

# Teotihuacan

Obsidian, Pottery & Ritual Art







As we saw in our first article, Teotihuacan was one of the first major civilizations in Mesoamerica. Its cultural influence and trade connections extended over thousand kilometres to the Maya strongholds of Tikal and further to Copan in present-day Honduras. The main driving force behind its power and enormous cultural influence was long-distance trade and a monopoly on obsidian. Particularly, the rare translucent green obsidian, exclusively mined and processed near Teotihuacan, was highly sought after.

#### *Thriving Long-Distance Trade*

Teotihuacan thrived on long-distance trade, which facilitated the construction of numerous monumental projects. Obsidian was its primary source of income and was traded over thousands of kilometres throughout the continent. The local obsidian deposits were abundant, with forty percent of the population engaged in its extraction and processing. In addition to regular imports of essential food for the growing population, whose labour was increasingly dedicated to finest craftsmanship, goods such as cotton and cocoa the latter reserved for the elite were also traded. Hematite, jadeite, turquoise and cinnabar, among other raw materials, were imported for artisans with diverse knowhow.

#### *Significance of Obsidian*

Obsidian can be considered a blessing for Teotihuacan, perhaps even the key to its economic success that allowed the construction these massive pyramids. There were over thirty obsidian deposits in the vicinity utilized for creating various artifacts and sharp weap-

ons. Sites like Otumba, Zacualtipan and Pico de Orizaba were surface-mined, with most sites yielding grey-black obsidian. However, the Sierra de las Navajas contained a unique translucent golden-green obsidian variety with glass-like quality. The green colour held strong ritual significance, possibly associated with the sacred bird Quetzal having green feathers which were used in ceremonial headdresses. Hence, the rare green obsidian was highly coveted and widely traded and also found in numerous Maya cities.

#### *Obsidian Production*

Obsidian, a very hard volcanic rock formed during volcanic eruptions, was shaped using a special flint-knapping technique. The resulting flakes were extremely sharp. Obsidian was used to create sharp tools such as knives, scrapers, drills, as well as various weapons like arrowheads, spears, lances and exquisite jewellery too. Artifacts crafted from obsidian had a religious and ritualistic character, such as the sickle-shaped dagger used in human sacrifices to extract the heart while the victim was still alive.





### *Obsidian Mining*

The Otumba Mine, located just twenty kilometres east of Teotihuacan, yielded grey-black obsidian. The Sierra de las Navajas, situated fifty kilometres southeast at an altitude of 3,200 metres, contained the holy golden-green obsidian. Obsidian was surface-mined up to a depth of twenty metres and later underground in tunnels reaching depths of up to fifty metres. Workers lived in settlements nearby, where some artifacts were already produced. Additionally, brown-red, red-black and spotted obsidian varieties were also present.

### *Monumental Architecture*

Almost all structures served a religious or ritual purpose. Many buildings were intricately painted and must have appeared extremely impressive. Unfortunately, there are no remnants or complete restorations of these paintings today. Most structures were painted on a red background with white motifs, though temple decorations were also painted in various colours. Motifs depicted were of mythological, astrological and ritual nature, with some illustrating people in ritual acts or daily work. Temples were adorned with sculptures on walls, masks including also human and animal figures made of stone, alabaster, or even obsidian.

### *Enormous Ceramic Production*

The first ceramics in Mesoamerica were produced over 4,500 years ago, that is 2,000 years before the emergence of the Teotihuacan Culture. The tradition of artistically refined Teotihuacan ceramics developed various styles and lasted for 800 years. Surprisingly, the styles of different forms of containers changed little over time, particularly for ritual vessels that adhered to specific guidelines. The products were widely traded, reaching as far as Puebla, Guerrero, Oaxaca and over thousand kilometres into the Maya lowlands.

### *Ceramic Forms*

These included drinking cups in various shapes, bowls and pots of different sizes, vases, vessels with three feet a form typical of Teotihuacan, crucibles, candelabra and elaborately decorated incense burners with complex designs. Ritual vessels with depictions of deities, such as the typical Tlaloc jug







and unique half-moon-shaped incense burners, were particularly popular. Many ceramics were produced exclusively for ritual purposes and some figures were pressed into moulds and fired, possibly representing the earliest form of mass production in Mesoamerica.

#### *Ceramic Techniques*

Characteristic features included fine polishing and a high gloss finish. A range of luxury ceramics with lids, various painting techniques and complex flat-relief compositions were produced. The colours used were white, green, yellow and light blue, mostly on cinnabar-painted and polished surfaces, as well as brown and black. Many patterns depicted anthropomorphic and zoomorphic figures, as well as stamps with faces or figures attached as handles.

Different negative techniques with incised decor and protrusions were employed. Discovered candelabra had one, two, or three chambers, with two theories suggesting they were either oil lamps or incense burners. Miniature ceramics for various ritual purposes were also produced. We know them from other south American cultures, where they were made as gifts for child burials.

#### *Ceramic Figures*

It is remarkable that the style of all human figures is characterized by a lack of any individualization. The faces all look the same. Teotihuacan also developed special ceramic figures, including unique hollow ritual figures, also known as guest or host figures. Some had a lid under which a smaller, intricately crafted



and painted figure was hidden. There were also two-piece figures with front opening filled with many small figurines in their hollow heads, abdomen, arms and feet.

#### *Ritual Figures*

The figures represented women, priests, traders, or warriors and were associated with an important cult of the dead. In female graves, another variant of these figures was found, featuring movable limbs like playing dolls. Their significance is not known yet. Scientists also noted that a change of clothes was performed with these ceramic dolls. Perhaps they were dressed for different rituals, or were they truly intended only for children to play with? We do not believe in the toy idea, as everything in Teotihuacan had a deeper ritual character.

#### *Agriculture & Animal Husbandry*

The inhabitants relied on local cultivation on high terraces with irrigation from the Rio San Juan and various mountain springs. However, the large population could not sustain itself and over half of the food needs had to be imported. Crops included corn, beans, peppers, tomatoes, squash, amaranth and other vegetables and grains. Wild fruits, juniper berries, rushes, purslane, prickly pear, agaves and various greens and herbs were also collected.

Turkeys and dogs were domesticated, with the latter considered a delicacy. Hunting involved deer, coyotes, hares, rabbits, rodents, birds, and reptiles. The diet in Teotihuacan was rich and diverse and no proof of malnutrition was found.





### *Influx of Foreign Cultures*

Between 200 and 250 AD, there was a peaceful and tolerated influx of foreign cultures, likely due to the need for many workers in the construction projects. After the first wave, this was already the second wave of immigration. Archaeologists have identified three ethnic groups, each residing in their own quarters and maintaining their culture, traditions, religion and clothing.

How was this possible? Why did the ruler of Teotihuacan allow this? Experts believe that these migrants were significant traders and sought-after artisans, crucial for the economic success of the major trading centre with a flourishing long-distance trade. A similar example we have found in the Inka capital Cuzco a thousand years later.

### *Zapotec Immigration*

They were the first immigrants and became part of the complex social structure of Teotihuacan. They lived in their own quarter called Tlailotlapan on the eastern edge of the city, approximately three kilometres from



the Avenue of the Dead. Their quarter covered five hundred square metres and consisted of fifteen multifamily complexes housing up to a thousand residents. The Zapotecs arrived around 200 AD from the Oaxaca region, five hundred kilometres away. For over four hundred years, they retained their clothing, customs and their burial practices in stone graves.

They were involved in lime extraction and trade, importing fine orange ceramics from Puebla, mica from Monte Alban and producing the important deep red colour from cochineal insects for textiles. This colorant, obtained from a specific cactus-dwelling insect, is still used as E120 in food or cosmetics today.

### *Michoacan Immigration*

These immigrants from the west reached Teotihuacan around 250 AD and established their quarter next to the Zapotecs. It was initially a small group of a hundred people. Archaeologists found in the skeletons of this group intentional skull deformations, likely performed ritually or as a beauty ideal. They also buried





their dead according to their own customs. While constructing their houses in their own style, they incorporated many elements from Teotihuacan.

#### *Huastec Immigration*

From the northeastern region of Mexico around Veracruz migrated the Huastecs. Their merchant quarter covered four hectares and was inhabited by two thousand people. They built round houses and excavations in their quarter shed light on their activities. Items such as jade from Guatemala, amber, silex flint stones from Belize, shells, cocoa, cotton and rubber were found. Interestingly, only men seemed to have migrated and therefore they intermixed with women



from Teotihuacan. This could be proven by DNA tests of their bones.

#### *Close Maya Connection*

It is established that the most important group were Maya traders living in Teotihuacan. They maintained an important cultural connection with a flourishing long-distance trade into the Maya lowlands, despite being over thousand kilometres away. Three Maya burials have even been identified in the Moon Pyramid. Were they also part of the sacrificial victims?

#### *Numerous Maya Traces*

In Teotihuacan, there are more traces of evidence for their presence. They inhabited their own quarter, Tetila, where murals with Maya representations and figures with Maya hieroglyphs were found. All these facts support the theory that Teotihuacan was an oligarchy of merchant clans with an elected leader or administrator.

#### *Teotihuacan Enclaves*

For one of the largest trading nations in Mesoamerica, there were not only quarters for traders of other cultures but also trading outposts in other significant city-states. Some were located over thousand kilometres away in Yucatan and Peten in the Maya lowlands and highlands, such as the famous Tikal and Kaminaljuyu in Guatemala and Copan in Honduras.

#### *Substantial Influences*

Architectural influences were also found in Acamceh in Yucatan, Tonina in Chiapas, El Baul in Guatemala, as well as Amatitlan and Escuintla. Closer to Teotihuacan, outposts were established, such as in El Grillo near modern day Mexico City. In the present province of Michoacan, there were Tinganio and, on the Gulf Coast, in the Sierra de los Tuxtlas, the military outpost of Maticapan.

#### *Conquest of Tikal*

Tikal is almost as large as Teotihuacan, with six pyramids and eighty thousand inhabitants. Throughout its history, it was ruled by both male and female leaders. Maya inscriptions confirm the presence of a Teotihuacan delegation in Tikal in 378 AD. Recent studies interpret these inscriptions differently. The delegation first arrived in Uaxactun and El Peru, near Tikal. It is reported that a day after their arrival in Tikal, the ruler died and his successor es-



establishes a new dynasty, openly acknowledging its foreign origin. The successor is mentioned in typical Maya style by name as Siyaj K'ak, meaning born in fire, possibly pointing to the volcanoes around Teotihuacan. Another name mentioned is Spear-thrower Owl. He appears to have been a war leader, with the epithet owl suggesting a connection to the Teotihuacan storm and war god Tlaloc. And spear slingshots were a common weapon in Teotihuacan.

#### *Conquest of Other Maya Cities*

Maya hieroglyphs were deciphered and provide insights into Tikal's victories, possibly under Teotihuacan's influence. Tikal defeated Bejucal in 381 AD and Rio Azul in 393 AD. This suggests that Teotihuacan may have conquered the renowned Maya stronghold Tikal, exploited internal conflicts, or witnessed Maya clans from Teotihuacan assuming power and seeking control over their old homeland for economic reasons. This could explain the abundant artifacts from Teotihuacan found in Tikal during this period.

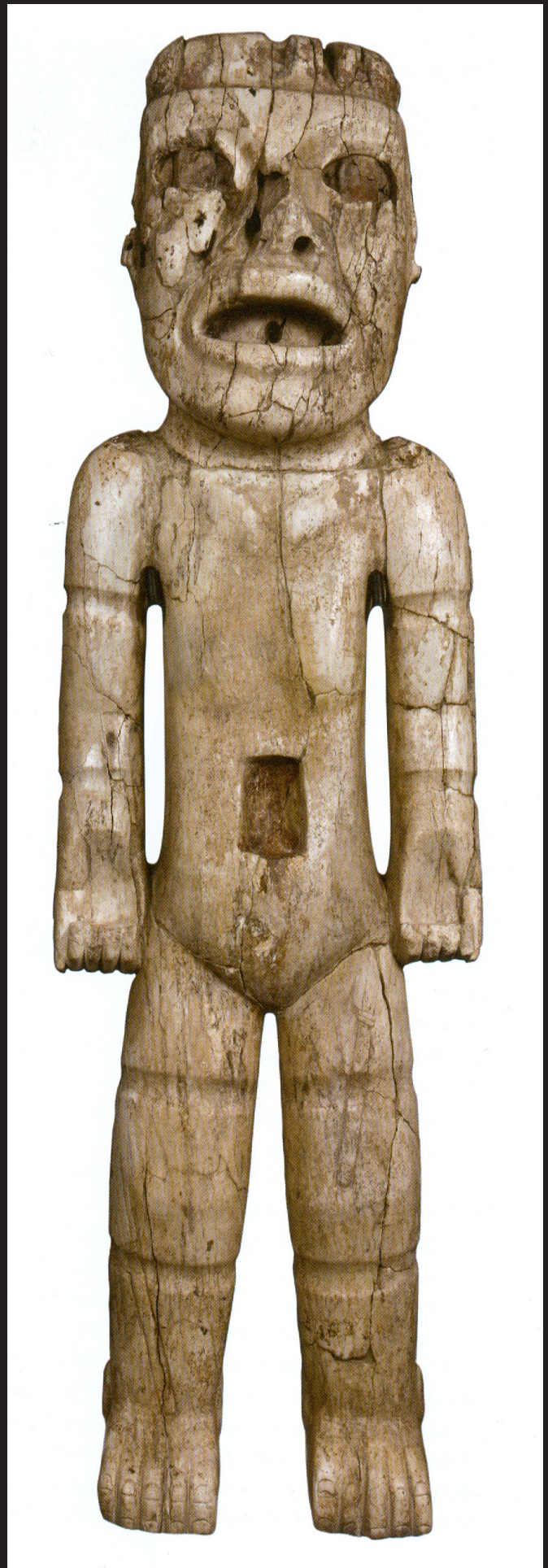
Conquests of Kaminaljuyu, Solano around 400 AD and a potential conquest of powerful Copan are also mentioned, supported by a Teotihuacan hieroglyphic inscription with a Maya translation found in Copan.

#### *Conquest of Monte Alban?*

Teotihuacan had a significant connection with the Zapotec capital, Monte Alban, in the Oaxaca region, only five hundred kilometres away. Recent excavations suggest a Teotihuacan campaign, possibly leading to the conquest of Monte Alban around 350 AD. This challenges the notion of a peaceful, mutually beneficial trade relationship between the two advanced Mesoamerican civilizations, indicating a more complex scenario involving the control of crucial trade routes and goods.

#### *Important Beliefs & Rituals*

Teotihuacan's sacred geography included mountains, cult caves, rivers, lakes and seas. The colossal pyramids symbolized the mountains of the gods, signifying their vital religious importance. The city's rituals revolved around a pantheon of various gods linked to the cosmos and natural forces, whose original names, unfortunately, remain unknown. Therefore, the names given to them by the Az-





tecs are used today.

### *Various Gods*

Tlaloc, the storm and rain god, prominently featured in Teotihuacan's depictions, recognizable by his eye spectacle like designs. Quetzalcoatl, a powerful creator god associated with wind, sky and earth, played a central role. The Great Goddess Chalchiuhtlicue, linked to water, was also adored, emphasizing the importance of offerings and an active cult involving human sacrifices.

### *Musical Instruments*

Teotihuacan utilized shell trumpets for ritual purposes, producing a penetrating sound believed to invoke the gods. Additionally, flutes made from hollow bones and clay were crafted, including a distinctive four-tube clay flute with a single mouthpiece. Various clay container whistles and long horns were also uncovered. The clay containers could be filled with water to change or fine tune tones.

### *Ballgame: Sport or Ritual?*

Evidence, such as ceramics and murals, suggests the practice of ballgames in Teotihuacan, but raising questions about its nature whether they were ritual games, or simply a sport, or military exercise. The exact location of the ball court remains still unknown. Or were they played on the wide Avenue of the Dead?

### *Widespread Mural Paintings*

Widespread painted murals adorned not only pyramids, temples and palaces but also residential complexes. Buildings along the lengthy Avenue of the Dead were extensively painted, in a predominantly deep red colour. The murals displayed an array of colours, from vermilion and ochre to orange, grey, green, yellow, light blue, white and black, which can be well seen in the pictures.

### *Intricate Symbolism*

The murals demonstrated detailed and sophisticated symbolism with ritual significance that researchers are still deciphering. Compositions often divided surfaces into upper and lower bands with geometric motifs, while the central part conveyed the narrative. The well-known compositions include the procession of singing priests and the imagery of flourishing trees.





### *Semi-Precious Stone Craftsmanship*

Greenstones like jadeite and serpentine held symbolic significance, representing life, fertility and purity. These stones were crafted into jewellery and small ritual figures depicting gods, possibly serving as well as talisman for various purposes at home or when traveling. Teotihuacan imported and worked with a wide range of semi-precious stones, including amphibolite, guatemalite, quartzite, muscovite, chlorite, fluorite, prasinite, dolomite, albite, magnesite, malachite, chrysocolla, travertine, pyrite, mica, marble, alabaster, turquoise and amazonite.

### *Techniques & Rules*

Teotihuacan's artisans adopted advanced techniques for cutting, grinding, and polishing semi-precious stones, with a dedicated artisan community in the Tecopac neighbourhood. Researchers believe there were clear rules governing the production of artifacts, including materials, shapes, and execution. This applied not only to semi-precious stones but also to murals, which showed remarkable consistency in motifs throughout the cultural period.

### *Expressive Masks*

Stone masks, especially those in head size, were a distinctive feature of Teotihuacan's material culture. Crafted from materials like black basalt, diorite and jade, these masks lacked openings for eyes and mouths but were adorned with inlays of white shells and obsidian, creating a natural appearance. While too heavy to be worn, these masks were likely used for ritual purposes, possibly in burial rituals or scarification, as they were not found in graves.

### *Two or Three Calendars?*

Teotihuacan used both a solar calendar with 365 days and a ritual calendar with 260 days. The Sun Pyramid and three platforms on the Citadel's east wall aligned with specific sunrise dates such as equinoxes and solstices, demonstrating the city's astronomical knowledge. The Temples of the Feathered Serpent featured precisely 365 serpent heads on its four sides.

While their own calendars are confirmed, it is uncertain whether Teotihuacan also adopted calendars from other cultures, such as the





Venus cycle calendar of one of their trading partners the Zapotec, who lived five hundred kilometres away in Monte Alban.

#### *Distinct Measurement Unit*

Teotihuacan used its own measurement unit, approximately eighty-five centimetres long, termed TMU or Teotihuacan Measuring Unit by researchers. Recent studies also revealed a quinary number system, using dots and lines for counting. A dot stood for one and a line signified five. This system, based on the fingers of one hand, indicated a sophisticated mathematical understanding.

#### *Possible Writing System?*

While Teotihuacan lacked a writing system, recent investigations suggest the presence of hieroglyphs in murals, potentially indicating a rudimentary writing or symbolic system associated with their artwork and expression. Over hundred signs have been identified, but their meanings remain still elusive.

#### *Unique Language?*

The language spoken in Teotihuacan remains unknown. While the Aztec, who lived a thousand years later, spoke Nahuatl, the language of Teotihuacan's inhabitants is yet to be determined.

#### *Summary*

Teotihuacan's advanced craftsmanship produced unique artifacts from diverse materials, showcasing exceptional high artisanal standards. The city's wealth, driven by obsidian and trade, enabled the construction of large ritual buildings.

Particularly intriguing is Teotihuacan's diverse and significant relationship with the important Maya Culture. While Maya traders lived in Teotihuacan for hundreds of years, questions arise about why the famous Maya city-state Tikal, was eventually conquered.

We hope the decipherment of hieroglyphs may soon reveal this fascinating story of a civilization that endured as a unique trade orientated oligarchy.

#### *Picture Credits*

We thank all museums, institutions and photographers for making available some of their pictures.





