OUR FAR-FLING CORRESPONDENTS

THE EL DORADO MACHINE

A new scanner's rain-forest discoveries.

BY DOUGLAS PRESTON

The rain forests of Mosquita, which span more than thirty-two thousand square miles of Honduras and Nicaragua, are among the densest and most inhospitable in the world. "It's mountainous," Chris Begley, an archeologist and expert on Honduras, told me recently. "There's white water. There are jumping vipers, cord snakes, fer-de-lance, sting plants, and biting insects. And then there are the illnesses—malaria, dengue fever, leishmaniasis, Chagas'." Nevertheless, for nearly a century, archeologists and adventurers have plumbed into the region, in search of the ruins of an ancient city, built of white stone, called la Ciudad Blanca, the White City.

Pre-Columbian jungles were far more densely populated than once thought. Rumors of the site's existence date back at least to 1526, when, in a letter to the Spanish emperor Charles V, the conquistador Hernán Cortés reported hearing "reliable" information about a province in the interior of Honduras that "will exceed Mexico in riches, and equal it in the largeness of its towns and villages." The claim was not an impossible one; the New World encountered by Europeans had wealthy cities and evidence of former splendor. In 1839, John Lloyd Stephens, an American diplomat and amateur archeologist, went in search of a group of ruins in the jungles of western Hondura—and found the stupendous remains of the Maya city of Copán, which he bought from a local landowner for fifty dollars. Stephens explored scores of other iconic ruins in Central America, which he described in a lavishly illustrated, best-selling book; serious archeology soon followed. Researchers have since determined that, beginning around 250 B.C., much of Mesoamerica south of Mexico had been dominated by the Maya civilization, which held sway until its mysterious collapse, in the tenth century.

But the grand Mesoamerican cultures, which stretched from Mexico southward, seemed to end in Honduras. The region as east and south of Copán was inhabited by peoples whom early scholars considered more "primitive" and less interesting, and the jungles were so dense, and the conditions so dangerous, that little exploration was done. Nonetheless, rumors persisted of lost cities—perhaps Maya, perhaps not—hidden in rugged Mosquito. By the twentieth century, these legends had coalesced into a single site, la Ciudad Blanca, sometimes referred to as the Lost City of the Monkey God.

In the nineteen-thirties, a number of expeditions began penetrating the Honduran interior, looking for the White City. George Heye, the son of an oil magnate, who founded the Museum of the American Indian in New York City, sponsored three of them. Nothing was discovered on the first two trips. Heye finally engaged Theodore Morde, a swashbuckling American explorer; at twenty-nine, Morde had sailed around the world five times and covered the Spanish Civil War as a journalist. In March, 1940, Morde left New York; after four months of silence, he emerged from Mosquito and sent news to the New York Times. The headline read, "CITY OF MONKEY GOD IS BELIEVED LOCATED. EXPEDITION REPORTS SUCCESS IN HONDURAS EXPLORATION."

Morde later described travelling for miles up rivers, through swamps and jungle, and over mountains before reaching the ruins. "The City of the Monkey God was walled," Morde wrote. "We found some of those walls upon which the green magic of the jungle had worked small damages and which had resisted the flood of vegetation. We traced one wall until it vanished under mounds that have all the evidence of once being great buildings." The jungle was too thick to see much else, but his Indian guides told him that, ac-
ccording to legend, it hid a great temple with a vast staircase leading to "a high stone dais on which was the statue of the Monkey God himself. Before it was the place of sacrifice." He wrote, "Towering mountains formed the backdrop of the scene. Nearby, a rushing cataract, beautiful as a robe of shimmering jewels, cascaded into the green valley of the rains."

The Times reported that Morde had brought back several thousand artifacts—stone utensils, sculptured religious idols, a flute—some of which went into storage at the Museum of the American Indian, which is now part of the Smithsonian. (He may have distributed much of his collection to other museums.) Morde vowed that he would return soon "to commence excavation." But, in 1954, he committed suicide, without revealing where the city was, if indeed he had really found it.

The legend of the White City has since become part of the Honduran national psyche, a tale known to most schoolchildren. In 1960, the government drew a line around two thousand square miles of the mostly unexplored interior of Mosquitia and called it the Ciudad Blanca Archaeological Reserve. In 1983, UNESCO named the area the Rio Plátano Biosphere Reserve, and two years later declared it a World Heritage site. At last count, two hundred or so archeological sites are hidden in Mosquitia; although a handful are extensive enough to be called cities, many consist of little more than mounds of dirt arranged in such a way to indicate a former settlement.

But stories about the "real" White City, seen from a distance rising from the jungle, have continued to circulate. The late Harvard archeologist Gordon Willey once told me about hearing such stories from "rural bullshitters" in Honduran bars, where he and his colleagues would sometimes try to gather information on local myths. "I think maybe what they were seeing was limestone cliffs," he said. George Haseman, an archeologist specializing in Honduras, who died in 1998, heard many rumors from local Indian informants. In a 1994 interview, he speculated that the sites he had seen in Mosquitia might have been part of a single political system "dominated by a huge primary center that hasn't been found yet," which could be the White City.

"Every ten years or so, somebody finds it," Begley, who teaches at Transylvania University, in Lexington, Kentucky, told me. "There are five or so big archeological sites out there that people typically cite as the lost city. I've been to all of them."

Begley is one of the few archeologists to have explored the region. "There aren't a lot of people who want to undergo the kind of pain it takes to work out there," he said. He believes that the White City fabric may have originated with the indigenous Pech and Tawahka Indians, and was later conflated with the Spanish legends. Begley's Indian sources told him of a Place of the Ancestors, also called the White House, where their gods had retreated from the Spanish. "To the indigenous peoples, the thing that's lost in this lost city isn't the city itself," Begley said. "It represents a kind of golden age, their lost autonomy, or hope, or opportunity."

Recently, Begley served as a guide to the journalist Christopher Stewart on an expedition to retrace Morde's route. Stewart chronicled the journey in "Jungleland," which was published in January. The story ends on a philosophical note: after a brutal, week-long trek, they arrive at a large ruin, which may or may not be Morde's City of the Monkey God. Begley announces dryly that, by definition, the ruin cannot be the White City, "because the White City must always be lost." On the other hand, he told me, "the legend does reflect the fact that there is some pretty cool stuff out there in the jungle."

In recent years, Honduras has been ravaged by crime, corruption, and narcotics trafficking; it has the highest per-capita murder rate in the world, and last year its second-largest city, San Pedro Sula, ranked first on a list of the world's most violent cities. One refuge is the island of Roatán, in the Gulf of Honduras, a hundred miles northwest of the Mosquitia mountains. Roughly three miles wide and twenty-nine miles long, it is surrounded by a turquoise sea and an extensive system of coral reefs; its economy is prospering, with luxury hotels and tourists who come to snorkel and dive. At dawn one morning last May, I walked out onto the tarmac of Roatán's airport, boarded a tiny twin-engine plane, and so joined the latest expedition to search for the White City.

From all appearances, the search seemed unlikely to succeed. It had been organized by Steve Elkins, a documentary filmmaker who, in the nineteen-nineties,
had made several failed attempts to find the White City. The plane, an aged Cessna 337 Skymaster, had outlived a third of its paint, and a streak of oil ran down the fuselage from the forward engine. The interior, once lined with red flocked velvet, was faded, greasy, and plastered with duct tape. Other parts of the plane appeared to be held together with acrylic caulk that was peeling off in strings. The pilot, Chuck Gross, assured me that the Skymaster was a “great little aircraft” and “totally dependable.”

Gross occupied the only seat on the plane, which otherwise had been stripped bare. Directly behind him, and filling much of the interior, was a large gray metal box; the plane had been specially modified in order to carry it. The box contained a light-detection and ranging, or lidar, machine, a million-dollar device that could peer through the dense canopy of the Mosquitaí rain forest to create a high-resolution map of the ground. Our destination was a remote valley, twenty-four square miles in area, known only as Target One, or T1. In 1997, scientists at the Jet Propulsion Laboratory, in Pasadena, California, parsing imagery from satellites, had identified unnatural “rectilinear and curvilinear” features in the valley. But the images were blurry and ambiguous, and no ground expedition had been able to reach T1. Ellis’s idea was to map the area with lidar and perhaps reveal the White City.

Archeology is on the cusp of a technological transformation. For more than a century, conducting work in the rain forest has been a sweaty, laborious business. When a potential site is identified, and before excavation can begin, it must be surveyed. Traditionally, this has required a team of researchers and assistants to comb and partially clear the forest, and then to mark, measure, and map every fixed, man-made feature, down to the smallest carved stone, while being tormented by mosquitos, black flies, heat, and the persistent hazard of venomous snakes. Unlike a desert site, which can be mapped in weeks or days, a survey in the jungle can take years, even decades, and can cost hundreds of thousands of dollars. Many small features are overlooked, and even the most prominent structures can be surprisingly difficult to see. Years ago, at an unexcavated Maya site in the Yucatán, I stood barely twenty feet from the base of a large pyramid so heavily obscured by foliage that I couldn’t make it out.

Lidar has been used by geologists, urban planners, and civil engineers since the nineteen-eighties, but only recently has it improved enough to be applied in fine-grained archeological mapping. Some archeologists have employed other remote-sensing methods to survey sites, but in areas of dense forest those technologies yield Rorschach-like images that even experts cannot decipher. Now, with lidar, thousands of acres of dense jungle can be finely mapped in a few hours, with greater accuracy than the most painstaking ground survey can provide.

With lidar, everything lost in the rain forest will soon be found. “By plugging lidar into what we already know, we can repopulate the Americas,” one Mesoamerican archeologist told me. The technology comes at an opportune moment. Scientists are only now realizing that the rain forests of the New World were far more densely inhabited than previously believed. And, compared with what is known about the Maya, little is understood about the ancient peoples who lived in Mosquitaí before the arrival of Europeans. They built temples, pyramids, ball courts, and plazas that look Maya in their layout but were constructed differently.

TO THE YOU OF TEN YEARS AGO, NOW

Never fear. I know the difference between arteries and arches, arch and tree, my bowe and a weak-kneed need, a harbor where one might moor tonight and a port worth the oars' effort to come ashore for, a bit part and the serpent's gravid apple. I won't flatter myself first or last, or presume to fast and feint a martyr, making mockery of sacrifice, attein for some sweet slaughter. I must believe that I'm not on your mind. On your body? Sure. That said, your body has a few ideas so bright that we might meet some night and render a dark room light as the last day before the world ends, that doom that was supposed to dawn today, but by now, hours worn on and in, we know there's no such luxury as fine as that for now. For now, at least, I'll have to kiss apocalypse goodbye, resign myself to this more mundane pain, the solace of the solstice, year's earliest sunset and its longest night.

I try to catch that fade of color with, without a flash. Both tries prove terrible. The horizon smudges up against the sky's blur like a child's heavy-handed landscape and inept erasure. They'll have to do. The pictures that I have of you will never do you justice, either, neither a camera's snap nor some synaptically crackled长老 elapsed can come remotely close to holding you. How else would you have it? You need never fear. I need you, but I only need you where you are: there, never far, never near.

—Dora Malech

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and stone rubble, over which they laid river stones, then added superstructures, made of wood and adobe, which have long since vanished. This civilization—there may have been more than one—doesn’t even have a name. Begley told me that he had contemplated giving the culture a name “But who am I to do that? I describe them as the ‘ancient populations of the Mosquita’ and leave it at that.”

In 2010, Elkins renewed his effort to find the White City. He had read an article in the magazine *Archaeology*, which described how, with funding from NASA, a team of scientists had used lidar to map the Maya city of Caracol, in Belize. The results were astounding. Archeologists had spent nearly twenty-five years mapping Caracol and its environs on the ground. In just five days, lidar revealed that they had found only ten per cent of what was there. The lidar maps showed temples, houses, roads, reservoirs, terracing, sinkholes, hidden caves, even open and looted tombs. Many features were identifiable from the images alone; others pointed archeologists to specific spots that they could investigate on the ground.

“This is the way to find stuff,” Elkins told me at the time. “Walking aimlessly through the jungle is crazy.” The mapping of Caracol had been carried out by the National Center for Airborne Laser Mapping, or NCALM, a joint project of the University of Houston and the University of California at Berkeley. Elkins flew to Houston and asked if he could hire the center’s expertise to search for the lost city; if he found anything, Elkins would bring in archeologists and scholars to analyze the data and supervise any ground expeditions. It was an eccentric proposal, but William Carter, a co-principal investigator at NCALM and an expert in lidar technology, was interested. Rashem Shrestha, the director of NCALM, was attracted to the technical challenges of looking into a dense, otherwise remote rain forest. Others at NCALM were dubious. Michael Sartori, the chief mapping scientist, was troubled that no academics were involved. “Steve Elkins is a fly-by-night guy,” he said. “Many times, I told my co-workers that this was a bad idea, that this is not the kind of project we should be doing. It just seemed like a crazy shot in the dark.”

At first, Elkins wanted to survey all of Mosquita with lidar, but when he learned that it would cost millions he narrowed the search area to about fifty square miles; mapping even that would run close to half a million dollars. He had gathered the latest maps of all the known archeological sites in Mosquita. Tinaj was still a blank.

“There’s no record of anybody ever being in Tinaj,” he told me. “Even the expeditions in the nineteen-thirties and forties went around it, because it was too hard.” To be safe, Elkins chose three other areas to survey as well, which he called T2, T3, and T4. The first was a valley that was also rumored to contain the White City. The second was an area like Tinaj—difficult to get to, seemingly unexplored. The third had been visited in the nineteen-fifties by an American geologist, who claimed to have discovered the “crumbling limestone wall” of the White City, but recent satellite imagery revealed that the area had been laid waste by illegal logging, so it was dropped from consideration.

Elkins went out to raise money. He asked the filmmaker Bill Benenson, who was just completing a documentary on the Hadza people of East Africa, to produce and co-direct a film about the search. Benenson was so captivated by the idea that he decided to finance the expedition himself. It was an “amazing insanity,” he admitted later. But, even if he and Elkins found nothing, he believed that the lidar mission itself would make a good film. Elkins and Benenson, with other partners, created a company called U.T.L.—Under the Lidar—to conduct the search and produce the film.

A sixty-two, Elkins has the springy, engaging charm of a hammy—camp director. On Roatán, he wore Panama hats and baggy shorts, and seemed always to have a laptop tucked under his arm. In late April of last year, his team arrived on Roatán and set up at the Parrot Tree Plantation resort. Three scientists had come from NCALM: Michael Sartori, the mapping specialist; Juan Carlos Fernández Díaz, the mission controller and lidar operator; and Abhinav Singhal, a field technician and data analyst.

By far the most colorful member of the team was Bruce Heinicke, Elkins’s longtime partner and lover, and a fellow White City obsessive. I first met Heinicke at the Parrot Tree bar. He was wearing a large watch, a pinkie ring, and gold chains around his neck; he had a beer in one hand and a cigarette in the other, and was telling a profanity-laced story that he quickly informed me was off the record.

Heinicke and Elkins met in 1994, when Elkins was filming a documentary about the White City for a German television station. Elkins needed a local arranger and hired Heinicke, who at the time lived in La Ceiba, a large coastal city opposite Roatán, with his wife, Mabel, a Honduran. Because of the violence and the corruption, Honduras is a difficult place to work, but Heinicke thrived in that setting. At one point during the television filming, Elkins’s German producer had to return immediately to Hamburg on business. They rushed to the Roatán airport, and found that the plane was full, and that the next flight wasn’t for several days. With the pilot about to take off, Heinicke boarded the plane, pulled out a Colt .45 pistol, and waved it at the passenger who had boarded last. “I need your fucking seat,” Heinicke told him. “Get off.” The man stumbled off the plane; Heinicke put the gun back into his waistband and said to the German producer, “O.K., you got your seat.”

Heinicke told me, “You gotta be that way down here. Don’t fuck with that gringo, he will fucking kill you. See, Steve, he’s kind of dangerous to be with. Hell tell me the good points he sees in someone, and I’ll say, ‘Fuck him, I don’t like him, I don’t trust him.’ That’s probably why we make a good partnership.” Elkins said, “Bruce’s definitely the kind of guy you want to have on your side.”

The Honduran government issues very few permits for archeological study in Mosquita, yet, with the help of Heinicke and Mabel, Elkins had managed to obtain a permit to conduct a lidar survey of the region. The couple had moved to St. Louis in 1996, but in 2009 Mabel returned to Tegucigalpa to attend the funeral of her father. While she was in the church, she heard that the recently elected President, Porfirio (Pepe) Lobo Sosa, would be attending services there the following Saturday with his cabinet, so that the pastor could bless the new government. She mentioned this in a phone call to Heinicke, who proposed a plan.

That Saturday, Mabel returned to the church. After the service, as Lobo was leaving, she forced her way through the crowds toward the President-elect. She called out his name—“Pepe! Pepe!” Fi-
nally, she reached through a ring of armed guards and grabbed his arm. "O.K., you got my attention," Lobo said. She asked if he had heard of the White City, and told him that her husband knew where it was; all they needed was government permission to go there. Lobo said that he wanted Mabel to meet a member of his cabinet who was in the church. "He will speak for me, and he will be able to get all your permits. His name is Árizco Madrid." He then asked for Mabel's cell phone and called her husband.

"I'm sitting in St. Louis, and here comes this call," Heinicke said. "It's the President of Honduras on the phone. He asks me, 'You really know where it's at?' I said, 'Yes, sir.' He said, 'I want to do this. It will be good for the country.'" The permits were granted in October, 2010.

Our flight was the third that the lidar-equipped plane had flown over the valley of T1 in as many days. I was warned that it would be uncomfortable. Fernández, the lidar operator, would be wedged into a spot next to the box, with a laptop plugged into the lidar, leaving little room to spare. He explained that we would be flying "low and slow" over the canopy, banking steeply turn after turn as the pilot ran survey lines across the target area for about four hours without interruption. In full sun, the plane would be sealed in—"the air-conditioning unit was broken—and it would be tossed around by thermals. And there was no bathroom.

A space was cleared for me in the back, behind the lidar box, next to a nacelle Plexiglas window. On the previous day's flight, Fernández had spotted something on the valley floor that looked like pillars; next to it was a geometric shape covered with vegetation. He gave me a camera with a long lens and told me to photograph the features, along with anything else that might look unnatural. I crammed myself into the allotted spot, my knees at my mouth, and we took off over the dazzling bay.

Fifteen minutes later, the Cessna reached the Honduran mainland. As we flew inland, coastal settlements gave way to hamlets, fields, and slow-moving brown rivers. The blue mountains of Mosquitia rose up ahead. The clouds were low and high—a great day for mapping. The land mounted into forested foothills, and ragged scars from clear-cut logging came into view; plumes of smoke rose from the jungle in every direction. Up to eighty-five per cent of the logging in Honduras is illegal, and the country is losing rain forest at a fearsome rate.

The logged areas eventually ceded to unbroken, precipitous jungle. Gross, the pilot, picked his way through the mountains, flying at about eight thousand feet above the green canopy. An hour out of Rotosi, Fernández announced that we were approaching the rim of the valley of T1. Although the valley is readily visible on Google Earth to someone who knows what to look for, its exact location is a Honduran state secret. Through my hazy window, I saw a lost world of steep hills and alluvial bottomlands, protected by a fortress of mountains.

The Cessna slipped down into the valley and levelled off at about two thousand feet above the treetops. Gross located where they had left off mapping the day before, and Fernández booted up the lidar. The device sat above a hole that had been cut in the bottom of the plane. Inside the box were a laser and a rapidly spinning mirror that together would spray brief beams of infrared light—a hundred and twenty-five thousand per second—onto a swath of the canopy directly below; in three days of mapping, the lidar would fire 1.5 billion laser pulses. Some beams would reflect off the leaves in the canopy, and a smaller number would penetrate the foliage and reflect off the forest floor. For each beam reflected back to the plane, the lidar would measure its round-trip time and gauge the distance travelled to within a centimetre. Later, Michael Sartori, the mapping specialist, would use software to strip away all the reflections from the vegetation, leaving only the ground points; these would be processed to create a shaded topographical map of the terrain and any ruins or structures that might be found on it.

As the lidar bombard the canopy with laser pulses, Gross steered the Cessna in long, parallel lines across the valley. For lidar to gather meaningful data, it must continuously pinpoint the location of the plane and corrects for turbulence. Later, the I.M.U. data are combined with readings from the plane's G.P.S. unit and from fixed G.P.S. receivers on the ground, to re-create the
plane’s exact position at every moment. The guidance device is highly classified; to use it in Honduras, NCALM needed a special export permit from the State Department. Armed guards were required at all times while the plane was on the ground.

The rain forest that enveloped below us was astonishingly opulent. The tree canopies were packed together like fluffy pillows and shimmered with every hue, tint, and shade of green: chartreuse, emerald, lime, aquamarine, teal, bottle, olive, jade. Here and there, the canopy was disrupted by a treetop smothered in gigantic purple blossoms—a celtia. Down the center of the valley floor, the jungle gave way to open meadows and meandering streams. The surrounding mountains were slashed with fresh landslide that exposed orange earth and shattered tree trunks.

"It’s coming up," Fernández said suddenly. "Down there two white things."

In an open area below, I could make out the two features that he had photographed the previous day. They stood about thirty feet apart and were partly covered with brush or vines; they looked like square pillars. Gross made several low passes as I photographed through the clouded Plexiglas, trying to steady the long lens of the camera against the bouncing of the plane.

At the end of the afternoon, we landed in La Ceiba. Fernández had gathered that day’s lidar data onto two disk drives, which he handed to me. While he and Gross went in search of fuel, I caught a commercial flight back to Roatán and delivered the data to Sartori, who would combine it with the data collected on the previous two days and begin to process it.

Sartori worked through the evening, while, in Houston, Ramesh Shrestha, the director of NCALM, pressed him for updates. It was a tedious task; Sartori had to merge data from several sources—the lidar, the G.P.S. ground stations, the G.P.S. readings from the aircraft itself, and the data from the I.R.U. —to create a "point cloud" of billions of laser reflections accurately situated in three-dimensional space. It was late at night when he finished making the raw maps of T1; everyone was asleep, and the Internet connection on Roatán was down. Exhausted, Sartori went to bed. Early the next morning, he uploaded the raw maps to a server in Houston. Without looking at them, Shrestha immediately forwarded them to NCALM’s William Carter, who was at his vacation home in West Virginia.

At 8:30 A.M., the maps of T1 arrived in Carter’s in-box; he was about to go out to buy a refrigerator, but he told his wife that he wanted to have a quick look, and downloaded the data. "I don’t think it took me more than five minutes to see something that looked like a pyramid," he said later. "I looked across the river at a plaza area with what looked like buildings—clearly man-made objects. As I looked at that river valley, I saw more, as well as alterations to the terrain. It was kind of surprising how easy it was to find them." He e-mailed the coordinates to Sartori and Shrestha, so that they could find them on the maps of the valley.

"I was mad at myself for not seeing it first, since I was the guy producing the images," Sartori said, after receiving Carter’s e-mail. He ran out in his flip-flops, waving his arm, shouting for Ellkins, who was walking back from breakfast. "There’s something in the valley!"

Ellkins wasn’t with us. Everyone crowded into Sartori’s room to look at the images on his laptop. The maps were in gray scale, hastily created and rough, but they were startlingly clear. In the valley of T1, above the confluence of two streams, we could see several rectangular features and long, pyramid-like mounds arranged in squares, which covered at least several hundred acres. Also visible were the square pillars I had seen from the plane. Sartori’s in-box pinged with e-mails from Carter and Shrestha, who were poring over the same maps.

"When we saw those rectangles and squares, I thought, Holy shit, there it is!" Ellkins said later. "I felt vindicated." Renonco, the filmmaker, who had been feverishly capturing the unfolding discovery on video, seemed stunned that his expensive gamble had paid off. "I’m witnessing this, but I’m not processing this very well," he said. "I have chills."

That evening, Heinicke called Africco Madrid, the minister of the interior, to tell him of the discovery. Madrid said he would verify it before informing the President. During the next three days, the lidar plane flew additional missions, this time over T2 and T3; by the time they were done, the team had mapped fifty-five square miles of Mosquitia rain forest. It soon became clear that there were even more numerous and spectacular ruins at T3, and T2 also showed many compelling sites. Instead of a lost city, we had found the expansive remains of an ancient civilization.

In the past twenty years, archaeologists have begun to realize that their assumptions about how pre-Columbian people lived in the rain forest were mostly wrong. Earlier theories held that the rain forest soils of Central and South America were too poor to support large populations, and that many areas could support only scattered hunter-gatherer tribes. Increasingly, it appears that the Amazon jungle once harbored sophisticated farming civilizations that cleared huge areas and built cities, towns, and networks of roads and canals. Likewise, the Mosquitia of today looks inhospitable, but in pre-Columbian times it was probably more like a vast, tended garden, according to Christopher Fisher, a Mesoamerican specialist at Colorado State University. Crops, flowers, and fruit and cocoa trees would have been mingled together, unlike the monocrop agriculture of today, and spaced around dense housing settlements, with woods, paths, and shaded parks. Even the vistas were tended, Fisher said. The pyramids and large-scale monuments were built to be seen from a distance—"something like Frederick Law Olmsted’s vision for Central Park."

On May 12, 2012, Madrid and several other Honduran officials assembled in Sartori’s room to examine the images. That evening, Madrid called Lobo at home to report that he believed that Ciudad Blanca had been found. When he heard the news, Lobo told me later, he was "completely speechless." Both men credited the hand of God; after all, Mabel Heinicke had approached them in church at the very moment when the new administration was being formally blessed. "There are no coincidences," Madrid said. "I think that God has extraordinary plans for our country, and Ciudad Blanca could be one of them."

Here was something that Hondurans could be proud of: On May 15th, Ellkins and Fernández, who is Honduran, were summoned to the Presidential palace, in Tegucigalpa, to present the discovery at a cabinet meeting, which was televised live to the nation. A press conference followed on the palace steps; later in the day, a press
release, issued jointly by Elkins’s team and the Honduran government, announced the discovery of “what appears to be evidence of archeological ruins in an area long rumored to contain the legendary lost city of Ciudad Blanca.” The careful qualification in the statement was lost on the popular press, which announced that Ciudad Blanca had been found.

The news was not greeted warmly by some archeologists. In two postings on the Berkeley Blog, Rosemary Joyce, an expert on Honduran archeology at U.C. Berkeley, denounced the project as “hype” and “bad archeology.” She criticized the team for not having an archeologist on board. “This is at least the fifth time someone’s announced they’ve found the White City,” Joyce told me a few days after the press conference. “There is no White City. The White City is a myth. I’m quite biased against this group of people because they are adventurers and not archeologists. They’re after spectacle. Culture is not something you can see from the lidar plane or from thousands of feet up. There’s this thing we call ‘ground-truthing.’”

I asked Joyce if she would look at an image. At first, she said no, then reluctantly agreed. “I may not call you back,” she said. I e-mailed her a lidar image of one small area of T1. She called back minutes later. Yes, she said, this was an archeological site. She could see “three major clusters of larger structures,” as well as “a plaza, a public space, par excellence, and possible a ball court, and many house mounds.” She guessed that the site dated from the late- to post-classic period, between 500 and 1000 A.D.; Elkins’s team has not yet attempted to date the site.

In mid-June, Elkins invited Fisher to join the project. For several years, Fisher has been studying a pre-Columbian settlement in Michoacan, Mexico, called Angamuco, that dates from the eleventh to the sixteenth century. In 2010, Fisher used lidar on Angamuco—he may be the first archeologist to have used the technology in Mexico—and his results were as astounding as those at Caracol. The images gathered after flying over Angamuco for just forty-five minutes revealed twenty thousand previously unknown archeological features, including a pyramid that, seen from overhead, is shaped like a keyhole. “I almost started crying when I saw the lidar images,” Fisher said. “I thought, Oh, my God, I’ve just got back ten or twelve years of my life. It would have taken me that long to survey those nine square kilometres.”

Fisher spent six months studying the lidar maps from Honduras. In December, he presented his findings to Elkins’s team. Initially, he had focused his attention on T3. “There is a big city here,” Fisher told Elkins’s team. “It’s comparable in geographic area to the core of Copán—the Maya city in western Honduras. He displayed a map of the central area of Copán, superimposed on the lidar map of the unknown city in T3; both covered about two square miles. “The scale of the site is amazing,” he told the audience. “This is data that would have taken decades to gather in traditional archeology.”

Later, Fisher told me that he had identified at least two large cities in the images—one in T1, one in T3—and possibly a third, in T2. The two cities appear to be as large as or larger than anything previously found in Mosquita. Fisher could also see a couple of hundred smaller sites, from farming hamlets to monumental architecture, thousands of canals and roads, and signs of terraced landscapes. “Each of these areas was once a completely modified human environment,” he said. To an archeologist, the term “city” refers to a site that had many functions, with clear divisions of space; was socially stratified; and was linked by roads and trails to farms and settlements on the outskirts. Cities also had special ceremonial functions and were supported by intensive agriculture. “I see all these things in these images,” Fisher said. He noted that, unlike ancient cities such as Copán and Caracol, which were built around a central core, the Mosquita cities were spread out—“more like L.A.” than like New York.

He smiled and added, “I hear myself saying this stuff, and I know, I just know, that there’s going to be a firestorm of criticism. But I’ve taught myself how to analyze these data. There aren’t yet a lot of archeologists who have experience working with lidar.”

I asked Fisher whether the White City had finally been found. He laughed. “I don’t think there is a single Ciudad Blanca,” he said. “I think there are many.” The myth may hold intense meaning for Hondurans, he said, but for archeologists it was mostly a distraction.

So far, only a few archeologists have seen the entire set of images. Next month, in Cancún, Fisher, Fernández, and other members of Elkins’s team will present some of their findings at the annual meeting of the American Geophysical Union, the leading organization of earth scientists. Elkins’s group is organizing a joint expedition with the Honduran government to explore the site in T1—first by helicopter, later this year, then with a ground expedition, shortly thereafter.

The archeological community is excited. When Chris Begel, the specialist in Honduran archeology, saw some of the lidar images, he expressed astonishment. “With lidar, you can find archeological sites that you could never before,” he told me. “There is incredibly valuable information in these images.” Alicia González, a Mexican archaeologist and a former curator at the Smithsonian’s National Museum of the American Indian, reviewed the images, and told me, “I couldn’t believe it, it was so fabulous. Lidar is going to turn the face of research all the way around. With lidar, you can do a hundred years of survey work in a few days.”

For centuries, impenetrable forests have kept these vast sites hidden. Space-age technology can strip away those barriers; human history is becoming transparent. But the Honduran rain forests are disappearing at a rate of some three hundred thousand acres a year. In the few years since Elkins identified T4 as an area of interest, it has been cut down and burned, and its archeological sites exposed to looting and destruction. Last June, the Honduran government established a protected zone encompassing the three sites, within the existing biosphere reserve and the U.N. World Heritage site. But enforcement is weak, and the remoteness, the rugged mountains, and the dangers of the jungle are no match for the profits of logging. From the Cespán, I saw plumes of smoke rising from the rain forest far into the distance. By the time archeologists can reach such sites to look at them, they may be gone. Fisher said, “The lidar data are all we might have left.”