CHOQUEQUIRAO

exploring a cloud-cloaked Inca ceremonial complex

by GARY ZIEGLER

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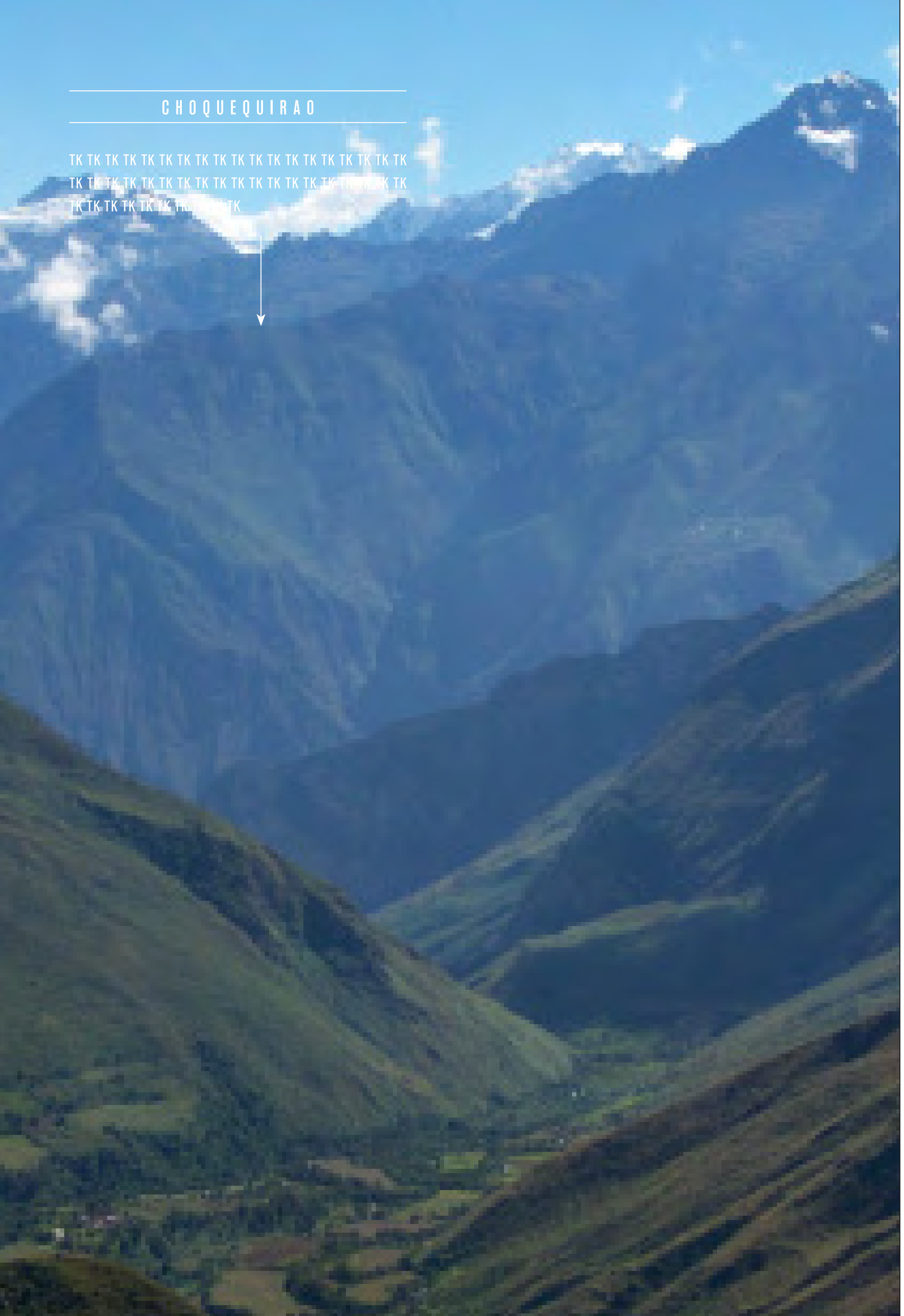

A fellow of The Explorers Club since 2003, Gary Ziegler is a field archaeologist and mountaineer who has spent more than five decades discovering and studying remote sites in the Vilcabamba range of the Peruvian Andes. Coauthor, with archaeoastronomer Kim Malville, of *Machu Picchu's Sacred Sisters: Choquequirao and Llactapata*, Ziegler has been featured in documentaries for the BBC and the Discovery and History channels.

The first rays of morning sunlight illuminate the great stone altar and stream through a square opening over my head. "*Inti camac sumac*" chants the priest. Soaked in sweat, I fight the bindings holding me to the stone as the grinning, looming, scarlet-cloaked figure slowly brings down a gleaming, bloodstained bronze knife toward my heaving chest.

"*Jefe, buenos dias—¿cafe?*"

Suddenly awake and startled, I thankfully greet a smiling Pancho, our camp cook handing a cup of coffee through the tent fly. I make a silent oath to avoid the second round of piscos that we had enjoyed by the campfire last night.

Having traveled several hours by horseback, we had pitched our tents on an idyllic site below the rim of the Apurímac Canyon, halfway between the road head at Cachora and our destination, Choquequirao, a 500-year-old Inca city in the remote cloud-forested Andes of Peru that has long been the focus of my research. Located on an eroded ridge, the campsite has a freshwater spring and ample flat places for tents. Not surprisingly, others have been here before us. Remains of low stone walls suggest a pre-Inca settlement site. For this expedition, I am accompanied by Ben Kamm and a team of ethnobotanists who have joined the project to identify plants and trees thought to have been introduced by the Inca, which may still thrive in the tangled vegetation surrounding the site's recently cleared and consolidated stone walls and buildings (see page XX). Their work is sure to add a dimension to what we now know about this ancient ceremonial center, which we have continued to map and study, building on more than two decades of research.

AN INCA CEREMONIAL CENTER COMES TO LIGHT

Ninety-eight kilometers west of Cusco, the archaeological complex of Choquequirao is sited majestically on a 3,000-meter-high spur of a glaciated peak in the Vilcabamba Range, overlooking the Apurímac River, which roars through a deep canyon. The river is thought to be the longest headwater source of the Amazon.

All evidence thus far points to

Choquequirao being designed and constructed during the reign of the Inca, Topa Yupanqui, sometime in the late fifteenth century and modeled after Machu Picchu, the impressive estate built by the ruler's father, Pachacuti. Choquequirao was abandoned sometime around 1572, when the last Inca ruler, Tupac Amaru, was captured in the distant jungles, dragged back to Cusco and executed by Spanish colonial authorities.

Within decades of the conquest, the city's dwellings, temples, canals, and walls were reclaimed by the primeval forest, only to be rediscovered and revealed in recent times.

The first reported visit to Choquequirao in the wake of the fall of the Inca was by a prospector, Juan Arias Díaz Topete, who journeyed there in 1710. During the nineteenth century, several other intrepid explorers made their way to the site, including the Frenchman, Eugène de Sartiges. It was not until February 1909, however, that Choquequirao's ruins were first mapped and surveyed by a team led by Yale University's Hiram Bingham, who is credited with the scientific discovery of Machu Picchu in 1911.

Choquequirao was then largely ignored until the mid-1980s, when the Peruvian government showed interest in exploring the tourism potential for the site, which had been visited by fewer than a hundred people since Bingham's time. In 1986, Peruvian architect Roberto Samanez carried out a feasibility study for the development of the site. Six years later, the government agency COPESCO embarked on an extensive investigation, restoration, and preservation program, under the direction of Peruvian archaeologist Percy Paz. It was during this time that I first journeyed to Choquequirao as part of a team charged with re-opening the multiday hiking trail across the highlands from Machu Picchu.

Little did I know that I would spend the better part of two decades investigating the site. Since then, I have worked closely with University of Colorado archeoastronomer, Kim Malville, studying the similarities between Choquequirao and Machu Picchu, both of which are now known to be geocosmically located. Our field investigations indicate Inca monumental sites were not only precisely placed in relationship to sacred rivers, mountains, and other natural features but alignmented with celestial events important to the Inca state religion, in particular, the June and December solstices.

ANATOMY OF A SITE

Like the high-status buildings at Machu Picchu, those at Choquequirao are centered on a ridge with a mountain looming just behind and a lower distinctive promontory in the foreground with a view of a sacred river flowing below. Each contains a series of fountains or baths the waters for which flow through

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canals that transit the ridge-top groups. Yet there is a distinct difference in the construction of the two ceremonial centers.

The archaeological complex at Choquequirao is spread over more than 6 square kilometers. The main structures are concentrated around two leveled plazas encompassing approximately 2 square kilometers along the crest of the ridge. Inca urban design frequently incorporates two distinct building groups called *hanan* (upper) and *hurin* (lower). At Choquequirao, high-status structures such as temples (*huacas*), elite residences, and a fountain/bath system are clustered around two plazas separated by some 200 meters in elevation.

The lower and larger plaza has a long multiple-entrance structure that we have identified as a *kallanca*, a multipurpose hall used for meetings, celebrations, and sometimes as a shrine. Excavations and items collected on the surface in the area of a cluster of common buildings not far from the plaza indicate they were probably used for workshops and food preparation.

Two unusual terraced temple sites were built several hundred meters downslope from the plaza groups. Both are associated with water features. The first, Casa Cascada, is located beneath a waterfall; the second, Pincha Unuyoc, is several kilometers away along the original Inca road that led up from the Cotacoca, Yanama, and the Apurímac rivers.

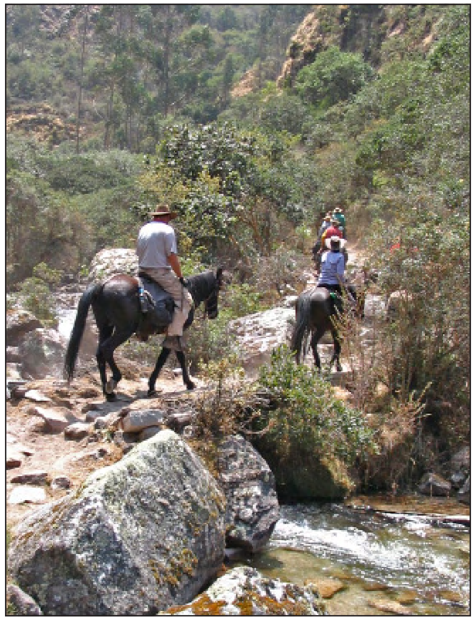
Unlike Machu Picchu, where walls and densely clustered *huacas* were carefully sculptured from coarse-grained granite, structures at Choquequirao are built of fragile metamorphic ashlars that were plastered over with clay and then painted a light orange color. Moreover, some of the structures at the site resemble those known from sites to the north, which were built by the Chachapoya, who later came under Inca subjugation. Among the most notable of Chachapoya features are extensive stepped stone terraces inlaid with white quartzite figures representing a series of cargo-laden llamas with a human handler. The uppermost terrace wall has a zigzag pattern of white inlaid stone. It is likely that laborers from Chachapoya helped build Choquequirao. If so, Choquequirao is the only Inca site where an ethnic labor group can be identified with near certainty.

In addition to the llama train mural, we have found llama pens and coca storehouses, suggesting that Choquequirao served as an important coca-growing and distribution center. Intensive cultivation of the crop would have required a large resident population. The remains of a large settlement of simple, round, wood dwellings enclosed by low stone walls, that could have accommodated such a workforce, has been identified near a water shrine known as Pinchaunuyoc some 3 kilometers north of the site.

A SACRED GEOGRAPHY

Despite its architectural differences, Choquequirao has many of the characteristics of Inca ceremonial centers and pilgrimage centers. Several features mark solstice sunrises and sunsets, the most notable being the so-called Giant Stairway, which faces the sunrise on the December solstice. The stairway is 25 meters long and 4.4 meters wide, and is oriented to an azimuth of 114°. The stairway ends abruptly partway down the hillside and leads nowhere. Terraces at the Inca site of Ollantaytambo similarly open to the December solstice sunrise while those at Moray open to the June solstice sunrise.

At Choquequirao, the stairway contains large boulders on its risers, which are fully illuminated by the rising December solstice sun. We postulate that the illumination of the sun, similar to the illumination of the large stone of the Torreón at Machu Picchu, which served to empower the feature with sunlight, a process called *camay*.



In the lower plaza at Choquequirao, there is a group of structures that appear to be water shrines and baths, similar to those known from sector II at Llactapata, a site 50 kilometers to the west that Malville and I investigated a decade ago. In that group of structures, which are fed by a water channel, a long corridor opens to the June solstice sunrise, which at the elevation of the northeastern mountains, occurs at an azimuth of 60°. There, the June solstice sun sets at 293° near the summit of the ice peak, Nevado Panta.

RESEARCH CONTINUES

As the Andean sun settles quietly behind the ragged western horizon capping the escarpment of the Apurímac gorge, we have just completed our work at Choquequirao. Ben and I review notes and observations around the campfire as a steaming platter of chicken with potatoes passes our way. I mention that I am particularly intrigued by the stately tall palms trees he has been documenting.

We share a chuckle as I recall a conversion I had many years ago with the eccentric Andean explorer, Gene Savoy. Drawing on a long ebony cigarette holder, scotch in hand, Gene solemnly conveyed to me, "I always look for palms when scouting for ruins–the Egyptians introduced them to the Andes many centuries before the Inca."

"Aw…so that explains it," I said in response, somewhat amused, if not outright appalled, by his creative approach to history.

As the dinner conversation winds down, I think about the unsolved mysteries of Choquequirao. When exactly was it abandoned? How did the last Inca use it? Could the last Inca ruler, Tupac Amaru, have been raised there among the holy temples? Was it still a sacred center or did it just become only an agricultural outpost to help feed the holdout population in their nearby Vilcabamba refuge? Why, when the other last Inca sites were discovered and looted, was the more significant Choquequirao, like its sister site Machu Picchu, never found or reported? Our ongoing Andean Research Project, in coordination with Peruvian colleagues, continues.

Each time I return, even for a brief stay, it involves a search for new clues that the last occupants may have left behind. Many times, something that I did not understand or observe becomes clear on a return visit. I have a strong intuition that something important still lies out there, perhaps the Inca's holy grail? Maybe I will have that second pisco.

exploring the anthropogenic vegetation at an ancient Inca site

by BEN KAMM

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At the time of Spanish contact, it is known that the Inca had highly diverse agriculture and a complex relationship with trees, which were thought to be intimately associated with the ancestors. They also had a priest class, the *Mallki-camayoc*, that was dedicated to matters of agroforestry, for harnessing the fecundity of the land was an integral expression of Inca power. Despite colonial documentation of such practices, vegetation removal has long been considered a priority at most archaeological sites and is carried out without consideration of its historical, cultural, and conservation value. Yet such vegetation assessments may provide an important window on past cultures and their ecological relationship to the land. With this in mind, this past May we conducted a cursory floristic inventory of the cloud forest at Choquequirao.

We counted more than 70 species of plants from 42 families. About two-thirds of these species have some known cultural significance or ethnobotanical use. This diversity would appear to be considerably higher than the cloud-forest just outside the archaeological site. To what degree this high diversity is due to the favorable microclimates, water, and nutrient catchment of the topography of the ruins or is the result of Inca horticultural practices warrants further study.

The absence of any Spanish-introduced plants helps to confirm Choquequirao's isolation in the wake of the conquest. Further pollen studies, analysis of carbon remains, and wood utilized in construction at the site would also give us deeper insight into the vegetation of Choquequirao and how it has changed over the centuries. Caveats aside, we think that the following three species are the ones that are likely Inca relics:

CEROXYLON SP.

Only about a dozen specimens of this palm were observed in the vicinity of the section of ruins referred to as the ridge group or *pikiwasi*. The tallest were about 8 meters in height with hemispherical crowns of large pinnate leaves. *Ceroxylon* is an endangered Andean endemic taxon with six species reported from Peru. Utilized for construction and thatching, the waxy coating on the stems has been used for candle production and the fruit of some species is edible. *Ceroxylon quindiuense* is reported from the Chachapoyas ruins the Department of Amazonas, Peru, and is utilized in agroforestry of the region. There have been very limited herbarium collections of *C. parvifrons* and *C. vogelianum* from near the Apurímac. Taxonomically, the plants at Choquequirao are closest to *C. vogelianum* but morphological variation keep us from clearly identifying it as that species.

CEDRELA ANGUSTIFOLIA

A large tree to 45 meters, this Andean species of mahogany is documented within much of the former Inca Empire: from southern Ecuador to northern Argentina. Highly valued and overharvested for its durable wood, it is now rare throughout most of its range, though known historically to have been much more abundant. Common at Choquequirao, specimens of all sizes occur. It may be worthwhile to conduct dendritic analysis of the larger trees to assess their age.

SOLANUM OCHRANTHUM

This is an unusual woody tomato vine that grows to 10 meters and bears large, thick-skinned green fruit with an edible pulp. It has a broad distribution from Columbia to southern Peru. Its reported occurrence in Chachapoyas, Machu Picchu, and now Choquequirao suggests anthropogenic dispersal.

Other culturally important, possibly anthropogenic, tree species that have been identified at Choquequirao include *Escallonia resinosa "chachacomo", Hesperomeles ferruginea "mayu manzana", Piper elongatum "mocomoco", Vallea stipularis"chijllur",* and a few possible agricultural relicts: *Arracacia sp. "arracacha" , Bomarea sp. "sullsullu", Cypella sp. "chulluco", Physalis peruviana "aguaymanto".* A full species list and details of the survey should be available later this year.