Korrekturhinweise

The ancient refrigerator

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Begründungen

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The text says: “Take the Incas, for example, who did not have a developed alphabetic system for writing but had the quipu, a counting device of knots and strings that enabled them to keep track of population records and livestock and even recaptured essential episodes of their folklore.” One particular ancient civilization therefore counted their people although they lacked a written language.

1
The text says: “When it comes to engineering, architectural wonders are omnipresent on almost every continent, whether that be the pyramids of Egypt, Angkor Wat of the Khmer Empire, or even entire underground cities such as Derinkuyu in Turkey’s Cappadocia region. One great example of smart and sustainable engineering brings us to the Middle East, a realm noted for being one of the cradles of civilization and developing human cultures. There, around the 4th century B.C., the ancient Persians came up with what is known as yakhchāl.” In ancient times, the yakhchāl was therefore one of many cases of clever inventions.

2
The text says: “The yakhchāl did not serve as a burial ground or a place to accommodate people; instead it fulfilled another important function in the scorching summers. With excessive heat and arid climate, the region had inhabitants, the ancient Persians, who needed some way to cool off and store food during the summer months, and that’s when yakhchāls were found to be of great help. The word stands for ‘ice pit.’ These edifices provided both space and conditions to store not only ice but also many types of food that would otherwise quickly spoil at hot temperatures.” The yakhchāl’s cooling effect was therefore able to cope with the annual hot season.

3
The text says: “On the outside, a yakhchāl structure dominates the skyline with its domed shape, and on the inside, it would typically integrate an evaporation cooler system that allowed the ice and food resources to stay cool or even frozen while stored in the structure’s underground rooms. It may sound a bit far-fetched that the ancient Persians saved ice in the middle of the desert, but their technique was, in essence, not so complicated.” The yakhchāl’s basement therefore served as the chamber for the supplies.

4
The text says: “A typical yakhchāl edifice would rise some 60 feet, and on the inside it would contain vast spaces for storage. The leading examples point to figures such as 6,500 cubic yards in volume. The evaporative cooling system inside the structures functioned through wind catchers and water brought from nearby springs via qanāts, common underground channel systems in the region, designed to carry water through communities and different facilities.” The technology that created the cold temperatures inside the yakhchāl therefore depended on some airflow.

Textquelle: Andrews, Stefan: The yakhchāl was an ancient Persian “refrigerator” that stored food and even ice long before electricity was invented.
https://www.thevintagenews.com/2017/12/20/yakhchal-ancient-persian-refrigerator/ [31.03.2022] (adaptiert).

5

The text says: “The evaporative cooling allowed temperatures inside the yakhchāl to decrease with ease, giving a chill feeling that you were indeed standing inside one big refrigerator. The walls of it were constructed intelligently as well, with usage of special mortar that provided super insulation and protection from the hot desert sun. It was a mix of sand, clay, and other components such as egg whites and goat hair among others.” The building material which kept the heat out therefore contained animal products.

6

The text says: “The structures also contained trenches at the bottom, designed to collect any water coming from molten ice. Once collected, this water was then refrozen during night time, making maximum use of the resource as well as the cold desert night temperatures. It was a repetitive process.” Channels located in the lowest part of the yakhchāls therefore made sure that no liquid would be wasted.