

High-Altitude Archeology and Andean Mountain Gods

JOHAN REINHARD

ANTHROPOLOGISTS who climb normally must wait for free time to get into the mountains. Even when we study mountain peoples, such as the Sherpas of Nepal, the research rarely involves climbing unless it is to cross a pass to reach another populated valley. In South America, however, I learned of ruins (predating the Spanish conquest of 1532) on mountain summits, including well-built stone structures up to 22,000 feet. Such heights were not even *reached* again until nearly 400 years later. More than 40 sites had been discovered above 17,000 feet. This was something to attract the attention of any climber/anthropologist and what was to lead to my vacation in South America extending from a few months to three years.

Little has been written about these sites in English, Evelio Echeverría's account being a rare exception.¹ However, in South America some Chilean and Argentine climbers have been investigating them for several years. These climbers are mainly untrained in anthropology; only a few, such as the Chilean Pedro Rosende and the pioneer in the field, the Argentine Antonio Beorchia, have undertaken serious studies. Among professional anthropologists, only the Argentine Juan Schobinger did detailed work on more than a single site, although a few others made valuable contributions to the analysis of materials. Nonetheless, even the most basic questions remained unanswered: Who made them, how far through the Andes were they distributed and, above all, why were they made? It seemed logical that the only way to solve these questions would be to combine an investigation of the high-mountain sites with historical research as to the reasons for mountain worship.

I began in May 1980 by climbing Licancabur (19,421 feet; 5921 meters), a beautiful cone-shaped volcano in northern Chile, with Rolf Pfaffelberger. The ruins on the summit had been partially surveyed by Chilean climbers, and, for those not familiar with the symbolic significance of simple lines of stones,

¹ See "The South American Indian as a Pioneer Alpinist" in *Alpine Journal*, vol. 73: pages 81-88, London.

PLATE 21

Photo by Johan Reinhard

**The World's Highest Archeological
Site on the Summit of Llullaillaco at
6721 meters or 22,051 feet.**

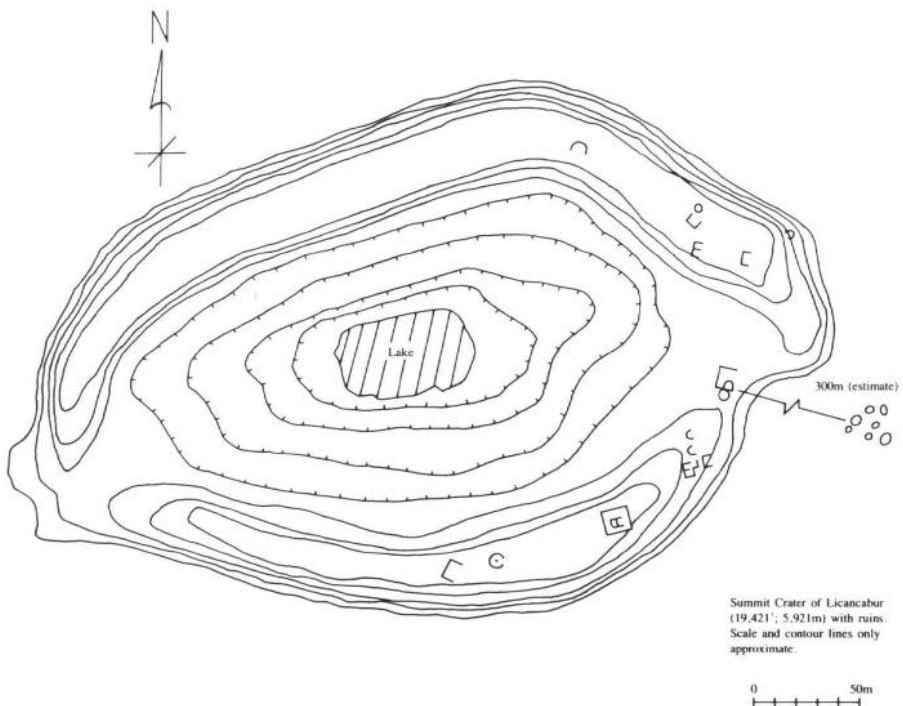


the site is not overly impressive. The crater lake, frozen at that time of year, especially interested me, and I decided to return during the summer months to study the site and lake in more detail. Shortly thereafter, the archaeologist George Serracino and I investigated a rumor of ruins on the summit of Paniri (19,503 feet; 5946 meters), not far to the north. While Serracino searched a lower-lying crater, I climbed to the summit and found, among other things, an intact, circular dwelling and remains of a one-room structure with walls six feet high.

I left Chile with plans to return after receiving financial support in the U.S., but upon entering Peru the bag containing all my notes and slides was stolen. In Arequipa, Peru, I briefly joined Antonio Beorchia and other Argentine climbers to examine the remains of structures on Misti (19,093 feet; 5821 meters), and then returned to Chile to redo my previous research. I repeated the ascent of Licancabur with the archaeologist Ana María Barón, this time making plans of the summit ruins and, with Barón, mapped the large complex of over 150 structures at its base (15,200 feet; 4634 meters). This complex was exceptionally well preserved and gave the impression that the Incas, who had constructed them, had only recently left. Afterwards, Serracino and I returned to Paniri and carefully resurveyed the summit ruins. This site, too, proved to be of Inca origin.

In the meantime I had collected historical references to mountain worship, which up to that point hadn't proven very promising. Although high mountains, such as Coropuna, Illimani, Huascarán, Ausangate, and Salcantay, were known to have been worshipped in Inca times, the early Spanish writers rarely explained the exact reasons for this. In September 1980 an unpublished manuscript by the Inca specialist Tom Zuidema came into my hands. He briefly mentioned that mountains were still worshipped in a village not far from San Pedro de Atacama, where I was staying in northern Chile. I went there with Barón, and in the course of this trip I reached the summit of Miscanti (18,440 feet; 5622 meters). I continued alone to climb Chiliques (18,952 feet; 5778 meters) and Lejía (19,001 feet; 5793 meters). Archaeological remains were found on all of these peaks with important ruins on the summit of Chiliques. At its base I also found a complex of Inca ruins (called *tambo*) such as the one at the foot of Licancabur, but previously unknown to archaeologists familiar with the area. While returning from the ascent, I met a herdsman from the village who told me that Chiliques was the most important mountain worshipped in their annual ceremony for rain. The people were unaware of ruins on any of the peaks near their village, yet there exists an exact parallel between the relative importance of the mountains worshipped today and those with archaeological remains on their summits. Later I obtained a detailed account of their annual ceremony. It was this that prompted more intensive work on current-day mountain worship, since the beliefs and ritual clearly dated back at least to the Inca period. A later expedition with Barón and Serracino to the mountain confirmed the Inca origin of the site.

I found archaeological remains on three other peaks in the area above 18,000 feet, and in January 1981 Barón, Serracino and I returned to Licancabur on an expedition sponsored by the University of the North, Antofagasta. While carrying a load to the summit, I located structures at two places high on the mountain and various pieces of wood showing this to be the route used by the Incas. Two days later we ascended to camp on the summit and remained for four days. To see if offerings had been made in the lake, I carried up diving gear (loaned from DIGEDER, Antofagasta) and proceeded to make a very cold dive. At c. 19,200 feet; (5854 meters) this surpassed by c. 4000 feet the next highest known dive. (Unfortunately, a last-minute foul-up prevented the use of compressed air.) The lake is over 200 feet long and proved to be relatively deep—about 15 feet in the center. I found a dark layer, roughly four feet thick, covering the center-bottom and consisting of millions of crustacean larvae—something hardly to be expected at this altitude. Diving into this dark swarm under such unusual circumstances proved to be an unforgettable experience. Like others at altitude, I too have occasionally had the sensation of someone accompanying me who didn't exist. Never before, however, did I have visions of this being a giant squid! I also saw underwater mole-like tunnels through the sand made by something I wasn't able to identify. Although a few pieces of wood were found at about 12 feet, these were apparently thrown in without any purpose in mind and no offerings of any type were seen. We also carefully surveyed all the ruins on the summit and made a few exploratory excavations.



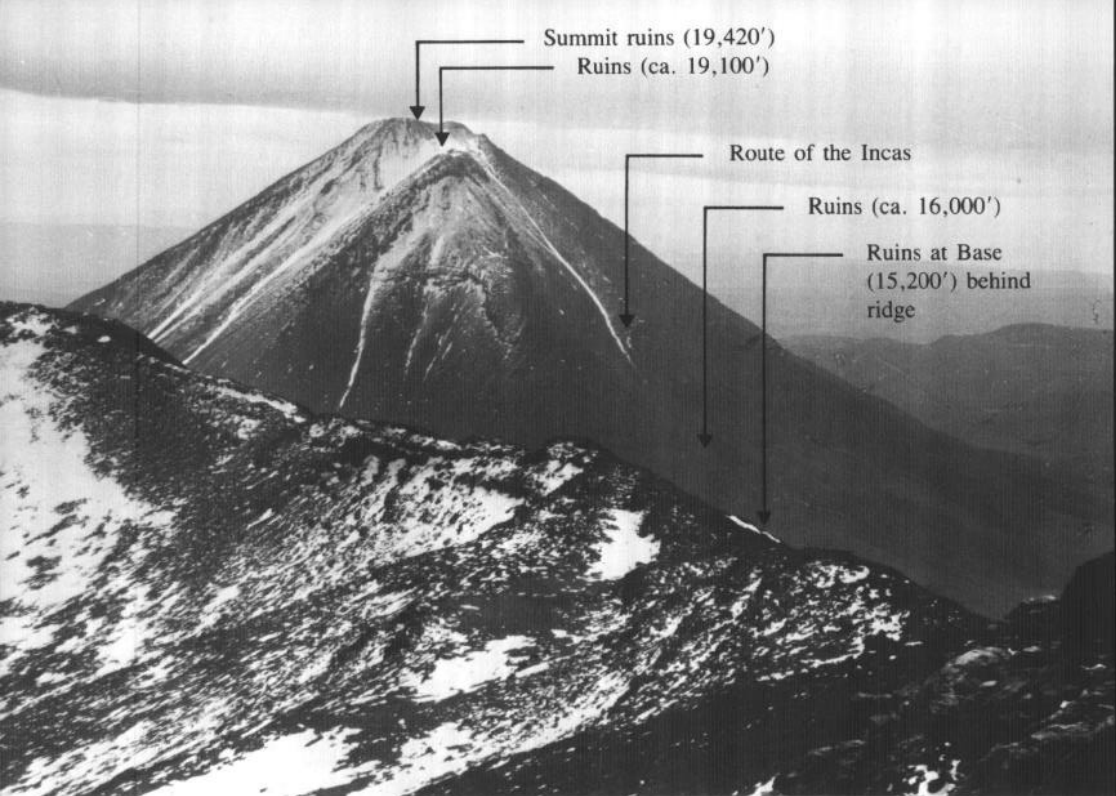
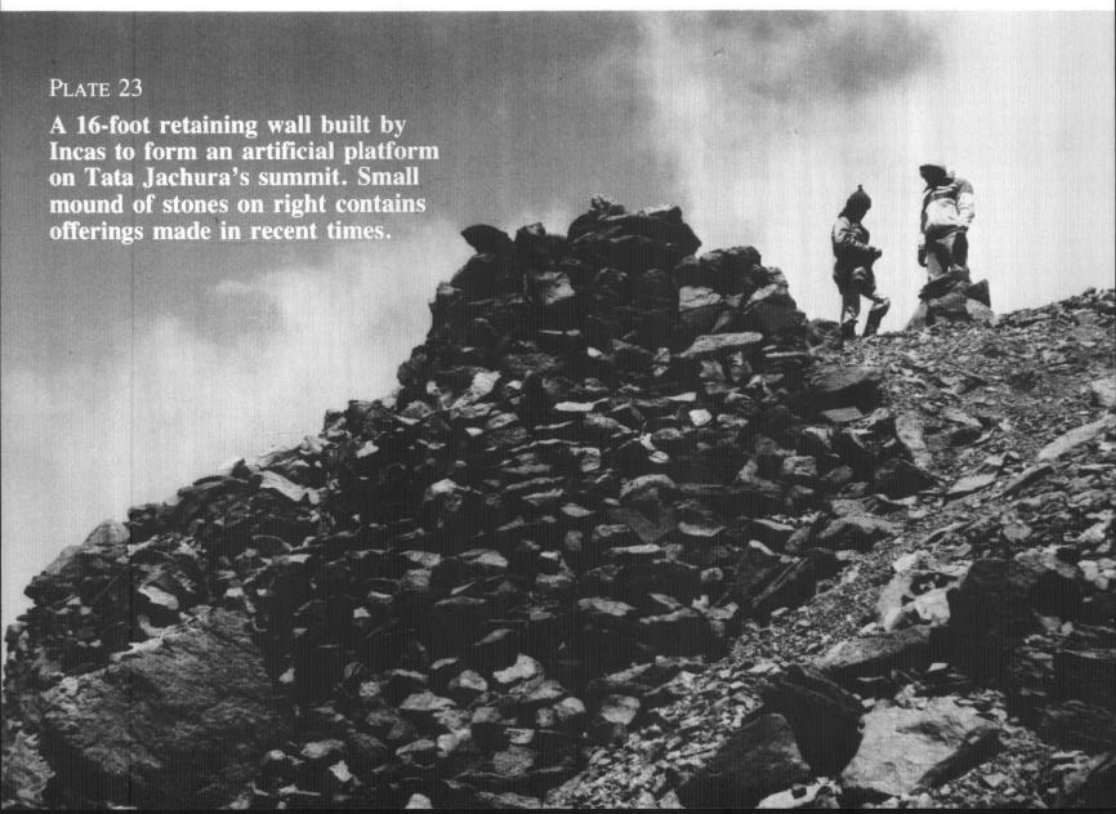


PLATE 23

A 16-foot retaining wall built by Incas to form an artificial platform on Tata Jachura's summit. Small mound of stones on right contains offerings made in recent times.



After Licancabur, I went to Aconcagua. I had heard of guanaco (a wild camelid related to the llama) bones between its two summits which I thought might indicate there were ruins nearby. It seemed unlikely that the guanaco would have gone to nearly 23,000 feet on its own volition. Unfortunately, after searching the summit (and finding no archaeological remains) a storm hit, and I was unable to take the time to search for the bones.

Next I joined Antonio Beorchia for a trip to northwest Argentina where ascents of Cerro Azufre (19,057 feet; 5810 meters) and Quehuar (20,106 feet; 6130 meters) were made. Storms occurred during both summit days on Quehuar, leaving four feet of snow and making work difficult. Antonio had surveyed impressive ruins here with walls six feet high and three feet thick, including a raised platform with steps leading to the top—an incredible feat at 20,106 feet. But now there was little visible beneath the snow, and we could only dig down to the layer of ice in which Antonio had seen the frozen body of an Inca child years before. Treasure hunters had been there before us, however, and, using dynamite, had blasted the “mummy.” We picked pieces of cranium and an ear out of a wall that showed it originally had been perfectly preserved. Ironically, the treasure hunters destroyed something more valuable than anything they could have hoped to find.

A similar human sacrifice had taken place on the summit of Cerro El Plomo (17,810 feet; 5430 meters). This frozen Inca body was found in 1954 and is being kept refrigerated in the National Museum of Natural History in Santiago. It still yields valuable information, not only for anthropologists but also for physicians. So well preserved is the body that scientists have even tried to revive worms found in it. It is an example of the sparsity of anthropologists trained in high-altitude archaeology that none had even visited the summit site until 1982. Interestingly, human sacrifices to mountains have taken place in recent times, especially during droughts or when viewed as necessary to appease the deity when a construction work, such as road building, was taking place near it.

Following the Quehuar trip, I joined the archaeologist Julio Sanhueza and photographer Manuel Guzmán to explore the mountains of Tarapacá in far northern Chile, a project made possible by the support of the Professional Institute of Iquique. No high-mountain ruins had been reported from c. 16°26' to 21°11'S. latitude, and it seemed likely that some would exist in the region, as we knew mountain worship still figured prominently in the beliefs of the people in the more isolated villages there. In the course of a two-week trip, we found ruins on the summits of three peaks, two of which were over 17,000 feet. On the summit of one, Tata Jachura (17,138 feet; 5225 meters), we found a large retaining wall, typically Inca, extending down for 16 feet. A few yards below Wanapa's summit (17,597 feet; 5365 meters) Manuel Guzmán, Raul Contreras and I found a large artificial stone platform, also of likely Inca origin. There may well be structures on the scenic mountain Cabaray (19,221 feet; 5860 meters) as rumors indicate, but it was deep in snow when I climbed it and no ruins were seen. Of particular interest is the fact that offerings are still made

PLATE 24

Photo by Johan Reinhard

An offering of Coca Leaves is
uncovered on the summit of Calcha.

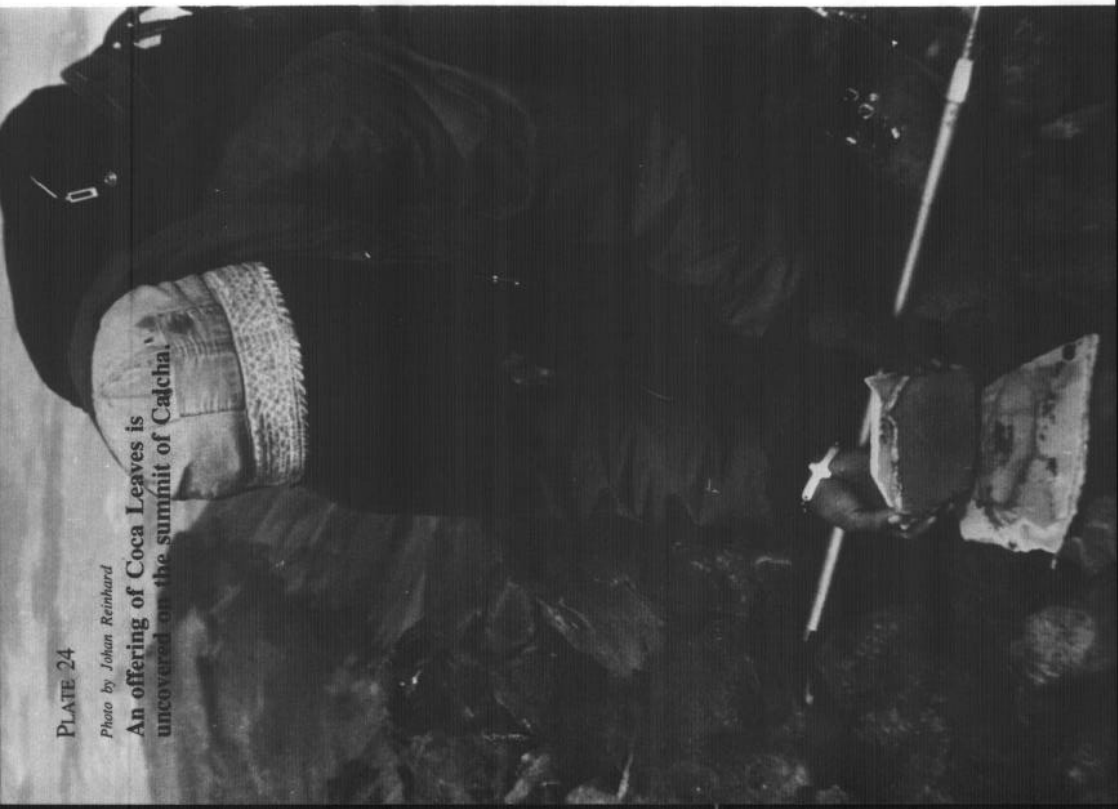
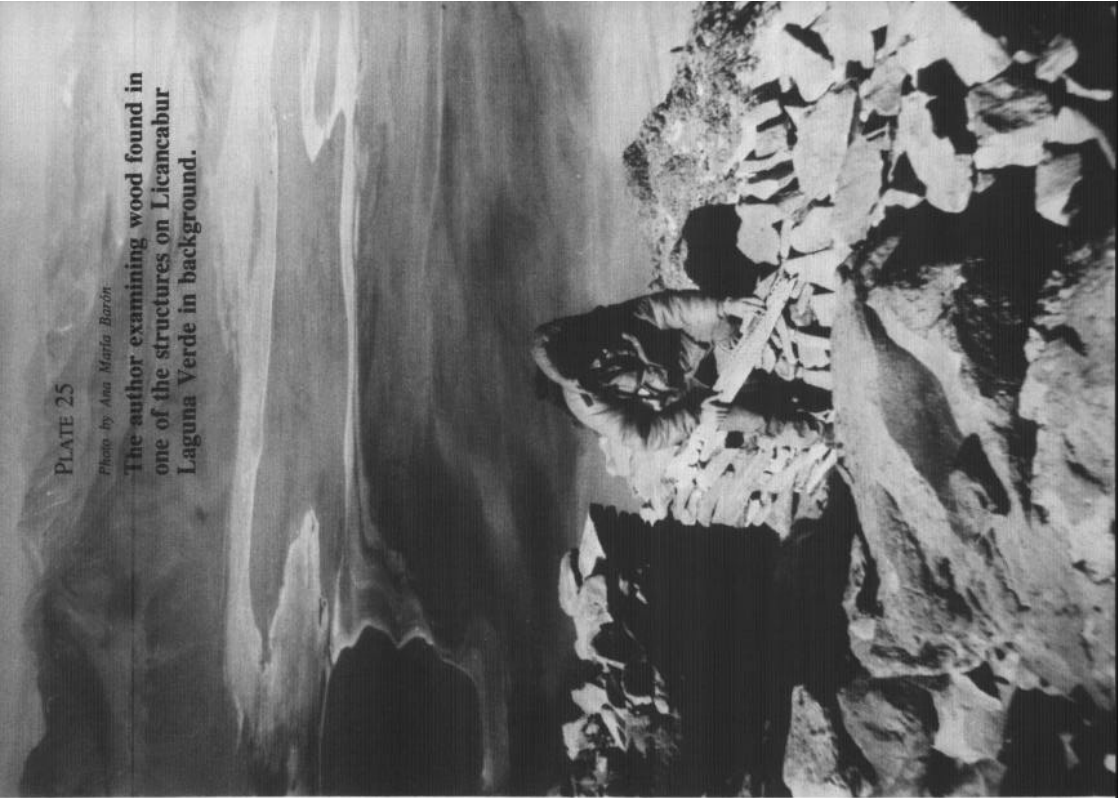


PLATE 25

Photo by Ana María Barón

The author examining wood found in
one of the structures on Licancabur
Laguna Verde in background.



annually in this area to the mountain gods for basically one reason—water. One peak, 17,663 feet (5385 meters) high, is still being climbed to perform this ritual.

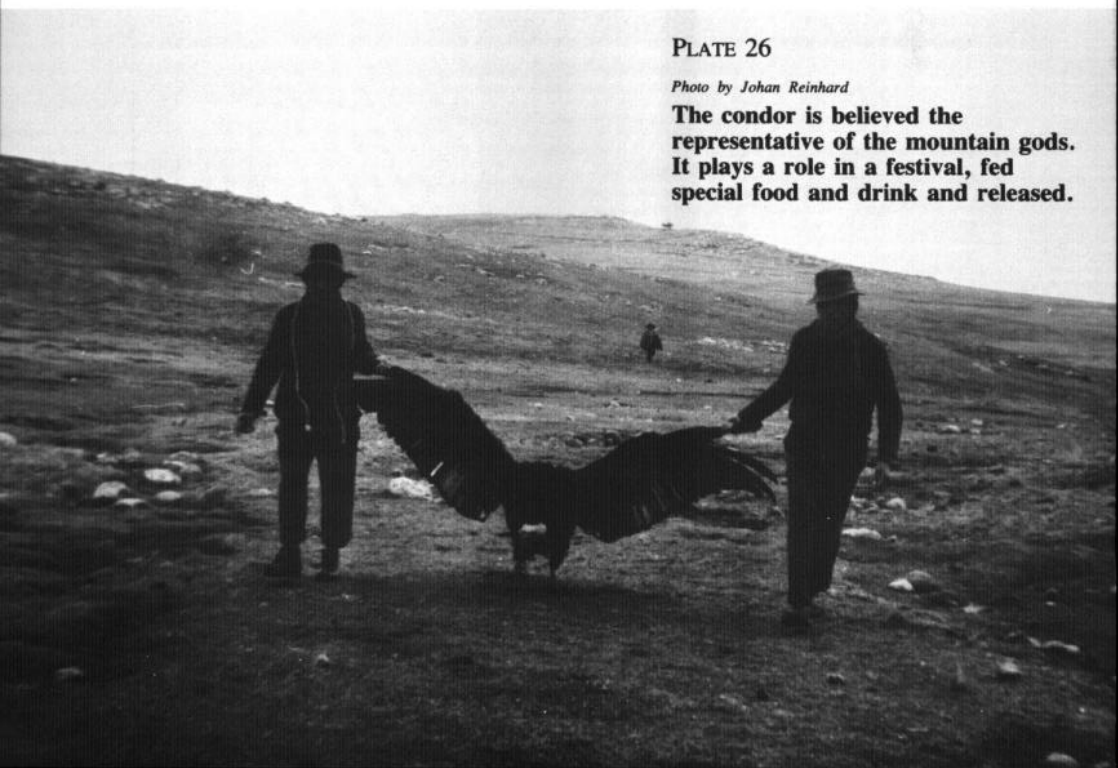
By this time I had collected extensive information from historical sources, studied numerous ethnographic reports of other anthropologists, and had conducted my own research among villagers. I found that mountains were worshipped for a large number of reasons in the Andes. I have used the past tense here, but in fact virtually all these reasons still exist in traditional villages today. Mountain deities were frequently believed to be the original ancestors of peoples. There was a widespread belief that the souls of the dead reside in sacred mountains. (Indeed, still today some people in southern Peru believe Saint Peter is waiting with the key to open the door, not of the gates of Heaven, but of the spirit world within the mountain Coropuna!) Mountain gods were seen as protectors of man, livestock and crops, besides lords of all wildlife. Ritual specialists were selected by them who cured illnesses, foresaw the future, etc., all with the help of the mountain deities. They frequently communicated with them through birds, especially the condor. In the eyes of many Andean villagers today, the most powerful of the mountain gods are either equal to a supreme deity or act as his intermediaries to the people on earth.

But of all the reasons for mountain worship, one stands out—fertility. Mountain deities controlled meteorological phenomena (rain, snow, frost, hail, lightning, etc.) and through them were responsible for the fertility of crops and animals. Agriculture and pastoralism in the Andes is very dependent on cli-

PLATE 26

Photo by Johan Reinhard

The condor is believed the representative of the mountain gods. It plays a role in a festival, fed special food and drink and released.



matic factors: hail can devastate crops, floods or droughts can destroy herds and crops, and so on. The association of mountain gods with water has led to a symbolic connection between lakes, mountains and the ocean, conceived as the mother of all water. For this reason ocean water and seashells figured prominently in mountain worship, and mountains with lakes on them, like Lincabur, were especially sacred.

Mountains were usually worshipped for a combination of reasons. However, it was with regard to fertility that the majority of rituals in the past (and present) were undertaken. As we have seen, people are still ascending summits over 17,000 feet to make offerings for rain. It is much more common, though, for them to make these on the summits of lower hills or from other special places from which the most important peaks can be seen. This worship is normally done in secret or with a Christian veneer, there being no significant change in basic beliefs that have survived for over 500 years.

But what of the origin of the sites? I found in a report of 1570 clear references to the Incas building sites on mountains already worshipped by peoples they conquered, i.e. mountain worship was not something the Incas initiated, but rather was common before their arrival. Nonetheless, the evidence points to the Incas as responsible for the construction of the majority of high-mountain sites. This apparently was done to gain greater control (through building places of worship and making offerings to please the deities) over the elements necessary for the economic welfare of the people. Throughout the Andes the Incas either constructed or expanded irrigation canals, terraces, etc., for the purpose of increasing production which in turn helped support the Inca state and religion. The Incas also took the idols of the people they conquered to hold as hostages in Cuzco. Mountains proved something of a problem for the Incas in this regard, but it seems they solved it with characteristic audacity—they climbed to the summits, thereby coming into a more direct relationship with the mountain gods and usurping local worship. Contrary to the hypothesis of several scholars that high-mountain sites were made for sun worship, there is no solid evidence of this from historical sources. Although sun worship could well have taken place at these sites, the reason they were built clearly related to the importance of the mountains themselves.

If the Incas constructed them, why haven't any high mountain sites been reported further north? Actually, they have been noted by historical sources as existing in Ecuador, and expeditions have noted seeing archaeological remains over 16,000 feet in the central-northern Andes. The reasons they haven't been found much higher probably are due to the low permanent snow cover in the northern area, the lower heights of peaks in northern Peru, less research in these areas, and less interest in the modest ruins on summits even if they were found.

To test this theory I went to the Cordillera Blanca in Peru. I located ruins up to 16,000 feet that were previously noted by the 1932 German expedition on the west side of the Cordillera. I had the good fortune to meet Rob Blatherwick, who knows the mountains of the Cordillera Blanca well, and we

PLATE 28

Photo by Ana María Barón

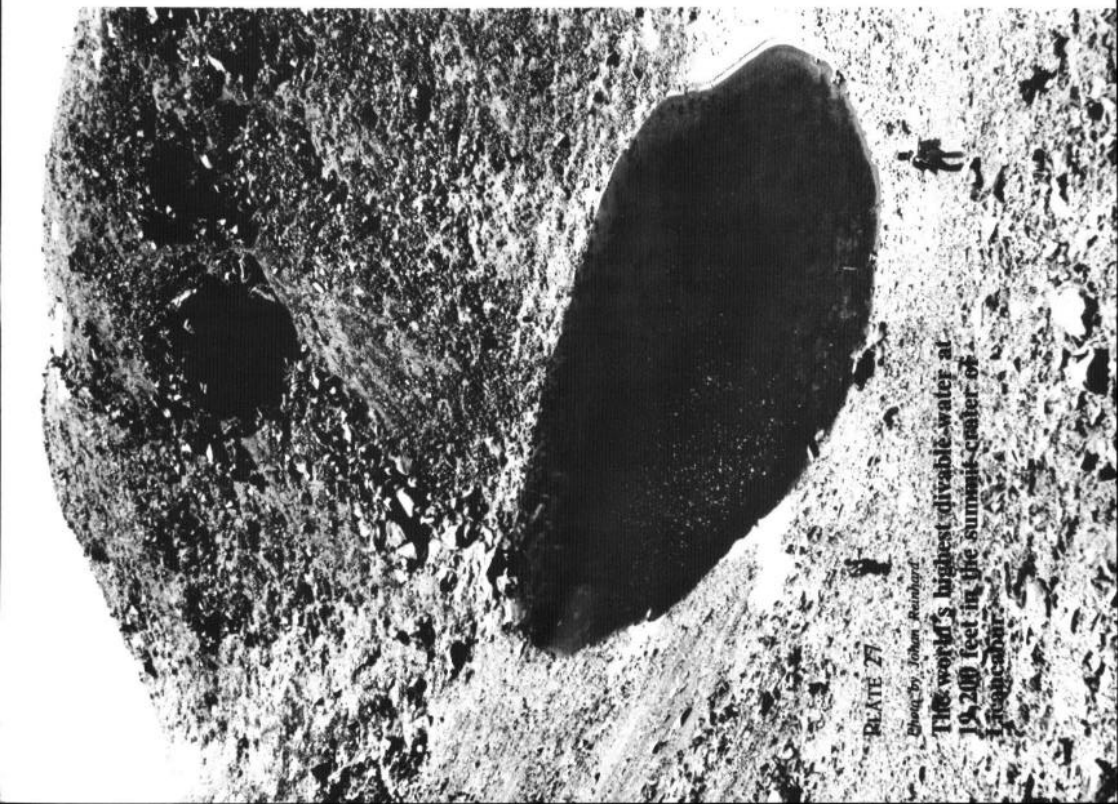
In the crater lake on Licancabur. It was full of plankton, including larvae of millions of crustaceans.



PLATE 27

Photo by John Reinhardt

The world's highest drinkable water at 19,200 feet in the summit crater of Licancabur.



went to the eastern side above the famous archaeological site of Chavin. We found structures at 15,500 feet (4726 meters), while villagers told us that others were on the summits of mountains of similar heights. Not high by southern Andes standards, but in this area they were as high as one could expect due to permanent snow cover at greater elevations. While looking for ruins, we climbed over the snow ridge separating the Huantsán and Carhuascancha river valleys (which involved a harrowing descent through an icefall above Lake Tumarina) and explored the area around Cerro Anco.

Other climbs followed this, including four ascents over 21,000 feet in Argentina that yielded no results beyond proving that not *all* the easy high mountains had been ascended in ancient times. However, a grant from the Explorer's Club and Brush Foundation enabled me to return to Peru in the summer of 1982 and obtain some interesting findings.

In the region of Arequipa, southern Peru, Miguel Zarate and I made several ascents. We first went to Pichu Pichu where ruins had been studied some years before and remains of a human sacrifice had been found at c. 18,368 feet; (5600 meters). We made a more precise plan of the site and located remains of wall sections leading to the second summit.

During an ascent of the eastern summit of Hualca Hualca (c. 19,516 feet; 5950 meters) we found a puma skin at the foot of a prominent boulder at about 19,188 feet; (5850 meters). The skin had been sewn and used as a container for ritual food offerings. We were told by a villager that offerings are still made to Hualca Hualca in an annual ceremony for water.

In collaboration with the National Institute of Culture, Arequipa, we next climbed Huarancante (c. 17,614 feet; 5370 meters). On the summit we saw the remains of charcoal and the river stones reported by Paul Rose and Peter Ross, and also found a spondylus shell and a llama figure carved from spondylus. The spondylus was considered indispensable in ceremonies for obtaining water during Inca times, and the river stones obviously played a role in such rituals. Preoccupied with surveying the site, we let an electrical storm catch us on the mountain and ended up having to bivouac until it cleared. Later we reached a herdsman's hut by moonlight. While surveying remains of a stone platform on the summit of Calcha (17,243 feet; 5257 meters), we once again were caught in an electrical storm. After these experiences, our dedication to science began to wane. However, we eventually did climb two summits in the Chachani Range, finding a large quantity of old wood on the lower one (c. 19,024 feet; 5800 meters). There are the remains of a wall on the main summit (19,867 feet; 6057 meters), but it appears to be of recent origin, and no traces of the Inca site noted nearly 100 years ago were seen.

Later I made a brief visit to the Cordillera Negra in central Peru where Rob Blatherwick and I climbed one of its highest peaks (16,420 feet; 5006 meters) listed as Cerro Rico on most maps. (The highest peak is actually called Almakaka by local inhabitants.) Although we did not find ruins on its summit, we saw remains of an *apacheta* (a stone mound of ritual use) just below it and stone structures at the pass (15,839 feet; 4829 meters). These appeared to be

of recent construction, but it is not unlikely that much older structures were built there in the past. We didn't have time to check more carefully because once again we were caught in a snowstorm—something rather rare at noon in a cordillera which didn't come to be called "black" (negra) for nothing.

After the unseasonal blizzards on Aconcagua, Quehwar, El Plomo, Almakaka, Calcha and Huarancate, plus the theft of all my equipment and notes, the diaphragm of a lens sticking open with a loss of 25 rolls of film, and other mishaps I won't bother to recount here, I began to wonder if there wasn't something to the widespread belief of a curse associated with reaching the summits of sacred mountains. Generally, the local inhabitants are afraid of them, and not just due to the physical hazards. In their minds the mountains are inhabited by powerful deities, very much alive, with various servants of the deities and other dangerous spirits wandering the mountain slopes as well. This combination of religious and practical factors leads villagers to doubt that people could reach the summits even if they were fool enough to try. After I told one disbelieving villager I had been on the top of a major mountain in the area, he thanked me for the information and introduced himself as Jesus Christ.

Up to the present time (October 1982) I've made a fair number of ascents searching for ruins, including 36 over 17,000 feet, and have found 17 sites previously unreported in the literature. Several sites about which some information existed were investigated in more detail, and I reached a point where patterns and findings began repeating themselves. It took time to gain an eye for symbolic structures and for tying together various bits of evidence to reconstruct what happened 500 years ago. Of course, this process is still by no means complete. Interesting information was also collected in Peru, Chile and Bolivia indicating that mountain worship played a significant role in even low-lying ceremonial centers of great antiquity, a topic too complex to deal with here.² It might be added that many of the beliefs held with regard to high mountains in the Andes also pertain to low ones and are found as far away as the coastal region.

As to sites on high-mountain summits, it seems that the majority of the well-built structures above 18,000 feet were built by the Incas. No high-altitude ruins have been found to definitely predate them, and where positive identification has been made they have proven to be of Inca origin. Virtually all the areas in which they have been located were occupied by the Incas only for a period of about 40-60 years prior to the Spanish conquest. Since the better constructed sites were obviously used over time, there is no doubt that the Incas were regularly undertaking ascents up to 22,000 feet which most of us even today find challenging. These may not be technically difficult, but in terms of altitude, mountaineering sense (e.g. route-finding) and physical stamina they can at least be considered demanding. Imagine these ascents (not to mention the building of stone structures) being made in the 1400s! Overcoming the

² See my article "The Nazca Lines, Mountains and Fertility," in press, *Boletín de Lima*, Lima, Peru.

psychological barrier—brought on by a fear of mountain deities and evil spirits and a belief of general bad luck befalling climbers of sacred mountains—was itself a considerable accomplishment. One need only recall the superstitions prevalent at the time of the early climbs in the Alps to have some ideas of what the Incas were up against. Although I've seen cairns with prayer flags at 18,000 feet in Dolpo on the Tibetan border, I'm not aware of anywhere else on earth that structures were acutally built at such heights in ancient times.

In order to do this the Incas solved many of the basic problems of high-mountain ascents. We tend to take such solutions for granted today, but in mountaineering terms they represented a great step forward. One of these was the use of a "base camp" with camps at intervals on up the mountain. There are also buildings on the summits that clearly indicate they were used as temporary refuges, most likely for a single night (offerings were normally made at sunrise). They also had lesser structures built at points in visual contact with the base camp, probably used for signalling (albeit perhaps of a religious nature to indicate the sacrifices had begun). They managed to make routes that are not always obvious, but invariably showed mountaineering savvy. Straw was used for bedding and poles utilized to form supports for blankets, a sort of half-tent structure with a stone foundation. Findings indicate wool caps with flaps to cover the ears were used, as were leather sandals or moccasins with wool socks. Although ropes have been found, they were probably used only for carrying loads and not as aids in climbing. There is no indication that any technical aids were utilized, and the wooden pegs that climbers believed of Inca origin (found in place on a mountain in Peru) certainly date to more recent times. Huge piles of wood have been found on the summits and considerable amounts of ashes. In such thin air they may have had to use some flammable substance to help the wood burn, although we also found tinder at some sites. Llamas were used to carry supplies to the base camp (corrals have been found at them) and porters were doubtless employed to help build and supply the camps. At one summit site of 20,739 feet; (6323 meters) walls held in a rock-and-gravel filling to form a platform. This could only have been made with stones brought from 300 feet below. It was estimated that 4000 carries would have been necessary to complete the structure.

From a scientific standpoint research on high-mountain ruins really began only after the discovery of the famous El Plomo mummy in 1954, although occasional reports of such sites had been made since the 1800s.³ Interest died down somewhat after this until the discovery in 1964 of an Inca body on El Toro at c. 20,664 feet (6,300 meters).⁴ This find was also the catalyst for its co-discoverer, Antonio Beorchia, to establish the Center for Archaeological

³ *La Momia del Cerro El Plomo* (1957), ed. by Grete Mostny and published in Santiago, Chile, remains a classic.

⁴ This led to two publications that remain essential reading, the special Vol. 21 of *Anales de Arqueología y Etnología* (1966) and *La "Momia" del Cerro El Toro* (1966) ed. by Juan Schobinger, both published in Mendoza, Argentina.

Investigations in High Mountains. In 1973 this extraordinarily dedicated man began editing the first of four volumes on the topic of high-altitude ruins, the latest appearing in 1980. Antonio is now preparing a further volume which will bring together in summary form the essential data relating to all the known sites. The Center also maintains an archive and is the principal place where information on this topic is available to interested scientists. It is hoped that those climbers in possession of information and/or materials relating to high-mountain ruins will inform either the Center or myself. The address of the Center is: Centro de Investigaciones Arqueológicas de Alta Montaña, República del Líbano 2621, Correo de Capitán Lazo, (5423) San Juan, Argentina. In the U.S., I can be contacted at P.O. Box 74, New Lenox, Illinois 60451.⁵ Thanks to a grant from the National Geographic Society, I will continue with research on high-mountain ruins through 1983.

The number of high-mountain sites is limited and few of the important ones were investigated prior to being pilfered and, occasionally, destroyed by treasure hunters and mountain climbers in search of souvenirs. Even if only one or two minor items were taken by each climber, a site would rapidly be depleted of finds, and we may never be able to determine who made them or reconstruct what took place there. Simple items, such as potsherds, can be extremely valuable to archaeologists, since they provide clues as to the origin, date of construction and functions of structures. Nothing should be taken from these sites—indeed it is against the law throughout South America to extract archaeological artifacts without prior permission. If there is some compelling reason to do so, a careful plan must be drawn and exact location of the site made known to archaeological authorities. There have been cases of climbers "saving" items and donating them later to museums, but lacking a site plan it has been impossible to analyze them in context. Such information might be more valuable than the finds themselves. We have also found that climbers have used the stones from symbolic structures (simple outlines) to make cairns or even, as on Misti, to spell their club's name! By removing even a few stones, the symbolic form can become unrecognizable. Although often simple in appearance, a careful study of the finds relating to the sites, their orientations, the patterns they form relative to each other, etc., will help us understand the religious beliefs underlying their construction. It would be a tragic loss to man's cultural (and mountaineering) heritage if materials which hold the key to such important ancient beliefs should disappear before they can be studied.

⁵For those who would like further details of the research summarized here, I have an article entitled "The Mountains of Power: an Ethnoarchaeological Study of High Mountain Ruins," in press, *Cuadernos de Historia*, Santiago, Chile.