



Dr Rémy Crassard delivering his lecture at DAI.

Photo by Rizalde Cayanan, courtesy of DAI

Catch as kites can

Kites trap a desert namesake

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Dr Rémy Crassard, an archaeologist at the French National Centre for Scientific Research (CNRS), delivered an illuminating lecture on the topic of 'The Archaeology of Mysterious Gigantic Structures: The Desert Kites' at the Yarmouk Cultural Center on Monday evening, as part of the Dar Al Athar Al Islamiyyah's weekly lecture series in its 25th cultural season.

Dr Crassard has participated in more than 70 archaeological expeditions, in many countries of the Middle East. He is the director of the Globalkites Project, has been teaching at universities in France and abroad, and has extensively published in international scientific journals and books. In 2017, he was appointed to the French Center for Archaeology and Social Sciences (CE-FAS) in Kuwait, as permanent researcher and CEFAS Head of Archaeology.

In his lecture he shared that from the 1920s, aviators regularly spotted emigmatic gigantic stone structures from the air. With the development of open-accessed satellite imagery, the number of these structures, called 'desert kites', now reaches more than 6,000. The desert kites were hunting mega-traps and seem to work within a complex system leading to strong landscape modification. Their dating and how they were used have been unresolved questions for many years. He discussed that the "Globalkites Project" (www.globalkites.fr) is proposing an interdisciplinary approach at the crossings of archaeology, ethnology, geography and biological and geological sciences. Another aspect of the project is the study of kites' huge distribution, from Arabia to Mesopotamia, and from Armenia to Uzbekistan.

He started his talk by underscoring that desert kites are a very new field of research, "Most of you have not heard about them and it is pretty amazing to say that it is such a new topic that most archeologists haven't heard of them either."

He continued, "They were discovered a 100 years ago in the 1920s, by British pilots who were flying over the Jordanian desert on their way to Baghdad. They observed these strange looking structures that were only visible from the air. They didn't know what they were – and guessed they could be fortresses, drainage structures, devices to gather and domesticate animals or maybe traps for wild animals. Nobody had any idea. But they came up with the name and called it the desert kites because they appeared like flying kites to them."

Dr Crassard showed the audience aerial photos of these desert kites, pointing to the specific characteristics that define them. These dry-stone constructions comprise of long convergence that can range from a minimum of 100m and to as long as 6 km. These lines go towards and end in an enclosure with an average of one hectare. All around these enclosures are found little rooms or cells, that researchers at first had no information on their function. "You can also observe the complex topography that shows that the land is really unpurposed. The structure is so big that you don't feel like you are inside it, you can't really see the walls all around and you cannot see how it is organised from the ground," he added.

In order to understand the desert kites, the team of researchers used real kites fitted with cameras to make fantastic aerial pictures. Dr Crassard showed the audience several examples to demonstrate the scale of the kites and how varied in shape they are. "From the ground, the desert kite is not impressive," he remarked, "it is just tiny walls sometimes only 80 cm high, just stones arranged vertically, and more rarely proper walls that can be much higher."

The globalkites research project is financed by the French Research Agency (ANR) (2013-2017). It has several important collaborations with international institutions and academics. "We started with an inventory to try to understand how many of these structure we knew before. We had an estimation of just 200 before we started the project."

"The good news is that kites are easily identifiable on high resolution satellite imagery so we could really start to find new desert kites thank to the very useful and easily accessible open access platforms on the internet such as google earth, bing maps," he informed. He shared that satellite images are so accurate and deliver such a high resolution so many structures can be viewed in the desert. Satellite images provide substantial amounts of data that can be subjected to geomatics analysis. The resulting spatial data are used to identify and explain regional differences.

"So with the inventory we started with, we ended up with more than 6,000 structures over a huge distribution area, ranging from Yemen to Medina, Jordan to Syria, Iraq, and Saudi Arabia, Armenia, Kazakhstan and Uzbekistan," he stated, noting that the densities were very different in each site. While Armenia contained a few isolated spots, the Basalt desert of Jordan had more than 2,000 structures.

"For this definition of the kites, we need to have these enclosures and lines that converge into it and tiny rooms and cells all around it. The inventory shows very different shapes ranging from the very simple shape of just the enclosure, two lines, sometimes just one line even, and one or two little cells to very complex shapes with multiple convergence lines, and some of them can be several kilometres long and to a high number of cells all around, as well as many reusing very complex shapes," he noted.

"There is a diversity in where they are located. Sometimes, they are in some deep slopes close to cliffs and use the cliff within the construction, there is also diversity in the number of cells from 1 to 30. Our project addressed three problems – the function, the dating and the huge distribution of the kites over the Middle East and Central Asia, he said.

The function of the kites pertain to what they were used for i.e. hunting or domestication. The dating presented a challenge as had not been studied by anyone before. In addition, as the structures are still visible on the surfaces without any sediment covering, it was really hard to date them. Looking at the huge distribution, the team looked to explain the reasons behind such a wide geographical distribution.

"Our approach is mainly interdisciplinary with a lot of innovative techniques and international collaborations with a multi-scaled approach. We have three scales to our geographical information system, a global approach with the use of five different windows and then we work on each individual kite," he stated.

The five windows are located in selective places. The first one is found in Kazakhstan on the Ustyurt Plateau. The second is in the Mount Ararat, an isolated place with a high density of desert kites. In the third window of Haarat Al Sham located in Northeastern Jordan lies the highest density where they conducted many exploration. The fourth window is in Northern Saudi Arabia in the Al Jawf region and the fifth in Southeast Jordan in Jubal Al Kashabiyeh where they have been excavating for more than six years.

"So in total we studied about 160 kites so it not so many in the end when you are looking at a total of 6,000 kites, we've conducted about 100 excavations," he added.

Dr Crassard delved into the first window of the Ustyurt Plateau in Kazakhstan. He shared that the most interesting feature of the kites in this massive plateau is that were along the cliff. Here, there are predominantly three main shapes of kites. "You have the classical triangular shape with one or two pointed cells with funnel entrances. The driving lines are with alignment of stones. The more complex building of the kites itself with walls. You have the same kind of concept and structure with the funnel entrance and two cells but then they are using the cliff here. It is so abrupt that there was no need to build a wall here. If animals come inside here they will not jump but follow the cliff and eventually the cliff which is used as a wall itself would lead them to the enclosure. So they were really using their environment. The walls were not well built, but made of simple vertical stones."

He shared that when the team started to excavate the cells they found some sediments. "That was interesting because it was the first evidence that these little cells, that are sometimes quite well preserved, are deeper. It was something that was already dug before. So we have the first evidence that these cells are in fact pits."

In Armenia, the site is completely isolated compared to other big areas of kites at some of the landscape with a lot of volcanos. "You have a gigantic structures, bigger than the structures we saw in Kazakhstan. The rocks are enormous. We started to dig in the little cells and we found the same, that these little cells, were well preserved."

In Northeast Jordan, the team conducted even more excavations and work at Harrat AL Sham, "You have a huge density of kites, it is amazing. We selected a sampling of exactly 522 kites." He shared that the researchers observed that the kites all had the same orientation, towards the east. They appeared aligned, sometimes really clearly in chains, linked one to the other. He showed the audience aerial photos to point to barriers and the vast scale of the kites.

He looked closer at one particular kite that has more than 6 km of driving lines. He shared that all the kites are either linked one to another either with some other walls, so it adds some other complexity of construction in the desert. There are a lot of superimpositions and even unfinished projects, he noted. All these examples point to indications of a relative chronology which means the use of these kites was over a long period of time.

The cells, researchers understood were trapping pits for animals. They are massive, well-constructed and found in each of the five windows the team worked in. In an example from Armenia, Dr Crassard shared a trapping pit which is four metre high, "it is very deep and you can see the huge blocks that were used to build them."

He pointed to the huge amount of work to construct all these walls and then to dig all these pits, "Once you have all these pits, because all you have the orientations of the kites being the same, maybe most will be hunters or trappers who are waiting for animals coming from migration routes and they knew very well the migration routes of the animals. Something we don't know and may never know is how they were really convinced to go inside. Most probably they were hunted inside close to the pits and then unfortunately for them, were trapped and killed."

Another window of work is in South East Jordan where the team found extremely interesting aspects of the kites as well as dwelling sites of kite users. He showed the audience a very isolated area with just eight kites. "They are along the cliffs organised as a chain as well oriented to the east. They have a very specific shape with a wide opening on the plateau and then you have the first slope, then a long and narrow corridor that does turn into an enclosure, and then a second slope."

"On the field you see it is very light and you cannot see much. It was full of black rocks. Most of the total area is covered by flint and they used white limestone rocks to shape these lines. They were not building a wall but just using the colour of the stones to shape their kites," he added.

While it is very difficult to see anything on the ground, excavations showed well preserved and well constructed huge stones at the base arranged vertically along with well constructed walls and deep trapping pits. "Close to each of the kites, we found 8 sites that were not very easy to find or see. You had to really observe on the ground but here stone tools which were plentiful – knives, daggers, etc."

An amazing discovery at one of these sites is a stone that contains engravings resembling the exact shape of the kites around it detailing the long corridor that goes to the enclosure and also contains the representations of all the trapping pits inside the stone. "One is almost to scale and so accurate. You also have a symbol here that may represent something. It is exactly at this moment and location where you have this that may be a topographic symbol and maybe one of the very first in the world. Once again you have to remember that these kites are only visible from the air and they had no plane or kites to take picture or anything. These representations are mental conceptions pressed on the stone as a plan and it might be also one of the first architectural plan," Dr Crassard stated.

He informed that when the team started to dig the tiny sites around the kites they found almost tiny villages with a huge amount of stone tools and stone vessels used in prehistory along with all kinds of weapons like arrowheads, strange boomerang-like stone tools and others. They also found on the surface itself bones of gazelles all over the place. Next season, they found a huge tiny village with little houses constructed next to each other. The objects found can be dated back to 7000 BC, he informed.

In Saudi Arabia, the last of their field work at the end of the huge density of kites, they excavated deep trapping pits. "We have examples of two couples of kites that are very interesting. Perhaps, they were functioning together because the lines are connecting more or less, and in between one of them we found another engraving."

This second engraving is big and cannot be moved. It contains representations of two kites serving as evidence that these drawings were made by the people who were the architects of the kites.

He shared the results of the project as establishing the function of these cells as pits used to trap and kill the animals, the dating is revealed to range from 7000 BC to as young as the 1st Millennium BC and AD. Explaining the distribution, he shared that they did an inventory that was a huge work using 40 descriptors for kites that provided a lot of data. "When you merge all of this information, you can do clusters and regionalization of the kites and start to understand this distribution as different groups."

In conclusion, he noted that while the team had acquired a lot of answers, many new questions awaited resolution such as the occupation and control of the territory, the artificialization of the landscape, extinction of species due to mass trapping and who did these traps.