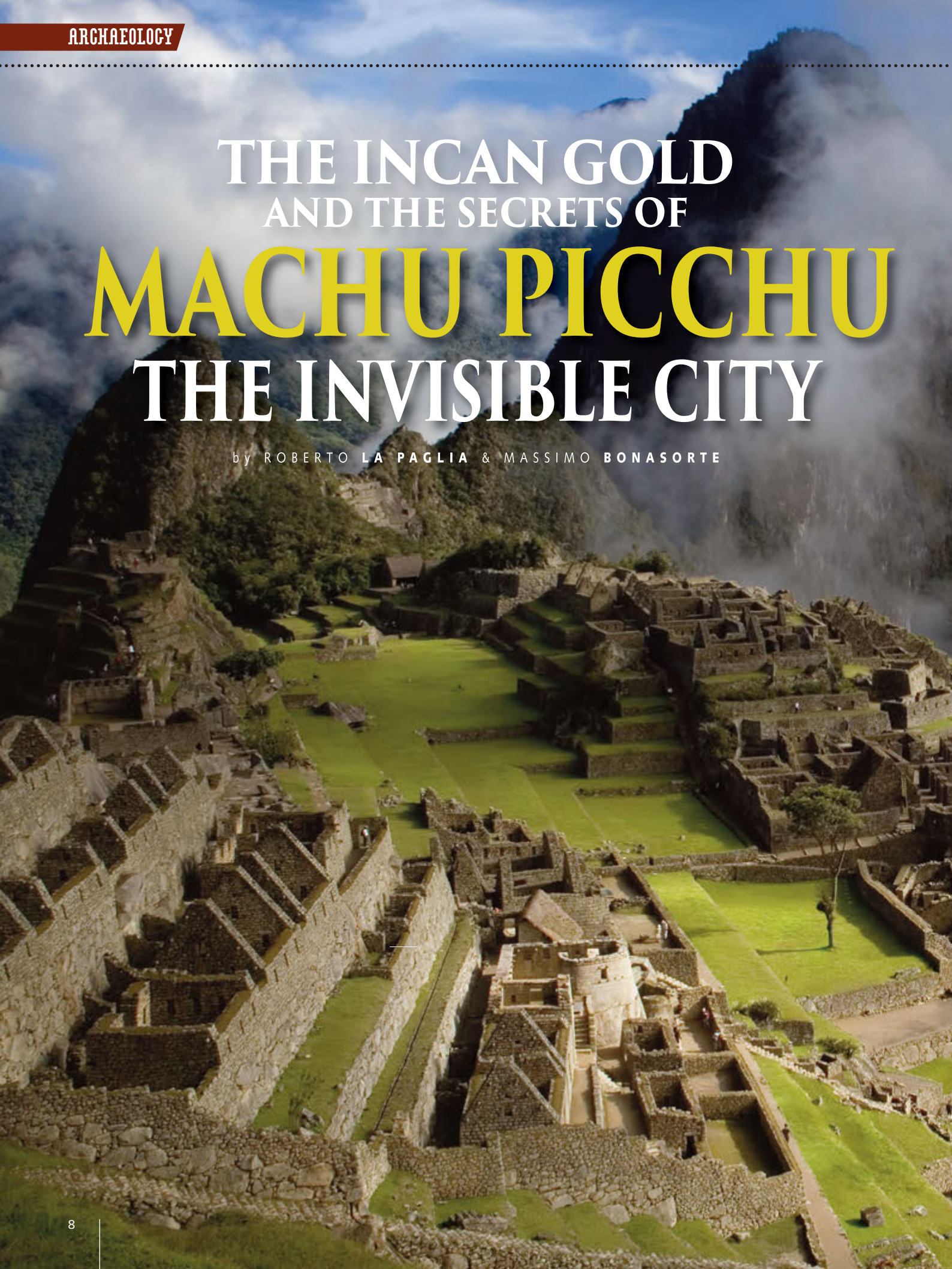
THE INCAN GOLD AND THE SECRETS OF MACHU PICCHU

THE INVISIBLE CITY

by ROBERTO **LA PAGLIA** & MASSIMO **BONASORTE**







Painting by Luis Montero, The Funerals of Inca Atahualpa.

In 1536, the Incan ruler Manco Inca Yupanqui, after being defeated by forces of the Spanish colonizers, flees Cusco, the capital of the empire, and founds a new city: Vilcabamba. The Spaniard Gonzalo Pizarro had already annihilated the Incan empire, already crippled by civil war, but the dynasty of Manco Inca Yupanqui managed to survive for another 36 years until Vilcabamba fell into oblivion.

About 370 years later, Hiram Bingham of Yale University decided to embark on a trip to Peru. In 1906 Bingham embarked on an adventurous







Pictured above and to the right, Hiram Bingham at the ruins of Espiritu Pampa in 1911.



journey from Buenos Aires to Cusco wishing to find Vilcabamba, the last refuge of the Incan rebels.
When he arrived in Abancay, the locals mentioned some ruins and took him to what we know today as the archaeological complex of Choquequirao. Bingham was unconvinced: the mythical Vilcabamba had to be even more impressive, so he planned his enterprise to find Vilcabamba. Alberto Giesecke, rector of the University of Cusco and a friend, told him about the existence of mysterious Inca ruins in the area.
The rest is history: on July 24th 1911, along with the local guide Melchor Arteaga, Bingham reached the top of Machu Picchu, believing he had found Vilcabamba.
In "The lost city of the Inca" he reported his excite-



Who stole the Incan gold?

Berns was an art smuggler that managed to convince or rather bribe the Peruvian authorities and get Andres Avelino Caceres, the president at the time, to allow him to sack the entire sacred area of Machu Picchu undisturbed. Berns complete lack of remorse and arrogance is further shown by his *Companhia Anonima Explotadora de las Huacas del Inca* (Exploiting Incan sites Anonymous Company), created specifically for his endeavours at spoiling the site.

It was the American historian Paolo Greer to discover a series of documents in the American and Peruvian archives that "pin" both Berns and the Peruvian authorities of the time as the culprits. Based on Greer's studies, we know that in 1887 Berns made a deal with the government that would allow the German company to export any plundered material by depositing 10% of its value as a tangent. But that was just the beginning. Greer also discovered that the government allowed several entrepreneurs to exploit the mineral reserves of the "huacas", ancient tombs and sacred Incan locations, and, as luck would have it, Berns' name also appears among the entrepreneurs listed. In an 1874 document, it was established that the entire mining area surrounding Machu Picchu was to be mined by the German, who probably discovered the Incan city remains while roaming its lands and seeking its treasures. "*We have proof that Berns and his associates* – says the Peruvian historian Carlos Carcelen – f*ound gold and several archaeological objects in Machu Picchu*".

The mystery remains, as we may never know where those artefacts are today.



ment in discovering what he believed to be the legendary Vilcabamba. Wrongfully so, as he had rediscovered the ruins of Machu Picchu or "the ancient peak", as it was called in the Quechua language, in the sacred valley of Urubamba. The archaeological site is part of the UNESCO World Heritage and is located in a mountainous area at 2,350 meters above sea level and 80 km north-east of the city of Cusco, with an extension of almost one kilometre. The location of the city was a well-guarded military secret due to the deep cliffs that function as a natural defence. Once abandoned, its location remained unknown for four centuries, protected by abundant vegetation and practically invisible from below.

The Temples mystery

Why build a city on a spur of rock 2,300 meters high on the slopes of the Andes? And above all, is it correct to use the term "city" when talking about Machu Picchu?



"Suddenly I found myself confronted with the walls of ruined houses built of the finest quality of Inca stone work. It was hard to see them for they were partly covered with trees and moss, the growth of centuries, but in the dense shadow, hiding in bamboo thickets and tangled vines, appeared here and there walls of white granite ashlars carefully cut and exquisitely fitted together.... Dimly I began to realize that this wall and its adjoining semicircular temple over the cave were as fine as the finest stonework in the world. It fairly took my breath away. What could this place be?"

(Hiram Bingham, Lost City of Incas)







Temple of the Sun, Machu Picchu.



Temple of the Condor.

Those enormous stone stairs and those gigantic terraces, most likely, never witnessed the normal daily life of the Inca people; they are, in fact, a huge complex of temples, observatories and sumptuous palaces destined for the ruling class. There is also a part with sings of agriculture and other activities, but the real purpose of the entire settlement remains a mystery.



Among the most important places of Machu Picchu is the *Plaza Alargada* built with terraces at different levels, the *Sun Observatory Temple*, the *Royal Residence*, which functions as the first entrance to the city, the *Sacred Square*, which in-





cludes two of the three major buildings, the *Three Windows Temple* and the *Main Temple*. At the western end of the site, there is also the enigmatic stone called *Intihuatana*, or "the post to tie the sun".

The Intihuatana is a small pyramid with a flattened top, where there's a sundial, an observation point for priests to trace the sky and in particular the movement of the Sun.

As he continued exploring the ruins and making more discoveries, Bingham noticed an unusual detail; they had found a lot of bronze, obsidian, stone and ceramic artefacts, but they had found none in silver or gold. These metals were commonly found in this sort of places, it was enough to visit the *Sun Temple* in Cusco to



INTIHUATANA, THE SUN HUNTER

We have often mentioned Intihuatana in the past, so we think the day has come to take a closer look at this ancient creation full of mystery. The original Inca name has long been lost to us, but we do know that the Spanish historians registered the monument as "saywa" o "sukhanka". The name we know today comes from the Quechua language, where inti stands for "sun", or Sun god, and wata- is the verb "tie", while the suffix -na defines the names for instruments or places. Therefore, *initi watana* translates to "an instrument or place to "tie the Sun-god", hence we know that it had a religious purpose. The stone itself has sides, one per cardinal point, marked by 70 stone steps and many dents of which we ignore the meaning. Perhaps they were used to place religious objects or mummies or to mark specific locations to perform sacrifices, but everything is shrouded in mystery.

At the end of the day, it most likely is some sort of clock used to determine the perfect moment to celebrate and "tie" the sun to the two equinoxes. At midday, on March and September 21st, the sun directly oversees the pillar, creating no shadow. This is possible because the summit of Intihuatana was built at a 13-degree angle.

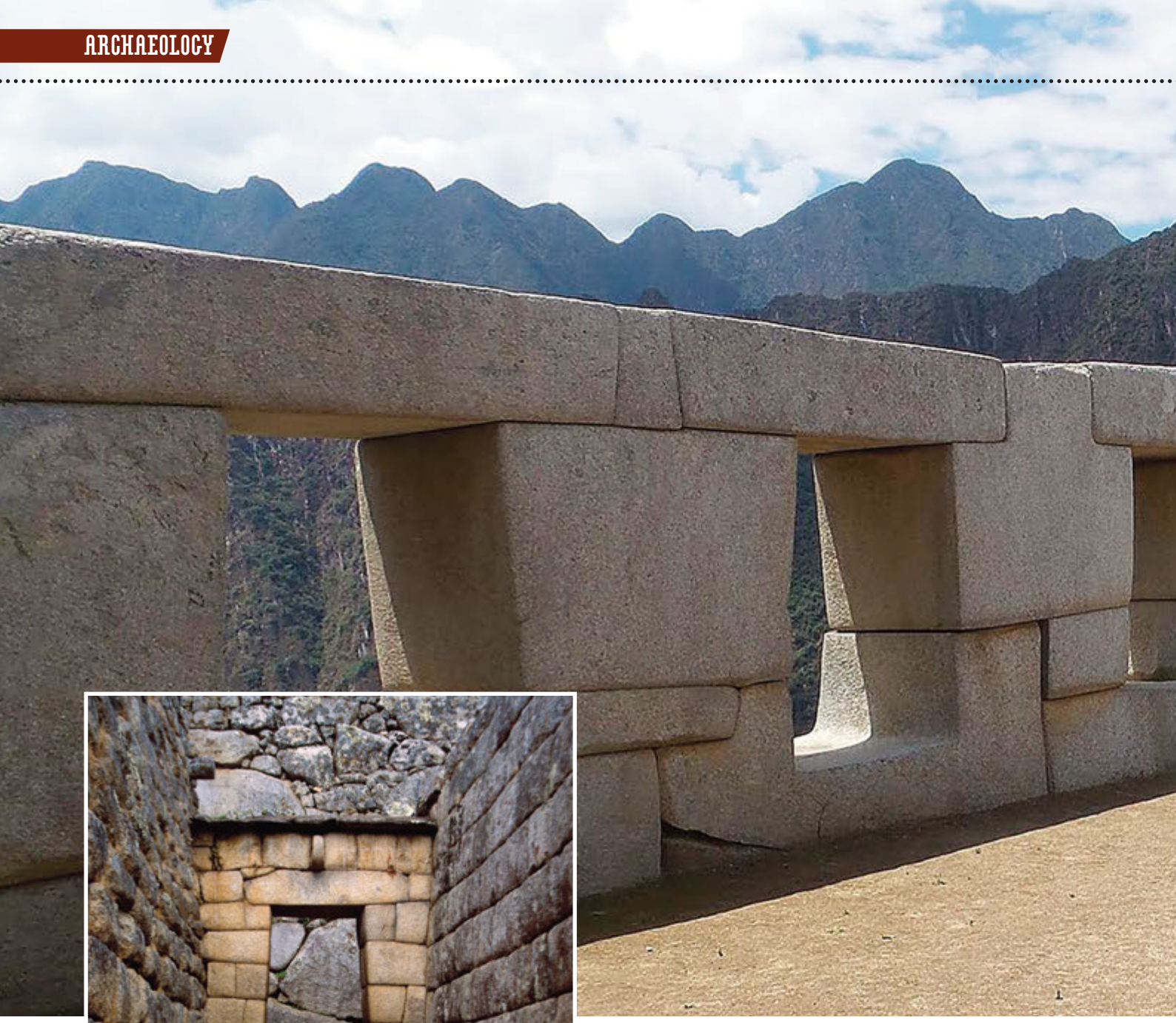
During the two equinoxes, the Incas would perform ceremonies to keep the sun in the correct position, granting a plentiful harvest and overall prosperity.

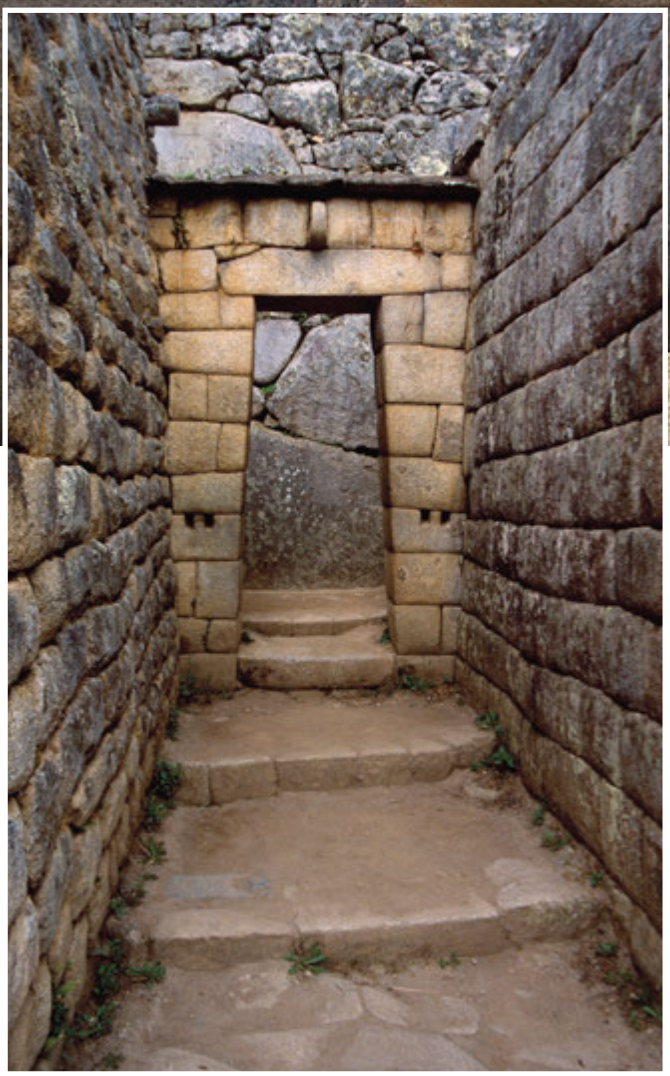




admire beautiful gold and silver plant sculptures, yet there was no such thing in Machu Picchu. Had the Spaniards Sacked the place? It was plausible, but consulting their chronicles there was no mention of the mysterious city, which was odd as the Spaniards were usually very precise in noting the locations of their conquests and sackings. The answer to this question only arrived in recent times: the sacred city of Machu Picchu was not discovered by Bingham but was explored and plundered by Augustus Berns, a sort of tomb raider, as we would say.







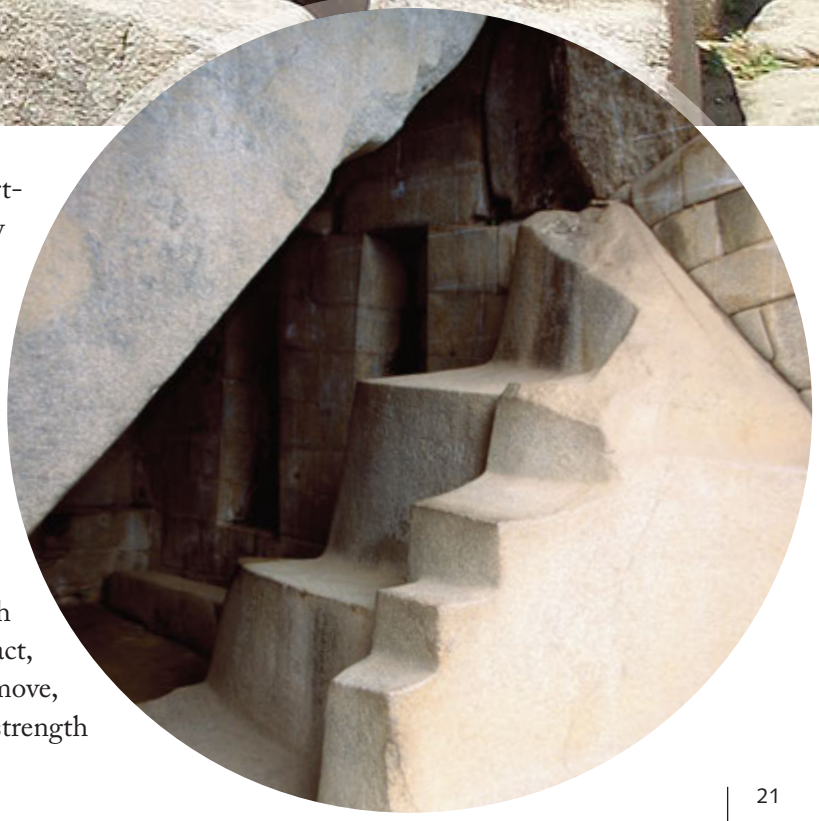
Berns was a German brazen adventurer who reached the city in 1867, 44 years before Bigham, seeking treasures and mostly gold. These Incan riches probably ended up in Berns' possession, but it remains just a plausible theory. According to the Peruvian scholar Victor Angles Vargas, Machu Picchu was abandoned around the 15th century, but what was the reason?

Perhaps the city fell victim to bloody battles between rival tribes? Was the population's fate marked by frequent epidemics? We are unable to give you clear answers, but the enigmas surrounding Machu Picchu are many more.

How was Machu Picchu built?

History tells us that the Incas had no draft animals or wheel, yet whoever has the opportunity to admire the

Temple of the Three Windows.



city ruins can't help but wonder how they transported the enormous amount of stones, each a few tons heavy, necessary to build it.
To this day, if we try to fit a razor blade between two stones we are to find it near impossible, because the stones are a perfect fit with one another, despite centuries of erosion.
Perhaps the secret lies in the particular masonry technique used by the Inca people; huge stones with many edges that fit together in a way as not to need mortar, a kind of puzzle able to defy time and the continuous attacks of nature such as earthquakes. The area is highly seismic. In fact, during earthquakes the stones of Machu Picchu move, but do not collapse, but they seem to follow the strength



In Machu Picchu there are many water sources for ritual use.



of nature in its dangerous wake. As if this wasn't enough, these huge blocks of stone are the keepers of another mystery. How did the Incas develop this construction technique?

In a wall in the city of Cusco, we found a rock with twelve edges, while not far from Machu Picchu, another one has even forty. Besides, how did they carve the granite? What tools did the Inca use? No archaeological research has ever found tools strong enough to cut stone. The Incas were masters of melting and alloying soft metals, they worked with bronze and copper, but they never made iron tools, and the artefacts found were unable to cut stone, yet they did it! How? According to local stories, they shaped the stones using hematite shards, but in this case, we should assume that this material was easily found on the Andes as if the place had suffered a massive meteor rain, but there is no historical trace of that.

Some scholars believe the Inca used wet wooden shovels to move the heavy rocks, but this doesn't explain how they built the massive structures made by a single stone or with intricate patterns.

Lastly, there is a highly debated theory: the Incas knew how to soften stone. This would be the reason why in Machu Picchu and other locations there are walls, monuments and buildings with the same characteristics: no room between stones, the rocks often with impossible curves and patterns as if they were fused instead of having been placed. Many myths mention a plant capable of softening stone, it would be a small red plant 25 cm tall with many names, among which *Pito*. Unfortunately, despite plenty of research, no proof supporting this theory has been found to this day.

What is the goal of Machu Picchu?

According to some researchers, Machu Picchu would have served as a base to manage the empire, or what was left of it, due to its proximity to Cusco. The city was not very populated and was able to contain no more than 750 people, although only an estimated 200 skeletons have been found. The low population combined with the majority of the building being temples lead us to believe that it was mostly a religious centre, where they preserved and followed ancient traditions. Regarding the skulls found, many presented the classic elongated skull, especially in the pits dedicated to the noblemen. We know that the deformation of the skull was an ancient custom of which the origin remains its deepest mystery. Who were these elongated skull individuals and why were they buried in Machu Picchu? The explanation of the archaeologists, however, excludes any mystery. Machu Picchu would be nothing more than the residence where the royal elite retired to entertain guests and carry out some activities such as hunting...

Bingham's mockery

Hiram Bingham devoted all his energies to finding Vilcabamba, the "lost city of the Incas", but as we have seen



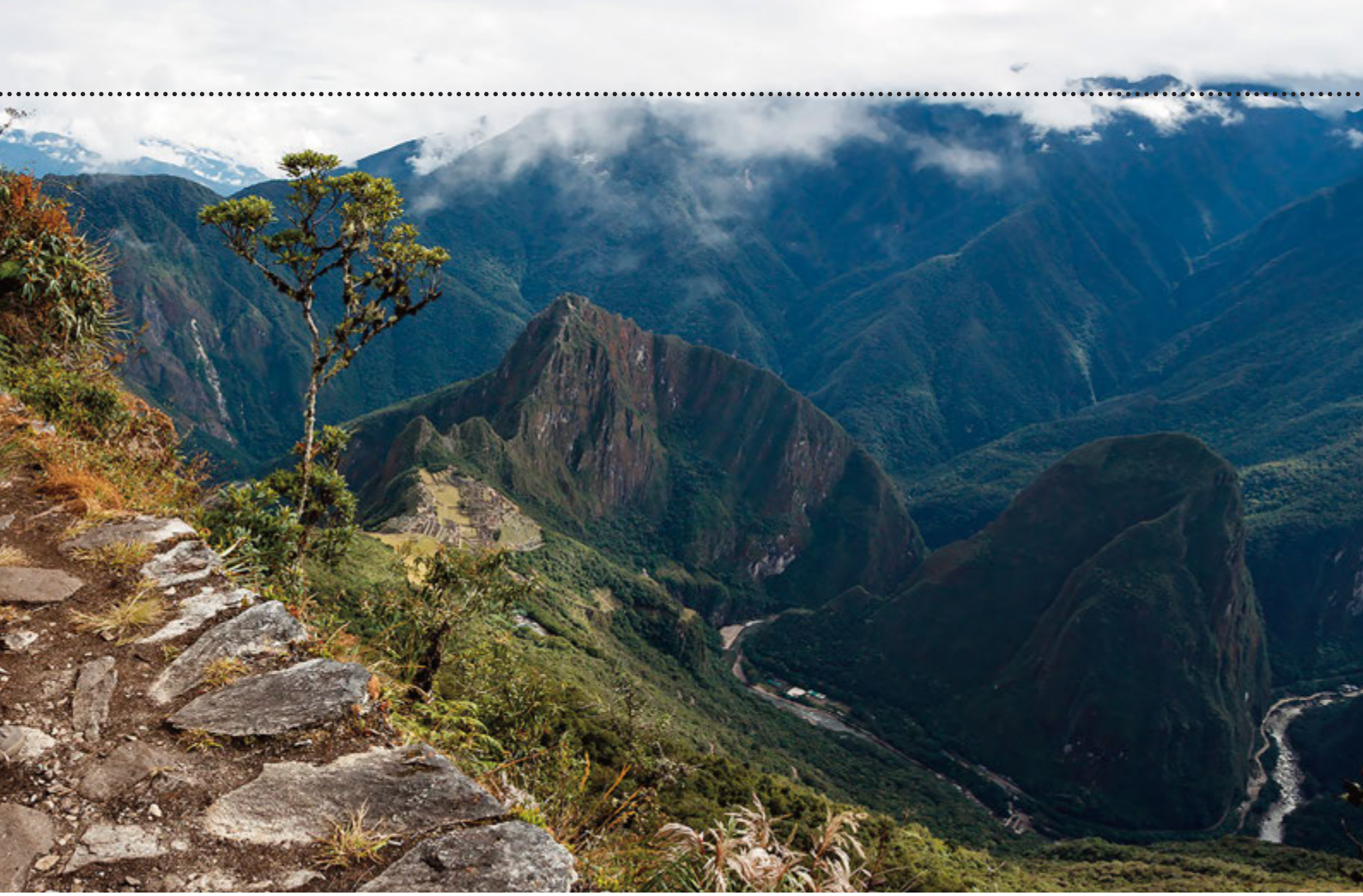
The Temple of the Moon is an Inca temple for ceremonies in Huayna Picchu, near Machu Picchu.



The sacred Plaza (Plaza Sagrada).







he discovered Machu Picchu instead. In reality, "luck" mocked him, as Bingham found Vilcabamba, but didn't realize he did!

Archaeologists have discovered that the last refuge of the Incas was a site called Espíritu Pampa, located in the forest about 130 kilometres west of the Inca capital Cusco. In 1911, Bingham arrived at Espíritu Pampa but he did not realize the importance of the archaeological site because he did not have the technology to investigate places so buried in dense vegetation. It was after 1960, when comparing some cartographic surveys and the archaeological excavations conducted by Vincent Lee, in the 1980s, that we understood how extensive the archaeological site of Espíritu Pampa was.

"*We discovered* – Lee declared – *that the city was made up of 400-500 buildings... but Bingham had only seen 20*" so he deduced that the site was too small and unimportant to be Vilcabamba. Too bad, however, that the natives, when they referred to Espíritu Pampa, called it Vilcabamba Grande, the truth was right under his nose, but Bingham did not see it!

The Incas and Machu Picchu are yet to reveal their secrets or maybe we, like Bingham, have the answers under our noses and cannot see them?





THE SUN VIRGINS DESACRATION

by GIUSTINA **VENEZIANO**



When you visit Macchu Pichu, you may be surprised by its terracing agriculture, once destined to grow corn and potatoes, by its "U" shaped urban area with two major architectural complexes, which combined have 3000 steps of stairs and roads and also have a hydric canal system. Here you can find sixteen liturgical fountains placed one after the other next to the entry steps. At the top, there's a beautiful double jamb door which leads to the Sun Temple (El Torreón), a solar observatory. Next to the temple, there is a two-story building known as "Ñusta Palace" (princess), where the high priest lived. Leaving the complex we reach the "quarry" or "Caos Granítico" an area full of scattered granite blocks that are thought to have been brought from adjacent mountains.

The origins of the city are still shrouded in mystery. Why do the chronicles from the 16th century not mention Machu Picchu? Why wasn't it destroyed by the colonizers and religious emissaries charged with "eradicating blasphemy"? These remain partly unanswered: what we know of the origin, function and construction of Machu Picchu is nothing but a hypothesis.

Some believe it was the last outpost of the Andes, the starting point to venture into the jungle and subdue new civilizations, or that it was a fortress used to monitor the arrival of the enemy. Others believe it to be a hidden sanctuary, a peaceful *Aclla Huasi*, home to virgins dedicated to the cult of the Gods.

Based on the examinations performed on the exhumed bodies, the population in Machu Picchu (which in its heyday it must have been about 1000 people) was 80% women. It is reasonable to believe this was a "llacta", that is an administrative-religious city inhabited by high state officials, priests and a bevvy of servants and



craftsmen. Its isolated location suggests that it may have been a refuge for the selected few of the Incan nobility in case of an attack.
The researcher Waldemar Espinoza Soriano says that not even the population of the Andes knew the exact location of Machu Picchu, only the "sapa inca" or "only king" and the members of the Pachacútec royal family. He adds: "*Macchu Picchu had a defensive function. It was a refuge Illacta, with all the means necessary to resist a siege and be isolated for decades*".





What we do know is that the city suddenly and indefinitely became uninhabited, until it disappeared in the jungle. There is another enigma regarding the reason behind this exodus. There are different hypothesis, among which a terrible epidemic that forced the population to quickly abandon the city built in a humid and bug-infested area. This theory stems from the fact that up to the early 20th century, the entire area was plagued by malaria outbreaks.
Another hypothesis is about the Antis, a nation enemy to the Incas coming from the jungle: they could have managed to reach and pass the bulwarks of Machu Picchu, where a gruesome battle ensued, showing how unsafe the city was, leading to it being abandoned and forgotten.
There is also a suggestive theory about a religious sacrilege: according to Garcilaso de la Vega, a chronicler of the time, a sacrilege may have been performed by the priests in the city. According to Incan tradition, anyone who laid with the Sacred Sun virgins would be executed alongside their family and their residence would be cursed and subsequently abandoned. Nonetheless, this hypothesis was debunked in 2000 when the anthropologist John Verano from Tulane University in New Orleans discovered that the skeletal remains actually belonged equally to male and female individuals.
So it is much more likely that the skeletons in Machu Picchu belonged not to violated Incan priestesses, but instead servants coming from different areas of the Empire working in the city.
Mystery solved?



