

Peru, the Wonderland

I would have never thought that near the equator, on the shore of the ocean, in the summer you can freeze so much! When we left for Peru, we were afraid of heat and mosquitoes, and in fact, we'd better brought warm sweaters with us. The only thing that could save us was that we could buy sweaters at any corner, or rather at any stop of our bus. As soon as you go into the streets you are surrounded by a flock of women in national attire: colorful skirts and shawls and, of course, hats. And, on the Peruvian hats one can write a special study (although, who knows, maybe someone has already defended his thesis on this subject). In each province they have their own models, somewhere just bowlers of Chicago type (it is possible that fellow members of some mafia were hiding there from justice or from their colleagues); somewhere there are wide-brimmed sombreros, on the islands of Lake Titicaca there is a variety of knitted caps of most amusing kinds. Vendors offer you their products, but do that with great dignity, without the obsession, from which one gets so tired in some countries. Although you can trade, it is accepted with understanding.

Our trip was very well organized: a comfortable bus, tidy hotels in beautiful places, delicious food. I remember stopping to have a snack during the day: it always happened in picturesque places with exotic views; the tables stood in the flowering gardens surrounded by trees with fragrant flowers, musicians were playing local motifs, and before each meal we were served a glass of the local drink, Pisco, a mixture of sugarcane vodka and juice. In Peru this drink was a great success, of course, we brought home a bottle of the picturesque, but at the first party exotics could not compete with the national tranquilizer, and it is still on the shelf...

Peru is really a country of exotic wonders. We drove from Lima along the coast with bird colonies, seal rookeries and thickets of cactuses, rose into the mountains above 4000 m, stayed on Lake Titicaca, the largest alpine lake in the world, inspected Cuzco, the capital of the Incas Empire, and across the valley of Urubamba reached the Holy City Machu Picchu. And every day we visited some interesting places, remnants of ancient civilizations, well enough preserved; every hour through the bus window we admired new landscapes.

I was immensely impressed by flying on a small plane over the Nazca Lines. What I saw did not correspond to any expectations. We flew for an hour, everyone was given a map showing the location of the giant figures, and the pilot flew up to each of them and warned us what we should look at, and then made a circle above the figure. Meanwhile it was not easy to spot the figure. The whole plateau had traces of erosion, a lot of traces from cars which had been driven there before it was declared a national reserve. To see a picture in the midst of this confusion of lines you need to stare very intently. But once you have noticed it, it is impossible to lose. It is like in the mysterious figures for children where you need to look for a figure among the tangled lines.

The images spread at big distances from each other, so that it takes quite a long time to walk from one to another. Their targeting is also arbitrary; they somehow do not quite give an impression of creativity of extraterrestrial intelligence, and, in any case, they hardly represent the navigation guidance for air travelers. You can, of course, dream that aliens once landed for repairs, taught local people to draw the gigantic pictures, and flew away on business, realizing that in another couple of thousand years there was nothing to do here, but this hypothesis has no evidence as, however, the rest of them.



Nazca Lines from the air

It is interesting that we went from the sea to the mountains early in the morning, and in the evening there was a powerful earthquake on the coast that took away thousands of lives. We learned about it the next morning from frantic phone calls from home. That would have been a shame to drown in the tsunami in the cold waves of the Pacific for our own money!

We associate Peru with the Inca civilization. And this is true. It was the greatest civilization on the American continent, comparable only with the Aztec civilization in Mexico. The Great Inca Empire stretched from the present-day Colombia, along the entire coast of South America to the southern extremities of modern Chile, at a distance of 5320 km. It is hard to imagine how one could manage such a vast empire in the absence of any transport and horses. Meanwhile the whole Empire was divided into provinces administered by local kasiks and connected with the center by the cobblestone

roads that went through the mountains and valleys, climbed the mountain passes and by suspension bridges crossed roaring rivers and bottomless canyons. On these roads specially trained runners, running in a shift method between the relay stations, delivered Inca's messages to the most remote corners of the Empire. Some of these roads are still there, and by the Inca Path one can walk from the fortress of Ollantaytambo to Machu Picchu in a day.

According to the historical records, the first ruler (Inca) Manco Capac appeared in the fertile valley of Cuzco in the Peruvian Andes around 1100 BC, and the rule of the Fourteenth Inca, Atahualpa, ended with the arrival of Francisco Pizarro in 1532.

If this story had been fiction, it would have been considered an incredible fairy tale. F. Pizarro leading a handful of 170 adventurers landed in the center of a powerful state with 6 million subjects, and for a short time was able to subdue this state and destroy it to the ground. But a similar story happened to the State of Aztecs, captured by Cortés several years before. Moreover, in contrast to the Inca Empire, torn by the civil war, the Aztec Empire was at the height of power and fiercely resisted the invaders. But they had to deal with civilization which stood at a higher stage of development, and with warriors representing the most ferocious detachments of this civilization. These were the famous Spanish conquistadors-Hidalgo, for several centuries fighting with the Saracens on the plains of Estramadura. The war was their sole occupation, and God and Gold their only religion. Proud, bold, dressed in a light steel armor, riding on huge war-horses, armed with swords of tempered Toledo steel they were not needed in Spain any more where Reconquista, the reconquest of Spain from the Moors, had ended, and were ready to fight anywhere in the hope of glory and gold. They were fearless, courageous, ruthless, and poor. Most of them, having passed through their hands untold riches, lost them at cards and squandered in taverns ending their life in poverty.



Meeting on the road

The Inca Empire was the last one in the series of great Andean civilizations, originated from the legendary city of Tiwanaku, the stone ruins of which still can be seen on the shores of Lake Titicaca. For millennia people settled in the fertile valleys of the Andes, they built villages, raised children, sacrificed to the gods, just like the Indians of the Sierra Nevada did. Archaeologists distinguish a constellation of the original cultures, distinguished by their art, culture and customs. Chavin, Paracas, Moche, Nazca, Rekuey, Chimu, Chachapoya, Chiang, all these names sound to us like an echo of the hidden secrets of the ages. And this is true. Researchers have found that in all these civilizations there was the cult of the heavenly bodies, and their structures are based on the knowledge of characteristics of celestial mechanics. Now we can only guess how it all happened...

The Spanish conquest dramatically changed the structure of the Indian life. They all became loyal Catholics, and in each village on the foundations of the destroyed pagan temples the

Christian churches were built. But the ancient spirits were not expelled forever. They continued to live in the hearts of the people. And the people preserved their kindness and their traditions. A farmer goes to church and lights up a candle to Virgin Mary, and in the evening he goes to the local shaman, Brujo, for the ceremony of harvest. Brujo himself is an honest parishioner and regularly confesses after the ceremony of calling spirits. The Catholic Church realized that to fight with this was useless, and worked out its own, very tolerant style of communication with the local population.

Our group mainly consisted of French doctors; with some of them I had been familiar from previous conferences and trips. They had invited me to the expedition as a scientific leader, so every evening we gathered after dinner and measured the energy of the group. The results were very interesting, since we rapidly rose from sea level to altitudes of 2500-4000 m where we had to spend 10 days in permanent travels. The collected data enabled us to monitor the features of high-altitude acclimatization in people of different ages and different levels of training.

The French are very fond of shamans. It is just a sort of their national characteristic. A Russian lady has written a book about her meetings with Siberian shamans. In Russia this work did not attract much attention; we have enough of our own psychics. Then she published her book in France and earned public recognition. There were reviews in major newspapers, television, huge print runs, the topic was discussed for quite a long time. "Our" French people were also eager to meet with Peruvian shamans and participate in ceremonies that the guides had specially prepared such meeting.

The first of these took place on a small Amantani Island in the middle of Lake Titicaca, the largest lake in South America. It is situated high in the Andes mountains and is the highest navigable lake in the world, with an elevation of over 3810

meters - 12,500 feet above sea level. Amantini island is considered a sacred place because it has two mountain peaks called Pachatata (Father Earth) and Pachamama (Mother Earth), both of which have ancient ruins and artifacts at the very top. The island has no electricity, cars or heavy machinery, and the 4,000 residents who are engaged in agricultural activities work by hand and rely on batteries and candles for light. We arrived there on a boat, and the local people dressed in colorful outfits took us to their families; in the daytime the bright afternoon sun illuminates its crystal, slightly salty water, but when the sun sets behind the top of the Andes, there falls down a cold mountain night. The inhabitants of the island have no heating, they have to travel for firewood to the neighboring islands, thus me and my wife warmed up at night clinging to each other in a quite adequate way. In the morning, after having some tea and multicolored manioc, we went to the top of the island where the altimeter showed exactly 4000 m. On the top floor, having passed through a stone gate, we found a stone tower five feet tall and the remnants of stone buildings with the wall three feet high surrounding the area of about 10 m in diameter. Inside, around the circle there were stone seats arranged like an amphitheater.

None of the residents could tell us when and by whom it had been built. From the top there opened a spectacular view of the vast lake with strips of colored water, the distant shore, framed by the snowy peaks 5000 m high, and some scattered islands. It was a place intended by nature for meditations and reflections on the impermanence of life.

Some time later a shaman came, a man of about 50, in jeans and a jacket. There was nothing exotic in his appearance. Several local residents assisted him. We sat down on the stone benches, and the shaman began the ceremony. Naturally, I was ready to take measurements, but to my deep disappointment all the batteries were dead. On the night

before we had made regular measurements of the participants and replaced the batteries, but on top of the mountain they were dead. I do not think that it was something to do with some supernatural power. High up in the mountains typical batteries run out quickly. There is no electricity on Amantane, the only source was a solar battery that belonged to the cacique (cheaf) of the island, but such battery operates only during the day. So we regretfully had to skip this step of measurements.

During the ceremony, the shaman used a lot of coca leaves. The people of the Andes think that these leaves are the panacea for all illnesses and the best means to acclimatize to the altitude. In each hotel in our way there was a kettle with brewed coca leaves. We were constantly consuming this drink, and even poured it into a thermos, but whether it was effective or not, I can not say. One thing is clear: these leaves do not relate to any drugs. For cocaine production it is necessary to use a complicated technological process extracting the active ingredient from hundreds of kilograms of leaves, which local people are not likely to do.

Each of us was given a pinch of leaves; it was necessary to make a wish and return the leaves to the shaman who conjured over them, and then burned them in a small fire, pouring some gasoline on them to make sure they would catch fire. The shaman sang a song to Verakoche, a Supreme deity, and in the end we came out of the amphitheater, joined hands and walked several times around the circle to the accompaniment of sacred songs. Then we had to come up to all participants, in turn, and to declare our love to each other. It was easy and natural, all people were good and nice, and the joint experience unites.

We walked around the island again, some even bathed in the cold water, and in the evening the islanders organized a party. We were given the local outfits: embroidered blouses, colorful skirts and bright striped belts for girls; colorful

ponchos and colorful crocheted hats for boys. All the participants immediately acquired a decorative-fabulous look, and even the most homely ones looked cheerful and pleasant. Then the local musicians played fiery Peruvian melodies, everybody began to dance, circling in fast-dancing and bouncing high up in the air. And that was absolutely without drinking booze! We can in fact, if we want! The fun continued until midnight, and outside, like a thousand years before, in the cold light of the moon there shone the silver waters of Lake Titicaca.



French, Russians and Peruvians celebrating together

So these natives have lived here for thousands of years, preserving their customs and their lifestyle. In these island communities there are quite few people, several hundred people on each island. They are engaged in agriculture; the whole island is covered with a network of terraces. There is a lot of sun, they grow mainly manioc, local potatoes, catch a little fish; the water in the lake is too cold for large animals, it

would be nice to have there seals and penguins. In the commune everybody helps each other, no one would perish. They fall ill very seldom and live long. Just try to run up and down to the height of a 100-storey building every day and eat only manioc, you will forget about superfluous weight. A natural, simple life in the lap of virgin nature. Although, of course, this is the life spent in a permanent work with no special entertainments. There are neither movies, nor TV. City residents think that islanders are bumpkins. Our guide who spoke four languages and had been born on one of the islands, admitted that in town she was compelled to wear European clothes.

The next morning we boarded a boat and sailed back to civilization. I wanted a beer, but was sorry to leave this cozy little world!

The second shaman ceremony took place in the valley of the Urubamba River, known as the sacred river. The Urubamba Valley through which it flows is called the "Sacred Valley of the Incas". That day was one of the most memorable during the whole trip. We drove from Cusco early in the morning, and after a while stopped at a farm-zoo. In open cages there were represented all forms of lamas: long-haired and long-necked lamas, lamas-mamas and lamas-suckers, alpacas and vicunas. And all of them could be touched and fed with branches. Surprisingly sweet and good natured animals!

There were also represented various crafts and, of course, local products. At a ridiculous price one could buy sweaters and scarves from gentle, tender wool. We were constrained only by boarding the plane in the nearest future with all bought things. They were sure to be weighed, and an overweight would be inevitable.

With each turn of the road the new beauties opened, on both sides one could see the remnants of ancient structures. Life has been in full swing in these parts for thousands of years, and archaeologists have excavated only a small part of what is hidden in the surrounding hills. At the market, striking with an abundance of original items and souvenirs, you are gently

offered the local antique gold. These things look like copper, and a dilettante will never guess whether they were dug out in an ancient settlement or made by a local craftsman. But even if you assume that they are authentic, you should be ready to deal with the local customs that do not encourage the export of national relics. So it is better not to risk.

In the middle of the day we visited the ancient salt mines. From above they looked like some fantastic landscape. The stream of salt water was flowing through a narrow deep gorge; on the slopes of the mountain terraces there were baths where the water evaporated in the sun leaving the icy lakes of crystalline salt. Salt is collected in large piles and brought on small donkeys for packaging. Nothing has changed over the millennia. These baths were built by one of the ancient peoples, and always attracted the conquerors. Those who own salt always have a steady source of income.



At the salt mines

In the evening we reached a comfortable hotel on the banks of the Urubamba River. The buildings scattered over a large area more closely resembled a hacienda than a hotel. After dinner we gathered near the river, and after some time four shamans in colorful red ponchos and embroidered caps appeared. They spread a large blanket, all seated around, and one of the shamans took a pipe, and in the darkness a dreary sad melody flowed. Then they started to chew coca leaves, and generally the ceremony was very similar to the previous one.



Shamanic ceremony

That time the equipment worked without failing. Throughout all way to Cusco and in the Urubamba valley there was no problem with electricity, so we were able to charge all the available batteries. I placed the device, computer and sensors directly before the shamans, and switched on an automatic mode. From time to time I glanced at the computer screen to make sure that everything went smoothly.

The ceremony was long. The shaman distributed coca leaves among all people, and then collected them back; for a long time they sang to the accompaniment of the flute. An hour later the Russian participants had an original idea to go out for a smoke and tea. We always had these with us. We sat on the terrace, watching the swift rapids of the river captured from the dark by the light from our room, listening to some exotic sounds from a small grove in the neighborhood. It was another world, another hemisphere of the Earth, and it was obvious that with all similarity the life here had its own laws and rules.



Shamanic ceremony

Half an hour later we came back. The ceremony went on. I checked the computer and discovered that it froze. I had to restart and continue recording, opening a new file. When I looked at the screen I could not believe my eyes. On the screen there was a glow image around the metal cylinder that served as a sensor. We had captured such pictures for over 10 years, and they were always a perfect circle of glow around the cylinder. Depending on external conditions the circle could become bigger or smaller, brighter or darker; on measuring its

parameters the procedure of the experimental method was built.

That time instead of a perfect circle on the screen there was a double ring (Fig.23). It was not an artifact: capturing was repeated every 10 seconds, and each time the same double ring appeared. As the guides explained, it was just the culmination of the ceremony when the shamans appealed to powerful spirits. The ceremony continued for 40 minutes more, and in the end all the participants stood in a circle holding hands and the shamans fumigated them with smoke from the coca leaves. After that everybody, in turn, took hold in each other's arms and confessed to each other in mutual affection.

As we were approaching the end of the ceremony, the double rings became less pronounced and gradually returned to their almost original state. All information was stored in computer, which then made it possible to analyze these results.

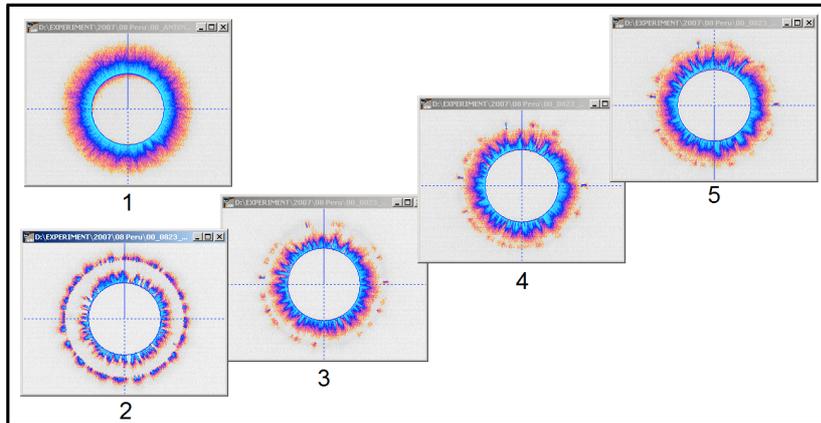


Fig.23. Transformation of the image of metal cylinder in the process of Shamanic ceremony.

1 – standard image; 2 – in the middle of ceremony; 3-5 – gradual restoration of the image to the end of ceremony

So far, we have no hypothesis about physical processes related to the phenomenon. The ceremony was held outdoors, the temperature was about 20°C; a light breeze was blowing. So it made no sense to speak about the influence of some gases formed as a result of burning leaves or breathing of 20 people. Besides, in the first half of the ceremony the shamans burned leaves but it had no influence on the obtained data.

Such images around human fingers are periodically observed during measurements. They relate to the two main factors: using drugs or coming into an altered state of consciousness (ASC). But how could a metal cylinder pass into an altered state of consciousness? Complete nonsense! However the phenomenon existed for a long time, it was recorded in the computer memory, and it was clearly associated with the activity of the shamans. At the moment we can not add anything to that, but the recorded phenomenon suggests the need for further research in this direction.

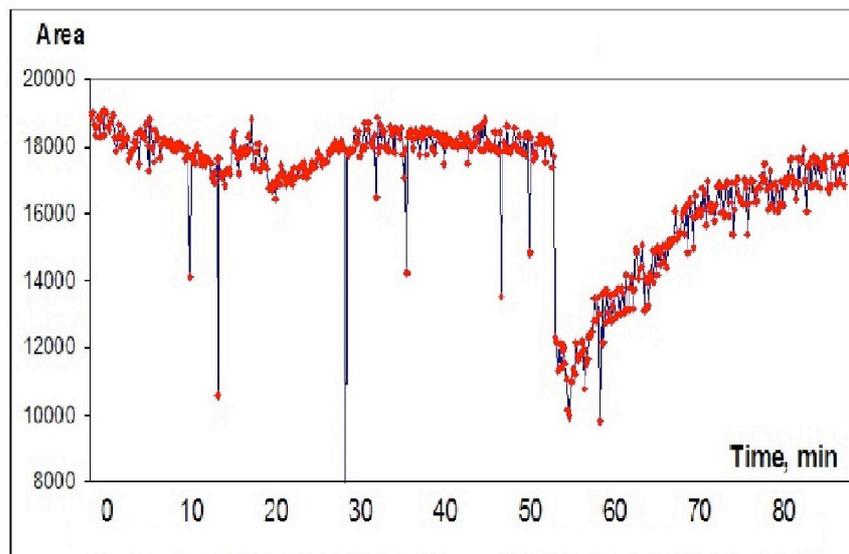


Fig.24. Time dynamics of Energy transformation in the process of Shamanic ceremony

I was sorry to leave that beautiful place on the following morning. I wanted to live there at least another day, to sit on the bank of the river, walk up the steep rocky paths, but the travel program included a move to new wonders. I had to obey, to get up again early in the morning, once again sit in the bus, but in fact, were the new beauties and new experiences yet to come.



Peruvian wanders



Ancient ruins are still alive