. It resembles a dissymmetrical scale having a middle, or zero point constituted by the 'empty' or 'nameless' day when the moon was last invisible; the number of the day of invisibility was considered to be 5. The full count of the lunar phase month is  $(13) + (3) + 9 + (5) = 30$ , the exactitude being enough for practical purposes.

The sequence of lunar phases is very important for watching meteor streams, the worst observational conditions being produced by the full moon and the most perfect ones by the absence of the moon.

A lunar half-year, besides its astronomical meaning, was closely related to the course of a young priest's or shaman's 'professional training'. These archaic practices come from the times of a lunar calendar rule, the moon being among the most powerful deities. It is worth mentioning that contemporary Quiches call their shamans *kachuch-kakahau*, literally 'our mother-our father', the term indicating the phenomenon's tribal origin. The shaman's role was to maintain contact with the godlike ancestors in order to acquire knowledge and admonition. Both men and women were able to do this work. New shamans were recruited among those designated by means of unusual dreams or illness. They were threatened by death if they refused to accept their mission; a less severe punishment in such a case would be insanity. Most of the ancient practices are still met in our days in some places of Mesoamerica. A 'magic' dream is produced by taking psychedelics, such as water lily. A course of initiation and training of young shamans, including the study of the magic calendar, symbolism, the practice of healing and divination, lasts nearly 180 days in the culture of contemporary Mayans, as it was ages ago. This term corresponds a lunar half-year ( $6 \times 30$  days). At the end of the education course a newly converted priest is solemnly handed over a 'sacral knot' together with instructions about how to keep it safe and how to make use of it (Garza, p. 202). As one may see, the composition drawn in the pot links together all the five layers of information named above.

The initiatory ceremonies are nine in number, in full accordance with the lunar underworld symbolism. All of them denote an individual's death on earth and his

or her rebirth in a new quality, a passage through a number of sacred places being part of the ritual. During the last, 9th ceremony the neophyte is treated with a psychedelic herb together with his or her spouse who must also possess specific abilities and be ready to serve as a shaman's assistant. The ceremony is crowned with fireworks and a general feast (Garza, p. 204).

The new priests' training course is more simpler in Yucatan than in the mountain regions, but some details of it are worth special attention. The shamanic practice in that area includes regular (every second year) periods of 'purification', lasting for nine days in complete isolation from the outer world. La Garza explains the nine days' reclusion in terms of initiatory death, as if a person was swallowed by a Serpent, because 9 is a number belonging to the Underworld and its chtonical deity – a Serpent. At the same time, this number symbolises birth, reminding one of the 9 months of pregnancy. Quiches, for instance, used to qualify a human being as 'a being of nine moons, of nine stars', having in mind the term of childbearing (Garza, p. 205).

In the Dresden manuscript, a passage concerning lunar half-years is located just after the chapters about the Venus cycles traditionally called 'eclipse tables'. This relation between the lunar tables and Venus is very important for our study (Knorozov, 1975, p. 38–47). The passage falls into two parts, which are placed, in my opinion, in reverse order. The first part describes a '33-year solar cycle' (11960 days) (Knorozov, 1975, p. 262); the table for counting these cycles is largely different from other tables of multiple numbers and other types of chronological cycles in the codex. This follows its own system, the greatest number of '33-year cycles' being 39 and the smallest number of them is 2.

It is followed by the second part, containing a table of 177-day cycles ( $29.5 \times 6 = 177$ ), resulting from successive enlargement of lunar half-years up to 11,958 days, which approximates a 33-year solar cycle, or, more accurately, 32.7 years. After A. Lebeuf, the Dresden manuscript is dated about the 13th century, so then if we retract 1277 years ( $39 \times 11,960$ ), the start of the table should be situated somewhere about the start of our era.

A record of 'falling stars' appears in the second part of the document, which might have been intended to ensure its precise dating. Unfortunately, at present we do not have a single text to permit a direct dating of the astronomical phenomena. For unknown reasons, rather equivocal evidence was used as a rule.

D31b. I–II. (Knorozov, 1999, Vol. III, p. 78)

<i>Xam chah'-ang u-chab</i>	The northern sky's force,
<i>Kaak-ek mo-zon o-ot-ah</i>	a glittering swarm of stars falls out

D36b. I–II. (Knorozov, 1999, Vol. III, p. 81)

<i>Noc-ekye cham-el</i>	A falling star of a death-threatening
<i>h 'el-been-tzil-aan u-nga</i>	Good Governor

D37b. I–II. (Knorozov, 1999, Vol. III, p. 82)

<i>Noc-ek XIII-tun...</i>	A falling star in the 13th year...
<i>et-ax-tang et-zin-been-tzil</i>	awakening in the beneficial space,
<i>v day-king vaay-uh</i>	in the Sun's home Moon's home
<i>lem chah 'ez ah 'tzu-been-tzil</i>	good order glaring in the sky

In some inscriptions a 33-year cyclicity can be easily noticed, like those made on the stelae of Naranjo in the years 714, 747, 780, and 813, all dedicated to the same person.

It seems possible that comets having a similar cycle, such as the Temple–Tuttle comet, could also serve the purpose of correlating this astronomical cycle. This conclusion is supported by an iconographic analysis, binding together the units of the Owl (Leo constellation) and the Turkey (a meteor stream). But proceeding from the generally accepted Goodman–Thompson correlation, we find that the aforementioned dates do not coincide with the comet's period so we could also suppose that this period was somewhat different at that time. Such point of view exists, but it still lacks acknowledgement (Astapovitch and Terentyeva, 1966, p. 27).

According to some available data the peaks of the Draconid meteor stream activity appear to have a 33-year cyclicity, too. Counting back from an enormously bright Draconid meteor shower in 1947, one may regard the Naranjo dates as belonging to that very meteor stream.

We ought to emphasize that the Maya, with their religious world outlook, must have attached unequal importance to meteor streams issuing from around the celestial pole, like Draconids, or from the Milky Way near Sagittarius (the so-called 'dead space'), or, on the contrary, from the 'live space' (Yershova, 1997a), especially in the part of the Milky Way adjacent to the Gemini and Orion areas, where, as they believed, the dead people's souls outlet was located.

According to the semantics of the verb *u-pay*, the meteors were 'pulled by the sky rope' or 'appealed to come'. The Milky Way was considered to be the main 'sky rope', hence all the meteor streams issuing from its neighbourhood were respected with major veneration. Judging from their explicit terminology, the Mayans displayed great accuracy in the denomination of celestial phenomena. For example, they used the term *mozon* ('swarm') for a meteor stream or swarm, as in many European languages. Apart of this, a number of other terms are preserved in dictionaries of the colonial era:

*Ik-om* – comet

*ik-om ne* – comet having a tail or train

*butz' ek* – 'smoky star', or 'long-haired', like the one observed in 1577

*butz' (-il; -al; -at) ek* – smoky star

*hal-al ek* – running star

*u halal tz'utan* – magician's run (flaring comet)

*kak noh ek* – large fiery star

*ek ku lubul* – bolide

*chaman tz'utan* – magician's cigar (small comet)

The latter designation was based on the belief that a shaman smoking a narcotic potion was able to leave the Earth and fly away to remote spaces.

The Mayas denoted meteor streams by animal names. The following table shows a preliminary scheme of the streams' distribution within the zodiacal constellations.

Meteor streams	Mayan names of meteor streams	Mayan names of zodiacal constellations	Season of observation
Geminids	<i>Aac</i> (Wild Boar)	( <i>Aac</i> ) Turtle	December 7–15
Leonids	Turkey	Owl	November
Orionids	Puma	Three Opossums	
Taurids	Dog	Squirrel (shifted; another configuration possible?)	October–November
Draconids	God of the Dead	Celestial Pole–Kingdom of the Dead	October
Perseids	?	? July–August	

Most meteor showers are observed during the time interval from October till November, not long from the Sun's ingress to the Bat (*Ophiuchus*) constellation, the time when souls of the dead were believed to quit the Underworld and to be reborn from the opposite side.

#### A CERAMIC POT WITH ASTRONOMICAL INSCRIPTIONS

The US archaeologist Michael Coe, who first published and described the vessel number 60 (Coe, 1982), also performed an accurate digital transcription of the symbols, followed by a comprehensive commentary. He pointed out, among the others, a very unusual scene with 'gods of the Underworld'. Nevertheless, some symbols and pictographs are identified with difficulty, and some are entirely unknown (one more fact to prove the great scientific value of the document). It is of no doubt that much further work is still required there. Our own study has put some new accents in decoding the pictures painted on the vessel\*.

The polychrome ceramic vessel, 30.5 cm high, probably comes from Naranjo, Guatemala, and belongs to the Late Classical Period, described by M. Coe in 1982, No. 60.

A circular inscription of the 'Rebirth Formula' running around the mouth of the pot, reads like this:

- |      |                                      |                     |                                       |
|------|--------------------------------------|---------------------|---------------------------------------|
| 1.   | A. 229.682:126                       | <i>a yal ngi</i>    | There had he descended                |
| 2/1. | B. 5.63:159.277(578?)<br>(Coe:1014c) | <i>vaay cen hul</i> | (into) the<br>Ghost-Patterned Snail's |
| 2/2. | B. 186.15                            | <i>tah h'o</i>      | Underworld region.                    |
| 3.   | C. 61.77:585a                        | <i>lich xik av</i>  | (He) has now flew back home           |
| 4.   | D. 59.96(Coe:61):565                 | <i>ti ich ch'um</i> | Into the (woman's) womb               |
| 5.   | E. 738(=25).130                      | <i>ca-aan</i>       | a purified (ghost)                    |
| 6/1. | F. 632(=582-120):126                 | <i>mo ni-ngi</i>    | on the top of a hill                  |
| 6/2. | F. 528.644(Coe:x):116                | <i>cu cut il</i>    | of flesh                              |

\*Reading the inscriptions on vessel No. 60 was performed together with Yu.V. Knorozov.

7/1.	G. 561:23	<i>chah'-ang</i>	Celestial
7/2.	G. 1030n(=44.190.87)	<i>kaak ch'ac-te</i>	right in the middle of a platform
8/1.	H. 126.687a.584(=168)	<i>ngi-tzil-been</i>	he who had been a god-blessed
8/2.	H. 513(Coe:518c):130	<i>ppi-aan</i>	Observer
9.	I. 89.502(=533-558): 142/3	<i>tem lab</i> <i>(la-bu)-el</i>	venerable seer (nagual),
10.	J. 122.758-524(Ins): .116(Coe:117)	<i>tooc tz'ay-il</i> <i>hix</i>	(an offspring) of a Mother-Jaguar and a Fiery Tapir
11.	K. 561:23.1030o(Coe:x)	<i>chah'-ang kar</i>	of heavenly (god) <i>K'ax</i> (fratry)
12/1.	L. 58.680(Coe:x).x	<i>zac ch'uu</i>	the white hovering (Moon's)
12/2.	L. 520:120:15	<i>ki ni ye</i>	changing faces has he shown <sup>†</sup>

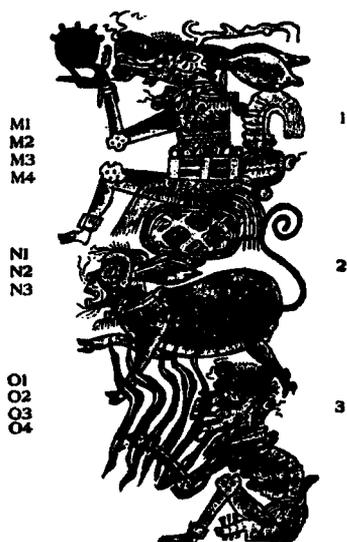
Thirteen groups of symbolic figures (the number of zodiacal constellations) are placed below the annular inscription, arranged in three horizontal rows, four groups in each of them. Coe has enumerated the picture groups in a downward direction and from left to right (see Photos 1 and 2), admitting later that the groups No. 9 and 10 (M. Coe, Figures 3 and 6) are aligned with each other forming an indivisible unity. The depicted figures symbolize both zodiacal constellations and meteor streams or showers, whose appearance was considered so important for counting the cycles of reincarnation.

*Figure 1.* A picture of a half-skeletized Deer; his elbow and knee are those of a human skeleton (compare to Figure 9, God of the Dead), with a sign *tooc* – 'glistening' – near his nostrils. In front of the ear there is a sign T242 *ot* 'station'. The Deer holds a reddish ('evening') full moon disk with his second finger and thumb. The moon disk is surrounded by six signs T136/1 *am* 'interval' (five of them being very distinct), which are most likely to mean lunar half-years in this context. The first finger is stretched forward and to the left, crossing the third finger in the shape of the sign *kaat* 'rise (of a heavenly body)'.

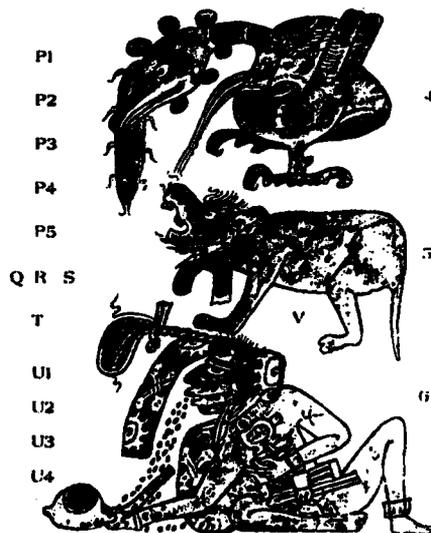
The Skeleton Deer has the horns and ears of a deer. Above the nose and in the mouth angle the sign *pay* ('indicatory') is drawn. We may hypothetically recognize a mythological Maya ancestor of the Deer *kin- Ah' May* symbolized by J-his personage (compare to Yucatec *May* – 'hoof', the ritual name of the deer). In his head region a complex block including a sign T242 (=T614) *ot* 'station' is placed. On the deer's neck, a necklace composed of rebirth symbols, namely signs T12 *ah'* – 'revive' – according to D. de Landa (Landa, repr. 1978, p. 242).

The Skeleton Deer wears an apron, being a male as well as a female accessory (Yuc. *H'ool tu taan*), similar to that of the Moon Goddess (Figure 10). Five signs *am* 'interval' are drawn on it; two of them (the 1st and 5th signs) are covered with small streaks. The Deer is seated upon a block patterned like a tortoise shell (*box* – T625), but without dots characteristic of T626b (*aac* 'tortoise'). The morpheme

<sup>†</sup>The readed inscription is written down according to rules operating in the Russian school of Maya epigraphies. First, a block ordinal number is given, then its position in the text shown by a Latin capital, followed by the symbols' identification numbers in Thompson's catalogue and, finally, translation. This may actually be followed by a detailed commentary which was omitted on account of the article's volume limitation.



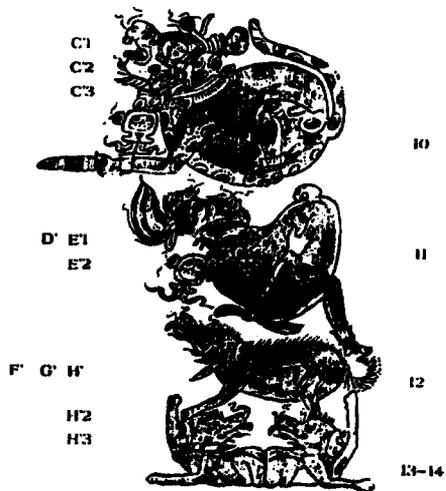
1. fig.1  
2. fig.5  
3. fig.9



4. fig.2  
5. fig.6  
6. fig.10



7. fig.3  
8. fig.7  
9. fig.11



10. fig.4  
11. fig.8  
12,13-  
14. fig.12,13

Figure 2

could denote 'dark (having no light) like a cave'. A tortoise carapace was always depicted as if viewed from above, the pictograph having much in common with a bookcase, but the latter was often covered with a jaguar skin and had a sign *tzil* ('to write') written upon it.

Behind the Deer's back there is a sign T504 *ak* 'night, darkness', 'ghost', or 'a plant sprout', to which two signs *ich* were added. Above it one may see an element resembling a sign *ab* 'a field divided into parcels' repeated several times.

The Deer constellation, correlated to the winter solstice in archaic times, marked the New Year's coming, the statement confirmed by dates of some later calendric feasts.

- |     |           |                               |                    |                                |
|-----|-----------|-------------------------------|--------------------|--------------------------------|
| 15. | <i>M1</i> | (A block destroyed)           | ...                | ...                            |
| 16. | <i>M2</i> | 582.x74                       | <i>mo-zon - ma</i> | A meteor swarm                 |
|     |           |                               | (= <i>mo-zon</i> ) | (from nothing)                 |
| 17. | <i>M3</i> | 1003b:87                      | <i>pay-te</i>      | is pulled (as if by a rope)    |
| 18. | <i>M4</i> | 524:116.585( <i>Coe:585</i> ) | <i>hix-il av</i>   | from the place of purification |

*Figure 2.* This is a picture of a bird, having something in common with different species of birds at a time. Coe defined it like a combination of owl and cormorant. We may add there an eagle and a turkey, because of a red piece hanging from the beak and a fuzzy wing. (An eagle - Yuc. *coot*; an owl - [it mu-aan; a wild turkey - *ul-um*; a cormorant - *pay*.)

The large bird described by Coe as a cormorant is standing on its left leg, the other leg, with spread claws, pointing forward or otherwise to the left - the side from where movement is expected to start. In the lower part of the bird's neck three red circles are placed, three more - under its head, resembling red warts on a wild turkey's head and neck. To the left from a curved neck, five feathers are shown, resembling that of a turkey's wing, but Coe describes them as that of an owl. Knorozov argues that the wing might belong to an eagle, for the two birds have actually very similar figures and it is easy to mistake one for another. For instance, the god Tosh, head of the Red Fraternity, is traditionally drawn with an eagle on his head, but Coe while interpreting a scene depicting this personage together with six other gods (Coe, 1973, No. 49), noted once again, that the god has an owl on his head.

Apropos of this, there is a picture in the Madrid Codex (M85a) where a white turkey and a black eagle are standing opposite each other, their necks intertwined and beaks open. According to a commentary by the Manuscript publisher A. Villacorta, the picture means a rivalry of two tribes, symbolized by their totem animals. One more symbolic motif is met in some other manuscripts: a serpent, half black and half white (D35b), pointing out the archaic two-fraternity tribal structure.

Proceeding with a description of the chimerical bird, one more detail is worth mentioning. An object reminding one of a sharp-ended leaf with longitudinal veins is hanging from the bird's neck. It is very likely to be a leaf of the herb used for ritual blood-letting (Yuc. *ac*). A snood hanging from the turkeyish beak has the shape of an oblong wingless insect, bright red in colour, presumably that of a cochineal, an insect called *niin*, or *muk-ay* (Yuc.), 'a wood louse-looking bug used

to make a tint'. Dried bodies of these insects, dwelling on a specific kind of oak, were used to make red tint – scarlet or carmine. Notice that *muk* means also (as a homonym) 'a round fruit of red colour'.

Let us now remember that the Owl (or, otherwise, the bird *Tian*) is the name of a zodiacal constellation, more or less identical with Leo. It is the place of the Leonid meteor stream's annual appearance (red circles near the bird's beak may be related to the 'falling stars'), and in the same area the Temple–Tuttle comet is observed every 33 years (a red snood on the beak). The regular appearance of the comet might have surely distinguished this constellation and this meteor stream from others of the kind.

19/1.	P1/1.	227.2/4.509	<i>noc ek bang</i>	Many falling stars
19/2.	P1/2.	790-582(Ins)	<i>mo-zon</i>	a swarm
20.	P2.	2/4.680:139	<i>ekch'uu-el</i>	of stars from above
21.	P3.	1.1002c	<i>u pay</i>	pulling
22.	P4.	738	<i>Ca</i>	of purified
23.	P5.	III(Ins).503.229	<i>ox-ik-a</i>	many of these souls-breathings

*Figure 3.* A running deer, having no elements of a skeleton or human being. The sign *tooc* – 'shining' comes from its nostrils. Unlike the deer *Figure 1*, this one shows us his red tongue – *ac*, a homonym to this word meaning 'a ghost'. A tortoise carapace (*box*) looks like a shield. A snake is rounding his neck, with a forked tail in the shape of the sign *tooc* – 'shining' or else 'departed', 'vanishing', thus resembling the Feathered Serpent – a symbol of a zodiacal constellation, such as the one carved in the famous relief of Tonina. The Feathered Serpent (*Boa*) is a zodiacal constellation, next in turn after the Owl (Leo) and nearly corresponding to Virgo.

23.	V1.	671:6S6b.x	<i>chi xam xot</i>	The Deer was left behind
24.	V2.	274.561:23	<i>bal chah'-ang</i>	(In) the Sky Rope
25.	V3.	1:116.539:126	<i>u-illam-ngi</i>	the Moon Vanishing,
26.	V4.	25.687a.584.?	<i>ca Chan tzil-been</i>	then (in) the good Serpent.

*Figure 4.* A fat-bellied creature possessing elements of a jaguar (its spots, tail, and ear, and a water-lily flower on its head, often associated with a jaguar; it is evidently a narcotic lily, used to prepare a hallucinogenic potion; the eye of the beast is replaced by the sign T524 – Kekchi *hix* 'jaguar'), of another animal, recognized by Coe and Knorozov as a squirrel (Yuc. *cuc*) by the protruding front incisors of a rodent (though some features resemble a tapir rather than squirrel), and a human being, for it has human hands and a braceleted foot. Something of the sign *tooc* 'departed', 'vanished' comes from the creature's nostrils. A mouth is open with a red tongue put out. In front of the ear, the sign T242 *ot* ('station') is placed. A necklace is put on the neck, similar to those on the deer's neck in *Figure 1*, having the shape of the sign *ah* – 'revive'. A block *tooc-xam-ak* ('a ghost that vanished long ago') in the form of an upturned vessel is suspended from the necklace, and the sign *ich* 'a soul bound to revive' is attached from the side.

The jaguar-squirrel-tapir has an obsidian knife (Yuc. *tok*) in its left hand, a motif often met in Mayan pottery. One of the two twin heroes is depicted on a ceramic pot from Chama (Coe, 1973, No. 6) with a waterlily flower on his head and an obsidian knife in his left hand, pulling out a Snail-god from his shell with his right hand; the flower is similar to those on the jaguar-squirrel's head, mentioned above. The twins' names were Hun Hun Ahpu and Xbalanque, the second name meaning Jaguar Cub. Therefore, we see that a water-lily flower is commonly associated with a jaguar.

The Female Jaguar and the Squirrel are two sequential zodiacal constellations, relevant to Pisces and Aries.

29.	C <sup>1</sup> .	122.758-524(Ins)	<i>tooc Hix Tz'ay</i>	By the shining Sharp-toothed She-Jaguar
30.	C <sup>2</sup> .	1.539:126	<i>u lam-ngi</i>	(the Moon) vanishing
31.	C <sup>3</sup> .	217/2:87	<i>naab-te</i>	(by?) the White Lily

An inscription above the Jaguar's tail runs like this:

32	1.757.528:116	<i>uzulcu-il</i>	End of the period
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*Figure 5.* A chimerical creature is depicted, in which features of a monkey (Yuc. *maah*) – a monkey face, a spirally twisted tail – are combined with an ungulate animal, maybe, a deer's features: its ears, hoofs, entire body form. Something like the sign '*tooc*' – 'departed' or 'vanishing' – comes from its nostrils. A necklace designed like a sign '*ah*' – 'revive' – similar to those found on Figures 1 and 4, is drawn on its neck. The mouth is open, but has no tongue.

The Monkey is a zodiacal constellation situated between the Deer (Capricorn) and Jaguar (Pisces), relevant to Aquarius.

33.	N1.	136.1016a. 181:136(diac.)	<i>ngom-aah</i>	...is sinking
34.	N2.	x.755	<i>...-maaz</i>	...towards the Monkey
35.	N3.	III.531(756d?)	<i>ox cu</i>	into the third period

*Figure 6.* This animal is, according to Coe, 'a dog having rodent teeth', and to the mind of Knorozov, a tapir, with a red scarf, tied in a knot under its neck. The sign *tooc* 'vanished', 'forsaken' comes from its nostrils. The sign T242 *ot* 'station' is in front of the ear. None of the semantic elements '*ah*' or '*ak*' are present in this animal. The entire figure is in fact very like a dog, with only a head covered with hair, the rest of the body and tail remaining bald.

It seems to me that the semantic element *tz'ay*, 'having large and sharp teeth' used in the picture, serves not as a description of the species, but to mark the beginning of a new lunar month. As we know, the term *tz'ay-can uh* means 'the first day new moon', or neomeny, literally 'the sky moon's fang'. Some specific semantics must be hidden in the red scarf, an element met in no other pictured personage.

- |        |  |                                   |  |
|--------|--|-----------------------------------|--|
| 36. Q. | 17(Coe:109):1038<br>(Coe:1047):2/4(Coe:24) | <i>h'o nich' ek</i>               | Near the entrance to<br>the Sharp Toothed Constellation. |
| 37. R. | 136/4(Coe:130).<br>17.(24).1047            | <i>am h'o</i><br>(Um) <i>Tzek</i> | Now here is the entrance<br>to the (Governor of) Skulls. |
| 38. S. | 1.539:126                                  | <i>u-lam-ngi</i>                  | (The Moon) has set.                                      |
| 39. T. | 33.557(Coe:x)                              | <i>xa maac</i>                    | Has already gone.  |

Inscription below the dog's belly:

- |     |             |                  |                          |
|-----|-------------|------------------|--------------------------|
| 40. | 585.524:116 | <i>av hix-il</i> | A place of purification. |
|-----|-------------|------------------|--------------------------|

*Figure 7.* A picture of a puma (Yuc. *coh*) looking around its shoulder (the same image is met in Abah Takalik, Guatemala, and D26/F47), having a curious branch-shaped tail. Something of the sign *tooc* 'shining' or 'vanished' comes from its nostrils, the sign T242 *ot* 'station' in front of the ear. In the back of the animal's head, like an ear being turned out, the sign of a constellation's star is placed. The puma's right anterior paw is lifted up in an indicating gesture. Its tail formed as a calabash tree branch ending in a fruit, a large red-coloured sign *tooc* 'shining' or 'vanished' separating from it.

A necklace in the shape of the sign *ah* 'revive', similar to those present in Figures 1, 4 and 5, is on the puma's neck, below it hanging a block the form of an upturned vessel *tooc-xaman* 'a ghost long vanished', and a sign *ich* 'a soul bound to revive' is attached from the side.

The set of elements present in the picture indicates that the puma ought to denote a celestial object, still needing determination. Taking into account the homonymous meaning of the verb *coh-al* 'to bear (child or fruit)' and proceeding from the Mayan star sky semantic organization, one may suppose that the constellation in question is with great likelihood relevant to Orion, being iconographically interchangeable with an image of the rattlesnake. A red fruit at the end of the tail may symbolize a bright meteor stream in the Puma (Orion) region, namely the Orionids.

- |     |     |              |                   |                                       |
|-----|-----|--------------|-------------------|---------------------------------------|
| 27. | V5. | 122.a        | <i>tooc...</i>    | Brilliant...                          |
| 28. | W.  | 17:585a.563a | <i>h'o av poc</i> | entrance to the place of purification |
| 41. | X.  | 569:139      | <i>ton-el</i>     | Purification                          |

*Figure 8.* This figure most likely represents a woman in childbirth. The sign *tooc* 'vanished' comes from her nostrils. The sign *ich* 'a foetus', 'a soul bound to revive' is plaited into her hair. She had a necklace in the form of the sign *ah* 'revive' like the personages of Figures 1, 4, 5, and 7, around her neck. A block in the form of an upturned vessel *tooc-xamak* 'a long vanished ghost' is hanging from the necklace, and another sign *ich* is attached from the side. The woman wears bracelets on her ankles and wrists, like those in Figure 4. She is lying on her back with the right knee bent. Her right hand is lifted in a gesture *kaat* 'to rise' (the same as in Figures 1, 7, and 10). Her hair is arranged in a knot, the eyes half-closed.

Coe interpreted the figure as a human corpse with a belly blown up by intestinal putrescence, so that even the umbilical cord has been turned inside out. There are, however, some solid arguments against this version. First of all, Mayas used to

depict noticeable sugillationa when drawing bodies. Secondly, in the case of a corpse swelling, all parts of the body are equally enlarged, the joints unbend and the face turns into a mask, but the navel-cord never turns out.

Neither can the figure be just a corpulent man, as its face, arms and legs are rather thin, which would contradict the canons of Mayan pictorial art, requiring the showing of the essential proportions of the human body realistically.

Thus, a single version was left: the figure is that of a woman in labour. We consulted professional obstetricians (Y. I. Nikolayeva, M. D., Z. V. Novikova, M. D., and N. Y. Granat, M. D., of the Mother and Child Health Centre, Moscow), who gave the idea full support. A woman in the initial stage of labour is depicted. Her eyes are half-closed; the face has a grimace of pain. Her right hand supports the uterus. Both the size and shape of her belly indicate that she is going to be delivered of twins.

The woman is bare of clothes, from which only a knot behind her back was left – a single detail of a breechcloth (*tu*). The knot might be put there with a purpose: the word *tz'ac* (T593) has two different meanings, 'a knot' and 'a mother's direct progeny'. The word *tul* (T60), in turn, means also 'a circle' or 'return'. Reviewing the signs T60 and T593 palaeography, we shall find that the latter is the middle element of the former sign.

The woman's protruding navel is worth a special discussion. Apart from a possible case of umbilical hernia, it is notorious that in localities wanting a doctor, midwives were often ignorant of how to correctly treat the child's umbilical cord, and it was left to stick out up to adult age. A case is known of a 30-year old woman having lost her umbilical cord, 6 cm long, after her own delivery. Besides that, a protruding navel-cord has a symbolic meaning in Mesoamerican iconography, being identified with the Creator God – the Milky Way – often depicted in form of a reptile, a snake or a rope. Thus, in a picture of the Seven Caves, the legendary forefathers' home of Mesoamerican people, the mountain, inside of which a mother cave of ancestors is located, is crowned with a similarly curled navel-cord<sup>†</sup> Notice that the sign of the navel-cord *x tuch* indicates the grammatical female gender category (Alvarez, p. 64). As George Frazer put it, many people, including Mexican Indians, are apt to take an umbilical cord for either a living thing, something of a child's brother or sister, or a sacred object, serving as a residence of the child's guardian ghost or concealing part of its soul. All this corresponds well with the whole system of reincarnational ideas. Ancient Mexicans believed that burying a boy's umbilical cord in a battle-field would cause his becoming a warrior, and a girl's ought to be buried near the hearth, causing her to become a good housewife (Frazer, 1923).

42.	<i>D'1.</i>	89-11:563a	<i>tern chul poc</i>	A time of purification,
43.	<i>E1.</i>	521:103	<i>ki-ix</i>	a (month's?) change
44.	<i>E2.</i>	16- <i>I</i> ( <i>pict</i> ).561	<i>h'o h'un tzel chah'</i>	(the Moon) rising on the First sky

<sup>†</sup>See, for instance, the picture of Chicomostoc-Kulhuacan in 'Toltec and Chichimec History', folio 16v (*Arqueologia Mexicana*, 1993, Vol. 1, No. 4, p.35).

*Figure 9.* A skeleton-like God of Death is seated before an open fire, in front of which a tripod is placed with some indecipherable signs. The only one seen clearly enough is a sign of crossed bones. The tongues of flame are intercrossed with the lifted left hand of the skeleton.

Upon the skeleton's bare skull a coiffure is added compounded of the signs T12 *ah'* 'revive', and a necklace of the same signs is placed on the neck. The sign T682 *haa* 'water' surrounds its eye: this element, called 'God's eye', reminds one of the ancestral homeland's virgin waters. The jaws are half-open and some teeth are present in the upper jaw. The sign T242 is placed in front of the ear, just as in Figures 1 and 4. The knot behind the personage's back is similar to that in the childbearing woman (Figure 8). Bracelets are drawn on the wrist and ankle.

The only live flesh in the skeleton figure is a long protruding phallus (Yuc. *ach, ton, cep, bac, bak*), pierced from above with three thick thorns, possibly symbolizing ritual blood-letting, described in detail by D. de Landa (Landa, repr. 1978). The scenes of ritual piercing are met, for instance, in the Madrid Manuscript, where four gods, or chiefs of the four fratrics, are depicted in putting a very thick rope through their phalli, symbolizing tribal unity (M19b). The Sky Crocodile God (Yuc. *Itzam-na*) seated near the Sky Tortoise (Yuc. *aac*) is holding the rope. The Tortoise is a zodiacal constellation corresponding to Gemini, and, by homonym, the Month of Land Parcels (ansc. *Aac-aan*; Yuc. *Ka-yab*), lasting from May 16 until June 12. The date of the ceremony is noted nearby: the 4th day *Ah'-av*, the 160th day of the cycle.

One more relevant motif is found on a stela from Izapa running back to the first years AD. Stela No. 50 is rather unusual by its subject, as all those belonging to the B group. A standard upper panel is absent in it. The figure composition is fitted into the monolyte – a seated skeleton from which a dwarf being one-half as large as the skeleton itself is pulling out with strain a curling umbilical cord. Diverse scenes with skeletons are found in Mayan ceramics.

Returning to the picture on pot No. 60, the skeleton's head is shaped like a sign ngom (compare to *Xa-nom*, the first man or messenger). The large thorns piercing its phallus (*num*) may have a parallel meaning by homonym: *num* also means 'to give information, bring news'; *num ca'an* – 'a full Moon lasting all night long'. In this scene, the skeleton may embody, besides others, a 'mystical father' who, having in fact no physical body, is yet pronouncedly masculine by nature.

Most probably, the symbolic meaning of the figure might be as follows. It concerns the final stage of a neophyte seer's initiatory ceremony, when a feast was organized, a new fire kindled, and the major rites in the name of junction with forefathers: blood-letting and piercing were accomplished. The symbol can also be connected with the Draconid meteor stream, whose peaks of activity (each 33 years) are counted by lunar half-years. Its sky co-ordinates are closely adjacent to the celestial pole, the 'forefathers' land' where the God of Death, alias Master of Skulls, was among the important persons. An astonishing bright Draconid shower, such as in 1947, might be imitated by means of a sacred flame, an indispensable component of the final stage of initiatory rite.

45. Q1.	585.524:116	<i>av hix-il</i>	to the place of purification
46. Q2.	2/4:552	<i>ek ch'a</i>	carries the stars
47. Q3.	1047:11624	<i>tzek-il um</i>	the Master of Skulls,
48. Q4.	15.736a(Coe:1046?): 140 60:715	<i>ye cham-el tul- paa (tulap)</i>	threatening death when returning

*Figure 10.* A personage sitting behind the skeleton's back is likely to symbolize one of the fraternity chiefs. It is almost identical to the participant of the piercing rite depicted in the Madrid Manuscript (M18b): it has a dark streak across one eye, the sign *ak* 'ghost' in its forehead, a headdress (sticking up around the head), a necklace consisting of the signs *ah*' ('revive'), and a breechcloth with an apron. It ought to be noticed that the image combines both male and female elements: that of the War God and of the Mother Goddess<sup>†</sup>. The picture drawn on the vessel differs from its analogue M18b by its elaborate head-dress which includes a ribbon with an ornament exactly repeating the ornament on the skirt worn by the old Iz Mol – Mistress of the Black Sky in D53, as noted by Y. A. Krasulin (oral communication). A cloak has the same ornament element – a pair of crossed bones, a sign associated by Knorozov with a lunar half-year period, as well as, in certain respect, a picture of a silt conch, resembling the sign T627b, read as *zul* 'feast', 'vertigo'. A turned-up vessel *tooc-xam-ak* is hanging from the necklace – 'a ghost long vanished', and two signs *ich* are placed symmetrically on both sides. Bracelets on wrists and ankles are identical with those in Figures 1, 4, 8, and 9.

This is the only figure out of the whole composition that is imaged *en face*, with the exception of the head turned to the left, thus creating the impression of being the main centre of attraction. It is sitting with its left knee bent and the right leg tucked in. A string (Yuc. *tep'*, *tab*, *zuum*) consisting of seven links, each link marked with a circle, is stretched from its head to the left. The sign T60 *tul* 'overflow' or 'return' marks the end of the string. The sign T242 is placed by the ear. An oval with the sign T577 *hul* inside it (meaning 'to come') and five internal protuberances, the fifth one differing from the others by a peculiar curl, is placed at the back of the head. A small sack decorated with three wide oblique lines hangs from the free end of the rope; this element is called *yal* (T698) – 'to come down, descend (concerning a god)'. The block *tooc-am* 'long forsaken' is placed beneath the sack. On the personage's left shoulder and hip there is a simplified sign T55d2 *cha* 'to pass'; on its cheek and right hand – the sign *bang* 'plenty of', 'to pour out' (*ban-al* Cord. 'placenta'). It is worth noting that 'falling out' in a physiological sense is denoted by the morpheme *ban* with respect to the lower part of the body only (diarrhoea, prolapse of internal organs), but never to the mouth, though the depicted personage is apparently spitting or vomiting. The second meaning 'plenty of falling or scattering objects' is not related to human body functions, but it may be indirectly connected with the notion of numerous deaths during epidemics or massacres. The elements *bang* and *chaam* (T590b) on the personage's cheek read

<sup>†</sup>The model of this image formation is not quite clear at present; we may at least note a controversy between Landa's relation denying the practice of ritual blood-letting in women, on one hand, and the iconography of the Classic Period, on the other, where we can find a picture of a woman pulling a prickly string through her tongue.

as inscriptions, produce together the combination *ban cim-(il)* 'Plenty of Deaths' (Cord.), which is a probable additional title of the War God, this assumption being supported by a black streak drawn across the personage's eye.

Knorozov, in the course of an oral conversation, has interpreted the personage as 'a Moon Goddess', in spite of its definitely male features. So did Krasulin, pointing out the great similarity of ornamental motifs in the figure's accessories and on the skirt of an old goddess Ix Mol (see above).

In trying to solve the puzzle, one should take into account the fact that Ix Mol, whose image included jaguar-like claws, had fulfilled not only 'receptive' functions, but also that of purification and preparing the ghosts for revival. Scratching with claws or thorns was called *ton*, the homonym of the word being 'male', or 'having male features', the latter apparently having little in common with the old female deity. In the Classical period, when the severe Olmec deity had lost much of her former power, her 'scratching' and thus 'refining' functions passed on to a jaguar, who inherited also the title *ton*, written down on Mayan ceramics as well. But unlike its predecessor Ix Mol, the jaguar was often rendered with exaggerated male genitals playing the role of its title's ideogram (Ken, 1978, Vase 771).

The seated personage is bent towards the Skeleton (Figure 9). He holds a large syringe in his right hand (Yuc. *thohob*) – presumably with a psychedelic potion. This method was widely used in the practices of divination. It was pointed out by Y. A. Krasulin that the personage's hair is standing on end, like the hair of a shaman-priest in the scene of divination (Yershova, Knorozov, 1983).

In order to prepare the potion, one has to masticate its ingredients for a long while in order to have it dispersed and mixed with ferments present in saliva. Thus, according to our own observations, contemporary Indians Huicholi use to masticate peyote before applying it to their legs and feet during long mountain trips as they believe it to cure sore joints and reduce fatigue.

As follows from the data presented by Marlene Dobkin de Rios, a species of water lily (*Nymphaea ampla*) growing in the region populated by Mountain Mayas, contains aporphine, an alkaloid akin to apomorphine and morphine by its chemical structure. This plant (*naab-te*) is mentioned in the Mayan inscription found in Figure 4. The primary effect of aporphine is violent vomiting, followed by a long sleep accompanied by vivid dream visions. An additional curing effect produced by the potion on the mind of patients cured by the water lily, may be due to nufaridine – another alkaloid present in this plant (Dobkin de Rios, 1990, p. 137–138).

Mercedes de la Garza strives to oppose Dobkin's opinion. 'Marlene Dobkin de Rios when discussing the information about Classical Mayan toad and frog and water lily iconography, has rendered the material in a rather speculative manner, maintaining all the quoted matters to act as psychedelics and to have been used by Mayan nobles in ritual purposes... None of her statements has the slightest scientific base, moreover, all of them are lacking plausibility and have been already disproved by numerous specialists' (Garza, 1990, p. 164). However, after this biting critique, M. de la Garza writes next: 'As follows from some of the Nahuatl poems, either a lotus or water lily was used by seniors as a narcotic herb; the conclusion may be drawn that this very species of lily is so commonly encountered in Mayan

pictorial art. Nevertheless this fact does in no way support Dobkin's mode of thought' (Garza, 1990, p. 164). In fact, it remains obscure, what aspect of Dobkin's 'speculations' is so zealously disapproved by Garza: the narcotic properties of the wwater lily by themselves or the manner of its use by seniors? The latter passage quoted from her own work may serve as one more item of evidence of two cardinal points: (a) the hallucinogenous properties of water lily certainly exist, and (b) its use for this very purpose in Meso-America is notorious. To proceed with the topic, our own study comprehending all the data available on this subject not only testifies to the actual existence of a water lily called *naab-te*, but even explains the method of its use, never mentioned neither by Dobkin, nor by Garza. The psychedelic potion was applied by means of an enema made of a large animal's bladder (mostly that of a jaguar) with a reed pipe attached to the outlet. The rapid absorption of narcotic fluid through the intestinal wall produced a dramatic physiological effect. On a well-known vase with 32 gods, one of the godlike ancestors, in the jaguar image, was shown with an enema in his hand.

49.	U1.	?. 1065-534	<i>p'e-la (p'el)</i>	The Only One
50.	U2.	1000 <i>h.a</i> (1-181 var.lig.?)	<i>ch'up u-(aa)h</i>	of the Moon Goddess
51.	U3.	588 <i>b</i> :(140) (Coe:299:520).507:23	<i>ze-(el) xoy-ang</i>	comes to visit
52.	U4.	20(=240/2).585	<i>much-av</i>	a child-bearing place

Figure 11. A long-toothed, covered with harsh hair wild boar-jabali. It is lying on its belly, with the front legs stretched forward. In front of its snout the large symbol T122 *tooc* 'fiery' is placed, before its ear the sign T242 *ot* 'station'. The term *Tooc-cem* - 'the Fiery Peccary' (Yuc. *tooc ken*) - is encountered as a name of a constellation, probably zodiacal, through which the planet Mars is passing (D74/F45). The sign T2/4 *ek* 'a star or constellation' is placed beneath the snout - a simplified sign *ot* 'station', and the signs *tul* 'return' and *nga* 'upwards' are drawn at the animal's rear. The Boar as a zodiacal constellation seems to be synchronized with the appearance of a meteor shower, presumably the Geminids.

53.	Z.	122.1038	<i>tooc nich'</i>	Fiery Long-Toothed
54.	A'.	754	<i>cen</i>	Wild Boar
55.	B.	...	...	

Figures 12-13. A pictural group is rendered, consisting of a female opossum and two cubs. The Opossum Mother (reminding us also of a dog) is imaged as a hairy animal with a spot round the eye and another one on the back, with a bushy tail not proper to opossums. However, a long snout and a spot surrounding the eye are quite characteristic of this animal group. A female opossum had been selected as a 'paragon mother' presumably for the reason that she continues to carry her young on her back till they grow up. Only a few elements of those common in vessel No. 60 are present in this figure: the sign T242 *ot* 'station' close to the ear and a red tongue (see Figures 3, 4, and 7). The animal is depicted half-face, its snout turned directly upwards, the mouth closed. The sign *tooc* 'shining' is placed near its snout, the sign *ek* 'star' or 'constellation' near the eye.

56.	<i>F</i> <sup>1</sup> .	59( <i>Coe</i> :58).III.765	<i>ti ox och</i>	By the (constellation of) three Opossums
57.	<i>G</i> <sup>1</sup> .	1.539:126	<i>u lam-ngi</i>	(the Moon) has set
58.	<i>H</i> <sup>1</sup>	84:207:140	<i>ngal tzab-el</i>	near the Rattlesnake

The 'Three Opossums' may account for three stars of the Orion's belt, three very noticeable stars 'wedging themselves' into the zodiacal circle between Gemini and Taurus, and being projected on the celestial sphere close to the Pleiades, just in the middle of the Milky Way.

Two opossum cubs are disposed symmetrically, touching each other with their hind legs, their heads turned back towards each other, the front legs lifted upwards. Near their noses are two signs *tooc* 'shining', at the back of their heads – two signs *ek* 'constellation', respectively.

59/1.	<i>H</i> <sup>1</sup> .	59( <i>Coe</i> :58).III.765	<i>ti ox och</i>	By the Three Opossums
59/2.	<i>H</i> <sup>2</sup> .	757-I;528:116	<i>xul h'un cu-il</i>	the end of the first period (lunar half-year)
58.	<i>H</i> <sup>3</sup> .	524:116:585a	<i>hix-il av</i>	in the place of purification

Apart from the aforementioned figures, some more signs, described by the Guatemalan scholar Heinrich Berlin as 'emblem glyphs', of the cities Calac Mul and Ucanal are present in the composition. They are special blocks included in the governor's titulature. These cities are located in a line stretched from north-west to south-east together with the city of Tical.

The inscriptions on the vessel run: *Calak mul: ca tzil-been Chan* – 'our good serpent'; *Ucanal: ox kaak zotz'* – many fiery bats (lightnings). 'The sky rope' or the Milky Way, crossing the Mayan territory in a north to south direction, is also mentioned in the text. The aforementioned cities are placed on this rope projection on earth, leading ultimately to the Jaina island necropolis (Yershova, 1997a).

Ancient astronomers presented the lunar half-year in the following sequence:

<i>F</i> <sup>1</sup> – <i>F</i> <sup>2</sup> .	November 15.11	Leonid stream	<i>F</i> <sup>1</sup> .
<i>F</i> <sup>3</sup> – <i>F</i> <sup>4</sup> .	December		<i>F</i> <sup>3</sup> .
<i>F</i> <sup>5</sup> – <i>F</i> <sup>6</sup> .	January		<i>F</i> <sup>5</sup> .
<i>F</i> <sup>7</sup> – <i>F</i> <sup>8</sup> .	February		
<i>F</i> <sup>9</sup> – <i>F</i> <sup>10</sup> .	March 21	Spring equinox in Pisces instead of Aries, as it has been in the first millennium BC.	
<i>F</i> <sup>11</sup> .	March		
<i>F</i> <sup>12</sup> – <i>F</i> <sup>13</sup>	April		

The final pictorial scene of the whole composition, related to priest initiation, tells us about a ritual 'rebirth'. All initiatory rites, designed as a simulation of the remcamational cycle, are aimed to reproduce the ideas of a person's death and revival in a new quality. The latter is arranged in a rather realistic way as a symbolical passage through female genitals. Diverse variants of the rite existed in different cultures, from a person's crawling between a woman's legs to the simulation of female genitals by some inanimate object. Thus, the Mexican Huicholi Indians arrange this ritual as a trip to the ancestral cave ('a mother's womb') through a

narrow passage (vagina). Even an oblong stone imitating a clitoris was found there. A way into the womb-cave is equated with death, and a way out – to new birth, serving as part of an initiatory rite. This may partly explain the fact that the pictures of ancestral caves in Mesoamerican art were sometimes supplied with the sign of an umbilical cord. The ceremony is likely to have been timed to the full-moon phase, as indicated by certain details of the text. The sign *ch'up* 'woman' there is followed by a yet unknown sign, resembling a ligature T1-181, which corresponds to the phonetical record of *Uh* (the Moon). The ancient Mayas associated the Moon with the ancestral cave and the First Mother, so an adequate translation of the fragment would be 'Moon Goddess'.

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