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Olmec Writing
The Cascajal “Block”
—
New Perspectives

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Between 1200 and 500 B.C., the Olmecs, the first of the great civilizations of ancient Mexico, created a writing system that consisted of hundreds of signs. This vast index first appeared on terracotta and later on stone; its use extended from the Gulf coast to the Pacific coast, passing through the Central Mexican Plateau.

The motifs were written on various materials. They sometimes appear in total disarray, while at other times they are set down in lines or columns. Whether the configuration is fractured or tight, there is always a direction to be followed, a semantic coherence, and the use of plastic and spatial conventions. This elaborate code supports and expresses an extremely sophisticated manner of thinking, which refers primarily to religious notions but also, to a lesser extent, to the socio-political domain.

I believe that the key to reading these signs is pictographic and ideographic. For the moment, there is no solid proof of the presence of a phonogram, that is, of a voiced component (syllabic in type). This does not imply an *a priori* exclusion of the existence of phoneticism; indeed, given that the spoken language of the Olmecs is unknown, all hypotheses necessarily remain conjectural.

For a long time, the existence of a form of writing among the Olmecs was obscured or even categorically refuted. In the archaeological literature, Americanists focused primarily on Mayan writing and, with some frequency, on that of the Aztecs and the Zapotecs. Generally speaking, the Maya appear to be the only people to have been genuinely accredited with a system of writing. It has been implicitly understood that the Olmecs had developed a fledgling system, a type of proto-writing; their glyphs are regarded as the early stages of a system that the Maya, several centuries later, would raise to the height of perfection.

The discovery of the so-called Cascajal Block has provoked a serious re-evaluation of this simplistic view and has introduced a considerable degree of aporia.

The Cascajal Block: A General Introduction

Cascajal is a ceremonial center of relatively modest size, located in the municipality of Jáltipan in the modern state of Veracruz, not far from San Lorenzo, which is one of the most important sites on Mexico's Gulf Coast (**Map**). Its sudden rise to fame came about through the discovery of a slab of serpentine upon which hieroglyphic inscriptions were engraved (**Fig. 1**). The object, known as the Cascajal Block, was fortuitously discovered in a gravel quarry in 1999; however, news of its discovery was only released to the public in September 2006 through a collective article that appeared in the renowned North American review, *Science*.¹

Unfortunately, the block was not exhumed by reliable scientific excavation. Its dating was established through association with the ceramic shards that surrounded it at the time of discovery and was not based upon a clearly defined occupational level. Despite these difficulties, archaeologists have dated the block of stone to approximately 900 b.c. The geologists Ricardo Sánchez and Jasinto Robles performed laboratory analyses for authentication,² definitively casting aside any doubts in terms of falsification.

¹ Rodríguez et al. 2006.

² Ortiz Ceballos et al. 2007, 18.

The artifact is 36 cm. long, 21 cm. wide, and 13 cm. thick. What makes it exceptional is the presence of 62 glyphs, set out in a fairly regular manner over several rows. It is notable that certain signs are repeated two, three, even four times.³ On an iconographic and stylistic level, one can confidently affirm that the type of glyphs on the stone indeed belong to the Olmec vocabulary.

Authors such as Ponciano Ortiz Ceballos and Maria del Carmen Rodríguez, who were at the origin of the discovery, have identified some of the glyphs. While some of their interpretations are satisfactory, others remain disputable. It is for this reason that I am putting forward new interpretative hypotheses.

In the first part of this article, I will analyze each glyph in isolation. To this end, I shall first present the list of currently known glyphs. I shall then tackle the more difficult motifs before moving on to those that still remain unknown.

In the second part, I shall undertake to study the glyphic inscription as a whole in order to decipher its semantic content.

Toward a New Interpretation: The Glyphs of the Cascajal Block

Currently Known Glyphs

Most of the glyphs that appear on the Cascajal Block can be situated in either Olmec iconography or the art of later Mesoamerican cultures. An accustomed eye can identify them without too much difficulty.

I have listed them below; for each one, I have put forward my own interpretative reading:

- knuckle duster. The knuckle duster is a semi-circular object, apparently made of perishable materials. Generally clasped from the inside, it covers a portion of the hand. It is a ritual object, used principally during nocturnal and/or subterranean ceremonies. The shape of the glyph matches that of the mountain/cave glyph, which is the archetype of the Aztec toponym. Indeed, the glyph of the town is made up of a mountain set atop the entrance to a cave.

- torch. The torch has the shape of a vertical cylinder. It consists of a fascia of wood or some other flammable material and is used for illumination. While the iconography of the knuckle duster is relatively homogenous, the torch has a number of variations. In the context of art, the torch and the knuckle duster generally constitute a pair (**Fig. 2**). Despite this recurrent association, each object may also be depicted in isolation from the other. In short, these objects can be used individually or not.

- ear of corn (naturalist design). An entirely analogous drawing of this appears on a bowl from Tlapacoya, an ancient lakeside city in the Basin of Mexico, where the figurative representation of the cereal allows little doubt as to its interpretation (**Fig. 3**). Maize, one of the oldest plants grown in America, formed the basis of the Prehispanic civilizations. Today, it is still the staple food of the Mexicans. The link between the plant

³ Rodríguez et al. 2006.

and the jaguar, which already manifested itself in the Olmec period, can be explained by the feline's powers of fertility. Indeed, Amerindian mythology informs us that the "Lord of the Animals" controls the weather, including thunder and rain; consequently, he is responsible for the germination of plants. A number of remarkable Olmec sculptures in the round show a jaguar wearing a giant ear of corn upon its head with criss-crossed lines. In Aztec art, *Chicomecoatl*, the Nahua goddess of agriculture, is adorned with ears of corn of the same design.

- ear of corn emerging from its husk (schematic design). Gramineous plants are often associated with the figure of the were-jaguar—a half-human, half-feline creature omnipresent in Olmec iconography. This close connection is visible, for example, on the La Encrucijada pectoral, discovered in the State of Tabasco, where a stylized depiction of the cereal is seen to emerge from the cleft brow of the hybrid being (**Fig. 4**). Olmec celts, of unknown provenance, have a design that is analogous to that of the Cascajal Block, where the ear of corn is sprouting from its husk (**Fig. 5**).

- vegetal motifs. In general terms, these signs symbolize the concept of fertility and the idea of plant germination.

- rectangle with a V-shaped cleft (fertility, emergence, and/or germination). The V-shaped cleft, which usually marks the crown of the head of the jaguar and were-jaguar, corresponds to terrestrial faults and to the maternal womb, a crossing point and liminal zone between the infra-world and the world of the living.

- bloodletting instruments. Self-sacrificial rites were a common practice in Mesoamerica. Numerous archaeological remains testify to the prevalence of this custom among the Olmecs. Of note among these are the bloodletters, stone replicas of perforators whose handles were sometimes carved with significant images. Other instruments were also used, such as vegetal thorns and the spiny leaves of the agave, fish bones, and shark teeth. Imitations in bone or in stone were made in the likeness of these models.

- terrestrial headband composed of the imbrications of E-motifs and double step motifs. According to iconographic conventions, the terrestrial headband (or jaguar mask) evokes an altar. What Olmecologists call an "altar" is a parallelepipedal monolith in stone, with somewhat rounded edges and sculpted in high or low relief as, for example, in altar 4 from La Venta (**Fig. 6**). The expert David Grove appropriately suggested that it served the purpose of a seat; whence the second name of "throne," which one sporadically encounters in the archaeological literature.

- rectangle with braided motif, which represents a plaited mat. This motif recurred over a certain period time; it can most notably be found on later pictographic manuscripts in association with power and the ruling elite (**Fig. 7**).

- Saint Andrew's cross, known as the "Olmec cross," marked inside a circle. According to my hypothesis, the X-shaped cross signifies darkness, the subterranean world, and blindness. Here, it refers to a blind eye.

- U-shaped motif in a square. The U-shaped motif appears frequently in Olmec art. In general terms, it signifies a cave and the maternal womb (earth/moon). In specific cases, I believe it symbolizes the seeing eye; the pupil is sometimes materialized by a circle.
- eye-bands. The eye-band is a type of ribbon, of moderate thickness, that is placed over the eye of a human or hybrid figure. It may be smooth with stippled, hatched, or even punctuated circles, or embellished with a were-jaguar profile. Either way, it is a symbol of fertility, evoking water and sacrificial blood.
- motif lightly bent at the top with semi-circle. I believe this design represents an L-shaped—“tearful”—eye, depicted vertically. This sign appears frequently in Olmec iconography. It is often associated with the figure of the were-jaguar and it refers to fertility and the sacrificial domain.
- S-shaped motif with central diagonal sash. I interpret this sign as depicting an ear ornament. Its design usually comprises two spirals placed on either side of a rectangle or circle; such a detail appears on an Olmec celt of unknown provenance, where one can see a human profile wearing an auricular ornament (**Fig. 8**).
- rounded motif with flared upper section. This represents a receptacle, a type of jar, which evokes the notion of fertility or the sacrificial domain.

More Difficult Motifs

Other signs are more difficult to interpret and/or read due to the poor state of the drawing. This is the case for the “inverted grooved sign” accompanied by three petals/feathers (radial circle with vegetal elements), the oblong pointed motif (weapon?), the rectangular plaque crossed with a double line (rectangular axe? ornament?), and the motif with rounded edges and crossed with a double line (petaloid celt?).

Glyphs That Remain Unknown

Finally, certain glyphs are entirely new. I mention them here and endeavor to make my own interpretative contribution:

- motif with three small protuberances and sometimes a horizontal bar, which I interpret as representing a sacrificial heart and/or a stone.

It should be noted for comparative purposes that among the pieces of Olmec jewelry is a mother-of-pearl pendant, which was uncovered at Teopantecuanitlan in Guerrero (**Fig. 9**). Christine Niederberger⁴ was right to recognize this as a representation of the human heart.

These icons assume their full meaning once they are resituated in the broader context of the sacrificial universe. Indeed, the practice of human sacrifice has been attested among the Olmecs. It is interesting to note that the glyph depicting the heart and that

⁴ 2002, 187.

depicting the hearthstone, both formally and semantically similar, recur in the art of later civilizations of ancient Mexico as well as during colonial times, as on the *Florentine Codex* and the *Santa María Asunción Codex* (**Figs. 10a and 10b**).

- geometric motif formed by a rectangle topped with a square, which I believe represents a diadem (glyph of the year and power). In later periods, the headgear of the Tlatoani, the Nahua sovereign, took on a similar shape.

- pointed motif coupled with a volute, which I identify as a wooden bat used to light a fire accompanied by its scroll of smoke.

- a multi-lobed sign that symbolizes the flame (fire) and, following the rule of *pars pro toto*, the torch. In fact, the multi-lobed glyph comprises two stepped motifs seen horizontally and joined to one another. I should point out that the double step motif usually appears in isolation; more rarely, it forms part of a figurative image such as that on the Linea Vieja mask in Costa Rica, where it occurs on the crown of the head (**Fig. 11**).

- oval motif from which two small, curved lines emerge, which I believe to represent vegetal sprouts. The whole resembles certain Olmec glyphs of the cave-mountain and, later, of certain Zapotec and Aztec toponyms, such as, for example, the Nahua toponym *xocoyoltepec* (from *xocoyolli*: sorrel), which can be seen on a plate of the *Mendoza Codex* (**Figs. 12a, 12b, and 12c**). Could we be in the presence of the Mesoamerican prototype of the glyph that depicts the city?

- pointed motif that depicts the thorn of an agave used during bloodletting rituals.

- insect design, which represents neither a bee nor a spider,⁵ but rather an ant.

- Generally, the insect image is highly sought after by Mesoamerican artists, and particularly by Aztec sculptors.

- Olmec art has only one representation of it: monument 43 of San Lorenzo, basalt sculpture in the round, kept at the Museum of Xalapa in Veracruz (**Fig. 13**). The body, depicted with eight legs, is divided into two distinct parts, one small and rounded, the other large and rectangular. Above is a disc with five dots in staggered rows. Taken together, its morphology suggests the naturalist representation of a spider; however, a more symbolic reading reveals a “fantastic” ant carrying a grain of corn.

Moreover, we can compare the picture of the ant, engraved on the Cascajal Block, with the depiction of an ant nest in the *Florentine Codex* (**Fig. 14**). This straightforward visual comparison reveals clear analogies. Such similarities encourage our identification.

⁵ As suggested by Ortiz Ceballos et al. 2007.

Toward an Interpretation: The Glyphic Ensemble of the Cascajal Block

In light of this information, I propose a global interpretation of the Cascajal Block. Authors such as P. Ortiz Ceballos and M. del Carmen Rodríguez find that its message concerns daily life, a type of list not unlike later tax registers.⁶ Contrary to this hypothesis, I believe its contents to be eminently religious in nature, although one can also detect socio-political concerns underlying this message. Let me proceed by a series of steps to clarify my position.

First, one can draw attention to the following semantic sequence: “ant-corn-Jaguar-Mother Earth.” Then, one can link these assorted components to religious ceremonies and, in particular, to subterranean and self-sacrificial rituals.

The mythology of ancient Mexico informs us about the “ant-corn” association. Myths and legends reveal a close link between these two elements. These tales recount that the cereal was originally buried inside a mountain. It was presented as a gift to humankind by the god-priest *Quetzalcoatl* (feathered serpent), the civilizing hero of Mesoamerica, by means of metamorphosizing himself into an insect and/or through the agency of ants. The *Popol Vuh*, a manuscript written in the Quiché language in the sixteenth century and based on oral tradition, relates that ants revealed its hiding place. On this point, the aforementioned monument 43 of San Lorenzo provides a perfect illustration of these beliefs.

In addition, there are a great many iconographic incidences that support the “maize-Jaguar” association.

Let’s move on to the ritual register. The torch and the knuckle duster are repeatedly depicted on the Cascajal Block. This pair of objects is generally associated with religious rites that are held in dark and hidden locations such as caves. The perforator and the agave thorn are also among the most insistently reiterated glyphs. In the manner of the torch, the bloodletter is depicted in various ways and sometimes bears the mark of the Olmec cross.

I am not surprised by the presence of self-sacrificial instruments. Indeed, the archaeological data verifies that the act of extracting blood was performed, among other places, in subterranean sites.

Furthermore, note the link between the perforator and both the “Olmec cross in a circle” and the “U-shaped motif in a square.” In fact, these latter two glyphs should be read as a pair. The codified image of the one-eyed man becomes apparent on this condition alone. According to my hypothesis, the “Olmec cross in a circle” represents blindness and the “U-shaped motif in a square” symbolizes the seeing eye. It is interesting to note that an analogous image is inscribed on an Olmec perforator in jade of unknown provenance (**Fig. 15**). As for the image of the one-eyed man, its presence in Olmec imagery is attested to by monument 1 of Laguna de los Cerros, which depicts the head of a hybrid creature whose blind eye is marked with a Saint Andrew’s cross (**Fig. 16**).

On the Cascajal Block, the proximity of the image of the perforator to that of the one-eyed man can be explained by the procedures of bloodletting rituals. Beyond the scarification of the legs, the bleeding of the male member, the perforation of the earlobe and tongue, there is also the perforation of the eyeball. This bloody practice was already

⁶ Ortiz Ceballos et al. 2007, 18.

exercised by the Olmecs, as can be seen on monument 1 of Cerro de la Mesas (**Fig. 17**). When viewed from a broader perspective, self-sacrifice can be understood as an act of regeneration through an offering of blood to the nourishing Mother Earth and the Jaguar.

The motif of eye-band, engraved upon the Cascajal Block, refers to the flowing of precious water (water-blood). It is no surprise that self-sacrificial practices were closely linked to the concept of fertility, which explains the profusion of motifs associated with vegetation or with the idea of germination (corn, vegetal motifs, V-shaped cleft in a rectangle, etc.).

In ancient Mexico, the sacrificial domain was never far from the political and military domains. The E-shaped and double step motifs that mark the terrestrial headband (water-fire binomial serving as a metaphor for war), the multi-lobed motif composed of two step-shaped glyphs and the hypothetical drawing of a weapon allude to the realm of war. The socio-political sphere, on the other hand, is signified by the following emblems of power: torch, knuckle duster, diadem, S-shaped motif with central bar (ear ornament), altar-throne, and plaited motif in a rectangle (mat), which represents a seat destined for the elite.

It is worth noting that the glyphs of the diadem (repeated twice), the ear ornament (three times), and the altar-throne (twice) are of relatively large size compared with the more modest size of the other signs. These three motifs, therefore, appear to occupy a preponderant place in the symbolic realm.

Is there, at the heart of this ideographic discourse, an individual who has acquired a new politico-religious and/or military status? Do the glyphs evoke an initiation rite, such as a rite to assume power? Does the ritual take place in an underground location, as would suggest the recurrent presence of the torch and knuckle duster images? Does the ceremony include self-sacrificial practices?

If the answer to these questions is affirmative, as I believe it is, then the Cascajal text would revolve around a number of semantic, religious, sacrificial, military, and socio-political spheres, all of which were closely related to each other. On this point, one observes the omnipresence of the concept of fertility. The figures of the Jaguar and Mother Earth, the principal recipients of the gift of blood, are evoked in a more subtle and implicit manner.

In the purely formal domain, it is interesting to note that the whole block is framed (above and below, left and right) by two identical signs, which form pairs (ant and radial motif with three petals).

In addition, all the glyphs can be read either in isolation, in pairs (binomial), or in groups or series of elements. At times, the direction of reading may vary. For example, the ant glyph is more legible once it is placed horizontally (which forces the reader to adopt a different reading angle). As for the repetition of certain glyphs, it reflects the desire to emphasize the message and thus accentuate its power in the eyes of the reader.

Our inquiry has demonstrated the coherence and the semantic complexity of the glyphic ensemble of the Cascajal Block (**Fig. 18**). This unity, which is equally apparent in both the form and its contents, pleads in favor of its authenticity.

It has become clear that the Olmecs produced a form of writing, essentially religious in nature, and that it served as the basis for later writing systems in ancient Mexico.

Bibliography

Standard Abbreviations:

CEMCA: Centro de Estudios Mexicanos y Centroamericanos

FCE: Fondo de Cultura Económica

INAH: Instituto Nacional de Antropología e Historia

UNAM: Universidad Nacional Autónoma de México

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Biography

Caterina Magni is an Associate Professor (HDR) of Prehispanic Archaeology at the University of Paris-Sorbonne (Paris IV). Her research has formed the basis for two books , one of which was published by Éditions du Seuil (Les Olmèques. Des origines au mythe, 2003), and for a several articles.

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Map:

Map of Olmec Mesoamerica

Drawing by C. Magni.

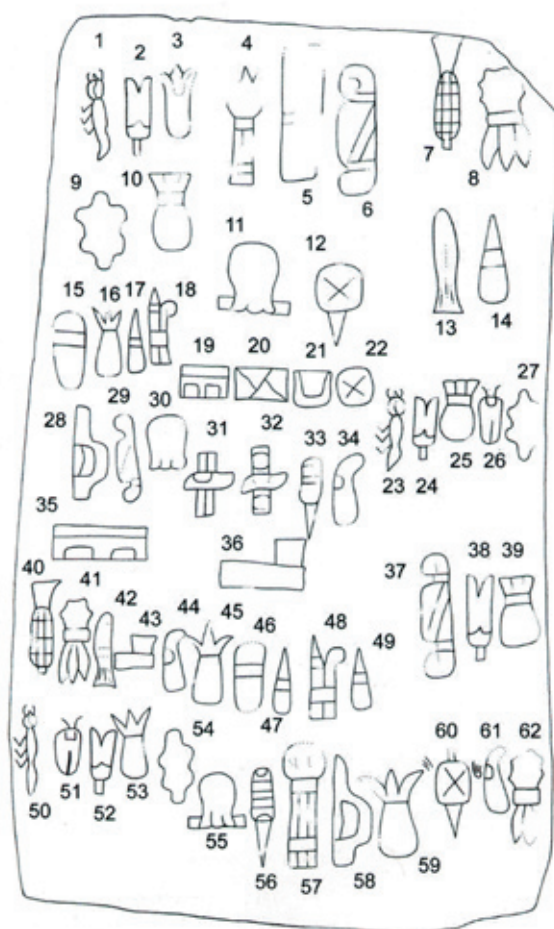


Fig. 1.

Cascajal Block, Veracruz.

After Rodríguez et al. 2006, fig. 4.

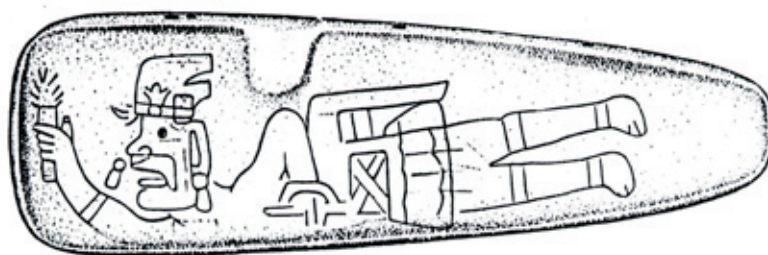


Fig. 2.
Spoon pendant of unknown provenance.
After Cervantes 1969, fig. 10.

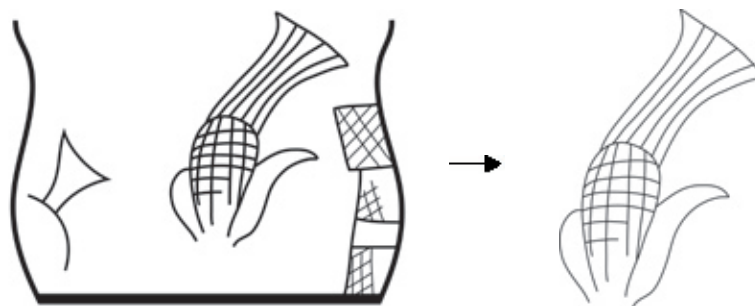


Fig. 3.
Tlapacoya bowl, Mexico Basin.
Drawings by C. Magni, after Niederberger 1987, fig. 446.

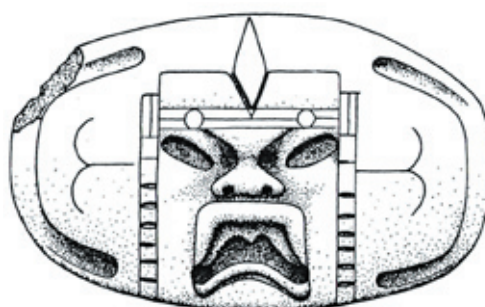


Fig. 4.
Pectoral from La Encrucijada, Tabasco.
After Gomez Rueda and Courtes 1987.



Fig. 5.
Celt of unknown provenance.
Drawing by C. Magni, after Joralemon 1990, 173.



Fig. 6.
Altar 4 of La Venta, Tabasco.
After Grove 1973, 131.



Fig. 7.
Tlatoani mexicana sitting on a woven mat.
Drawing by C. Magni.



Fig. 8.
Celt of unknown provenance, detail.
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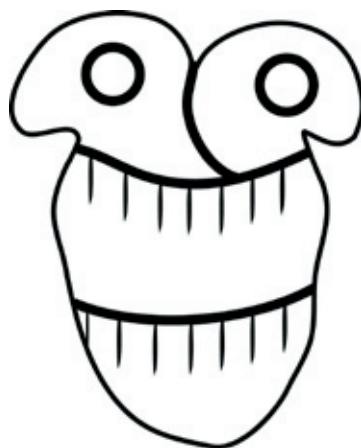


Fig. 9.
Mother-of-pearl pendant from Teopantecuanitlan, Guerrero.
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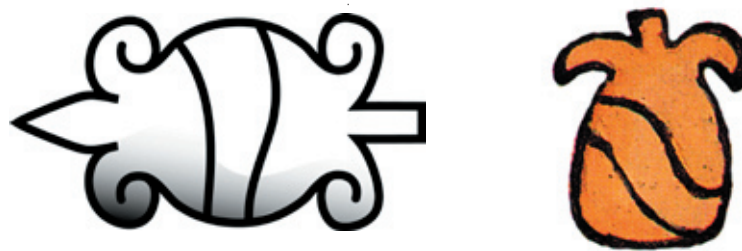


Fig. 10a and 10b.
Stone and heart glyphs
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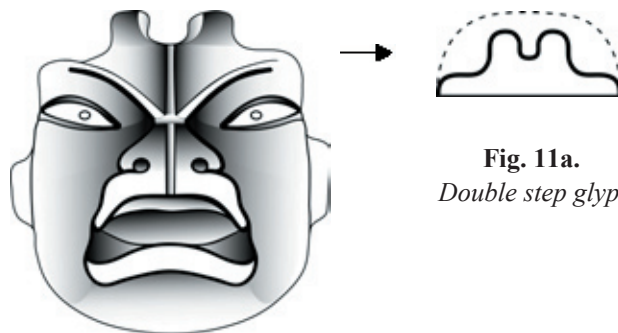


Fig. 11a.
Double step glyph.

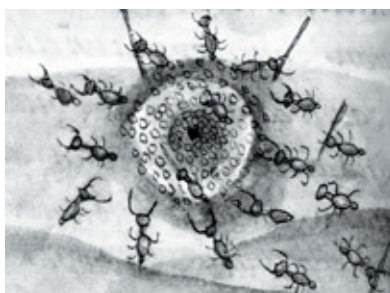
Fig. 11.
Linea Vieja mask, Costa Rica.
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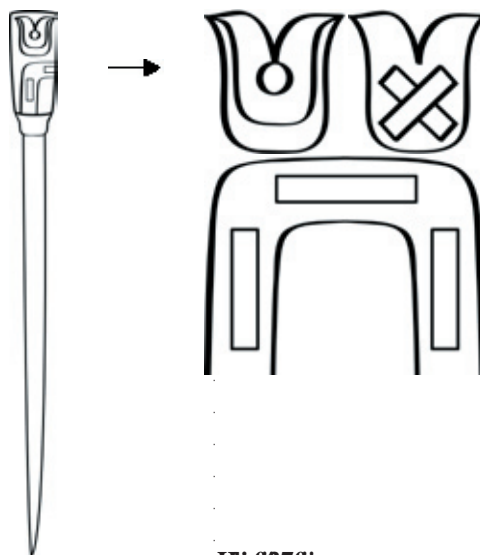
Fig. 12a, 12b and 12c.
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 Drawings by C. Magni and Mendoza Codex. Drawings by C. Magni and Mendoza Codex.



Fig. 13.
Monument 43 of San Lorenzo, Veracruz.
 Photo by C. Magni.



Hli 0360'
"Cpv'pgu0'
 Florentine Codex.

**H*i* 0370'**









Qw ge'r gt lqt cwt. 'qhlwmpqy p'rt qxgpcpeg. 'y kj 'k ci g'qhlqpg/gf' o cp0
 Drawing by C. Magni, after Joralemon 1990, fig. 124.










**H*i* 0380**




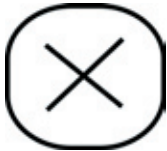





O qpwo gpv'3'qhNci wpc'f g'hqu'Egttqu.'Xgt cet w'0
 Drawing by C. Magni, after a photograph.


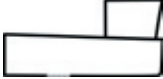
**H*i* 0390**

O qpwo gpv'3'qh'Egttq'f g'h'u'O gucu.'Xgt cet w'0
 After Stirling 1943, fig. 13.

No.	GLYPH	DESCRIPTION	DESIGNATION AND PERSONAL INTERPRETATION	INTERPRETATION OF OTHER AUTHORS (Rodríguez et al. 2006 and Ortiz Ponciano et al. 2007)
1		Insect in profile with antennae and six legs	Ant (alliance man-animal, corn, fertility)	Bee or spider
2		Rectangle with V-shaped cleft and a stem	Vegetal motif (emergence, primordial rift)	Motif associated with the god of corn
3		Tripartite element flared towards the top	Ear of corn in its husk (fertility, germination, power, color yellow)	Motif associated with the god of corn
4		Fascia with tripartite element	Torch (fire, conquest, masculine element, power, subterranean rituals)	Pineapple
5		Rectangular element crossed with double line	Rectangular axe or ornament? (socio-aesthetic sign of distinction, symbol of power)	<i>idem</i>
6		S-shaped motif with central bar	Ear ornament (socio-aesthetic sign of distinction, symbol of power)	Bundle or <i>bulto</i>
7		Oblong element covered with "grill" motif	Ear of corn (fertility, germination, power, color yellow)	<i>idem</i>
8		"Inverted grooved sign" with three petals/feathers	Radial circle with vegetal elements (heat, fire, fertility)	Snail (cross-section view)

9		Multi-lobed element composed of two double step motifs seen horizontally and joined together	Flame (fire, heat, torch)	Animal skin
10		Rounded motif with flared upper section	Rounded receptacle (womb, earth-water)	<i>idem</i>
11		Element with three small protuberances in its lower section and sometimes a horizontal bar	Sacrificial heart, stone (human sacrifice, water-blood, renewal)	Hill or bivalve shell
12		Circle containing an Olmec cross and a pointed tip	Bloodletting instruments, perforators (self-sacrificial rites, water-blood, renewal)	Awl or dart tip (similar hypothesis)
13		Oblong element with pointed tip	Pointed weapon (sacrifice, war, power, conquest)	Fish
14		Pointed element	Agave thorn, bloodletting instrument (self-sacrificial rite, water-blood, renewal)	Celt
15		Oval crossed with a double line	Petaloid celt? (symbol of power)	Bundle or <i>bulto</i>
16		Element with three pointed tips	Torch (fire, conquest, masculine element, power, subterranean rituals)	<i>idem</i>
17		Pointed element with a volute	Wooden stick to light fire and volute of smoke (fire, heat, power)	"Cartridge pouch" or <i>cartuchera</i>

18		Terrestrial frieze made by imbrications of E-shaped and double step motifs	Altar-throne (power, jaguar, conquest)	<i>idem</i>
19		Rectangle with braided motif	Plaited sitting mat (power)	<i>idem</i>
20		U-shaped motif in rectangle	Seeing eye (light, life)	No hypothesis
21		Motif of the Olmec cross in a circle	Blind eye (darkness, death)	Olmec cross
22		Semi-circular element with baton, seen vertically	Knuckle duster (subterranean rites, cave-mountain, power, conquest, feminine element)	<i>idem</i>
23		Rectangle crossed by vertical lines with oblong element at center	Eye with eye-band (water-blood, fertility)	<i>idem</i>
24		Rectangle punctuated by circles with oblong element at center	Eye with eye-band (water-blood, fertility)	<i>idem</i>
25		Oblong element crossed by horizontal lines and with a pointed tip	Bloodletting instruments, perforators (self-sacrificial rite, water-blood, renewal)	Awl or dart tip (similar hypothesis)
26		Elongated element bent at the top and with a semi-circle	L-shaped “tearful” eye, seen vertically (water-blood, fertility)	No hypothesis

27		Oval with two small curved lines	Toponym (power, city)	Corn in the process of germination
28		Rectangle topped with a square	Diadem (glyph of the year, power, socio-aesthetic sign of distinction)	No hypothesis

'Hl 03: 0'
U{pqrwē'wdrq"qlh r{rj u'lt qo 'j g'Ecueclcn'Drqen0'
Drawings by C. Magni.