





Opposite: Diane and Arlen Chase kneel beside altar that records Caracol's A.D. 800 conquest of Maya sites.

Canaa, the sacred complex (above), grew over centuries as rulers added rooms, tombs, temples and pyramids.

By Nadine Epstein

From a remote jungle site, a trail of striking clues

In Belize's backcountry, two archaeologists solve the Maya's puzzling Middle Classic hiatus and document radical change in their warfare

One February morning in 1986, archaeologists Diane and Arlen Chase were browsing through a ball court at the Maya site of Caracol in Belize. Suddenly, there was a *clink* as Arlen's machete, swung at a patch of brush, hit a solid object just below the surface. Scraping away the light layer of soil, he uncovered a circular white altar, broken, eroded and not particularly beautiful. It was incised with concentric rings of Maya hieroglyphics. The altar turned out to be a major find: evidence suggests that it provides the solution to a conundrum that has baffled Mayanists for decades, that of the Middle Classic hiatus.

The altar was not to be the Chases' only important discovery. The site is proving even larger than Guatemala's famous Tikal and has yielded clues to drastic changes in the Maya practice of warfare. It has

also raised interesting questions about a much more prominent role for women in Caracol society than had been hitherto suspected.

Both Chases, currently at the University of Central Florida (UCF), chose careers in archaeology while still in their teens. Arlen, the son of a U.S. Army intelligence analyst detailed to SHAPE (Supreme Headquarters Allied Powers Europe), grew up in France. The husband of one of his schoolteachers was a paleontologist who gave Arlen a sack of sweepings from a dig in southern France. "It had wonderful fossil fish vertebrae and teeth. I was hooked." Later, during his last year of high school in California, a three-week field trip in Guatemala to map a little-known site turned him to the Maya. He enrolled in the University of Pennsylvania, knowing of its strength in that area.

Photographs by Tom Ives



Partial excavation of Caracol's epicenter was basis for this model; the built areas extended much farther.



Chases and staff (center) excavate within a medial door, formal entrance to the architectural complex.



Map shows the relationship of Caracol, deep in the Belizean jungle, to its archenemy, Tikal.

While Arlen was falling for fossils, Diane Zaino's physician father was taking his family on tours of archaeological sites throughout the American Southwest. She, too, chose Penn "because of its strong focus on archaeology." They met in 1971 on their first day as freshmen.

"I invited her up to see my books," Arlen remembers. "Which were pretty pitiful at the time," Diane adds. Later, with doctorates in hand and partial sponsorship by the National Science Foundation, they spent seven years at Santa Rita Corozal, a Post Classic Maya site in Belize.

Lying on the Caribbean with the Yucatán to the north and Guatemala to the west, Belize was known as British Honduras until 1973; it gained independence eight years ago. Except for its highlands, the country is more Caribbean in flavor than Spanish or British. Aldous Huxley once wrote that if the Earth had ends, British Honduras would be one of them; and indeed the country is best known to the anglers and scuba divers who visit its magnificent barrier reef—second only to Australia's in size—and to those who go there in search of the Maya.

Between A.D. 250 and 900, during what is known as their Classic era, the Maya established great ceremonial centers from Mexico to El Salvador. These resembled city-states ruled by semidivine royalty. There were lofty pyramidal temples and stelae intricately carved



Workmen (at left) are removing rubble from the sacred precinct; site extends far beyond the first ridge.



This crypt, 2.5 kilometers from epicenter, entombed two adults, indicating they were not among the elite.

with representations of humans and animals; ball courts and broad plazas; tombs furnished with exquisite jewelry and elaborate ceramics. The Maya devised the most complex system of writing developed in the Americas; a form of astronomy; a calendar; a mathematical system that included the concept of zero; and an extensive court etiquette. And then came collapse of the political system along with abandonment of the major Classic cities.

Why? The question was not uppermost in the Chases' minds when they selected Caracol as their next project. "At Santa Rita we checked Spanish historical documentation of the Maya against the Maya's own archaeological record, as revealed by site excavation. We found the two didn't match. So we wanted an earlier site for comparison, one that might have a Maya written record, as found on stelae and monuments, to check against the archaeological record. We thought Caracol might fill the bill," Arlen explained. An initial survey in 1983-84 convinced them that "three or four years could give us a full understanding of what the site was all about." They have had to revise that estimate.

No one knows what the Maya called Caracol, but the word means "snail" in Spanish—the city so named, per-

haps, because it lies at the end of a deeply rutted, corkscrew logging road through dense jungle, near the western boundary of Belize and 86 kilometers from the nearest town. Its myriad broad plazas, temples, acropolis, causeways and residential compounds have been overrun by lush stands of ceiba, allspice and cohune. Eroded though it is, the pyramidal Canaa, which means "sky place" in Mayan, at 42.5 meters is still the tallest man-made structure in the country. Standing at its summit, Arlen Chase made a sweeping gesture. "That's Caracol—as far as the eye can see." Following his gaze over the enveloping greenery, punctuated here and there by slashes of exposed limestone ruins that are being cleared, one found it difficult to avoid an adjective that is anathema to the couple: mysterious.

"We get so tired of hearing about the 'mysterious Maya,'" Diane explained while carefully peeling layers of plaster from floors in an excavation on Canaa's upper plaza. A veil of lime dust hung in the thick, damp air and coated her auburn hair. "The Maya are no more mysterious than other past civilizations," Arlen added.

The first Westerners to invade the Maya world were Spanish conquistadores, shipwrecked off the Yucatán coast in A.D. 1511. But not until the 19th century, through the writings of John Lloyd Stephens, an American lawyer and amateur archaeologist, did Maya ruins catch the American imagination. Most spectacular was

The author, a free-lance writer from Arizona, is in Ann Arbor as a Michigan Journalism Fellow, 1989-90.



Here Clarissa Hunter is detailing the skull of one of the two bodies found in this Late Classic Maya grave.

Guatemala's Tikal, discovered in 1848. Archaeologist William Coe has called it the "supreme Maya center." Excavations at this magnificent site, 76 kilometers northwest of Caracol, have told us most of what we know of the southern lowland Maya.

Archaeologists found that Tikal dominated many neighboring sites throughout the Classic era, with the exception of an enigmatic period between A.D. 534 and 690. Known as the hiatus, it brought forth no carved monuments at Tikal, where tombs are strangely impoverished. Some archaeologists have theorized that the collapse of Teotihuacán, the largest and most important pre-Columbian site in the valley of Mexico, could have been indirectly responsible. In the late 1950s a great Mayanist, Tatiana Proskouriakoff, asked what "momentous historical event" could have disrupted Tikal and the rest of the Maya world.

Caracol was discovered in 1938 when a woodcutter, Rosa Mai, stumbled onto its jungle-clad mounds while prospecting for mahogany and chicle. The logging trucks came; and in 1950 so did A. H. Anderson, the first archaeological commissioner of British Honduras, along with Linton Satterthwaite, a University of Pennsylvania archaeologist. A year later, and again in 1953, Satterthwaite returned to map the central area and to collect a number of stelae and altars for the University Museum. Sadly, the results of Anderson's later work, in '55 and '58, were lost when Hurricane Hattie destroyed his notes. Then Canadian archaeologist Paul Healy studied the ancient farming terraces in the late '70s. Other than that, Caracol was mainly left to looters and to British and Belizean soldiers patrolling the nearby Guatemalan border. "It was considered a small site," Diane explained. "It didn't get much attention."

A crowd poured out of the jungle

The Chases' first full season, in 1985, was spent clearing brush, establishing camp in a central plaza and doing limited excavation. Early in their second season, discovery of the ball court altar sent Diane racing back to camp for epigrapher Steve Houston, while Arlen gently brushed dirt from the crevices. Word crackled out to the field by walkie-talkie, and a crowd soon emerged from the jungle.

"We were all pretty excited. It was the first hieroglyphic monument found by our project," Diane recalled. "But none of us had any idea how important it would prove to be."

A few days later, the glyphs on the altar were to give the Chases their first inkling of Caracol's major role in the Classic Maya world. "It was beyond anything we had ever dreamt of—some things you don't even dare dream of finding, they're so far from likely," Diane recalled. "But people do say we have a gold thumb."



June Morton, the 1989 laboratory director, turns sherds on drying screens; behind her are solar collectors.



Bill and Diane Wilson use subsurface interface radar to find voids that might show promising areas to dig.



Data on Late Classic water jar, only partially exposed, are recorded by graduate student Katherine Stine.



Diane and camp mascot, Yax Balam, an orphaned margay, supervise Arlen's restoration of one of 300 pots found during 1989 season.



Terminal Classic incense burner is fashioned to represent sun at night.

The 160 partially eroded glyphs explained Proskouriakoff's "momentous event." The altar had been inscribed in A.D. 633 for Caracol's Lord Kan II, two years after he had won a war against an important neighbor, Naranjo. Its narrative begins with his birth in 588. As interpreted by Houston, an epigrapher from Vanderbilt University, the account then reverts to the accession of Kan II's father, Lord Water, in 553. An "axe event" glyph representing a skirmish with Tikal in 556 is followed by a "shell-star" glyph standing for war. Led by Lord Water, Caracol defeated mighty Tikal in 562.

"Caracol dominated Tikal and Naranjo for about 140 years, the time of the Middle Classic hiatus," said Arlen. "During those years it replaced Tikal as the major regional power."

David Freidel, a Maya scholar and professor of anthropology at Southern Methodist University, believes "What the Chases have found at Caracol is a very important discovery, a major piece of the Maya picture." According to Linda Schele of the University of Texas, cocurator of the stunning 1986 Maya exhibition "The Blood of Kings" (SMITHSONIAN, May 1986), "The big story, other than that it's a fabulous place, is that it documents the hiatus. That is one of the great stories in Maya archaeology, the fellow who was then the little guy knocking over the big guy."

It is fitting that such an important document would have been set in the middle of a ball court. The ball game was closely related to Maya war and religion, politics and dynastic change, and the underworld. It was played by two teams using a rubber ball. Players

vied to score by driving a ball through a ring or hitting a marker; they used no hands, instead striking the ball with their shoulder, knee, torso or thigh. There was, however, a gladiatorial aspect to the game. Rubber balls were sometimes replaced by skulls or the heads of decapitated prisoners.

The myth of the Maya as a peaceful people whose games were tame persisted until about 20 years ago, despite bountiful evidence to the contrary on lintels, stelae, altars and ceramics. "We wanted to make them our pet utopia," Arlen believes.

In the Middle Classic, the Maya did not fight European-style wars with huge armies determined to annihilate one another. The Chases think the sixth-century war between Caracol and Tikal consisted of the knocking over of stelae and the hacking off of faces of rulers depicted on monuments. "This besmirched the greatness of Tikal's leaders and stripped them of their infallibility," Arlen added. "It was more destructive of the religious than of the physical order. In the Middle Classic you killed a few prisoners and put the rest into forced labor to till your fields and put up your buildings."

Noble captives like unlucky Lord Double Bird, the Tikal ruler whose defeat by Caracol was followed by the hiatus, were taken in hand-to-hand combat. It was imperative that a royal captive be led back to the captor's city alive and displayed in a demeaning public ceremony, perhaps beneath the feet of the conqueror. Afterward, if not slated for the ball game, he might be sacrificed ritually in a bloodletting ceremony. This kind of warfare, although catastrophic for the defeated

nobles, spared the lives of most people and preserved the cities and their culture.

Theories abound on why millions of Maya fled their cities between A.D. 790 and 1200. A vast gap between elite and commoner leading to a revolt? A plague? Invaders? New trade routes? Agricultural practices that stripped nutrients from the soil and caused the collapse of the economy?

Based on what they've documented at Caracol and have seen at other sites, Arlen and Diane believe the exodus was directly related to changes in Maya warfare in the Late Classic. For the past two seasons, a grant from the Harry Frank Guggenheim Foundation has allowed them to test their theory. "Our ideas weren't really firmed up until we got to Caracol," Diane admits.

The Chases reminisced. He: "We found the missing element." She: "Caracol got us asking the right questions and getting the pertinent pieces of information. When it started to work we were really pleased." He: "And boy, did it work! Our idea was to test the impact of warfare, not on the elite, but on those living outside the epicenter. Classic era warfare had been for tribute, and we knew there had been a tremendous building boom in the center of Caracol, where the ruler lived after the defeats of Tikal and Naranjo. But did that prosperity carry through to the rest of the population?"

They picked an outlying area, excavated a quarter of it—settlements, agricultural areas and causeways—and found the same growth and prosperity, even monuments. "We found it was true of the entire population," Arlen added.

Then, inexplicably, Caracol suffered a century of

decline; possibly Tikal's warriors swept in to settle old scores. But Caracol rebounded in A.D. 800. He: "The Maya had traditionally fought with spears. But now the atlatl became the weapon of choice." She: "A long-distance weapon with multiple shafts, a cross between the catapult and the bow and arrow, it gave greater propulsion and could be fired repeatedly. The emphasis was on killing."

With the help of the atlatl, Caracol conquered three different sites. They were going for territory and empire. In 562 that objective had not existed. He: "Suddenly, you see something new, the *tzompantli* at Chichén Itzá. Racks with many skulls—ceremonial displays of heads of captives taken in war, then sacrificed in religious ceremonies. Now you're beheading not only the rulers, but also the people who, as captives, had been your laborers. You are head-hunting."

These changes are reflected at the end of the Classic in carving and pottery at Caracol. "Earlier, decorated pottery had been polychrome. In the Terminal Classic, preceding the collapse, scenes associated with warfare, such as captives being presented to a ruler, were carved and modeled on the damp clay; they were not painted. Both altars found in our last season are from this period and show captives," explained Arlen. One, beautifully preserved, tells of the defeat by Caracol of three lords from three different sites; two of them are depicted on the monument.

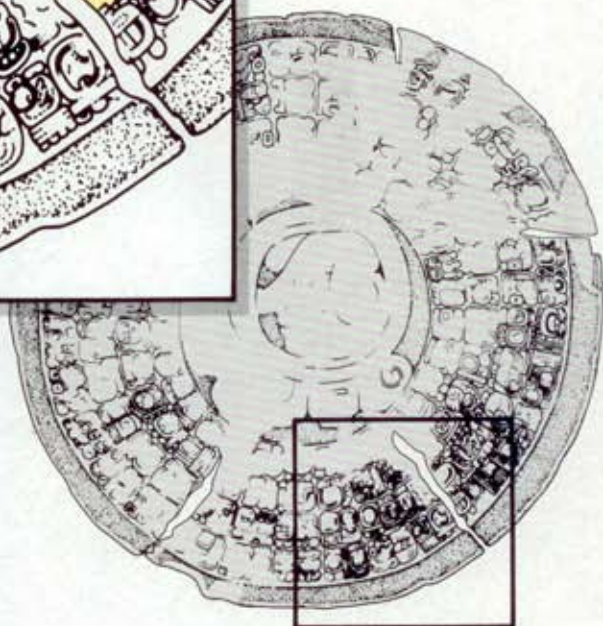
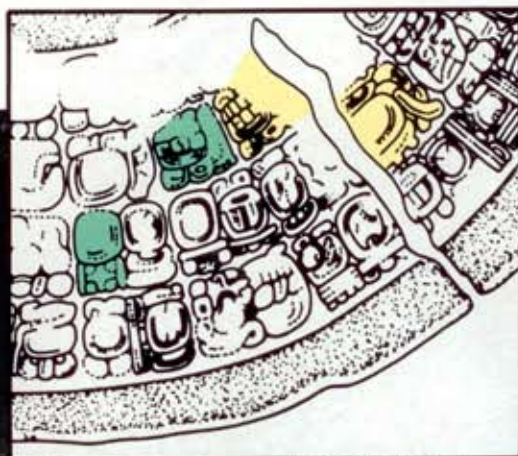
Murals of this period at Chichén Itzá show houses being sacked, their thatched roofs in flames. Rebuilding was next to impossible for large populations living at the ecological limits of the environment. "The Maya



Some of the thousand ceramic vessels recovered at Caracol since the project began in 1985 are stored on shelves in the main lab.



Classic cylinder with woman's figure is from the outskirts; here, a detail.



Hieroglyphs on altar from Caracol ball court run clockwise. Account of Tikal's defeat is interrupted

by fracture and erosion. Yellow tint in detail of the drawing represents a skirmish; green, the battle.

didn't just disappear," Diane believes. "They left the cities for places where they could find readily available building materials—and water. They were frightened. The people on those northern skull racks may have come from the south. They had been under the protection of deified ancestors, and their survivors saw that the ancestors had not helped them. Their religion was not working. They stopped building tall temples. To the Maya, religion and politics were inseparable. Their faith in the system was shattered. It's not like thinking 'Well, we'll get rid of Mayor Koch and bring in someone who'll fix things up.'"

During the 1989 season the archaeological team at Caracol consisted of 104 people; 15, in addition to the Chases, were permanent staff, graduate and undergraduate students. Other specialists in residence from time to time included Nicoli Grube, whose field is Maya hieroglyphics. Next season laser technology will be used for reading eroded hieroglyphics in long-abandoned tombs. The labor force is Belizean: four cooks and a laundress; a foreman in charge of all workmen; and a secondary foreman, with expertise in stabilization, to supervise the consolidation crew putting things back together after excavation. Most members of the work force have Maya ancestry; some are veterans of the dig at Santa Rita.

A day in the field begins at 6:30 A.M. when everyone tumbles out of hammocks festooned with mosquito netting and heads for a hot breakfast. By 7, Diane and Arlen have sent off scientists, students and laborers to assigned sites. Machetes are standard equipment, protection against snakes, wild boars and an occasional jaguar. "Every evening we plan the next day: who goes where, what excavating, photographing, mapping and drawing need to be done," Arlen explained. "With our University of Pennsylvania training behind us, we decided we must have a full overview, at all times, of what every excavation or deposit yielded. Besides the site center, we usually have at least five teams excavating within a radius of three kilometers farther out." All sites have been given capricious names—Machete, Conchita, Pajaro. "One site is so far in the boonies we call it Nowhere."

Anyone with a question or a need can reach the Chases by walkie-talkie. A pair in perpetual motion, they spend a lot of time walking out to various sites, checking to be sure the excavating or recording is being done correctly. Their responsibilities also include keeping tabs on all manner of supplies and equipment (drinking water, food, bags of lime and cement), making sure the road into the site is kept passable and taking in meetings in Belize City or Belmopan. "This year

we had radio contact with the U.S. Embassy in Belize City. A mixed blessing," Arlen commented wryly.

A good share of each day is spent in the lab. Although there is a full-time lab director, Arlen pursues his area of expertise—ceramic analysis and reconstruction; and Diane, hers—the analysis of human bone. At 4 o'clock the crew begins straggling in, each excavator bringing new materials to be processed and reporting on the day's finds. Then come bucket baths, courtesy of the 2,000-year-old Maya rainwater reservoir, water from which is used for everything except drinking and cooking. After dinner, it's work, reading, games—or movies on the VCR, which, along with the labs, computers and electric lights, is powered by solar-operated batteries that were donated by the Florida Solar Energy Center.

In the field from January to June and at home in Orlando the rest of the year (where they teach during the fall term), the Chases live Caracol. "We probably spend more time talking Maya archaeology than your average couple," deadpanned Diane. "But we don't always agree," cautioned Arlen. "We come to better

decisions because each of us has had to defend ideas to the other," she went on. "Plus, you really need two people to run a dig of this size." He interjected, "It just so happens that we're married," and she shot back, "Yes, we have been told that we finish each other's sentences." They don't; each allows the other to finish, but listening to them is the aural equivalent of watching a staccato game of badminton.

There was another major discovery in the 1986 season, centered around a royal tomb near the top of Canaa. It was in a location fit for a ruler, and it contained the body of a woman. Maya archaeologists have found few women in major tombs, especially of the Classic period. "The bones were terribly deteriorated," recalled Diane. "The precise evidence was the pelvis, the single best bone for sex identification. It was no guess; that bone was excellently preserved. It was beautiful." Arlen described the scene: "She was buried with jade beads, solid jade ear flares, teeth inlaid with jade, and tomb furnishings customary for royalty or the elite. There were eight ceramic vessels and some kind of animal claw. A painted capstone. Her death date had



Tzompantli platform at Chichén Itzá shows four tiers of relief-carved skulls from the Terminal Classic.

Maya warfare in this period emphasized taking and sacrificing captives rather than enslaving them.



Figure with headdress and ear flares characteristic of a Maya lord holds ceremonial bar, a sign of rulership.

been painted on the back wall, and broad stripes of red swept around the tomb walls and climbed the south corners, framing the entrance."

The woman had been buried in 634, shortly after the ball court monument was erected, so she must have witnessed the heroic events of the preceding years. She might have been Kan II's mother or wife. Or she might have been a ruler. "We think women might have ruled Caracol at certain times," Diane posited. "Perhaps as regents when the heir apparent was a child."

A burial in 695 might also have been a woman. "The bones were too highly eroded to be sexed," Diane said. "But the burial pattern in the tomb was so similar it made us wonder." Arlen took up: "Both were in north buildings, were located in a medial doorway under the floor and had eight vessels. The burials were placed in the same way." Associated hieroglyphic text made clear that this person was a member of the royal family. And inclusion of bobwhites in elite tombs at Caracol and Tikal seems to have conferred status; this one contained 13, a number sacred to the Maya.

Representations of women are common in Maya ceramics, murals and carvings; but for a generation, from the 1930s into the '50s, Mayanists interpreted these portrayals as male priests in flowing robes. "They couldn't conceive of women having played any important role," according to Joyce Marcus, professor of anthropology at the University of Michigan, whose specialty is the women of the Maya. "Women probably ruled for brief periods in Palenque, Calakmul and Coba, as well as Caracol. The key element is royalty. Elizabeth became queen because her father had no male heir. Well, as it happens to turn out, it was the same with the Maya." Evidence from the historical records of the Classic period, such as that

found on hieroglyphic texts of stelae and altars, is still needed, however.

Another surprise has been the size of Caracol. In tracing seven tentaclelike causeways and mapping the site, the Chases discovered that by the end of the hiatus, Caracol was more densely populated than Tikal. Some Maya scholars may consider that heresy. But in Tikal's 16-square-kilometer center, 2,300 structures have been mapped. The Chases have mapped more than 1,500 in 4 square kilometers at Caracol and estimate there are at least 4,400 in all in the central core. In four years they have located 54 tombs, twice as many as were found in decades of excavation at Tikal. "The old archaeological definition of 'tomb' was 'elite interment,'" Arlen explained. "But we found that a larger portion of society had access to tombs; so far, that is distinctive of Caracol. Whereas there is one individual in a royal tomb, those of lower status contain 2 to 26."

"Most people don't want to believe Caracol is as big or bigger than Tikal," Diane said. "Well, it's time for them to hear that Tikal is not the 'supreme' Maya city. It is a very important site, as is Caracol."

How long will they work at Caracol? "We will stay until we have no more questions to ask," according to Diane. "Now we can ask questions and get answers. The Maya of Caracol were kind enough to leave us dates in their tombs, so we can tie things down to 20-year intervals and record the changes. At most sites you're lucky if you can get within 100 years." "By 1992, for example, we will have a much fuller picture of the social organization," Arlen said. "Wherever we work we always have a need to carry out more long-term projects. Each season at a site changes our view of it. In order to understand more, we have to be in an area for a long, long time. And funding is a problem. You can't get more than two years' from most backers." Their next two seasons will be funded by the Government of Belize and the U.S. Agency for International Development.

The Chases, as well as the Belizean government, envision Caracol as an eventual archaeological park. "But it will take years to get to the point where visitors can get a sense of what it once was," Diane cautions. "It should look like a city that has been abandoned for more than a thousand years." Arlen adds: "Not Disneyland."

"Caracol is very important to Belize," says that country's archaeological commissioner, Harriot Topsey. He has plans for a tourist attraction comparable to the

Maya faces, modeled in stucco, were architectural ornamentation on buildings at the summit of Canaa.

much-visited Tikal and Chichén Itzá. Topsey envisions a 166-square-kilometer national park that will encompass the surrounding rain forest, some of the finest remaining in Central America. The region is home to the keel-billed motmot, the red-bellied trogon and the margay, the smallest jungle cat in the Maya area.

Most evenings during the season at Caracol, Belizean workers come in from the field and, before dinner, lace up their tennis shoes for a raging game of soccer,

the nation's most popular sport. Belize's leagues have yet to play Guatemala which, in a still-simmering dispute, claims Belize as its rightful eastern territory. And so Caracol, with its ball court altar, has a special significance for Belizeans. "Archaeology means a lot more than history around here," explains Topsey. "You have to understand that Caracol's victory over Tikal in 562 gives us a big morale boost. We like to hear that we beat Guatemala, even if it was 1,400 years ago."

