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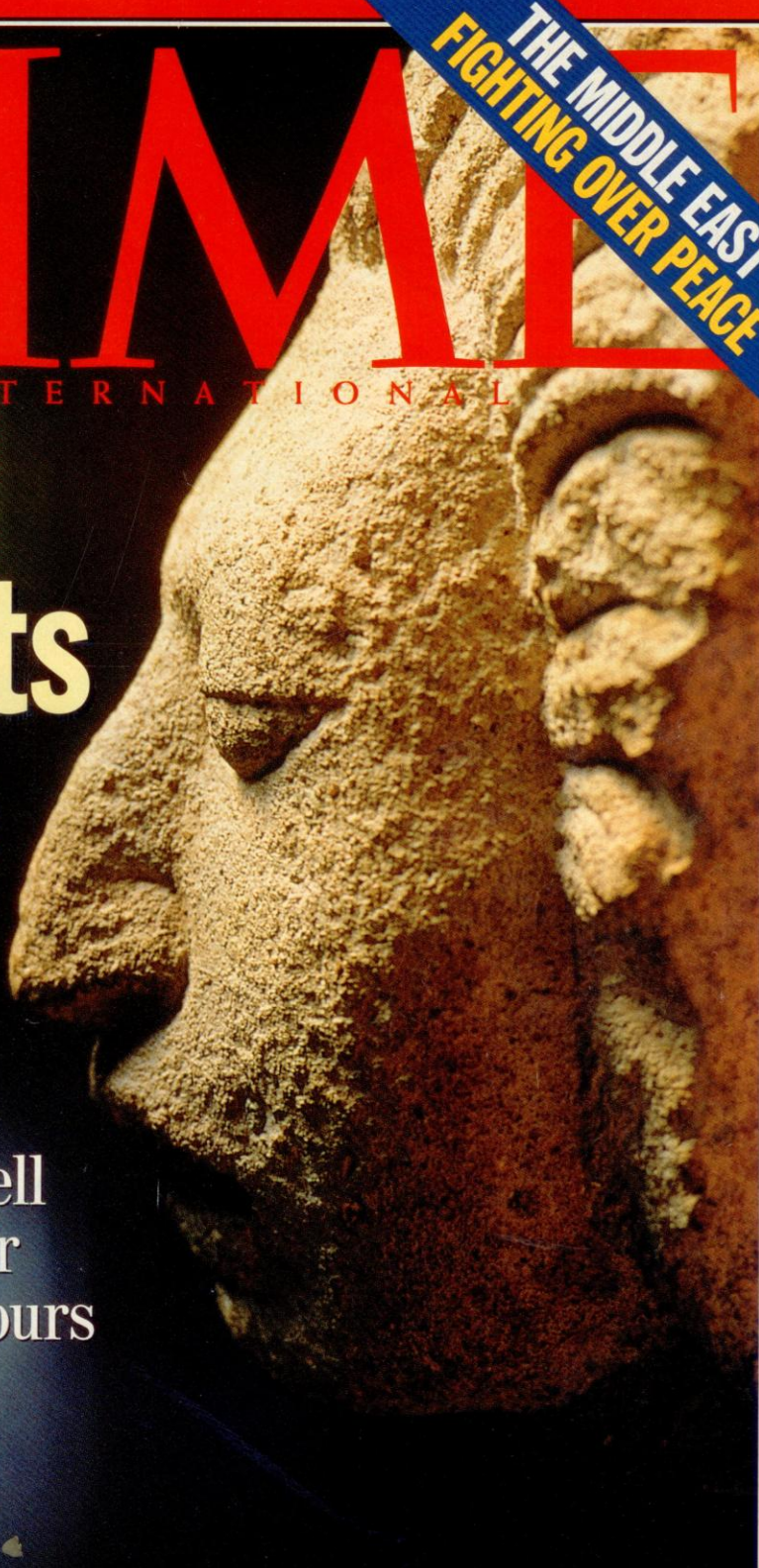
TIME

INTERNATIONAL

Lost Secrets Of the Maya

What new
discoveries tell
us about their
world—and ours

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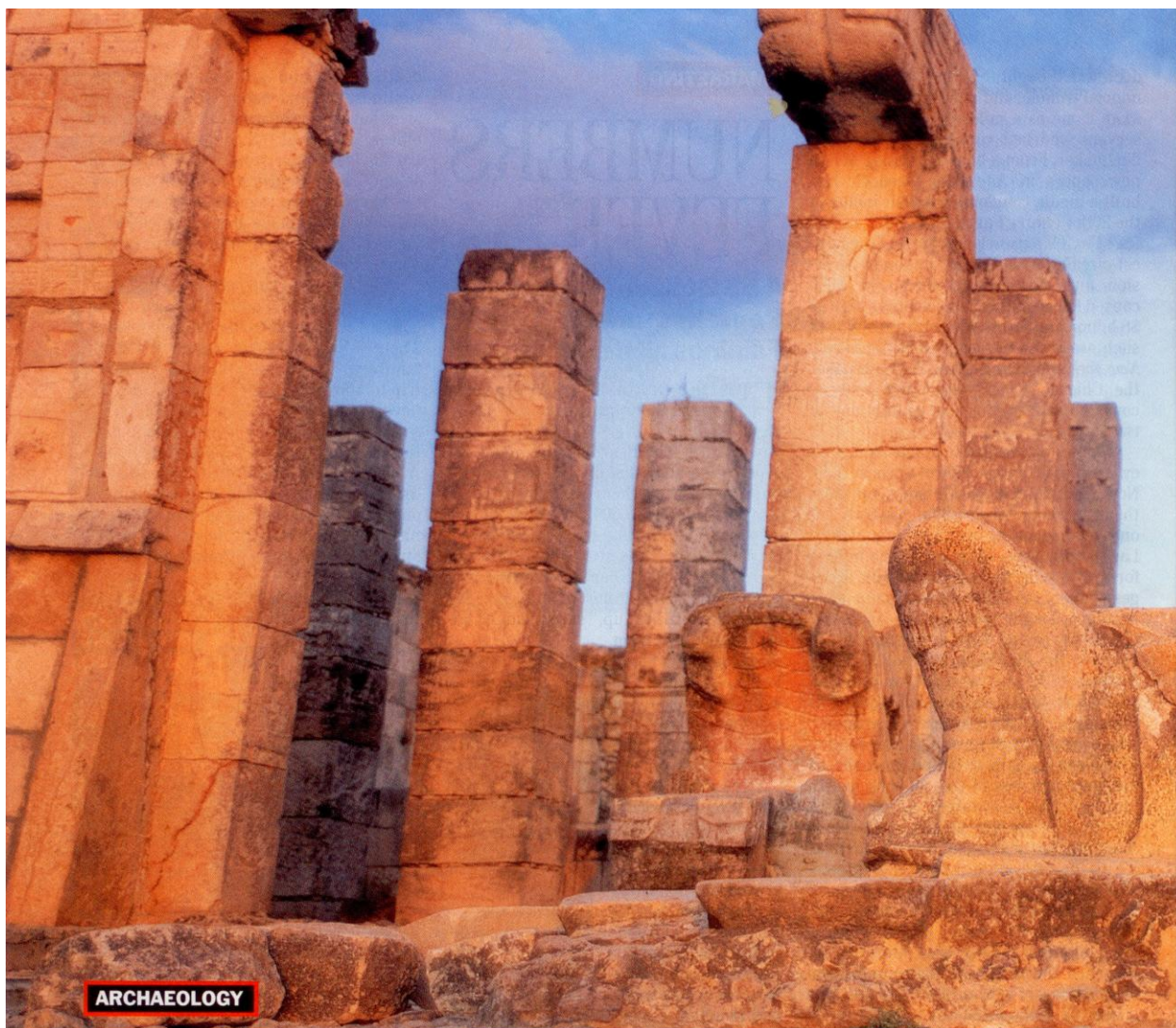
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ARCHAEOLOGY

SECRETS OF

After a century and a half of research, scientists are finally unraveling the mystery of

By **MICHAEL D. LEMONICK**

THE CROWD AT THE BASE OF THE ENORMOUS bloodred pyramid has been standing for hours in the dripping heat of the Guatemalan jungle. No one moves; every eye stays fixed on the building's summit, where the king, his head adorned with feathers, his scepter a two-headed crocodile, is about to emerge from a sacred chamber with instructions

from his long-dead ancestors. The crowd sees nothing of his movements, but it knows the ritual: lifted into the next world by hallucinogenic drugs, the king will take an obsidian blade or the spine of a stingray, pierce his own penis, and then draw a rope through the wound, letting the blood drip onto bits of bark paper. Then he will take the bark and set it afire, and out of the rising smoke a vision of a serpent will appear to him.

When the king finally emerges, on the verge of collapse, he reaches under his loincloth, displays a bloodstained hand and announces the ancestors' message—the same message he has received so many times in the past: "Prepare to go to war." The crowd erupts in wild cheers. The bloodletting has barely begun.

Who were the Maya, the people who built and later abandoned these majestic pyra-



ROBERT FRERICKS—GODS&WONDERS.COM

THE MAYA

who the Maya were, how they lived—and why their civilization suddenly collapsed

mids scattered around Central America and who enacted these bizarre rites? The question has piqued scientists across a broad swath of disciplines ever since an American lawyer and explorer named John Lloyd Stephens stumbled across something strange in the Honduran jungle. In *Incidents of Travel in Central America, Chiapas and Yucatan* (1841), Stephens impressionistically described what was later identified as the

ruined Maya city of Copán: “It lay before us like a shattered bark in the midst of the ocean, her masts gone, her name effaced, her crew perished, and none to tell whence she came, to whom she belonged, how long on her voyage, or what caused her destruction.”

More than 150 years later, the Maya seem less inscrutable than they did to Stephens, the man who discovered, or rediscovered, what they had left behind. Archaeologists have long

GIFTS TO THE GODS The chacmool figure reclining in front of a Chichén Itzá temple bears on its chest a vessel for offerings to the Maya gods. These gifts may have included hearts ripped from the chests of sacrificial victims. Chacmools, which also reflect the influence of central Mexico's Toltec culture, are thought to represent dead warriors in homage to the gods.

known that the Maya, who flourished between about A.D. 250 and 900, perfected the most complex writing system in the hemisphere, mastered mathematics and astrological calendars of astonishing accuracy, and built massive pyramids all over Central America, from Yucatán to modern Honduras. But what researchers have now found among these haunting irruptions of architecture may be, among other things, reasons for admonishing today's world: at a time when tribal fratricide is destroying Bosnia and farmers are carving through the rain forest, the lessons yielded by the Maya have a disturbing resonance.

THE LATEST DISCOVERY, announced just this week, underscores how quickly Maya archaeology is changing. Four new Maya sites have been uncovered in the jungle-clad mountains of southern Belize, in rough terrain that experts assumed the Maya would have shunned. Two of the sites have never been looted, which will provide researchers with a wealth of clues to the still largely unsolved puzzle of who the Maya were—and the mystery of how and why their civilization collapsed so catastrophically around the year 900. Of course, considerable mysteries persist and always will. "I wake up almost every morning thinking how little we know about the Maya," says George Stuart, an archaeologist with *National Geographic*. "What's preserved is less than 1% of what was there in a tropical climate."

Such limited and often puzzling physical evidence has not deterred growing legions of archaeologists, art historians, epigraphers, anthropologists, ethnohistorians, linguists and geologists from making annual treks to Maya sites. Propelled by a series of dramatic discoveries, Mayanism has been transformed over the past 30 years from an esoteric academic discipline into one of the hottest fields of scientific inquiry—and the pace of discovery is greater today than ever.

Among the already addicted, Mayamania is easy to explain. Says Arthur Demarest, an archaeologist from Vanderbilt University in Tennessee who for the past four years has led a team of researchers unearthing the remains of Dos Pilas, a onetime Maya metropolis in northern Guatemala: "You've got lost cities in the jungle, secret inscriptions that only a few people can read, tombs with treasures in them, and then the mystery of why it all collapsed."

The explosion of information has led to a comparable explosion of theorizing about the Maya, along with inevitable, often vehement, disagreements over whose ideas are right. Nevertheless, a consensus has begun to emerge among Mayanists. Among the first myths about this population to be de-



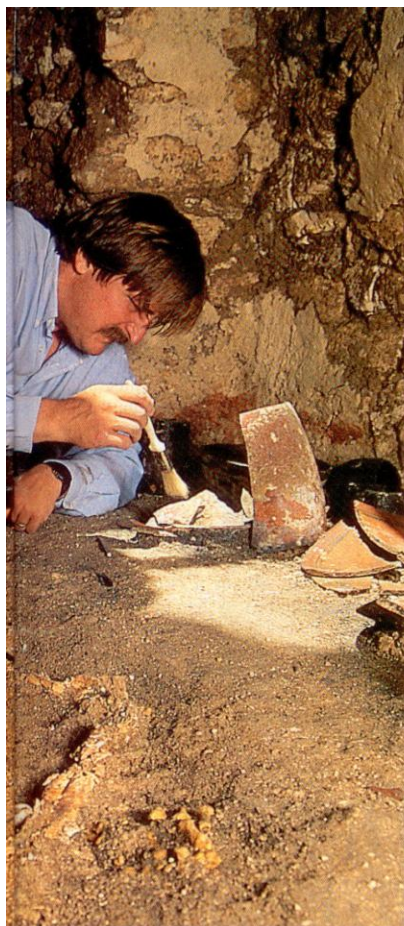
WHAT WAS THE MAYA CLASS SYSTEM? Tombs excavated by Arlen and Diane Chase, a husband-and-wife team of archaeologists, have produced evidence that Caracol's Maya society was not starkly divided between nobility and peasantry but had a large middle class. War victories yielded enough loot to support the ambitious Maya and turn Caracol into a boomtown. The Maya's middle class may have included artisans and administrators, warriors and overseers, all of whom had the means to acquire some of the same finely carved shell jewelry that the aristocracy enjoyed.

bunked is that they were a peaceful race. Experts now generally agree that warfare played a key role in Maya civilization. The rulers found reasons to use torture and human sacrifice throughout their culture, from religious celebrations to sporting events to building dedications. "This has come as something of a shock to many Mayanists," says Carlos Navarrete, a leading Mexican anthropologist.

Uncontrolled warfare was probably one of the main causes for the Maya's eventual downfall. In the centuries after 250—the start of what is called the Classic period of Maya civilization—the skirmishes that were common among competing city-states escalated into full-fledged, vicious wars that turned the proud cities into ghost towns.

Among the first modern Westerners to be captivated by the Maya were the American Stephens and English artist Frederick

Catherwood, who started in 1839 to bushwhack their way into the Central American rain forest to gaze at the monumental ruins of Copán, Palenque, Uxmal and other Maya sites. The book Stephens wrote about his trek was an enormous popular success and sparked others to follow him and Catherwood into the jungle and into musty Spanish colonial archives. Over the next half-century, researchers uncovered, among other things, the *Popol Vuh* (the sacred book of the Quiché Maya tribe) and the *Relación de las Cosas de Yucatán*, an account of Maya culture during and immediately after the 16th century Spanish conquest written by the Roman Catholic bishop Diego de Landa. By the 1890s, Alfred Maudslay, an English explorer, was compiling the first comprehensive catalog of Maya buildings, monuments and inscriptions in the major known cities, and the first excavations were under way.



THOMAS HOEFNER—MAGNUM FOR TIME

With all this data, 19th century scholars began trying to decipher the hieroglyphic script, reconstruct Maya history and figure out what caused the civilization to fall apart. In the absence of any historical context, though, speculation tended to run a little wild. Some ascribed the monumental buildings to survivors of the lost continent of Atlantis; others insisted they were the work of the Ten Lost Tribes of Israel, or the Egyptians, the Phoenicians, the Chinese, or even the Javanese.

The first half of the 20th century brought more excavations and more cataloging—but still only scratched the surface of what was to come. By 1950 the field was dominated by J. Eric Thompson and Sylvanus Morley of the Carnegie Institution of Washington. Both are still revered as brilliant archaeologists, but some of their theories have been overturned by new evidence. Among their now outdated ideas: that the city centers of the Classic Maya were used primarily for ceremonial purposes, not for living; hieroglyphic texts described esoteric calendrical, astronomical and religious subjects but never recorded anything as mundane as rulers or historical events; slash-and-burn agriculture was the farming method of choice; and, of course, the Maya lived in blissful coexistence with one another.

Morley and Thompson presumed that certain practices of the ancient Maya could be deduced from those of their descendants. Modern scientists are more rigorous; besides, they have the advantage of sophisticated technology, like radiocar-

bon dating, which can help test their theories.

NEAR THE MEXICAN BORDER OF Guatemala, in the Maya city of Dos Pilas and the surrounding Petexbatún region, Arthur Demarest's excavations have put him at the forefront of the revisionists. He divides the history of the region into two periods: before 761 and after. Before that year, he says, wars were well-orchestrated battles to seize dynastic power and procure royal captives for very public and ornate executions. But after 761, he notes, "wars led to wholesale destruction of property and people, reflecting a breakdown of social order comparable to modern Somalia." In that year the king and warriors of nearby Tamarindito and Arroyo de Piedra besieged Dos Pilas. Says Demarest: "They defeated the king of Dos Pilas and probably dragged him back to Tamarindito to sacrifice him." The reason for the abrupt change in the Maya's battleground behavior, he suspects, was that the ruling élite had grown large enough to produce intense rivalries among its members. Their ferocious competition, which exploded into civil war, may have been what finally triggered the society's breakdown. Similar breakdowns, he believes, happened in other areas as well.

Arlen and Diane Chase, archaeologists at the University of Central Florida, believe their work at Caracol, in present-day Belize, also shows that escalating warfare was largely responsible for that ancient city's



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abrupt extinction. Among the evidence they cite: burn marks on buildings, the uncharacteristically unburied body of a six-year-old child lying on the floor of a pyramid, and an increase in war imagery on late monuments and pottery. "Of course we found weapons too," says Arlen.

While many Mayanists agree that wars contributed to the collapse, no one thinks they were the whole story. Another factor was overexploitation of the rain-forest ecosystem, on which the Maya depended for food. University of Arizona archaeologist T. Patrick Culbert says pollen recovered from underground debris shows clearly that "there was almost no tropical forest left."

Water shortages might have played a role in the collapse as well: archaeologist Vernon Scarborough of the University of Cincinnati in Ohio has found evidence of sophisticated reservoir systems in Tikal and other landlocked Maya cities (some of the settlements newly discovered this week also have reservoirs). Since those cities depended on stored rainfall during the four dry months of the year, they would have been extremely vulnerable to a prolonged drought.



PLAY BALL The Maya ballgame was both ritual and recreation. Spectators gambled on the competition's outcome. The solid rubber ball, which may have symbolized the sun or the moon, was kept in constant motion in the air, mimicking planetary movements. The players may also have attempted to reenact the battles they had won. Human sacrifice frequently provided the grisly finale of a game: either the defeated players were decapitated and their heads possibly used as balls, or they were tortured to death when the winners trussed up their bodies into human spheres and bounced them down pyramid steps.

Overpopulation was another problem. On the basis of data collected from about 20 sites, Culbert estimates that there were as many as 200 people per sq km in the southern lowlands of Central America. Says Culbert: "This is an astonishingly high figure; it ranks up there with the most heavily populated parts of the pre-industrial world. And the north may have been even more densely populated."

One inevitable consequence of overpopulation and a disintegrating agricultural system would be malnutrition—and in fact, some researchers are beginning to find preliminary evidence of undernourishment in children's skeletons from the late Classic period. Given all the stresses on Maya society, says Culbert, what ultimately sent it over the edge "could have been something totally trivial—two bad hurricane seasons, say, or a crazy king. An enormously strained system like this could have been pushed over in a million ways."

What sorts of lessons can be drawn from the Maya collapse? Most experts point to the environmental messages. "The Maya were overpopulated and they overexploited their environment and mil-



FORGOTTEN BUT NOT GONE

By GUY GARCIA PALENQUE

A TOUR GUIDE AT THE LEGENDARY RUINS OF PALENQUE IN CHIAPAS, Mexico, likes to tell the story. A tourist, after staring in awe at the towering pyramids, turned to the guide and said, "The buildings are beautiful, but where did all the people go?" "Of course, she was talking to a Maya," the guide says, shaking his head at the irony. "We're still here. We never left."

The exchange illustrates a living paradox at the heart of the Maya puzzle: even as scientists continue to investigate the mysterious eclipse of the classic Maya empire, the Maya themselves are all around them. An estimated 1.2 million Maya still live in the southern Mexican state of Chiapas, and nearly 5 million more are spread throughout the Yucatán Peninsula and the cities and rural farm communities of Belize, Guatemala, Honduras and El Salvador. Ethnically, they are derived from the same people who created the most exalted culture in Mesoamerica. Yet the thousands of visitors who come each year to admire the imposing temples of Palenque might be shocked to know the ignominious fate of the Maya's modern-day descendants.

Centuries of persecution and cultural isolation have turned the Maya into impoverished outcasts in their own land. At best, they are often reduced to tourist attractions; for a little money, Mexico's Lacandon Indians, for instance, will display their traditional white cotton *shikur* and long black hair. But condemnation is the mildest of the abuses suffered by today's Maya.

A Guatemalan flower girl wearing the motifs of her ancestors

lions of them died," says Culbert bluntly. "That knowledge isn't going to solve the modern world situation, but it's silly to ignore it and say it has nothing to do with us." *National Geographic* archaeologist George Stuart agrees. The most important message, he says, is "not to cut down the rain forest." But others are not so sure. Says Stephen Houston, a hieroglyphics expert from Vanderbilt University: "I think we should be careful of finding too many lessons in the Maya. They were a different society, and the glue that held them together was different."

Just how different the Maya were is clear from their everyday lives, on which archaeologists are increasingly focusing. From the contents of graves and burial caches, the architecture of ordinary houses, and scenes painted on pottery, Demarest and others are learning what an average Maya day was like.

The typical Maya family (averaging five to seven members, archaeologists guess) probably arose before dawn to a breakfast of hot chocolate—or, if they weren't rich enough, a thick, hot corn drink called atole—and tortillas or tamales. The house was usually a one-room hut built of interwoven poles covered with dried mud. Meals of



BLOOD HARVEST The gruesome ritual of bloodletting accompanied every major political and religious event in ancient Maya society. In this carving, Lady Xoc is shown kneeling before her husband, the Yaxchilan ruler Shield Jaguar, as she pulls a rope through her tongue. Blood dripped onto pieces of bark paper, which were burned as offerings to the gods. The intense pain of such rites led to hallucinatory visions that allowed participants to communicate with ancestors and mythological beings.

corn, squash and beans, supplemented with the occasional turkey or rabbit, were probably eaten on the run.

During the growing season, men would spend most of the day in the fields, while women usually stayed closer to home, weaving or sewing and preparing food. At the end of the day the family would reconvene at home, where the head of the household might perform a quick bloodletting, the central act of piety, accompanied by prayers and chanting to the ancestors. Days that were not devoted to agriculture might be spent building pyramids and temples. In exchange for their toil, the people expected to attend royal marriages and ceremonies marking important astrological and calendrical events. At these occasions the king might perform a bloodletting, sacrifice a captive or preside over a ball game—the losers to be beheaded, or sometimes tied in a ball and bounced down the stone steps of a pyramid. Like modern-day hot-dog vendors, craftsmen and farmers might show up for these games to set up stands and barter for pots, cacao and beads.

The Maya also had a highly developed—and to modern eyes, highly bizarre—aesthetic sense. "Slightly crossed eyes were held in great esteem," writes

In a 1992 report on the indigenous peoples of the Americas, Amnesty International cited dozens of human-rights violations carried out by Mexican authorities against the Maya people of Chiapas: they include an incident in 1990 when 11 Maya were tortured after being arrested during a land dispute, and another one two years ago when 100 Maya were beaten and imprisoned for 30 hours without food or medical attention. In Guatemala's 30-year-old civil war, it has been the Maya who have been the primary victims of the military's antiguerrilla campaigns in the highlands, which have left 140,000 Guatemalans dead or missing. In some cases, government troops have burned entire Maya villages.

The systematic subjugation of the Maya dates back to the Spanish Conquest of the early 16th century, when Catholic missionaries outlawed the Maya religion and burned all but four of their sacred bark-paper books. Indians who were not killed in battle or felled by European diseases were forced to work on colonial plantations, often as slaves. Bands of Maya rebels, known to be ferocious fighters, resisted pacification for almost 400 years, first under the Spanish occupation and then under the Mexican army after Mexico became independent.

Despite this history of defiance—or maybe, in some cases, because of it—the Maya continued to be targets of abuse even after being incorporated into the family of Central American nations. As recently as 20 years ago, Maya peasants carrying chickens or peanuts to the town market in San Cristóbal de las Casas were in danger of having their wares snatched away by non-Indian women, or "Black Widows." And though the town's economy depended on trade with the Indians, Maya found

walking the streets at night would be thrown into jail and fined.

Today, despite government decrees that guarantee equal rights for Indians and the new presidency in Guatemala of human-rights champion Ramiro de Leon Carpio, indigenous peoples like the Maya remain at the bottom rung of the political and economic ladder. In Chiapas, where the natives speak nine different languages, literacy rates are about 50%, compared with 88% for Mexico as a whole. Infant mortality among the Maya is 500 per 1,000 live births, 10 times as high as the national average. And 70% of the Indians in the countryside lack access to potable water.

In these sorry conditions, many Maya have seized on their old ways to make sense of their modern lives. In the remote highlands of Guatemala and Mexico, where the rugged terrain has held the outside world at bay, contemporary Maya still practice many of the same rituals that were performed by their ancestors 4,000 years ago. Maya weavers embroider their wares with diamond motifs that are virtually identical to the cosmological patterns depicted on the lintels of ancient temples at Yaxchilán and other Maya sites. By marking their clothing with the symbols of their ancestors, the Maya artisans build a material link to pre-Columbian gods—and the indelible spirit of their cultural past.

"Depictions of everyday life do not occur in the weaving," notes Walter F. Morris Jr., a Seattle-based anthropologist and author of *Living Maya*. "It's always something supernatural, something dreamt, something you can only see in dreams."

—With reporting by
Laura López/San Cristóbal de las Casas

Persecution has turned the once great Maya into impoverished outcasts in their own land





LIGHT AND MAGIC: During the spring and fall equinoxes every year, crowds of tourists gather around El Castillo of Chichén Itzá to watch the setting sun's serrated shadow slowly move up the staircase that begins with two massive serpent heads carved at the base. The pyramid was dedicated to Kukulcan, a powerful god of creation and transformation. Its four staircases have 91 steps each, which, added to the top platform, equal 365, the number of days in the solar year, reflecting the Maya's advanced grasp of astronomy. The serpent heads point directly to a natural well where human bones and gold jewelry, evidence of ritual sacrifice, have been found.

Yale anthropologist Michael Coe in his book *The Maya*. "Parents attempted to induce the condition by hanging small beads over the noses of their children." The Maya also seemed to go in for shaping their children's skulls: they liked to flatten them (although this may have simply been the inadvertent result of strapping babies to cradle boards) or squeeze them into a cone. Some Mayanists speculate that the conehead effect was the result of trying to approximate the shape of an ear of corn.

The Maya filed their teeth (it's unclear whether they used an anesthetic), sometimes into a T shape and sometimes to a point. They also inlaid their teeth with small, round plaques of jade or pyrite. According to Coe, young men painted themselves black until marriage and later engaged in ritual tattooing and scarring.

Information about the Maya has come not just from physical objects but also from the elaborate hieroglyphics they left behind. Indeed, the study of Maya writing has become a coequal—and sometimes competitive—path of inquiry. For some reason it has attracted more than its share of amateurs. In the early 1970s, "discoveries came at the pace of a raging prairie fire," writes Coe in his latest book, *Breaking the Maya Code*. Former University of South Alabama art teacher Linda Schele burst into the epigraphical world. On a 1970 visit to Mexico,

she was mesmerized by the ruins at Palenque. Three years later, she was accomplished enough to collaborate with two others in a mind-boggling feat of decipherment: during a conference at modern Palenque, the trio took a mere 2½ hours to decode the history of Palenque and its rulers from the beginning of the 7th century to its fall around the late 8th century—and got it right.

HOW WAS THIS POSSIBLE? BECAUSE, say the professionals, deciphering glyphs depends as much on intuition and instinct as it does on knowledge of a given writing system. Insight can strike like lightning. Says Schele, now an art historian at the University of Texas at Austin: "These moments of clarity are just extraordinary. The greatest thrills of my career came in those moments when the inscription becomes clear and we suddenly understand the humans who created this legacy for the first time."

The Palenque decipherment work began an epigraphic revolution. Since then, the field has been blessed with a number of young, gifted epigraphers, including Stephen Houston, 34, and David Stuart, 28, who began his career as a child. The son of Maya archaeologists George and Gene Stuart, he made his first trip to Maya

ruins at the age of three, and by 1984, at 18, was so skilled at deciphering glyphs that he became the youngest recipient ever of a MacArthur Foundation "genius" grant. Stuart's next project is nothing less than cataloging every known Maya inscription, a task he guesses could take him the rest of his life. "There is at least another century of work; it will go on long after I'm gone," he says.

Like most official records, glyphs undoubtedly contain a healthy dose of propaganda. Imagine, argues Richard Leventhal, director of UCLA's Institute of Archaeology, that you tried to understand the Gulf War by reading Saddam Hussein's pronouncements. Says Arlen Chase: "You get this real warped view of what Maya politics and Classic society look like if you just use epigraphy. It's important, but archaeology is the only way to test it." Observes Houston: "Of course it's propaganda, but to jump from that to a blanket dismissal is preposterous."

The argument over how to interpret Maya writing—along with arguments over just about every other aspect of Maya archaeology—won't be resolved anytime soon. New discoveries are constantly reinventing the conventional wisdom. At Caracol, for example, the Chases have uncovered an unprecedented 74 relic-filled tombs; their location, in living areas, supports the idea of ancestor worship, and the number of burial chambers provides evidence, the Chases think, that the Maya had a large, prosperous "middle class."

In Dos Pilas, Arthur Demarest is turning his attention to garbage piles. "Those are the most important finds," he says, "not the tombs, because you find everything they ate, their tools—a real cross-section of life, in really good preservation." A colleague plans to study the chemical composition of ancient soil and pollen samples and exhumed human bones to learn more about the Maya diet, common diseases, agricultural practices and even what the climate was like.

As they excavate deeper into the Maya past, archaeologists and other scientists are still struggling to make sense of this legacy of triumph and self-destruction. And there usually comes a point when a Mayanist has to decide how to draw joyful inspiration from the culture's destiny. "It's a very rare thing for the past to be a source of deep-seated pessimism," says David Freidel, an anthropologist at Southern Methodist University in Texas. So Freidel has come up with this way to think of the Maya: "When I see the past, what I see are not just the failures of human effort, of human imagination, but that unquenchable desire to make of life a meaningful thing."

—Reported by
Hannah Bloch/Palenque, Guy Garcia/Dos Pilas
and Laura Lopez/Mexico City