

Olmec colossal head at La Venta. Photograph by Constantino Reyes-Valerio.

"ANCIENT MAYA"

The ancient Maya Indians created a spectacular civilization in southern Mesoamerica. In many ways their achievements surpass all other native American groups—certainly their superb monumental remains are more numerous. Some historians have compared the Maya to the ancient Greeks, noting that both made great intellectual advances, designed aesthetically pleasing works of art and passed their civilization on to other peoples. Millions of their descendants still inhabit parts of southeastern Mexico, Guatemala, Belize, Honduras, and El Salvador, where they cultivate indigenous plants, produce traditional folk art, and speak various dialects of the Maya language.

Their history in the early Formative era is obscure, but for more than a thousand years before A.D. 300 the Maya per-

fects their agriculture, religion, and arts. By the first century B.C. they lived in small agricultural villages and cultivated maize, beans, squash, and in some places harvested cacao, vanilla, sisal, and cotton. From the last two plants they made rope, mats, hammocks, and clothing. They also traded extensively by land and sea with people far to the north and south. Ecological adaptation, institutional order, and an understanding of higher mathematics were bases upon which the Maya civilization was built.

Within the vast Maya area archaeologists distinguish three geographical regions where different cultures evolved. The highlands of central Guatemala, adjacent El Salvador, and Honduras provided fertile land, a benign climate, and other resources to support a large population, then and now. Many early settlement sites, such as Kaminaljuyú, have been uncovered in the high inter-mountain valleys. The low-lying Yucatán peninsula was a second ecological zone settled by the Maya. It is a tropical plain, virtually treeless, with shallow soil deposits and very little rainfall; nevertheless, an adequate supply of sub-surface water and natural wells (*cenotes*) along with man-made cisterns makes cultivation possible. Settled by humans long ago, this northern lowland region still has a high population. Between Yucatán and the highlands is a third Maya region that is scarcely inhabited today, the central lowlands with its Petén jungle core and adjacent uplands in Chiapas, Belize, and Honduras. Mostly covered by dense tropical forests interspersed by rivers and swamps, and with heavy rainfall and humidity that make even slash and burn agriculture difficult, this region seems least suitable for human settlement; yet it was here that the Maya civilization flowered early and reached its highest peak.

The golden age of the Maya occurred from A.D. 300 to 900, when their culture flourished in the central lowlands. During this Classic period they built the great ceremonial centers known today as Bonampak, Copán, Palenque, Piedras Negras, Tikal, Uaxactún, and a dozen others. A remarkable system of causeways (*sacbeob*) connected some of these places, facilitating collection of tribute and exchange of trade items. These



The Palace, Maya temple at Palenque. Photograph by Dianne Weiss.

“cities” were not typical urban communities; instead they were civic-religious centers that had some elite dwellings, and dispersed in the surrounding area were scattered hamlets where the bulk of the peasants lived.

The genius of the Maya is revealed in their extant monuments at the Classic era sites. Here are handsome limestone temples with mansard-type roofs topped with decorative combs; stone-faced pyramids that usually served as a base for temples; cut-stone buildings that seem to have been used as government headquarters and official residences; ball courts, gateways, plazas, carved stone pillars (stelae); and water-reservoirs—all constructed without metal tools. The Maya, who invented and utilized the corbeled vault or arch that is the hallmark of their Classic architecture, were the only pre-Columbian Indians who used any form of the arch. Unlike the public buildings, houses of the ordinary men and women who toiled in these centers have long since disappeared, because they were made of wood, mud, and thatch.



Mural of warriors and captives, Maya temple at Bonampak. Courtesy Instituto Nacional de Antropología e Historia.



Maya clay figurine of a dignitary, Island of Jaina. Courtesy Instituto Nacional de Antropología e Historia.

Yet, in many places, vestiges of the raised earth floors of these houses can be located.



Vivid colors were characteristic of Maya architecture and art. Their important buildings were decorated with friezes, frescoes, and stucco ornamentation. Traces of red and blue paint indicate that stelae and structures—even the limestone pyramids—were painted, and fragments of their textiles show the same proclivity for bright colors. Aside from their considerable aesthetic and technical merit, the realistic frescoed wall paintings, especially those at Bonampak, reveal much about life in their golden age. They show musicians with their instruments (drums, trumpets, flutes, whistles, rattles), nobles being served a banquet, dancers and entertainers, warrior chiefs in their elaborate costumes, and captured slaves who had been mutilated or tortured. Additional daily life data can be gleaned from pictures on the superb polychrome pottery and from many clay figurines such as those found on the island of Jaina. Maya artists often incorporated numbers and dates into their works.

The Maya numerical system was a brilliant achievement that paved the way for their advancements in astronomy, engineering, and calendrical calculations. With only three symbols—a dot for one, a bar for five, and a shell-like figure for zero—they made complicated computations by using a positional mode that increased by twenties from bottom to top (unlike our decimal system, which increases by tens from right to left of the decimal point). The bottom, or units, position recorded numbers from 0 through 19; the second position sub-total was multiplied by twenty; the third position multiplied by 400 (20×20); and so on, as shown in Table 1.

The Maya concept of zero antedated by many centuries its use in Europe, where it was introduced about A.D. 1200 by Arabs who had acquired the idea earlier from the Hindu culture in India. Maya priests combined mathematics and astronomy to develop a solar calendar that was more accurate than the contemporary Julian calendar used in Europe. Their Long Count dating system reckoned days from a mythical beginning correlated to 3,113 B.C.

Maya numerals also had an alternative form, a glyph that

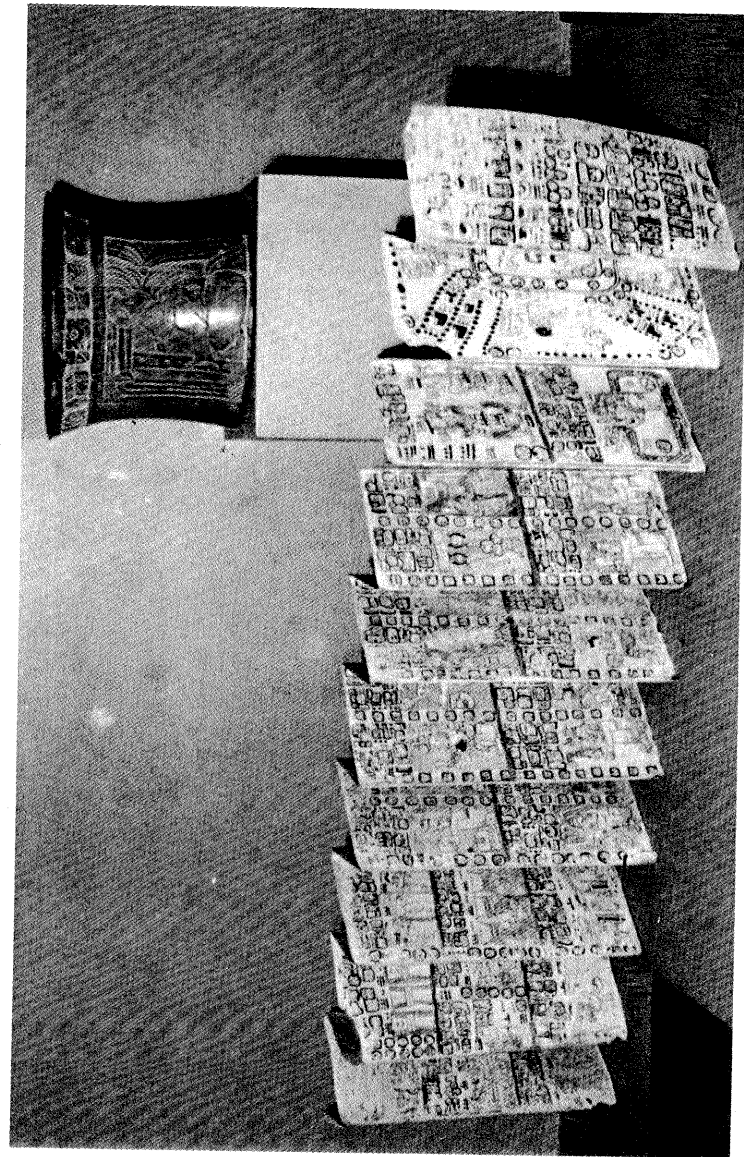
TABLE I. Maya Counting System

8,000s				• • •
400s			• •	
20s		• —	• •	• =
units	• =		• • =	•
totals	11	120	852	24,221

was the head of an animal, a bird, or a mythological creature. Numerical symbols were only part of the written communication pattern.

Maya hieroglyphic writing was the most sophisticated of all the American Indian inscription systems. More than four hundred glyphs, representing numbers, dates, colors, and more complicated matters, were chiseled in stone, painted in wet plaster and on pottery, and drawn in primitive books made from paper derived from the inner bark of the wild fig tree. These paper records, or codices, were folded accordion-fashion. Only three of them survive today, one each in Madrid, Paris, and Dresden. (There is also an unauthenticated fragment known as the Grolier Codex.) The glyphs, only partly deciphered today, recorded data and abstract knowledge related to chronology, astronomy, religion, and highlights of the rule of certain leaders.

Classic Maya society was stratified. At the top was an elite hereditary nobility composed of priests and ranking officials and their families; the middle sectors were the majority, the families of craftsmen and specialists, commoners, and peasant farmers; and at the bottom was a large component of slaves who were convicted criminals, or prisoners of war, or those who sold themselves or were sold by their families into



A Maya codex, or primitive book. Courtesy Instituto Nacional de Antropología e Historia.

servitude. Children of slaves were born free. Many scholars believe that the Classic Maya political organization was theocratic; others maintain there was a secular ruler and a high priest. Certainly there was a hierarchy of priests who were carried on litters and whose functions included prophesy, medicine, education of candidates for the priesthood, and religious rituals.

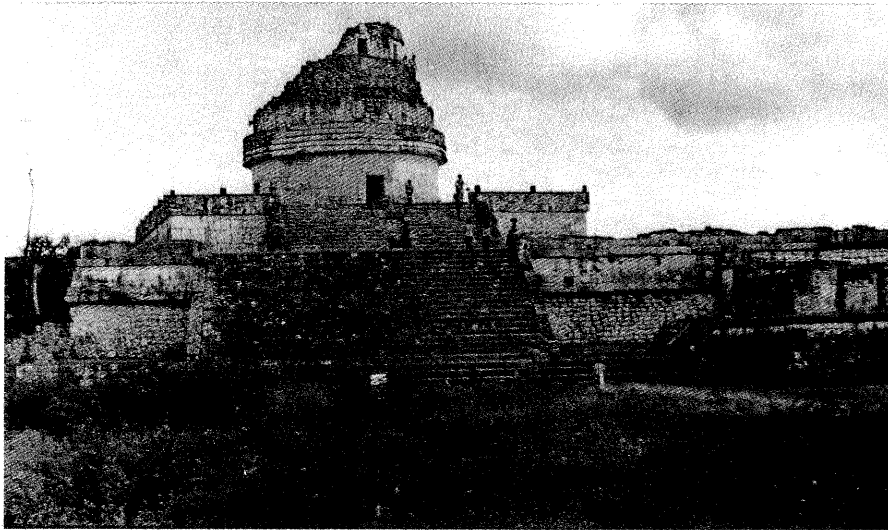
The Maya were polytheistic. Two chief gods in their pantheon were Itzamná, benevolent friend of man and inventor of writing, and Ix Chel, the moon goddess who was patroness of healing and pregnancy. Other important deities were patrons of rain (Chac), wind, maize, hunting, music, war, death, and a special goddess of suicides. Maya iconography is difficult to decipher because the supernatural beings had multiple manifestations, attributes, and symbols.

After six hundred years of splendor in the central lowlands, development suddenly ceased and the Maya centers were abandoned. No inscriptions dated later than A.D. 950 have been found there. Although there is some evidence of foreign intruders at the end of the Classic period, it is not believed that military conquest caused the collapse. Scholars have suggested several possible reasons: a maize virus, soil exhaustion, prolonged drought, epidemic disease, hurricanes, or supernatural visions perceived by leaders who were told to move elsewhere. But the best evidence points to peasant insurrections. Apparently the workers, oppressed by an increasing tax and work load to support the nobles and priests, retreated into the jungle, whereupon the whole society collapsed. The demographic and vital center of lowland civilization then shifted to northern Yucatán. The Maya highland petty states and chiefdoms, which had lagged far behind Classic era lowland developments, continued to exist.

A Maya renaissance occurred in northern Yucatán beginning in the tenth century. During this post-Classic period old centers in Yucatán were rebuilt and new ones were established near natural wells, the only reliable source of fresh water. Culture, techniques, and traditions from the south were transplanted in the north, perhaps carried there by priests or refugees. But the striking feature of this period



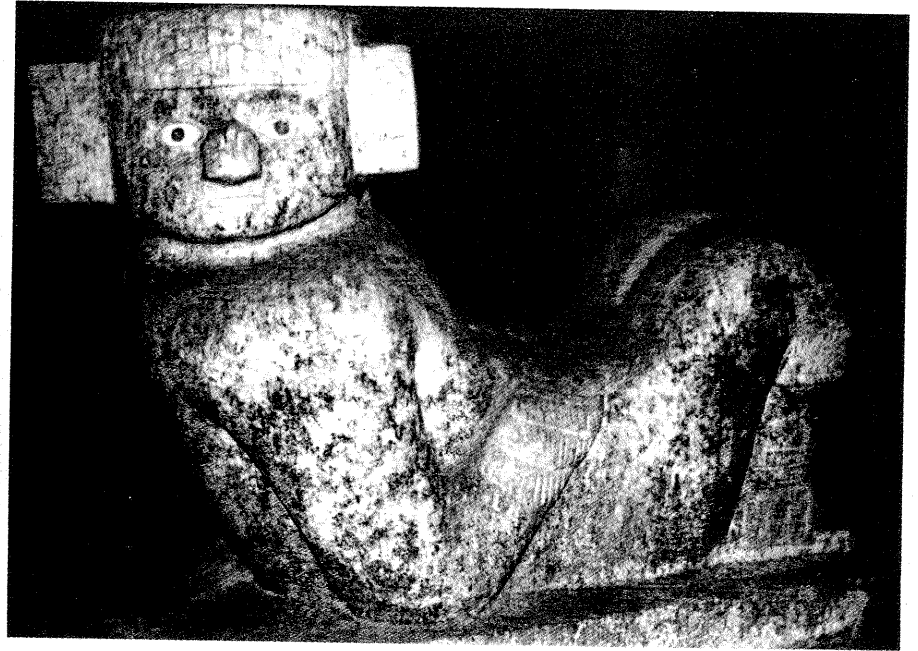
Maya-Toltec pyramid-temple of Kukulcan (or the Castillo), Chichén Itzá.



Maya-Toltec astronomical observatory, Chichén Itzá.

was the influence from central Mexico that came with an actual invasion by Nahuatl-speaking Toltecs who settled down and fused their culture with the Maya. The architecture of this renaissance Maya-Toltec period is not as refined as the Classic period, but it has a grandeur based on magnitude coupled with a simplicity of decoration.

Both Maya and Toltec traditions confirm the merging of their cultures. A Toltec legend tells how one of their leaders, Quetzalcoatl ("Feathered Serpent" in Nahuatl), expelled from their chief city of Tula (then called Tollan) after a factional dispute, made his way to the Gulf Coast with a group of partisans. A parallel Maya historical tradition recalls that about the year 1000 the Toltec warrior Kukulcán ("Feathered Serpent" in Maya) led followers to Yucatán where they seized the city of Chichén Itzá and rebuilt it. At this time, Toltec features first appeared in Yucatecan architecture: stone columns to support temple roofs, friezes of skulls, Chacmools (statues of reclining figures with flexed knees), and



Chacmool figure, Chichén Itzá. Photograph by Robert Yaryan.

especially the feathered serpent motif. The warlike Toltecs also introduced human sacrifice on a large scale.

Maya-Toltec culture flourished for a few hundred years in Yucatán before it disintegrated. Oral traditions suggest that political stability was first maintained through a confederation or league of three cities: Chichén Itzá, Mayapán (a walled city), and Uxmal. Then about A.D. 1200 Mayapán destroyed Chichén Itzá and dominated the area until it was annihilated in a revolt in the mid-fifteenth century. Thereafter, small independent chiefdoms were established, but their intermittent civil wars hastened the cultural decline. The final blow to Maya civilization came from the Spanish, who first overran the highland Maya chiefdoms and then invaded the northern lowlands.

When Spanish conquistadors came to Yucatán in the second decade of the sixteenth century, they found destroyed cities and a disunited Maya-speaking people who could not read their ancient hieroglyphic writing. Although their political structure had waned and their culture and technology had declined, the Yucatecan self-sufficient economic base continued. Because of the native demographic dispersal and fierce guerrilla warfare tactics, the Spaniards had a difficult time subduing the region. The conquest lasted from 1527 to 1546, and one last group, the Itzá, who had retreated south to Lake Petén, maintained an isolated independence until 1697. Thus the first advanced Indian civilization seen by the Europeans—Columbus encountered a Maya trading canoe in 1502—was the last to be conquered.